

CHAPTER V

RESEARCH INSTRUMENT AND DATA COLLECTION

The questionnaire method is used for data collection. The investigator obtains data by posing a written question for the respondent. A questionnaire is a process of a data collection method. The essential purpose was information seeking. A questioning method is most effectively used in the survey method. For the descriptive survey, it is the most appropriate method of obtaining specific information. When it is not possible or desirable to observe directly. Questionnaires are the main methods of data collection. If possible, experimental and direct observation are the best methods of study, but descriptive correlation studies can not be done experiment. So a questionnaire was used to collect information. According to Seaman, C.H (1987), a questionnaire is one of the effective tools for obtaining information, opinions, and perceptions. Questionnaires are especially useful for describing the characteristics of a large population. In this study two types of method were used; questionnaires and students' academic records.

5.1. CONSTRUCTION OF DATA COLLECTION INSTRUMENT

The construction of a data collection instrument requires planning, a review relevant literatures, and testing of the tools. The source of information to develop the instrument used in this study is based on the literature of following authors; Tyler, H. C (1964), Wotbura and Wright (1975), O, Shea, H. S., and Parson, M. K (1979), Beyer, J. E (1981), Griffith, and Bakanauskas (1983) and Heish., et al (1990). Also the valuable suggestions which were given by educationists, psychologists, and nursing teachers both in Thailand and Nepal.

The scale of measurement is necessary before construction of the instrument. Measurement is the assignment of numerical value to object event. Measurement can determine relationships such as quantities, degrees, and levels of observation. Measurement assumes the counting, comparing or ranking. This instrument measured each question on the basis of a five point rating scale. A five point rating scale is more appropriate, simple, and easy to rate for the subject (William, H.B and Leo, J.B).

The response scale was written in numerical and attribute. The rating scale used is stated in following.

Excellent	= 5	Very good	= 4
Good	= 3	Fair	= 2
Poor	= 1		

Student demographic information was developed by a nominal scale and components of relationships were in continuous data. Clear written instruction, introduction, and objective of the study were prepared to make respondents clear about the instrument. Pre-coding was used with numerical codes on the question responses, so that responses could either be read by machine or counted by hand. For example, the codes 1 for male and 2 for female appeared beside the response category. There were two types of instruments namely close ended and open ended.

The questionnaire used in this study consisted of three parts as follows:

Part I. The questionnaire consisted of demographic information of the nursing students. It included age, sex, name of campus, marital status, parents occupation, and educational status.

Part II. The second part contained interpersonal relationship components. The interpersonal relationship was subdivided into 5 components of the relationship, namely trust, open communication, support system, effective class room teaching and characteristics of clinical teacher. Each component had 8 items of questions. These components were constructed in a 5 point scale.

Part III. This part contained the second and third year nursing students' last institute final year examination; both theory and clinical scores (mark). Students wrote this themselves as a self-report but the investigator cross checked from the student's personal record to validate the data. In this part the opinion also asked to student which information may give suggestion and recommendation to the nursing campuses.

5.2. VALIDITY AND RELIABILITY.

A good research instrument should have at least two major qualities, validity and reliability. All the measures and scales must be validated and tested for reliability. Validity refers to the extent to which the instrument measures what it intends to measure. Reliability is the extent to which a

specified measurement yields consistent observations of the same facts from one time to another time and one situation to another situation Seaman, C.H (1987). In this study the investigator asked the expert to validate the content and construction validity. Content validity refers to sampling adequacy. It judges whether the content of the questionnaire is representative of all possible questions by judges in the content area. It is helpful to review the adequacy of the instrument. Construction validity, the validity of concepts, judges the extent that the questionnaire measures the concepts or variables that investigator wants it to measure. In this study, the investigator tried to establish the content and construction validity by requesting 8 experts. They were experts in education, psychology, and nursing education. From their advice the instrument was tested and improved. If all the experts agree on this questionnaire, it has content and construct validity.

Another important matter is reliability. A questionnaire pre test was done at Bir Hospital Nursing Campus and Lalitpur Nursing Campus. Both campuses used the same curriculum. The year completion of certificate level nursing was similar.

Reliability of the instrument was estimated by applied Hypt,s analysis of variance. Ref - Shrestha, M.L (1990) and Henry,E.G (1981).

The formula (Henry, E.G 1981).

$$rtt = 1 - \frac{se^2}{s^2 p}$$

$$= \text{Reliability coefficient } rtt = 1 - \frac{\text{Var}(e)}{\text{Var}(ot)}$$

Remarks.

rtt = Reliability of coefficient.

se2 = Variance of error.

s2p = Variance of individual person score.

Table 5.1. The result of the reliability test in each component of relationship.

Components of relationship	Reliability coefficient
1. Trust	0. 7432
2. Support system	0. 7862
3. Open communication	0. 6267
4. Effective class room teaching	0. 7226
5. Characteristics of clinical teacher	0. 6124



$$\begin{aligned} \text{Reliability of coefficient (rtt)} &= 1 - \frac{1.12263}{7.5437} \\ &= 0.8512. \end{aligned}$$

The result of the reliability was 0.8512 (85%).

It indicates that, 0.8512 (85%) of the variance of the score is true score variance and only 15% error variance. After the pretest the questionnaire was modified and this somewhat improved the instrument.

5.3. DATA COLLECTION.

This study involved seven certificate level Nursing Campuses in Nepal. All the Nursing Campuses are under the Institute of Medicine Dean's office except Bir Hospital Nursing Campus. So co-operation and permission was necessary before entering the campuses. The request letters were made from the academic unit, faculty of Medicine Chulalongkorn University and the United Mission to Nepal health service secretary. The research topic and objectives were explained to the Dean Institute of Medicine. From the Institute of Medicine Dean's office, requests and permission letters were obtained for the different campuses' campus chiefs. The objectives of

study were explained to the campus chief of Nursing Campuses to enhance co-operation with the study.

Before implementation of data collection, the questionnaire and form were arranged. There was one assistant to help with data collection. Training was given to the assistant prior to data collection regarding objectives of the study. Clear instruction was given to check the completeness of data and coding of the questionnaire. The investigator was responsible for the overall study.

5.4. SOURCE OF INFORMATION.

The data and information were collected from following Campuses.

1. Maharajgunj Nursing Campus.
2. Lalitpur Nursing Campus.
3. Bir Hospital Nursing Campus.
4. Birgung Nursing Campus.
5. Biratnagar Nursing Campus.
6. Nepalgunj Nursing Campus.
7. Pokhara Nursing Campus.

Second and third year nursing students' and final examination scores (marks) for the academic

year 1990, were collected from students' mark sheets and nursing campus examination sections.

There are three campuses situated in Kathmandu. Another four campuses were outside Kathmandu. All necessary things were prepared before travelling to the outside research sites. The study was conducted on the second week of November, 1991.

5.5. METHOD

This study's subjects consist of second and third year certificate level nursing students in 1991. They were the main source of data collection. The subjects were male and female nursing students. An other main source was the students' final examination record score.

A self-administered questionnaire was the main method of data collection. From the help of the class co-ordinator instruments were distributed to the students. The objective of the study was explained to the second and third year students. Clear instruction about how to use the questionnaire, both in verbal and written form were given to each subject. The subjects were asked to respond to each of the five components of relationship included under each question on the basis of a 5 rating point scale; excellent = 5, very

good = 4, good = 3, fair = 2 and poor = 1. Each attribute was explained on a separate paper in the questionnaire. The students were requested to return the questionnaire in the following day. Follow up was done in between data collection time on some campuses. From the help of the examination section, students' institute final marks were cross checked and collected. It is important to cross check to ensure maintenance of confidentiality. Missing data and completeness were checked upon return of the questionnaire. If there were any mistakes or incomplete forms. They were sent back to the student to be redone. Incomplete questionnaires were already excluded during data checking time. The data were coded after data collection.

Two hundred and fifty questionnaires were distributed for the random selected sample. Out of 250 questionnaires, 234 were returned. The questionnaire response was 94%. Two hundred and thirty-four questionnaires were available for data analysis. The number of subjects responding questionnaires are shown in the following table 5.2.

Table 5.2

Nursing Campus	Number of subjects
Maharajgunj	70
Lalitpur	34
Bir Hospital	15
Birgung	30
Biratnagar	30
Nepalgung	15
Pokhara	20
Total	234