CHAPTER IV

INSTRUMENT AND DATA COLLECTION

4.1 Introduction

The settings selected for the assessment of auxiliary nurse midwife were government rural health post and district health office. A health post is expected to cover 5 to 10,000 population in the area. Health post are situated at subdistrict level. Their activities are predominantly prevention and health promotion. There is no physician at the health post level. As already mentiond, health assistant is the incharge of the health post. Each of the integrated health posts supposes to have 2 ANMs. The health posts are under the administration of the district health office. The district health office is situated in the district level and a district health officer is the incharge. The officer can be health personnel or non health personnel. A public health nurse is the incharge of MCH/FP clinic.

4.2 Data Collection Instrument

The main instrument used in this study was a direct observation checklist. Record of filled

antenatal care form was reviewed for completeness. Already existing scenerio type of close ended questions were used to test knowledge on antenatal care. The same instrument was used to gather data from both the hill and the terai ANMs.

4.3 Delineation of standard competence:--

The standard competence was prepared to be used for assessing the level of competence of the graduate ANMs. The steps in delineation were as follows:

    a. Searching standard job description of ANM particularly in ANC in MCH service.

    b. Review of text book (WHO and other midwifery) about components and activities of ANC care.

    c. Reviewing Nepali ANM job description.

    d. Reviewing ANM training course outline in antenatal care.

The content of the observation checklist consisted of ANC activity. They were composed of the following areas:

    1. History taking.

    2. Physical examination

    3. Abdominal examination.

4. Blood pressure measurement.

5. Vaccination of pregnant women (T.T).

6. Health education.

7. Communication skill.

4.4   Reliability and validity of the measuring instrument-

The reliability of a measuring instrument is the degree of consistency with which it measures what ever it is measuring. It refers to the stability, consistency, accuracy and dependability of an instrument or a measurement. Reproducibility of an instrument can be assessed by doing intrarater and interrater reliability test, i.e., the result of a series of measurement by the same observer or by different observers using the same test on the same group of subjects under identical conditions are composed. (R. D. T. Farmer et al).

Direct observation can measure history taking, physical examination, interviewing and interpersonal relationship but it alone can not measure the cognitive domain. (R. Neufeld et al 1981).

In the study of Andrew who used observation check list, and interrater reliability was 0.82 -

0.94. Dunn in 1970 used observation checklist to assess the professional nurse practitioner in five procedures, an interrater reliability was very high, i.e., 0.992, 0.895, 1.000, 0.999, 0.988, 0.996.

The content validity refers to the extent to which a procedure measures what it is supposed to measure. Verification of the content validity was requested from a group of experts in Thailand. The experts were those who have had experiences in obstetric and gynecology. Seven experts were consulted. The items were checked on the basis of acceptance as required competence for ANMs in antenatal care. Acceptance of 5 out of 7 experts were used as the criteria for observing competence items.

The independent variables are the factors which have important effect to the professional competence directly or indirectly. The factors which can effect on the professional competence of the ANM graduates were extracted from previous related literature, articles, textbooks, and own or colleagues previous experiences. These factors were age, marital status, supervision received, refresher courses, duration of work, availability of supply and equipment, and geographic setting, and work load (number of patients/day). In other related study, sex

was also mentioned as a possible predictor but in this study all ANMs were only female.

Observations were carried out in antenatal care in the clinical field. For each observation the rater was allowed only one decision, i.e. whether a particular procedure did occur correctly (a "yes" answere) or incorrectly (a "no" answer) and whether the procedure was omitted by the ANMs during the episode in the clinical care (also a "no" answer).

Direct observation may be associated with opinion or bias, therefore it was necessary to measure interrater reliability of the instrument. The reliability of the instrument of this study was measured by the same instrument on the same subjects, by two observers, the investigator and one helper. In this study the pretest of the observational checklist was conducted in 20 ANMs, at Sunsari district which was one of the district in Eastern Development Region. Reliability was constructed by means of Analysis of Variance (ANOVA).

The reliability was calculated by using the following formula:-

$$\text{Reliability} = \frac{\sigma^2_{RA}}{\sigma^2_{RA} + \sigma^2_{ERR}}$$

$$MSRA = \sigma^2 err + 2\sigma^2 RA$$

$$\sigma^2 RA = (MSRA - MSerr)/2$$

$$= 58.842$$

$$= \frac{58.842}{58.842 + 1.737}$$

$$Reliability = 0.97$$

To test the knowledge about antenatal care, as already mentioned, existing institute final examination standard questions were used.

4.5 Preparatory Phase

This study involved all the sample health posts and the district health office of the sample districts. Therefore it was necessary to consult related health personnel in related district health office and health posts for cooperation and to collect baseline. They were requested to keep the research study secret. Information collection forms, questionnaire and checklist were prepared in advance for data collection. There was one helper as an observer. Detaild instructions or training were given to helper in the following matter: Objective of the study, type of instrument, objective of data collection according to each instrument, process of instrument utilization by means of observation and

checking of filled antenatal care forms and communication with district health officer and health post incharge. She was informed to keep the obtained data secret and to complete the work in time. The time schedule was arranged with the co-investigator.

4.6 Methods

The sample of this study was composed of all the auxiliary nurse midwives who work in antenatal care of maternal and child health service. They were all graduated from the same category of extension nursing campus. The steps of direct observation and question to test knowledge were carried out in the following way:

1. Observation process was done by two observers.

2. Data was collected on the antenatal clinic day according to the schedule of the clinic.

3. Data collection began from early in the morning.

5. ANMs were not informed about research study, i.e., they were kept blind to minimize Hawthorn effect.

6. Antenatal card was also cross checked for completeness.

7. A rotation visit schedule was prepared in advance to do random visit and observation to prevent selection bias. One health post was visited twice or more than twice and was observed according to the

prepared random visit plan.

9. After finishing the antenatal care service of that day, questions to test of knowledge and demographic data form were given and the ANMs were asked to fill it. At this time they were explained about purpose of test and also informed not to write their names to maintain confidentiality..

a. The completeness of data was checked daily, i.e., blank or unanswered questions were requested to be completed immediately.

b. If the ANMs were unable to complete the forms on that day, forms were left with them and were collected within the next 2, 3 days.

c. Periodically, the investigator met the helper and discussed for any difficulty in data collection. The helper was reinforced to check for completeness of data.

4.7 DATA PROCESSING

Each completed set of forms for competence and knowledge as kept separately for the two groups with separate coding number. The code number for the checklist and questions was the same for the same person. When the data collection was finished, they were prepared for analysis. The investigator hired

another person for keying the data.

The data analysis was computed by using dbase III plus, spss/pc + and logress2.