



## CHAPTER III

### METHODOLOGY

#### STUDY LOCATION:

This study was conducted at Manikhel village in Nepal. The village is bordered by Gotikhel village in the southern part, Chaughare village; western, Kaleswor village; eastern and Bardev village northern. The estimated population of this village is 1,798. People mainly speak Nepali and Tamang languages. Almost ninety percent of the population is dependent on agriculture. The village is characterized by relatively poor conditions, with low income. In the health services sector, the United Mission to Nepal, Community Development and Health Project has been contributing health services. Due to lack of education, people still approach traditional healers for treatment even for serious complications during pregnancy and child birth. Because of this attitude of the people, this village was selected as the setting for this study.

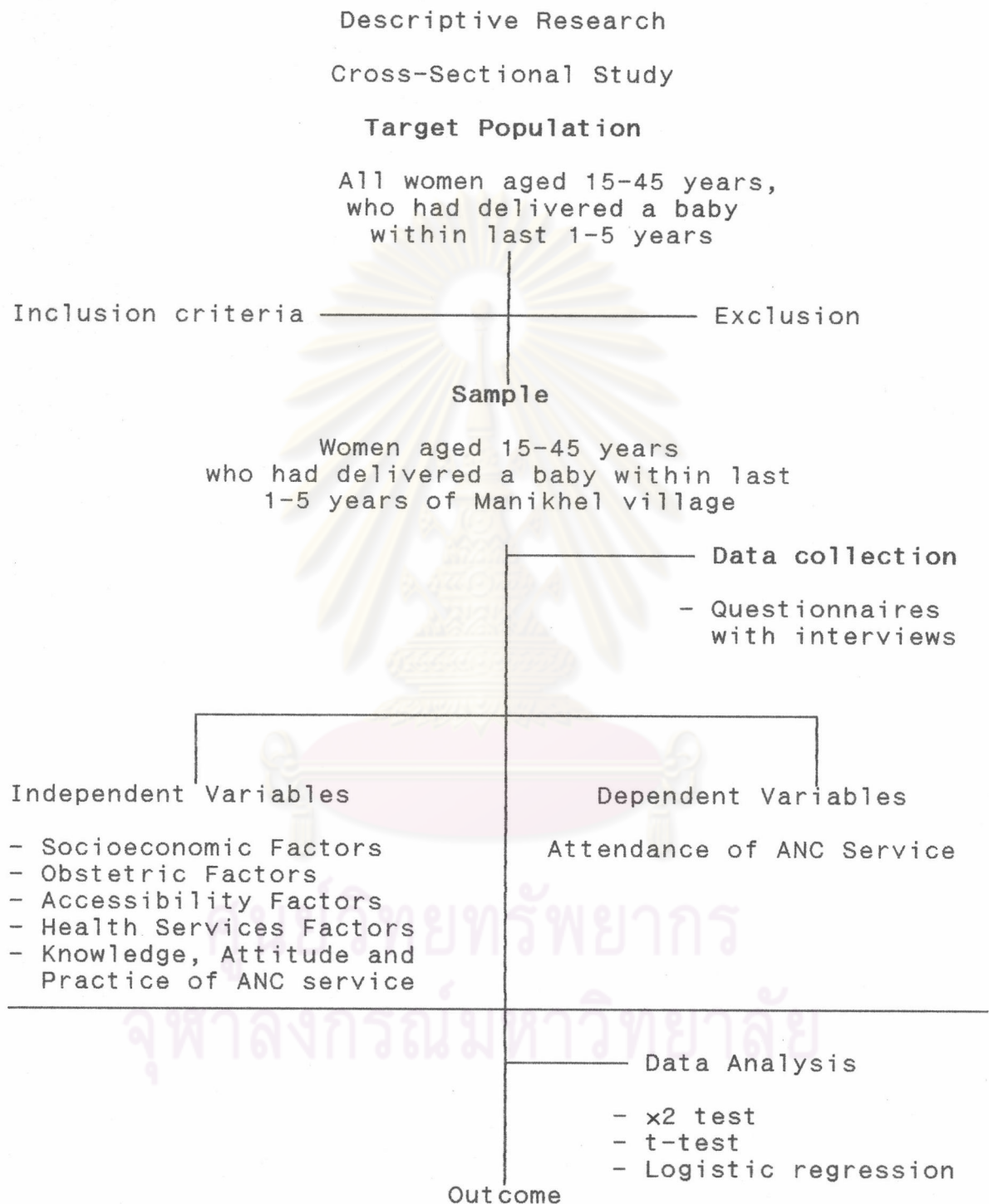
**RESEARCH DESIGN OVERVIEW:**

The study design was a community based, descriptive cross-sectional study to identify the antenatal care coverage and determine the factors affecting attendance of antenatal care service among pregnant women in Manikhel village. The study sample consists of women aged between 15-45 years who had delivered a baby within the last 1-5 years. In this study the dependent variable was the attendance of ANC service by pregnant women. The independent variables used to find out the factors affecting the attendance of ANC service included socioeconomic factors, accessibility of ANC service, obstetrical factors, health service factors and knowledge, attitude and practice on ANC service of pregnant women.

Before this study was conducted, the baseline data were collected from the village health worker's registration book of Manikhel village in order to estimate the study population. All necessary data were collected by using questionnaire with direct interview.

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**DIAGRAM OF STUDY DESIGN:**



Attendance of ANC service with Factors

**Figure 3.1 Overview of study design**

**TARGET POPULATION:**

The target population was the total study population i.e. all women aged 15-45 years, who had delivered a baby within the last 1-5 years.

**POPULATION SAMPLED AND STUDY SAMPLE:**

The population sampled was the population selected from the target population for studying and making conclusion. The population sample in this study were women aged between 15-45 years, who had delivered a baby within the last 1-5 years of Manikhel village and who were eligible when inclusion criteria were followed.

**ELIGIBILITY CRITERIA:****1. INCLUSION CRITERIA:**

The subjects with the following characteristics were considered for inclusion:

The women aged between 15-45 years who had delivered a baby within the last 1-5 years of Manikhel village and willing to participate were included.

## 2. EXCLUSION CRITERIA:

1. Women who had delivered their last child more than 5 years ago.
2. Women who had suffered from mental illness.
3. Women who were not willing to participate in the study.

## SAMPLE SELECTION PROCEDURE:

It is well known that the appropriateness of the study population refers mainly to its suitability for attainment of the objectives of the study. In this study, the sampling frame was considered to be all women in Manikhel village who had delivered a baby within the last 1-5 years and who were aged between 15-45 years. In order to identify all women who had delivered a baby within the last 1-5 years, a list was obtained from the village health worker's register book. Then a list was developed by the investigator and served as new sampling frame. All of the women who had delivered a baby within the last 1-5 years from the developed list were selected using simple random sampling method until the number of sample included in the study equaled to the sample size which was about 260 for the detailed interview.

## STRUCTURE OF SAMPLE DESIGN:

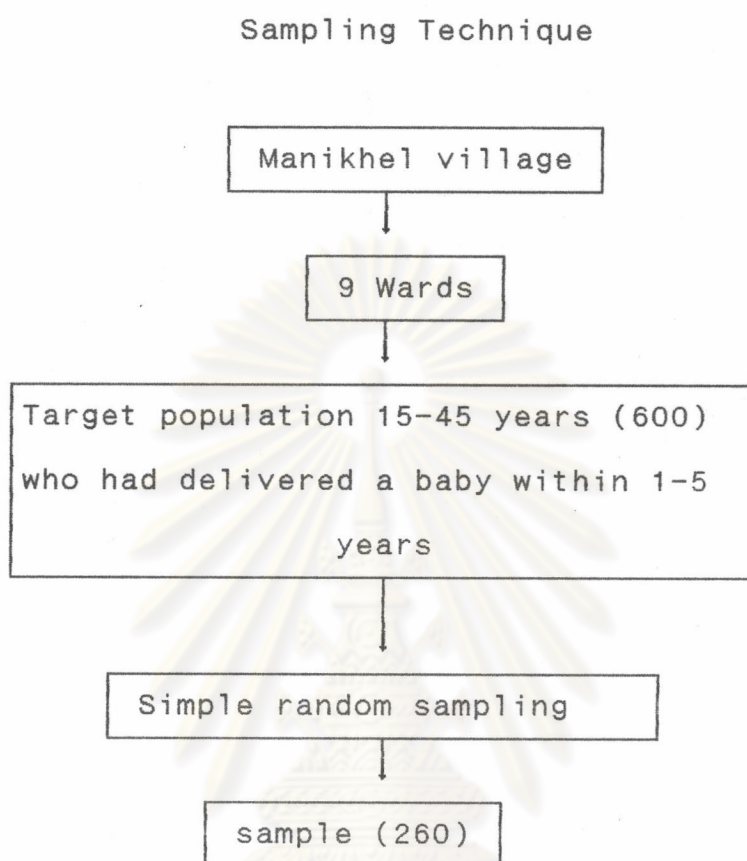


Figure 3.2 Structure of sample design

Note: The Manikhel village is divided into 9 wards. (The wards means small community area of the Manikhel village) The total target population in this areas was about 600 women. (Figure 3.2 see diagram)

**SAMPLE SIZE CALCULATION:**

The formula used in this study for sample calculation is as follows:

$$n = Z^2_{\alpha/2} P(1-P)/d^2$$

n = number of subjects

$$C. I. = 95\% \alpha 0.05 \quad Z_{\alpha/2} = 1.96$$

P = Proportion of women who used antenatal care services among those who delivered during the last 1-5 years = 0.20

d = Absolute precision required on either side of the proportion  $\pm = 0.05$

$$n = (1.96)^2 (0.20)(1-0.20)/(0.05)^2$$

$$\text{Sample size} = 246$$

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**OBSERVATION AND MEASUREMENT:**

The outcome of this study were divided into two variables which was dependent and independent variables. The following outcomes attributes were measured:

**DEPENDENT VARIABLE**

- Attendance of ANC service

**INDEPENDENT VARIABLES**

## 1. Socio-economic factors

- Age
- Religion
- Caste
- Education
- Occupation
- Type of family
- Annual income of family

## 2. Obstetric factors

- Gravida
- Number of children under 5 years of age
- Obstetric complication during previous and present pregnancy

## 3. Accessibility of ANC service

- Distance of ANC clinic
- Cost of travel



4. Health service factors
  - Attitude of health staff
  - Waiting time
  - Pink card
  - Service cost
5. Knowledge, attitude and practice of antenatal care of pregnant women

#### INSTRUMENT:

The questionnaire was used as an instrument for data collection. The content of questionnaire was developed by the investigator from textbooks, previous research and expert's advice. The questionnaire was formulated to identify antenatal coverage and determine the factors affecting attendance at ANC service of pregnant women. The questionnaire was divided into four parts.

In part I there were four sections. Part I, Section I: the questions about socio-economic characteristics of pregnant women, which included age, religion, caste, education, occupation, type of family and annual income of family.

Part I, Section II: questions about obstetrical information including gravida and obstetrical complications during previous and present pregnancy.

Part I, Section III: questions related to the accessibility of ANC service to pregnant women, which includes the distance of ANC clinic and cost of travel.

Part I, section IV: questions about the health services, which included the waiting time, service cost, pink card and impression towards health personnel of the pregnant women.

Part II consisted of 13 questions about knowledge on ANC service. The questions addressed the importance of ANC service, complications and appropriate way of health practices during pregnancy. Each question had one correct answer. The scoring rate for knowledge on ANC service was developed. The 1 score rating for knowledge on ANC was given to each correct answer. The total score was 13. So the highest score was 13 and the lowest score was zero.

Part III consisted of 19 sentences used for measuring attitude towards antenatal care service of pregnant women. This part consisted of 15 positive attitude sentences and 4 negative sentences. This instrument mainly measured the mother's concern about antenatal care and feeling towards the baby of pregnant women.

In this part, there were 5 scales for each sentence: i.e., strongly agree, agree, undecided, disagree and strongly disagree. The Likert scale was used to measure attitude.

Score rating for positive attitude sentences:

- 5 mark for strongly agree
- 4 mark for agree
- 3 mark for undecided
- 2 mark for disagree
- 1 mark for strongly disagree

Score rating for negative attitude sentences:

- 5 mark for strongly disagree
- 4 mark for disagree
- 3 mark for undecided
- 2 mark for agree
- 1 mark for strongly agree

The highest score was 75, this meant the pregnant women had a good or positive attitude towards ANC service. The lowest score was 20 which meant the pregnant women had a negative attitude towards ANC service.

Part IV included 11 questions used for measuring health practices of pregnant women towards antenatal care service. This part was mainly concerned of pregnant women on attendance of ANC service on proper methods to prevent complications during pregnancy.

Each question had one correct answer, the total score of part IV was 11, therefore the highest score was 11 and lowest score was zero. The score was given according to the

correction of answer, i.e., for correct answer the score was given 1 and if answer was wrong the score was given zero.

#### **VALIDITY AND RELIABILITY OF THE MEASURING INSTRUMENT:**

In any research, there are two important things that should be concerned: validity and reliability. In this study the investigator tried to make the research process internally valid and reliable using the following measures.

##### **1. VALIDITY:**

Validity is the degree to which the methods and its measurement process provide precise and correct measurement. In this study content validity was concerned with whether the instrument adequately covered and measured what it was supposed to measure.

##### **2. CONTENT VALIDITY:**

Content validity was concerned with whether the instrument adequately covered and transformed into questionnaire the study objectives. The investigator developed or extracted the questionnaire from related literature, textbooks and expert experiences. Then items were checked on the basis of study objectives and verification of the questionnaire was from 4 experts of Thailand and Nepal. According to the expert's suggestions some items were subtracted and only a few items were added.

**PRETEST:**

In this study, the pretest questionnaire was carried out in 30 sample with women aged between 15-45 years, who had delivered a baby within last 1-5 years in neighboring village during July 12<sup>th</sup> to July 17<sup>th</sup> 1994. The purpose of the pretest was to examine the flow of interview questions, and the uniformity in information, clarity and variability in response. The pretest questions were reviewed and finalized before conducting the study.

**RELIABILITY:**

Checking for reliability was done by examining the questions constructed to assess for internal consistency with other questions. The questionnaire had been tested for internal consistency in 3 categories. In this study the result of the reliability achieved was as shown below:

Categories	Coefficient	N	R
Knowledge	Kuder-Richardson	13	0.84
Attitude	Test retest	19	0.85
Practice	Kuder-Richardson	11	0.77

**DATA COLLECTION:**

In this study all necessary data was collected using by a questionnaire to interview in women's home setting. The nine interviewers were recruited from CDHP's health personnel. The interviewers received training before data collection.

The investigator explained briefly the purpose of the study, the selection of the subjects, the data collection procedure and provided a practical demonstration in data collection. The investigator provided close supervision throughout the period of data collection.



Figure 3.3 Interviewing in women's home setting

#### DATA PROCESSING:

Data processing is an important part of the study. The investigator checked each completed set of questionnaire in order to correct any error in the data. When some questionnaire forms were found to be incomplete, the investigator asked for its completion by contacting with concerned interviewers. After the data collection was finished, the data were first coded and edited. Then all data were analysed by using software computer program, EPI-INFO and SPSS+PC.

#### ANALYSIS OF THE DATA:

This section is concerned with the summary and planning analysis of the data in order to provide answers to the research questions. The detailed study results were described in chapter IV.

##### 1. SUMMARY OF THE DATA:

The primary outcome coverage of antenatal care were summarized in term of proportion or percentage and secondary outcome factors which might affect on the attendance of ANC were summarized by descriptive statistics. The quantitative data were summarized in term of mean and standard deviation, and qualitative data were summarized as frequency and percentage.

## 2. STATISTICAL TEST:

The outcome of this study were measured in term of factors to be the association between the factors and attendance of ANC service of pregnant women. Thus, the qualitative data were analysed by chi-square test to assess the statistical significance of the association between the factors of interest and attendance of ANC service of pregnant women.

T-test was used to determine the differences between mean score of knowledge, attitude and practice among pregnant women who attended ANC and those not attended ANC.

The multiple logistic regression is a powerful statistical tool for the estimation of odds ratio for adjusted confounding variables. The logistic model for the probability of outcome gives values that are at all times zero and one. The coefficient obtained through the logistic regression, indicates the effects of variables on the log odds of the outcome event with all the remaining variable held constant. The coefficient indicates the magnitude of the increase or decrease of the regressor variable. Therefore, the logistic regression was used to find out the strength of association of independent variable to dependent variable.



**ETHICAL CONSIDERATION:**

In any kind of research dealing with human beings, certain ethical issues must be considered. In this study, there was no disadvantages to the subjects. Subjects were given the right to decide whether to take part in the study. In this study, subjects asked for their willingness to take part in the study. Before the study was implemented the investigator held a meeting with the community leaders to explain the purpose of the study.

The main concern of this study was to determine factors effecting the attendance of ANC service of pregnant women. The result of this study was more beneficial than harmful for subjects, community and country.

**LIMITATION OF THE STUDY:**

Due to the limitation of time and budget, this study was designed on a small scale. Two hundred and sixty-four samples of women who had delivered a baby within the last 1-5 years were randomly selected and conducted only in Manikhel village. The data collection was only possible in the morning and evening time, because during the day time the target women usually were busy in their field work. This study can not represent the whole area of Nepal, but can be modified to benefit other villages which have the same characteristics as the study area.

**IMPLICATION OF THE STUDY:**

1. Useful for strengthening the maternal and child health service.
2. Provide guidelines for improving maternal and child health program.
3. Useful for health personnel in selecting topics best suited for health education. This is an appropriate and effective way to expect better coverage of ANC and safe motherhood.
4. Useful for those managers who are responsible for planning and implementing maternal and child health service.
5. Make pregnant women more conscious towards the importance of antenatal care and regular ANC attendance.



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