

CHAPTER III

RESEARCH METHODOLOGY

Primary Data

3.1 Study Population

For cross sectional study, the study population was all the women of reproductive age (15-49 years) within the catchment area of Paro hospital (intervention area) and catchment area under Punakha hospital. (Control area).

Selection of the subjects was based on the following criteria:

1. Women aged between 15-49 years.
2. Women who have stayed in the area for more than 6 months. This criteria is used because the education program was concluded six months before this survey is conducted.
3. Only women willing to participate in the survey were included. But there was none who refused.

3.2 Study Site:

Catchment area under Paro hospital was used as the site for data collection because the education program was given in this area. The catchment area under Punakha hospital was selected as the control area. Punakha was selected as the control area because the type of facilities available in Punakha was same as Paro. The community-based activities carried out in Punakha were also similar to Paro. The facilities available for obstetric care was same because both the centers were functioning as Basic Emergency Obstetric care centers. Baseline data on education, occupation, parity and age distribution were not available for comparison.

3.3 Research Design:

The research design used in this study is cross sectional for primary data and longitudinal comparison of secondary data. Cross sectional design was used because of the time constraints. It may not be the best method to assess the knowledge of women over time.

Cross sectional study was used to find the level of knowledge of the target population. The Primary data collected information on the socio-demographic variables and the level of knowledge of women. The secondary data included information about the hospital utilization for delivery and treatment of complications of pregnancy. This was used to compare the hospital utilization before and after the education program.

To measure the outcome of the education program, level of knowledge of women was ascertained by using standardized structured questionnaire by trained interviewer. The target population was all women of reproductive age (15-49 years) in the intervention area (Paro) and control area (Punakha). Secondary data from the hospital register was collected to determine Rate of utilization for delivery and treatment of complications of pregnancy. The secondary data was also collected from both Paro and Punakha.

Five female students from the institute of education were trained for two days to carry out the structured questionnaire interview. The same interviewers were used for data collection in both areas.

The secondary data was collected for the period from January 2001 to Dec. 2003, which is 18 months before the start of the program till 18 months after the start of the program. Two nurses each in Paro and Punakha were trained to collect the secondary data.

3.4 Sample Size:

The Sample size was calculated by using Epi-info software for cohort /cross-sectional study. (Fleiss, 1991)

The percentage of the target population in the intervention area who will have knowledge (Know at least one danger sign) was taken as 30%.

Percentage of population in the control area who will have knowledge (Know at least one danger sign) was taken as 10%.

Ratio of intervention to control group is taken as 1:1

Confidence interval of 99%: This means that the probability of making Type I error is only .01. If the difference between the sample population and the underlying population is none, the probability of telling that the study population does not represent the actual underlying population is only .01.

Power of 95%: The probability of making type two error, or if the sample population does not represent the underlying population the probability of telling that there was no difference is .05.

Sample size is $149 = 150$. (In each intervention and control area), total = 300.

All women of reproductive age group in the study area were listed from the household register maintained in the district office. Then systematic random sampling was done to get the sample population. This was done by dividing the total target population by the sample size. In Paro it was $2,029/150=14$ (Denoted as K) and in Punakha $1,323/150=9$ (denoted as K).

Then simple random sampling was done to get the first subject. The number was 9 in Paro and 6 in Punakha. First subject was $k+9$ in Paro and every other subject was taken

by adding 14. In Punakha first subject was k+6 and every other subject was taken by adding 9.

3.5 Instruments for Data Collection

Structured standardized questionnaire administered by a trained interviewer was the instrument used for collecting primary data.

Records of the patient who had attended the hospital for delivery and treatment of complications of pregnancy was the Secondary data collected.

Five female interviewers were trained for two days to do the structured questionnaire interview. Same interviewers were used in both Paro and Punakha. Two nurses were trained in both areas to collect secondary data.

Quantitative data:

a) Primary data:

Structured questionnaire interview data contains general description of the sample population like ID number, age, Date of birth, religion, number of children, marital status and education level. It also contains about the level of knowledge on five danger signs, source of information, availability of transportation and time taken to reach the hospital

The level of knowledge was categorized into high knowledge, if the women knew two or more danger signs and low knowledge if she knew one or less danger sign.

b) Secondary data:

Secondary data from the emergency obstetric care register in both the area was collected for eighteen months before and eighteen months after start of the program.(January 2001 to December 2003) The data collected were the number of patients who had utilized the hospital for delivery and treatment of the complications of pregnancy. The data was collected on a monthly basis. The data also contains demographic variables like age, occupation, education level and diagnosis.

3.6 Content Validity:

The questionnaire was distributed to the three member of the thesis committee and their comments were noted and changes were made accordingly.

3.7 Reliability:

Reliability test of the questionnaire was done for level of knowledge. It was done on 20 randomly selected women of reproductive age group. The selection was done from women attending out patient department of Paro hospital. Using SPSS 10 software Reliability test was done and cronbach,s alpha was calculated and found to be .7985 So it was found to be reliable.

3.8 Data Analysis : (SPSS-10 software was used for data analyses)

- Demographic variables of the surveyed population and women who utilized the hospital in Paro and Punakha are presented in percentage, means and SD.
- Chi-square test is done to see the association of knowledge in Paro and Punakha.
- Chi-square test is done for association of level of knowledge with age, occupation, Parity and education level in Paro and Punakha and in the combined group.
- Chi-square test is done to see the association of hospital utilization for delivery and treatment of complications of pregnancy before and after the start of the program in Paro and Punakha.
- Line graphs and tabular presentation is done for time trends in rates of hospital utilization for delivery and treatment of complications of pregnancy in Paro and Punakha.

3.9 Ethical Consideration :

- Formal approval for conducting the research in Bhutan was taken from the Director of Public health Division, Ministry of Health. Thimphu; Bhutan.
- Formal approval for collecting primary and secondary data from Paro and Punakha was taken from the Director of Public health Division, Ministry of Health. Thimphu; Bhutan.
- Those who could read and write informed consent were taken by getting their signature. For those who could not read or write the consent form was explained and their left thumb impression was taken.