CHAPTER 3

RESEARCH METHODOLOGY

3.1. RESEARCH QUESTIONS :

Primary Research Question :

What is the knowledge of mothers of children aged six months to three years on supplementary feeding in Harisiddi Village, Nepal ?

Secondary Research Question :

How do mothers of children aged six months to three years practice supplementary feeding in Harisiddi village, Nepal ?

3.2 RESEARCH OBJECTIVES :

1. To assess the knowledge of mothers of children aged six months to three years on supplementary feeding in Harisiddi village, Nepal.

2. To identify supplementary feeding practice of mothers of children aged six months to three years in Harisiddi

village, Nepal.

3.3 HYPOTHESIS :

1. There is difference in the knowledge of mothers of children aged six months to three years on supplementary feeding in Harisiddi village.

2. Mothers of children aged six months to three years in Harisiddi village have different practice on supplementary feeding.

3.4 OPERATIONAL DEFINITIONS :

knowledge : Answer of the mother with understanding of supplementary feeding on age, type of food, preparation of food, and frequency of feeding

Correct : Right answer of the mother understanding
knowledge supplementary feeding following guideline.

Practice : Answer of mothers on supplementary feeding carry out.

Correct : Right answer of mother on supplementary
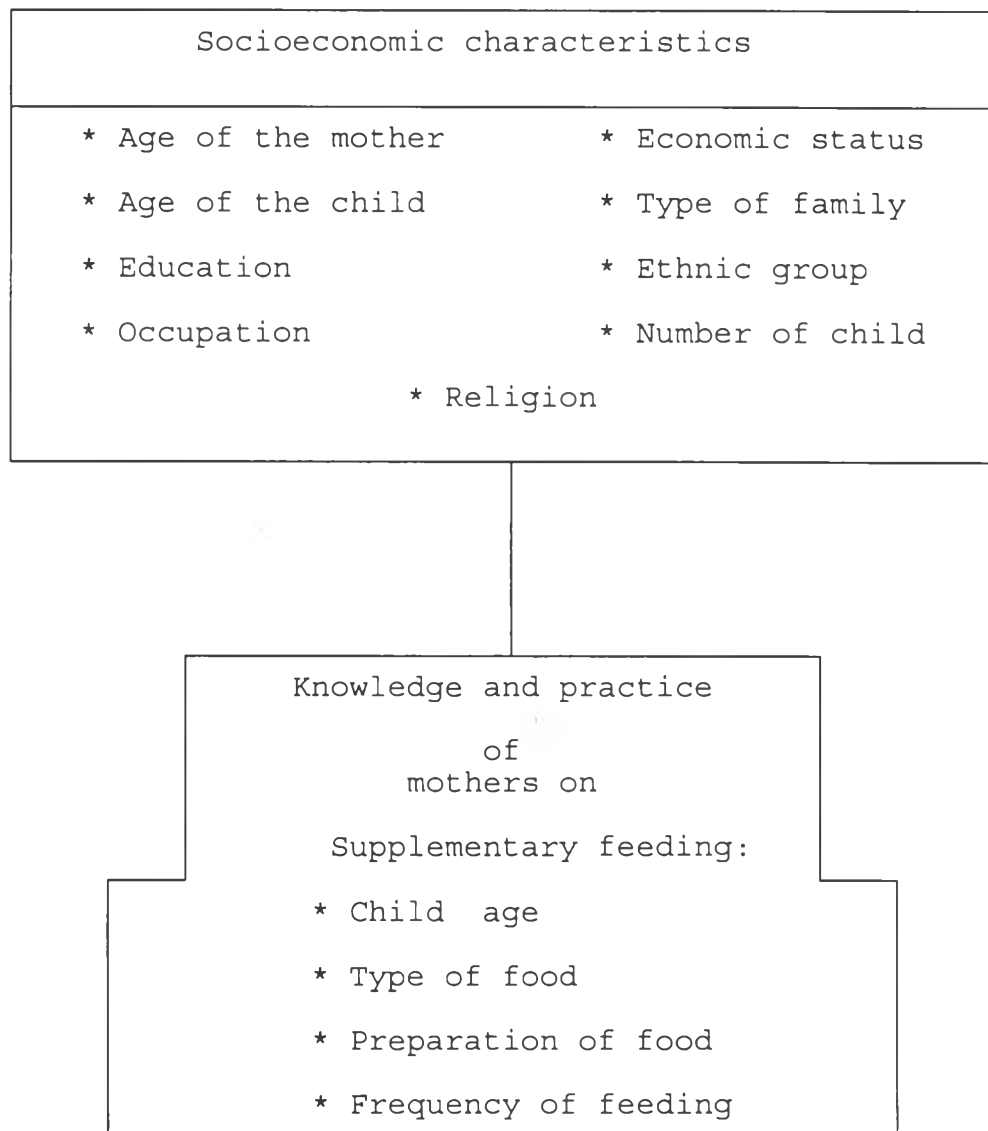
practice   feeding carry out following the guideline.

Supplementary :   Introducing semisolid or solid food to the
feeding   child.

Regular   : 2 to 3 times a week.
               : 2 to 3 times a month.

KEY WORDS   : Community Survey
                  : Knowledge
                  : Practice
                  : Supplementary feeding

CONCEPTUAL FRAMEWORK :

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+-----------------------------------------------------------+
|              Socioeconomic characteristics               |
+-----------------------------------------------------------+
|   * Age of the mother      * Economic status             |
|                                                           |
|   * Age of the child       * Type of family              |
|                                                           |
|   * Education              * Ethnic group                |
|                                                           |
|   * Occupation             * Number of child             |
|                                                           |
|                    * Religion                            |
+-----------------------------------------------------------+
                             |
                             |
              +------------------------------------+
              |        Knowledge and practice      |
              |                  of                |
              |              mothers on            |
              |                                    |
              |         Supplementary feeding:     |
       +------+                                    +------+
       |         * Child  age                             |
       |                                                  |
       |         * Type of food                           |
       |                                                  |
       |         * Preparation of food                    |
       |                                                  |
       |         * Frequency of feeding                   |
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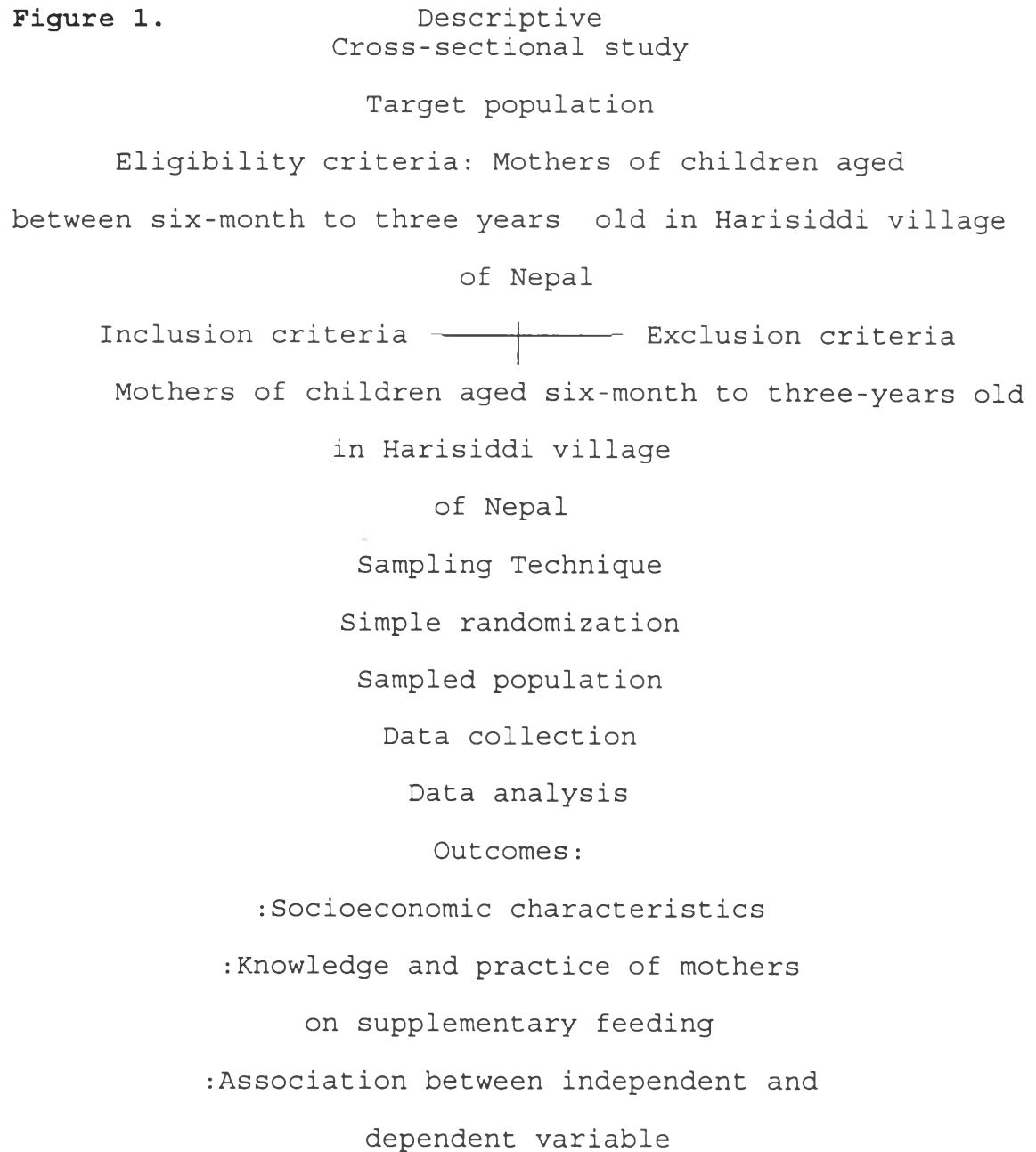
3.5 RESEARCH DESIGN :

Community based descriptive cross-sectional study design to assess the knowledge and practice of mothers of children aged six-month to three years old on supplementary feeding in Harisiddi village of Nepal.

Local health workers from health care center helped to provide the baseline needed data of the village. All necessary data were collected by the interviewers interviewing mothers using questionnaire face to face. In this study independent variables are socioeconomic characteristics, and dependant variables are knowledge and practice of mothers on supplementary feeding with feeding age, type of food, preparation of food and frequency of feeding. Statistical tests were carried out to identify the association between independent variables and dependent variables.

DIAGRAM OF STUDY DESIGN

Figure 1.   Descriptive
                           Cross-sectional study

Target population

Eligibility criteria: Mothers of children aged

between six-month to three years old in Harisiddi village

of Nepal

Inclusion criteria ————+———— Exclusion criteria

Mothers of children aged six-month to three-years old

in Harisiddi village

of Nepal

Sampling Technique

Simple randomization

Sampled population

Data collection

Data analysis

Outcomes:

:Socioeconomic characteristics

:Knowledge and practice of mothers

on supplementary feeding

:Association between independent and

dependent variable

3.5.1 STUDY LOCATION :

This study was conducted at Harisiddi village of Nepal. This village is well known for the brick industry. Harisiddi is in Lalitpur District, in the east of Kathmandu. The estimated total population is 7304. Most of the people are Newar so, they mainly speak Newari and Nepali language too. Majority of people are in agriculture and in brick industry too.

This village is characterized relatively poor condition with low income. The village on the way of one of the famous botanical garden called Godawari. Therefore, in the village there is one main road for the transportation.

Women are very hard worker with their various role of daughter inlaw, mother and overall responsible of household affaire. Literacy rate is fairly low especially in women. In the health sector, one health care center with local volunteer, supported by a German project is contributing health services. Diarrhoea, anaemia, warm infestation and various degree of malnutrition found commonly in children which are among the child killer health problem in Nepal. Mothers were unaware of health care need and in otherhand health care facilities were not feasible to them. People mostly preferred traditional healer for any kind of health

problem. In order to improve health status of the children main care giver or mother should have correct knowledge and right way of child nutrition. To bring the awareness among those mothers health education is essential focussing to the child nutrition. Thus, the investigator decided to select this village for the study.

3.5.2 THE SAMPLE:

TARGET POPULATION :

The target population was the total study population who were mothers of children aged six-month to three-years old in Harisiddi village, Nepal.

POPULATION SAMPLED AND STUDY SAMPLE:

The sampled population were the population selected from the target population (13 % of target population). Sampled population were mothers of children aged six months to three years and who did fit into the inclusion criteria of the study.

ELIGIBILITY CRITERIA:

INCLUSION CRITERIA :

1. Mothers who had children between six-month to three-years old in Harisiddi village.

2. Mothers who had supplementary feeding practice experience on their own children.

3. Mothers who were willing to participate in the study.

EXCLUSION CRITERIA :

1. Mothers who had children below six-month and above three-years of age.

2. Mothers who had supplementary feeding practice experience not on their own children.

3. Mothers who had children with following problem which interferes to the child feeding practice: Congenital abnormalities as following:

   * Mental retardation
   * Gastrointestinal anomalies
   * Cleft lip, Cleft palate

Illness: * Gastrointestinal diseases

* Congestive heart failure

* Cyanotic heart disease

Premature baby:

3.3.5. SAMPLE SIZE CALCULATION :

Formula used for sample size calculation :

$$n = z^2_{\alpha/2} \; p \, (1 - p) \, / \, d^2$$

n   = number of subjects

C.I. = 95 % α : 0.05 $z_{\alpha/2}$ = 1.96

p   = Proportion of proper Knowledge of mother on supplementary feeding age = 0.5

d   = Absolute precision required on either side of the proportion $\pm$ = 0.1

n   = $(1.96)^2$ (0.5) (0.5) / $(0.1)^2$

Sample size : 96

Non-respondent rate : 20 %

Round up sample size : 115

SAMPLE SELECTION PROCEDURE:

In order to identify sampled population, a list of

the target population was obtained from the local village worker out of voter list. From that a new list was developed by the investigator and were used for the sampling frame. And 120 sampled population were selected with simple random sampling technique which was more than calculated sample size.

STRUCTURE OF SAMPLE DESIGN

Harisiddi village is divided into nine wards which are small separate community areas of a village. Total target population was about 900.

Figure 2. **Sampling technique**

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┌─────────────────────────────────────────┐
│ Target Population 900  mothers of children │
│       aged six-month to three-years        │
└─────────────────────────────────────────┘
                    │
        ┌───────────────────────┐
        │   Harisiddi village   │
        └───────────────────────┘
                    │
       ┌─────────────────────────┐
       │ Simple random technique │
       └─────────────────────────┘
                    │
         ┌─────────────────────┐
         │   Sample Size 120   │
         └─────────────────────┘
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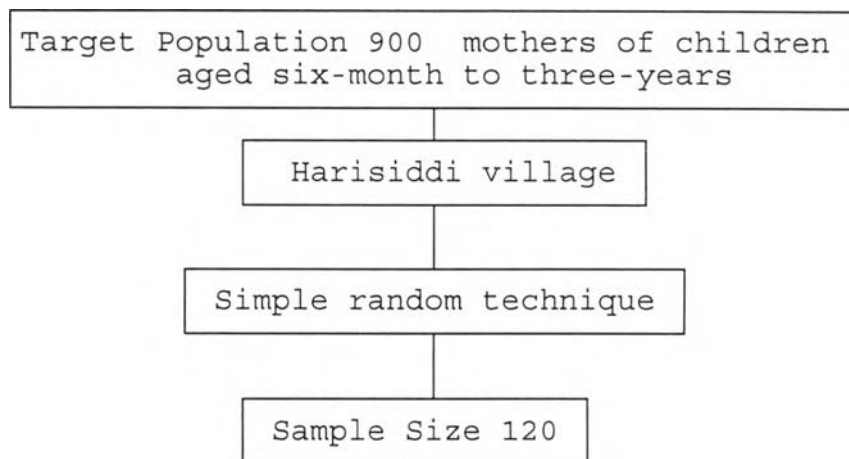
3.5. MEASUREMENT OF VARIABLES :

3.6.1. Socioeconomic characteristics : Independent variable

* Age of the mother
* Age of the child
* Ethnic group
* Religion
* Education
* Occupation
* Family type
* Family annual income
* Number of children

3.6.2. Knowledge of mother on supplementary feeding: Dependent variable :

* Supplementary feeding age of the child.
* Type of supplementary food.
* Preparation of supplementary food.
* Frequency of supplementary feeding

3.6.3. Practice of mothers on supplementary feeding:

* Supplementary feeding age of the child.
* Type of supplementary food.
* Preparation of supplementary food.
* Frequency of supplementary feeding.

3.6.3 INSTRUMENT :

The questionnaire was used as an instrument for data collection. The content of question was developed by the investigator from WHO guideline, Text books, previous research, and expert's advice. The questionnaire was formulated to find out the knowledge and practice of mothers on supplementary feeding of children.

The question was divided into three parts :

Part I   : There is only one section containing questions about socioeconomic characteristics of mother.

Part II   : Consist of four sections on knowledge:

* Section I   : Questions concerning knowledge of mother on supplementary feeding age of the child.

* Section II : Questions on knowledge of mother on type of supplementary feeding.

* Section III: Questions related to knowledge of mother on preparation of supplementary foods.

* Section IV : Questions to find out knowledge of mothers on frequency of feeding.

Part III : Consists of five sections on practice:

* Sec. I : Questions about practice of mother on age of
the child for introducing supplementary
feeding.

* Sec. II : Questions about practice of mother on type
supplementary food.

* Sec. III : Questions related to practice of mother on
preparation of supplementary food.

* Sec. IV : Questions about practice of mothers on
frequency of supplementary feeding

Each question relating to supplementary feeding knowledge and practice of mothers had one correct answer except few additional questions which were needed. For each one correct answer or score for Yes answer is 1 and for each incorrect answer or score for each No answer is 0. There are few reversed questions too, which had score o for correct answer or Yes and 1 for each incorrect answer or No.

    ( ) 1. Yes   Reverse   >   ( ) 0. Yes

    ( ) 0. No   ( ) 1. No

VALIDITY :

The investigator developed questionnaire from related literatures, WHO guideline, text books, and expert's advice. The items checked on the basis of study objectives and verification of questionnaire was done by three experts frcm Thailand and other three experts from Nepal.

RELIABILITY :

Checking for reliability were done by examining the questions constructed to assess for internal consistency with other question. The question were tested in two categories of knowledge and practice with Kuder Richardson formula for the reliability coefficient test. The results are given below:

Category	Coefficient	N	R
Knowledge	Kuder-Richardson	22	0.98
Practice	Kuder-Richardson	24	0.99

PRETEST :

The question were pretested in ten sample with

mothers who have children aged six months to three years in neighbor village of Harisiddi. The purpose of the pretest was to assess the flow of question, uniformity in information, clarity and variability in response were examined.

3.7. DATA COLLECTION :

All necessary data were collected using pretested Questionnaire to interview mother in community-based mother's home setting. For the data collection investigator hired four interviewers from a neighbour village of Harisiddi who had MCH training. They were cleared purpose of the study, subjects selection technique, and data collection procedure with demonstration during one week training prior to interview mothers. Those trained interviewers did direct interview mothers face to face, filling out the questionnaire at the same time. The investigator had taken a close supervision of interview through out the data collection.

Due to rainy season and harvesting time in the village, for some week data collection was interrupted and needed longer time. Most of the mothers were interviewed in the evening after coming back from the field.

3.8 DATA PROCESSING :

This is an integral part of the study. Each questionnaire were checked for it's completeness by the investigator. After checking the data, all the data were entered and analyzed using software computer program, EPIINFO and SPSS-WIN.

3.9 DATA ANALYSIS :

In this section, data summarization and analysis performed to answer the research questions. This is descriptive type of study with continuous and discrete data. Statistical test were Chi-square, T-test using EPI-INFO and SPSS-WIN computer program. The result were in consonance with the guideline by WHO and UNICEF guide line and learning packages.

3.10 STATISTICAL TEST :

Outcome of this study were measured in order to find out the association between selected socioeconomic characteristics (6) and four aspects of mother's supplementary feeding knowledge and practice. Therefore, all the data were analyzed by T-test and Chi-square test to assess statistical

significance of the association between two variables of interest.

SUMMARY OF THE DATA:

The primary outcome of the research question was supplementary feeding knowledge of mothers. So the primary outcome was summarized in proportion and by descriptive statistics. And for the secondary research question which was relate to supplementary feeding practice of mothers, also summarized in proportion by descriptive statistics. All the continuous data were summarized in terms of mean and standard deviation, and all the discrete data were summarized in frequency and percentage.

3.11 ETHICAL CONSIDERATION :

In this study, subjects were given right to take part in the study. Before participation, asked mothers for their verbal consent. Community leader was approached prior to study activities. Purpose of the study was cleared to the community people before undertaken study. In this study here were no harm rather it was beneficial for the community.

3.12 LIMITATIONS :

1. A small scale study was designed in one specific study area only due to limitation of budget and the time.
2. Busy mothers due to harvesting time.
3. Budget constraint for the interviewers.
4. Transportation problem due to rainy season for the data collection in the village.
5. Lingering of data collection period resulted into more expense.

3.13 IMPLICATION :

1. Implementation of a realistic and acceptable health education program on appropriate supplementary feeding in the village.
2. Useful for strengthening the nutritional status of the children.
3. Helpful to introduce new educational approaches to mother.
4. Useful to improve child health services in the community.
5. Assist to reinforce the teaching strategy at health educational institute, specially towards child nutrition.
6. Children will be benefitted reducing morbidity and mortality rate by improving appropriate supp. feeding.
7. Provide guideline for further study in related subject.