CHAPTER 3

RESEARCH METHODOLOGY

DESIGN ARCHITECTURE:

This study was a cross sectional descriptive study, which employed survey research to analyze the prevalence of malnutritional status and associated factors of malnutrition among children under five years of age in the Dadhikot Village, Bhaktapur district.

3.1 Sample specification:

Target population: The target population was intended to include those households who have under five years children in the Dadhikot Village.

Sampling Unit: The mothers who have at least one child under five years old was considered as the sampling unit of the study population.

Sampling Frame: A sampling frame consisting all sampling units rural community (congested areas) including all the mothers who have at least one child under 5 yrs old. **Sampling Interval:** Since all the mothers who have at least one under five child have been interviewed, the necessity of sampling interval had no use. Therefore the sampling interval of sampling unit was not prepared.

3.2 Inclusion Criteria:

Mothers who have under five years children in the Dadhikot village. Youngest child were measure.

3.3 Exclusion Criteria:

Not applied, because the objective of study is to find out the prevalence of malnutrition among under five years children in Dadhikot village development committee.

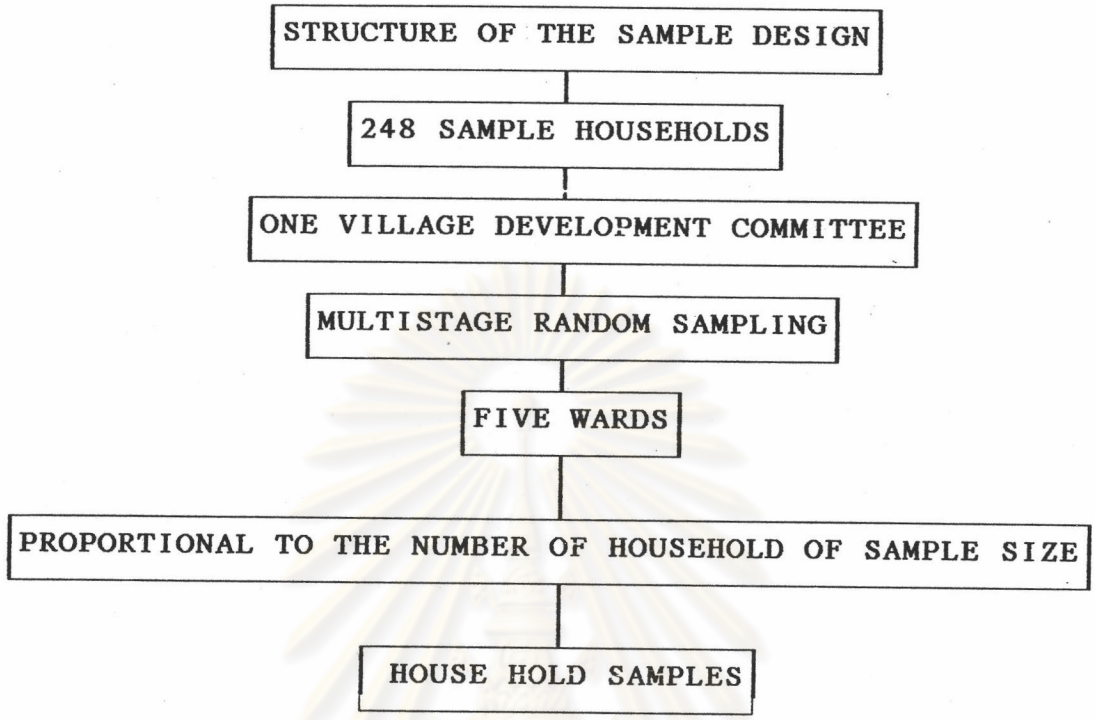
3.2 (A) Sample size calculation:

$$N = \frac{Z^2 \alpha . p.q}{\text{Acceptable error}^2}$$

α = 0.05-- z-2 α --1.96
P = 0 . 20
q = 1-p = 0 . 80.
Acceptable error = 0.05.

So sample size specification according to calculation Of 246 Subject.

3.3. (B) Structure of the sample design:

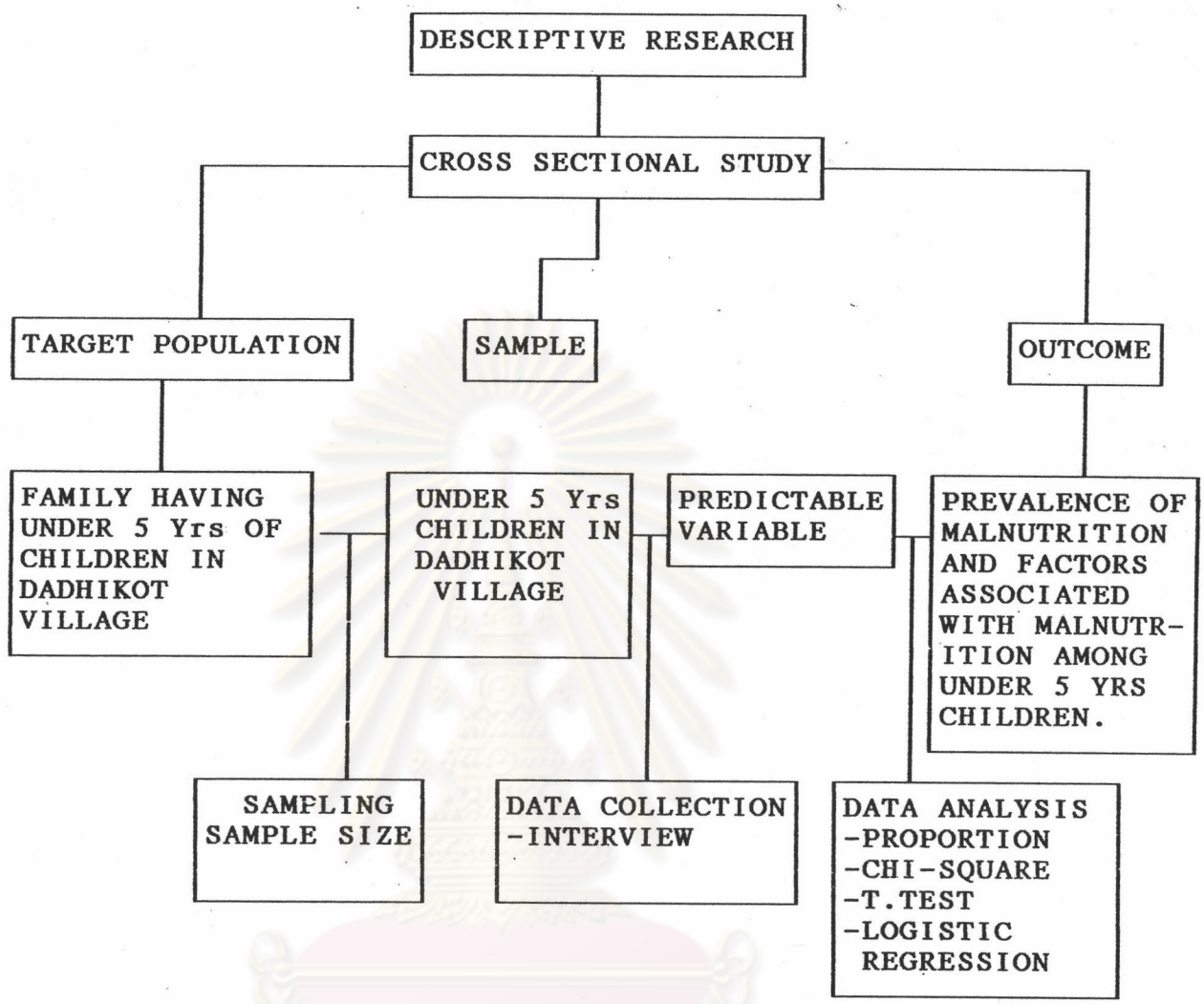


Note: One village development committee divided into 9 wards or Area. 248 sample household survey done in one village development committee by applying multistage random sampling of 5 wards or area, and conduct sample proportional to the number of house hold survey.

3.4 Instrumentation:

The research study was conducted by using a precoded questionnaire consisting of 43 various questions (Appendix A). The mothers who have at least 1 under five child were interviewed and their one youngest child were measured. Questionnaire were prepared based upon the objective of the study subject.

3.5 Overview of the study design



3.6 Reliability and validity of the measuring instrument according to the theory:

The reliability of a measuring instrument is the degree of consistence. It refers to the stability, consistence accuracy and dependability of an instrument can be assessed by doing entrarater and enterrater 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 subject under identical condition are compare (former R.D.T.1983).

The content validity refers to the extent to which a procedure measures what it is suppose to measure. Verification of the content validity was requested from a group of experts in Thailand and Nepal. Then the items were checked on the basis of related research questions. Among them two experts had given few items add, as well as substracted. Acceptance of 7 experts were used as the criteria for observing competence items.

The following measure was applied in order to increase the validity and reliability of the research study:

To increase the validity and reliability of the research instrument a pre-test of questionnaire was conducted in neighborhood community. The purpose was to examined the flow of interview question, and the comprehensibility of information. The pre-test questions were reviewed and finalized before doing the pilot study.

3.7 Pilot study:

Pilot study was done for two objectives. Firstly to identify the prevalence of malnutrition. In the pilot study it was found that the prevalence of malnutrition was total 40 % according to Waterlow classification, that was weight and height ratio. Secondly, to determine suitable time and means to conduct interview at the sampling location and as basis to plan and implement the field survey. The pilot study was also held in the same village, but with different mothers with under 5 yrs children. The time spent for each interview and screening physical examination was approximately 30-40 minutes.

Cronbach's α coefficient test was employed to assess reliability in some part of the continued scale questionnaire by using following formula.

3.8 Reliability Test

$$\frac{n}{n-1}\left\{1-\frac{\Sigma s_i^2}{s_t^2}\right\}$$

When n = number of items

s_i^2 = item variance

$= \Sigma (x-x)^2$

s_t^2 = total variance

$$n = \frac{\Sigma x^2}{N} - \frac{(\Sigma x^2)}{(n-1)}$$

3.9 Reliability study:

* 30 sample: Internal consistency by cronbach's coefficient α

Subscale	No of items	alpha
S1,S2,S3,S4,S5	5	0.77
FS1,FS2,FS3,FS4,FS5,FS6,FS7,FS8	8	0.77
OVER ALL SCALE	43	0.57

Health post staff and community leader:
Consisting by formal meetings interviews.
4 Bachelor level student in community health nursing were trained.

3.10 Training of interviewer:

There are four bachelor degree in community health nursing. Students of Tribhuban University institute of Medicine, Nursing Campus, with experience in community field were trained to conduct field interview. The training covered objective of the study. The investigator was incharge of the supervision and also did interviews self shelter scale which was frequentle checked against ideal standard in order to get reliable and accurate measurement.

3.11 Anthropometric assessment instrument:

Height measuring board, and Self shelter scale, was frequently checked against ideal standard in order to get reliable and accurate measurement. Cross check of the filled questionnaire forms was also conducted by the research during the entire periods of data collection. Completeness of the field questionnaire and the coding was done at the same day of data collection at every day at night.

3.12. Methods of study:

In order to gather the answers and to answers to fulfill the objectives, this study employed both quantitative and qualitative methods. For quantitative measurement, structure interview were formulated based on information, and anthropometric measurement, which were obtained through review of literature and related studies. The questionnaire formulation frame consists of 9 parts as following: 1. Demography Information and

2. Socioeconomic Information
3. Child care Information
4. Food supplementary Information
5. Food habit Information
6. Food availability information
7. Health Information
8. Screening physical examination
9. Anthropometric examination

Data collection:

Data collection was conducted from September 5 1993 to September. 20 1993. Four interviewers were trained in order to collect information prior to the data collection date. During training orientation emphasis were given on how validity and reliability can improve during data collection. five to six respondents were interviewed in one day by each interviewers. At the evening time, each day measurement of the weight and height were conducted at the one place of vary active village health communicators house. The instrument for measuring the weight were borrow from the Nepal nutrition section, height measuring board was prepare in local place. Nutritional status parameters to detected nutritional status among under 5 years children in Dadhikot village, Waterlow classification weight for height ratio which was widely used in Nepal by SCF project.

Nutritional status parameters:

To select nutritional status of among under 5 yrs children in Dadhikot village. Waterlow classification, weight for height ratio which was widely used in Nepal by Save the Children Fund Office (SCF) project. In this study Waterlow classification will be used that was weight for height ratio, to distinguish nutritional status among the age group 0 - 60 month children.

3.14 Waterlow classification:

Wt/Ht ratio expressed as percentage of standard	Grades
More than 90 %	Normal
80 - 90 %	Grades 1
70 - 79 %	Grades 11
Less than 70 %	Grades 111

The grades of malnutrition were classified on the following values: If weight for height > 90 percent normal If weight for height < 90 percent, grade 1 mild Wasted: If weight for height < 80 percent, grade 11 moderate wasted. If weight for height < 70 percent grade 111 severe wasted.

3.15. Data analysis plan :

All statistical analysis in this study were perform by the statistical package for social sciences (Dbase111 Epienfo5 and spsspc+) in the computer program at CEU Chulalongcorn University was used to convert raw data weight and height in to weight for height standard to know the nutritional status of the children. Waterlow classification was used to identify nutritional status of the under 5 yrs children. To perform nutritional standard a computer program of nutritional status Nepali standard (0 - 60 months) was developed by the SCF project in Nepal 1979 was used.

The analysis was divided into two parts

- Descriptive statistics.
- Association test and T-test.
- Logistic regression.

Descriptive statistic:

The frequency distribution of each variable was performed by the use of sub program" Frequencies: qualitative data were grouped on original response, while the quantitative data were grouped into appropriate class interval. The nutritional status parameters were grouped by Waterlow classification.

3.15 Association test:

In order to find the association of various indicator and nutritional status parameter, the x^2 test was applied through the use of sub-program" CROSSTAB" T- test will be used to distinguish between mean difference of nutritional status among age of the father, age of the mother, age of the child, number of the family, no of children, duration of breast feeding to test the mean difference of malnutrition and normal group. The final analysis will be performed logistic regression to measure the strength of association between dependent variable in to independent variable.

3.16 Logistic regression:

Logistic regression analysis: Is a linear regression which used the logarithm of relative proportion of dependent variable standard error and p. value of the ßeta coefficient for each independent variables of predictors can be calculated. If p. value of the ßeta coefficient of independent variable is less than 0.05 hence, it provide a significant association between the variables and out come. It shows that there is a strength of association between dependent variable and independent variable.