



## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

A cross-sectional, analytical study was carried out to ascertain nutritional status in public primary school children and association between children's weight and potential related factors such as School snack program, gender, number of people in the family, occupation of mothers, education level of mothers, income, Knowledge, Practice (K and P) of mother, and environment.

#### **3.2 Site of Study**

This study was carried out in 12 public primary schools, in Jati Asih sub district , Indonesia.

#### **3.3 Study Population**

The study population was public primary school children and their parents. In Jati Asih sub district Indonesia.

#### **3.4 Sample Size and Sampling Technique**

Sampling method: Multistage sampling method was applied for data collection. Subject was grades 1-3, the younger school age children. In Jati Asih, there are 12

public primary schools, 2 with the snack program and 10 without it. In every sub-district, school snack program is given to only two of all public primary schools based on the economic situation due to the financial constraints. This is the third straight year in which these two schools have had the snack program in my study area. These are the only study area schools that have had the snack program during the last three years. On average one school has total enrollment of about 210 students (grades 1-6), and about 105 students in grades 1, 2, and 3. Thus in the 12 schools there were 1260 children in total of grades 1-3.

Previous study in Indonesia, 40% under weight without school snack program and 24% underweight with school snack program. Sample size calculation was used by Epi-info, cohort/cross sectional 40% unexposed and 24% exposed with school snack program as an exposed. Total 288 subjects needed consisting of 144 with school snack program and 144 without it.

By using simple random selection method, selected 150 students in grades 1-3 in two schools with school snack program and then select two public primary schools from ten public primary schools without school snack program and from two public primary schools with school snack program chose 150 students in grade 1-3. Therefore total number of subjects that we need were 300 students.

## **3.5 Data Collection**

### **3.5.1 Data collection instrument**

#### **3.5.1.1 Identify nutritional status in children**

Anthropometric measurements of weight, and height were done by the research team using weighing scale, and height scale. After the measurements of weight and height, the primary data were entered into the recording form together with their age and gender. The degree of nutritional status was derived using BMI reference.

#### **3.5.1.2 Preparation phase: The activities were as follows**

Permission to conduct the study was obtained from the Director of provincial education office and director of primary schools. The director of primary schools and myself solicited the teachers and 2 nutritional expert (Totally, there were 15 data collectors) to interview schools children and their mothers. Data collectors were trained about measurement, interview skills and managing data.

#### **3.5.1.3 Data Collection Phase**

Data was collected from 4 primary schools during February first to February twentieth 2005.

In this phase the following actions were undertaken:

- Measured weight and height of the school children (physical examinations)
- Interviewed with mother and children
- Arranged the measurement and interview locations : director of each

school prepared 2 rooms, 1 for interview and 1 for physical examination.

- Instruments for physical examination: Weighing scale and height scale to measure weight and height, Structure questionnaire to collect information about socio demographic , practice and knowledge .
- Children were examined in the room with full light. The weight and height in morning of the children were measured, after physical examination they were interviewed.
- Interview section : face to face interview with school children and their mothers by data collectors.
- 12 trained data collector used structure questionnaire to interview school children and their mother then fill the questionnaire form. Questions were asked by using simple Indonesian language for children and their mother.

#### **3.5.1.4 Data Processing and Analysis**

- Data Processing

After collecting data it was coded and entered to SPSS 10.0 analyzed.

- Scores for Questionnaires

Questionnaire for mother

- Mother's education

In scoring for mother's education a "1" for passed senior high school and other higher education, "2" for passed primary and secondary school and "3" for mother who has education less than primary school.

- Father's education

In scoring for father's education a "1" for passed senior high school and other higher education, "2" for passed primary and secondary school and "3" for father who has education less than primary school.

- Occupation of mother

For occupation of mother scoring classified into 2 categories "1" for housewife or not working and "2" for government official, clerk, employed, labor, trade and other.

- Occupation of father

In coding for occupation of father an "1" is for government official and clerk (high), "2" is for employed, labor, trade and other (middle) and "3" is for father who has not job or unemployed (low). Because in the study area, government official and clerk are the highest level in terms of earn per month, but employed, labor, trade and other are lower than "1" but higher than "3". This is the researcher own judgment. That is why this grouping can be only used in this study.

- Duration of breast feeding

In scoring for duration of breast feeding "1" and it means good from 20 months and up breast feeding, "2" means middle from 18 months to 20 months and "3" is poor which is less than 17 months.

- Household Possession

In scoring for household possessions we made scoring for every household and

multiply each other, for example radio has score 2, TV 3, and so on, finally we summed result from each other and find mean so that score lower than 42 is “2” and score higher than 42 is “1”. 1 means good income and 2 means low income

- Sanitation facility

In scoring for sanitation a “1” is good sanitation which means having toilet inside their home, and having toilet outside their home, “2” is middle and “3” means poor sanitation that is for no toilet facility in the house.

- Information about health and nutrition

In scoring for information we did same with scoring for sanitation and we categorized “1” for having good information and values are higher than 69, and “2” for poor information with values are lower than 69.

- Mother’s food behavior and knowledge

In scoring for mother’s food behavior we categorized it into two, “1” is good behavior with values more than 5 and “2” is poor behavior with values less than 5. And scoring for mother’s knowledge we divided into two categories that are “1” for good knowledge and value is less than 1, and “2” for poor knowledge and value is more than 1.

### **Questionnaire for Child**

- Scoring for age, weight, and height was done for scoring BMI, and categories for BMI was divided into two : Good nutrition is “1” with BMI more than 18.5 and Under nutrition is “2” with BMI less than 18.5.

- Breakfast

In scoring for breakfast a “1” is yes and “2” is no

- Exercise

Scoring for exercise “1” is good and “2” is not good.

### 3.5.1.5 Validity of Instruments

Weighting scale was used manual scale (Japan made). The balance was placed on a hard flat surface, and checked for the zero balance before measurement. The subject stood unassisted in the center of platform, and we asked to look straight forward, and standing relaxed. The subject wore school uniforms, bare footed. Body weight of children was recorded.

Height scale : height was measured by rule, which measured up to 180 meters. Children wore school uniform during measure but shoes and socks were not worn.

When measuring height, the subject stood straight with the head positioned is horizontal, feet together, knees straight, and heels, buttocks and shoulder blades in contact with the vertical surface of the wall. Subject were asked to take a deep breath and stand tall to aid the straightening of the spine. Height was recorded.

Only one weighing scale and one height scale were used to measure the weights and heights of all subjects. The scale was standardized everyday and before measurement.

### **3.5.1.6 Ethical Considerations**

Since this study was conducted among public primary school, verbal agreement was obtained before starting data collection from school authorities, children, and parents for data collection. Only those who consented to participate were enrolled for this study. The respondent has the right to feel free to stop the interview. All the information gained was kept in confidentiality.

### **3.5.1.7 Limitations of this study**

- Subject of this study are public primary school children grades 1-3 the youngest children. Therefore the results could not be representative for entire children in primary school children.
- This study was done in Jati Asih sub district public primary school. Therefore the result couldn't represent for other areas and also for private school children.
- Some of the question such as mother's food practice, food knowledge and etc in the questionnaire are not properly described as per the main purpose so that some questions were not get correct answer.
- In the part of interviewing, the parents sometimes did not to cooperate and hurried, therefore the results had some bias.
- The time limited so this study just focused only on quantitative study.