



WOLKITE UNIVERSITY
COLLEGE OF MEDICINE AND HEALTH SCIENCES
DEPARTMENT OF PUBLIC HEALTH

**NUTRITIONAL STATUS AND ITS ASSOCIATED FACTORS
AMONG PRIMARY SCHOOL STUDENTS WITH FEEDING AND
WITHOUT FEEDING PROGRAM IN SANKURA WEREDA,
SOUTHERN ETHIOPIA, 2022: COMPARATIVE CROSS-
SECTIONAL STUDY**

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**A THESIS TO BE SUBMITTED TO WOLKITE UNIVERSITY, COLLEGE
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WOLKITE, ETHIOPIA

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WOLKITE UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DECLARATION NOTE

As members of the Board of Examiners of the final Master's degree open defense, we certify that we have read and evaluated the thesis prepared by **Tajudin Nesre** under the title “Nutritional status and associated factors among students in primary school with feeding and without feeding program, in Sankura Wereda, Southern Ethiopia” and recommend that it be accepted as fulfilling the thesis requirement for the degree of **Master of public health in nutrition**

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ABBREVIATION AND ACRIMONY

ABE.....	Alternative Basic Education
BAZ	Body- Mass Index for Age Z- score
CI	Confidence Interval
COR	Crude Odds Ratio
DDS.....	Dietary Diversity Score
E.C.....	Ethiopian Calendar
MOE	Ministry of Education
NSFP	Non-School Feeding Program
RCT.....	Randomized Controlled Trial
SFPs	School Feeding Programs
SCM.....	School Management Committee
SRS.....	Simple Random Sampling
SNNPR	South Nation Nationality People Region
SD.....	Standard Deviation
SPSS	Statistical Product and Service Solutions
WFP	World Food Program
WHO.....	World Health Organization

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ABSTRACT

Background: Significant numbers of Ethiopian primary school students are affected by undernutrition and prone to poor academic performance. To avert such nutritional problems the government in collaboration with world food program has implemented a school feeding program. However, limited evidences exist regarding the improvement of school feeding program on nutritional status compare to non-school feeding program.

Objective: To compare the nutritional status of primary school students from school with feeding program to without Feeding Program, in Sankura woreda, Southern Ethiopia, 2022.

Method: A school-based comparative cross-sectional study design was conducted among 472 students, from May 1 - 30/2022. A multi-stage technique with proportional allocation was applied. A Pretested structured questionnaire was used to collect data. Data were entered into Epi-Data 4.6 Software and analysis was done using Statistical Product and Service Solutions version 25 software. Descriptive statistics and logistic regression analyses were done. Anthropometric data were analyzed using Anthro-plus software.

Result: In this study, 29% (95% CI = 25.4-33.4) and 21.6% (18.2-25.2) of students were thin among non-school feeding program and school feeding program respectively. Moreover, 19.6% (10.8-20.7) and 15.5% (12.8-18.7) of students among non-school feeding and school feeding program were stunted respectively. Nonetheless, 6% (3-9.1) and 5.2% (2.5-8.3) of students counted as overweight among school feeding program and non-school feeding program respectively. Being early adolescent 2.5(1.22-5.1), being male 3.7(2.44–6.06) and students who did not take meals at school 1.6(1.03–2.49) were statistically associated with thinness. Students having a mother with no formal education 2.3(1.2–4.47) and having poor dietary diversity score 1.7(1.05–2.89) were statistically associated with stunting. Students having a mother with no formal education 2.5(1.1–5.8) was statistically associated with overweight.

Conclusion: Thinness was higher among schools without feeding program than schools with feeding program. But stunting and overweight were not significant difference between both types of schools. Early adolescent and male students and students who did not take meals at school; and students having a mother with no formal education and having poor dietary diversity score significant factors of thinness and stunting respectively. Thus, education on diversified foods and optimal nutritional advice should be encouraged.

Keywords: School feeding program, Primary school, Student, Nutritional status.

CHAPTER ONE

1. INTRODUCTION

1.1. Background

School feeding defined as the availability and the provision of adequate food for school children (1). School feeding as part of an integrated school health and nutrition package supports children to become better learners in school and to improve their overall wellbeing (2). Well-designed school feeding interventions can improve the nutritional status, cognitive function, school attendance, academic performance, school admission, and reduces school dropout rates of school children (3–5).

School feeding can alleviate short-term hunger or reduce the magnitude of micronutrient deficiency (undernutrition) among children (1). Malnutrition is one of the most difficult and complex global problems affecting development, especially for the poor. School children are prone to undernutrition due to poor social status, poor nutrition, poor health, and poor care (6).

The nutritional status of school-age children influences their health, cognition and, their academic success (7). Undernutrition in school-age children have the potential to impair their cognitive development through psychophysiological changes or reduced ability to participate in learning experiences or both (8). The development of programs to improve child health and nutrition is particularly important. Especially in Africa, which houses 28% of the world's undernourished population (1).

World Food Program (WFP) report indicates that the organization were working with more than 100 countries to set up sustainable national school feeding programs to support school feeding and health initiatives for six decades (2). The report says the ultimate goal of WFP is to ensure that the most vulnerable children get the support they need and, encourage and facilitate national government ownership of these programs. In 2019, 17.3 million school children received nutritious meals from WFP in 59 countries working with governments to capacity building (2).

In 2020, there are school feeding programmes in 163 countries, with estimated 388 million children receive school meals around the world. Of these in Sub-Saharan Africa 53 million children receive school meals which started with initial support from WFP, that are now institutionalized as large-scale nationally-run programmes (9).

The school feeding program was introduced to the Ethiopia since 1994, by World Food Program together with the Government of Ethiopia with the coordination of Regional Education Bureaus and communities (10). The program has been carried out in areas mostly vulnerable to food insecurity due to drought and other factors (10).

The program initially targeted 250,000 children at 40 primary schools in the Amhara, Tigray, Afar and Oromia regions, targeting regions that were frequently food insecure, then later expanded to South Nation Nationality People Region (SNNPR) and Somalia region in 2002 (11).

In 2012, the total number of beneficiaries were 649,188 in food insecure areas of six regions with over 1,186 primary schools and alternative basic education centers (ABE) supported (12). In 2012, WFP provide for 37 schools in SNNPR and then after, it were expand to 50 additional schools (11).

At the beginning of 2014, the program were reduced its geographic reach and has since operated in four regions (Afar, Somali, Oromia and SNNPR), targeting 488,000 student beneficiaries (11).

Accordingly School Feeding Programs (SFPs) are expected to raise and maintain school enrollment (13). In general, the expected outcome of SFP is to help poor rural households invest in children's education. It also aims at alleviating short-term hunger for children by feeding them in schools (14).

In sankura woreda the school feeding programs are occupied by WFP. It implemented starting from 2014 to support children in primary schools in the woreda. It is one of severely food shortaged and extremely povern woreda in Silte zone.

1.2. Statement of problem

Globally, in 2019, nearly 690 million children worldwide were undernourished, 144 million children were suffer from stunting (21.3%) and 47 million will suffer from wasting (6.9%). 8.4 per cent of girls (75 million) and 12.4 percent of boys (117 million) aged 5–19 years suffered from thinness (15).

In addition, 20-80% of school-aged children were affected by stunted growth. Undernutrition is responsible for more than half of all child mortality in developing countries (14,16,17,18).

Many developing-country governments and international organizations implementing school feeding programs have recognized that, by fortifying the food with protein and key micronutrients, they may also be able to improve child nutritional status and reduce morbidity (18).

Most of literatures the impact of school feeding program on nutritional status of school-aged children shown varied outcomes, For instance, according to studies done in Bangladesh, China and Kenya, the nutritional status of students who took meals at school was better than students who did not take meals at school (9,19,20). However, in Ghana, the nutritional status of students who took meals at school was similar to students who did not take meals at school which was inconsistent with the above studies finding (21,22).

In Africa, there is high incidence of malnutrition and food insecurity among school-age children. Therefore, the effectiveness of programs in achieving adequate and healthy school nutrition is questioned (23).

In Ethiopia also indicate that undernutrition is a major public health problem. Local studies found about 31% of school children were undernourished from this 19.6% were stunting, 15.9% underweight and 14.0% wasting (24,25). Undernutrition in school-going children seriously affects their ability to learn (26). In 2018 The magnitude of stunting ranges from 17.1%to 41.9% and the magnitude of thinness became8% to 17.9% (27,28). According to a study conducted in Gondar Town 46.1% and 9% of primary school students have been stunted and wasted, respectively (29).

SNNPR is one of food insecure region in the country. WFP, in 2012 school feeding program was focus on SNNPR and the Oromia region. In the country, target areas to implement SFP were woredas with chronic food insecurity, lower school enrolment and higher gender disparity (11).

Sankura Woreda is one of the food insecure woreda in Silte Zone, SNNPR. In the woreda, SFP was implemented in 2014. The program was implemented for four primary schools. The meal was served for the students in the form of porridge, once (lunch) a day, on the school days for 8 years (30).

Research-based information on the nutritional status of Ethiopian children in school with SFP is limited. For this reason, there is lack of adequate evidence on the nutritional status of school children in SFP and NSFP (Non-School Feeding Program). This study aimed to compare the nutritional status of primary school students among SFP and NSFP in food insecure areas of Sankura woreda, Southern Ethiopia.

1.3. Significance of the study

School meals should not only strive to alleviate short-term hunger but should also meet the nutritional needs of children (19). School feeding may help students receive sufficient nutrients and grow. The nutritional status of students in primary school with feeding and non-feeding program were limited in the country, and not studied in the study area. Hence the findings of this study will contribute to compare nutritional status of students from schools with and without feeding program. As a result, the study can be used as a resource for Ministry of Education (MOE) and others interested in conducting further research. The results of this study will also provide important information to the Sankura woreda health and educational office, regional health and educational bureau, policymakers and NGOs for future planning and interventions of appropriate measures to promote and sustain SFP in food insecure areas.

CHAPTER TWO

2. LITERATURE REVIEWS

2.1 Nutritional status of students in primary school

The School feeding programme helps to improve the nutritional status as well as health status of school children, as they learn better if they are not hungry. The poorly fed school children who are provided with good meals improve their growth and school performance, and prevent nutritional deficiencies (31).

A study by the Chinese Centre for Disease Control and Prevention, covering all regions where the programme was implemented, found that the average height of children supported by the programme had increased by 1.54 cm (boys) and 1.69 cm (girls) between 2012 and 2019. Over the same period, their weight had increased by 1.06 kg (boys) and 1.18 kg (girls). These improvements exceed the average growth rate in all rural areas in the country. In addition, the stunting rate of students decreased from 8.0 percent to 5.8 percent (9).

School feeding program significantly improved the nutritional status of children. It increased the body mass index (BMI) of the participating children by the average of 0.62 points (20). Another study shown that, school feeding has positive effects on weight (0.37 kg gain per year/school year). However, for height the study shown that no significant effects on height for school feeding (32). Programs in Burkina Faso shown that a significant increase in weight (weight-for-age and weight-for-height z-scores) of children (33).

The meta-analysis of two randomized controlled trials (RCTs) shown school feeding had significant effect on height-for-age and stronger and more consistent effect on weight gain ranged between 0.25 to 0.75 kg a year(34).

One study revealed, there was a significant difference in the prevalence of underweight between both groups. Only 8.1% of beneficiaries were undernourished than their counterparts (16.3%). There were significant association between height-for-age and school lunches, the height-for-age index showed higher level of stunting in non-beneficiaries (53.1%) than beneficiaries (30%). (35).

Another study shows the magnitude stunting (63.0%) and thinness (21.5%) among of children in schools without SFP higher than among children in schools with SFP, stunting (44.7%) and thinness (18.5%) (22). The magnitude of overnutrition was 5.6%, of this 4.4% were overweight and 1.2% was obesity accounted (28).

A comparative cross-sectional study found students in schools without a school feeding program have higher prevalence of stunting (17.2%) than students in schools with SFP (16.2%). On the other hand, about 2% of students in schools with SFP have overweight (21).

A study conducted in Sidama Zone, Boricha District, Southern Ethiopia, shown that the mean of body-mass index for age (BAZ) in the non-beneficiaries were significantly lower than the BAZ of those who were beneficiaries (36).

According to a study conducted Meketa Woreda in North Wollo Zone, The magnitude of thinness higher among students who do not take school meals 37.6% than students who take school meals 21.8 %. Students who did not eat at school were 2.6 times more likely to be thin than their counterparts (37).

2.1. Factors associated with their nutritional status

2.1.1. Socio-Demographic status

Studies conducted in Ghana, shows sex of students were strong associated factor for stunting, females are 2.7 times likely to become thin than males. Occupation of mother significant association with overweight status of the child (27,29,35).

A comparative cross-sectional study conducted in Sidama Zone found, maternal educational status, father's occupation and family size showed significant associated factors for stunting among students in school without SFP (36).

According to a study done in Meket Woreda, mother without formal education, being male and having a housewife mother were significant associated predictors for thinness and stunting (37).

A study conducted in eastern Hararghe administrative zone eastern Ethiopia revealed residence and age were independent predictors for stunting, thinness and overweight. Children who lived in rural areas were 68% more likely to be stunted than children who lived in urban areas.

Reversely, the children who lived in urban areas were 1.4 more likely to be thin compared with children in rural areas. Children who lived in rural areas were 58% more likely to have overweight than children in urban areas (28).

Across-sectional study reveals, school children from large family members were 1.48 times more likely to be stunted. More number of family sizes could have put children at higher risk for stunting (38).

2.1.2. Dietary related factors

Individuals consuming more diverse diets are thought to be more likely to meet their nutrient needs. Nutritional status of children is influenced by diet and both under nutrition and over nutrition could be reduced by increasing the diversity of foods available for consumption (39). According to FAO, (40) dietary diversity reflects the nutrient quality of an individual's diet. In a study of Iran and India, it was reported that increasing dietary diversity scores (DDS) were associated with higher BMI of children. Also, there was a positive relationship between height for age z-scores and DDS (39). According to Zenebe et al the study was conducted School-based comparative cross-sectional in SFP and NSFP, the mean ($\pm$ SD) of DDS among SFP non beneficiaries (3.5 ± 0.7) was significantly lower than the beneficiaries (5.8 ± 1.1) (36).

According to a study done in Meket Woreda, eats one meal a day at home, did not taking meal at school and eating Shero frequently at home were significant association predictors of thinness and stunting (37).

Children who taken school meal for 6-month, have small but significant improvements in their height, weight, and BMI. Heights improved by approximately 0.25 cm, and weight increased by 0.4 kg over the counterpart (41).

2.1.3. Environmental and health related factors

According to a study done in Meket Woreda, drinking river or spring water was a statistically significant association with stunting (37).

Children with repeated illness are also at risk for nutritional problems due to poor intake of nutrients, increased caloric demands or impaired organ function for synthesis of nutrients (42). Food intake and disease are immediate causes of child under nutrition (43). Food and disease

interacts each other to create a vicious cycle. Diarrhea and other infectious diseases manifests in the form of fever affecting dietary intake, utilization and absorption of nutrients which may results to under nutrition (44). According to Abdulkadir et' al (45), in primary school thinness was significantly associated with diarrheal illness.

2.2. Conceptual frame work

The possible factors that can affect the nutritional status of primary schools (with or without SFP), socio-demographic, feeding practice related, environmental and health related factors adapted from reviewing related literature (21,22,28,36–39,45).

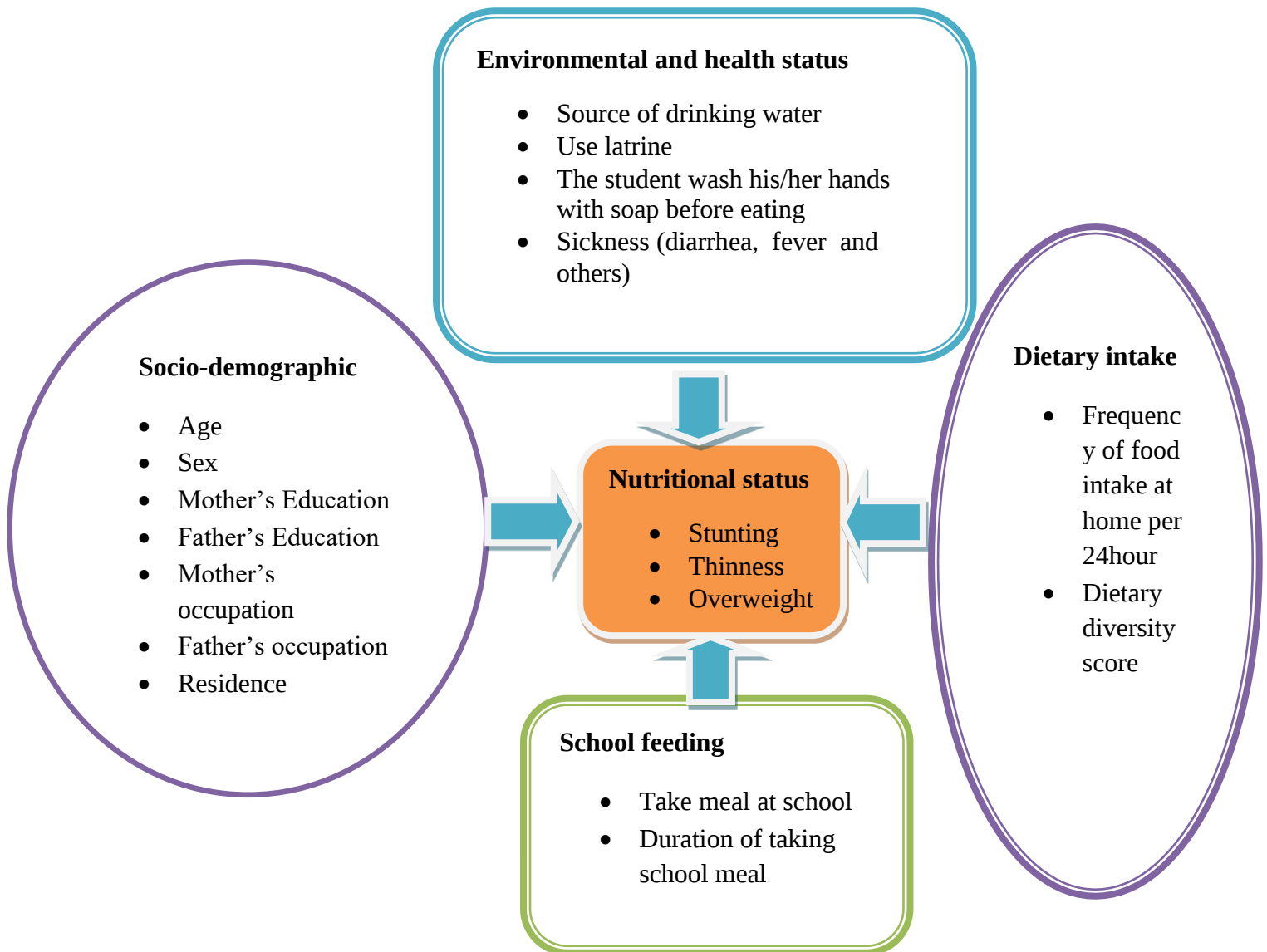


Figure 1: conceptual framework for nutritional status and its associated factors among primary school students with feeding and non-feeding program, in SankuraWereda, Southern Ethiopia, 2022 (21,22,28,36–39,45).

CHAPTER THREE

3. OBJECTIVE OF THE STUDY

3.1. General objective

- To assess nutritional status and its associated factors among primary school students with feeding and non-feeding program, in Sankura Wereda, Southern Ethiopia, 2022.

3.2. Specific objective

- To compare nutritional status of students who took meals at school with those who did not take meals at school in Sankura Wereda.
- To identify factors associated with nutritional status of primary schools students in Sankura Wereda.

CHAPTER FOUR

4. METHODS

4.1. Study area

The study was conducted in Sankura Woreda, Southern Ethiopia. Sankura Woreda is located 214 km from Addis Ababa and 160 km from Hawassa. According to 2018 projection, total population of the woreda are estimated to be 120,601 with the Households of 24,612. The woreda was identified as one of the most food insecure woreda in Silte zone, SNNP Region. According to the woreda education office report, in the woreda, there are 31 kebeles with in these kebeles there are 34 primary schools with 24,112 students, of which are 12354 boys and 11758 are girls in 2022. Of these schools, the SFP was implemented in 4 schools with 2632 students. Of these students, 1335 are boys and 1297 are girls. According to the program standard, each SFP beneficiary student gets porridge prepared from wheat, corn or bean once a day from Monday to Friday (30).

4.2. Study design and period

A school-based comparative cross-sectional study design was conducted among primary school students, from May 1 - 30/2022.

4.3. Source population

All primary school students in the woreda were the source population.

4.4. Study population

Students in selected schools during the study period were the study population.

4.5. Eligibility criteria

4.5.1. Inclusive criteria

Students who take school meal at least for six months were included in the study.

4.5.2. Exclusion criteria

Students who transferred from other schools were excluded from the study.

4.6. Sample Size and Sampling Procedure

4.6.1. Sample size determination

Sample size was determined by double population proportion formula using Epi-Info Software version 7.0. Considering the following assumptions: a 95% confidence level and 80% power, $P_1 = 37.6\%$ proportion of thinness among students who did not take meals at school (37). The population allocation ratio is 1:1; $n = 286$, $286 \times 1.5(\text{design effect}) = 429$

After considering 10% non-response rate, the final sample size approximately 472. Of these, 236 students were from schools had no FP (feeding program) and 236 students were from schools had FP.

Sample size calculation for objective 1

Table 1: Sample size calculation for nutritional status of primary school students with feeding and non-feeding program, in Sankura Wereda, Southern Ethiopia, 2022

Dependent variable	P1(% of outcomes in unexposed group)	P2 (% of outcomes in exposed group)	Sample Size with design effect and non-response rate (10%)	Reference
Stunting	63	44.7	416	(22)
Stunting	53.1	30	261	(35)
Thinness	37.6	21.8	472	(37)

Sample size calculation for objective 2

Table 2: Sample size calculation for factors associated with nutritional status of primary school students with feeding and non-feeding program, in Sankura Wereda, Southern Ethiopia, 2022

Independent variable	P1(% of factors in unexposed group)	P2 (% of factors in exposed group)	Sample Size with design effect and non-response rate (10%)	Reference
Uneducated mother	62.1	82.8	270	(36)
Being farmer	69	88.3	264	(36)
House wife	89.1	71.3	294	(37)
Using spring water source	89.4	50.7	86	(37)

4.6.2. Sampling techniques and Sampling procedure

The study participants were selected using a multi-stage stratified sampling method. First schools in the woreda were stratified as the schools with FP and schools without FP.

Next, by using a list of schools with FP as a sampling frame, 2 schools were selected from 4 schools with FP.

Similarly, 9 schools were selected from 30 schools without FP by simple random sampling (SRS) technique using the list of schools without FP in the woreda as a sampling frame.

The calculated sample size was allocated to the selected schools based on proportion to the size of the students from each school.

Finally, using the school registration rosters as a sampling frame, students were selected by the SRS technique.

4.6.3. Proportional allocation

A total of 11 schools were selected from both groups (two with and nine without SFP) then based on proportional allocation to size, 472 (236 students from schools with SFP and 236 students from schools without SFP) students were distributed to each school by using the following formula.

$$n_k = \frac{n \times N_k}{N}$$

Where;

n_k = required sample size from each school

n = the total sample size = 236 (for each group)

N_k = number of students in each selected school.

N = total number of students in selected schools (with SFP = 1363 and without SFP = 7326)

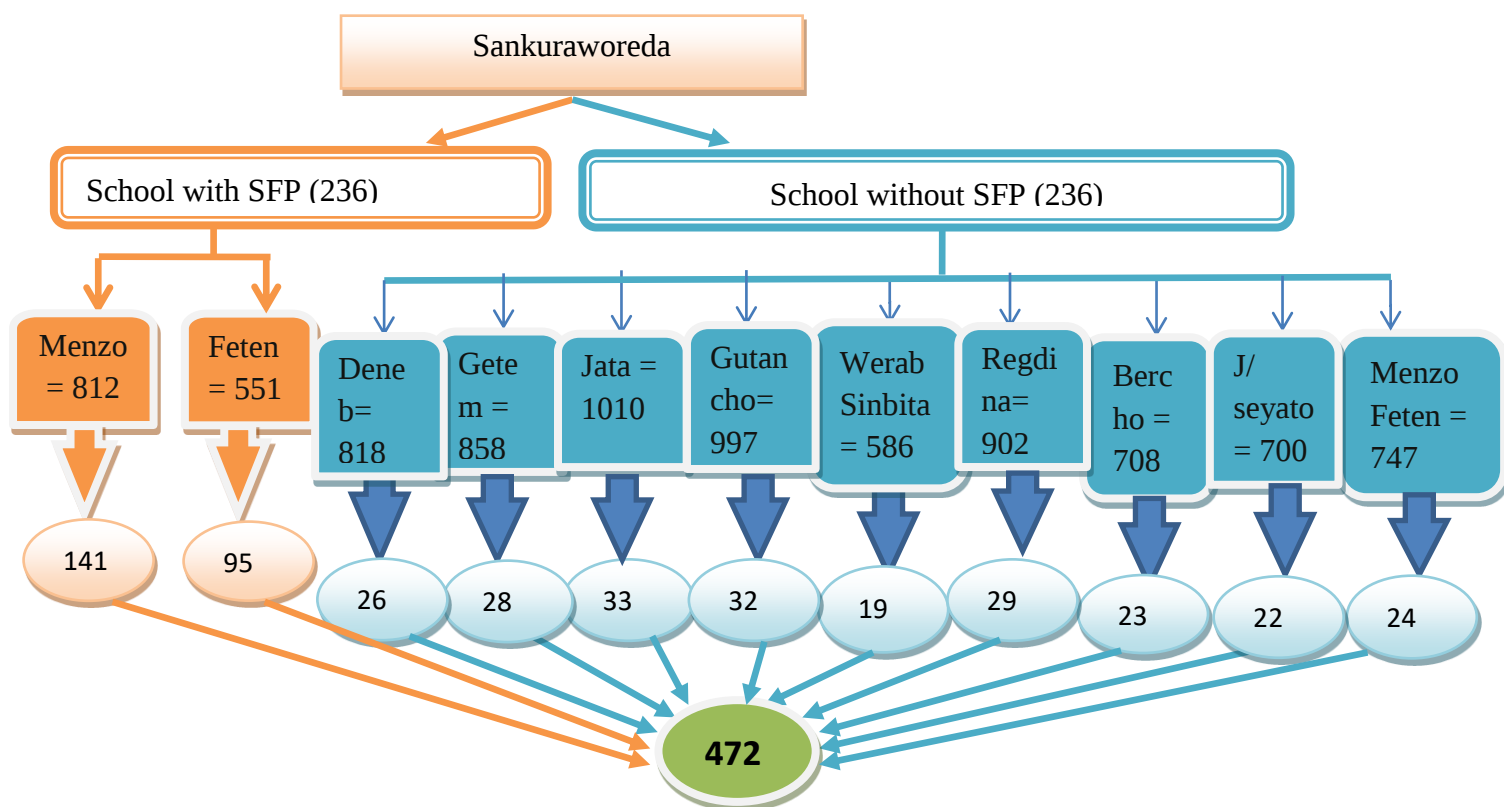


Figure 2:- Diagrammatic presentation of sampling procedure nutritional status and its associated factors among primary school students with feeding and non-feeding program, in Sankura Wereda, Southern Ethiopia, 2022

4.7. Data collection Procedure

4.7.1. Instrument and measurement

A structured interviewer administered questionnaire was used to collect data from students at school. It was constructed by adapting from previous literatures (21,22,28,36–39,45).

First, the English version of the questionnaire was prepared. Then it was translated to Amharic version and translated back to English to keep their consistency. The questionnaire consists of four parts. The first and second part contains about socio-demographic characteristics of students and their parents, and feeding practice (at home and at school). The third and fourth part of the questionnaire is about anthropometric measurement and, environmental hygiene and health related questions. Feeding practice and DDS were assessed using a 24-hour recall method.

4.7.2. Data collectors

Six diploma nurses were recruited as data collectors and also two BSc public health officers were assigned as supervisors. Data collectors were take their responsibility to interview the participant, record the result in a consistent manner and submit the result to the investigator.

4.7.3. Anthropometric measurement

4.7.3.1. Height

Height was measured using the standardized vertical seca stadiometer measurement. The subject stand erect & bare footed on the scale with a movable head piece & height will be recorded to the nearest 0.1cm. Procedure for height measurements were as follows:

- The stadiometer were placed on an even, uncarpeted surface.
- The participant asked to remove socks and shoes
- The participant asked to stand with heels together, arms to the side, legs straight, shoulders relax and head in the Frankfort horizontal plane.
- Shoulder blades, buttocks and heels had to be touching the measuring rod.
- The sliding headpiece then lowered upon the highest point of the head with adequate pressure to compress the hair and the reading were taken.
- The height measurements read to the nearest 0.1cm

4.7.3.2. Weight

It was measured by Seca weighting scale. Instruments were checked daily against a standard weight for accuracy. Calibration of the indicator against zero reading was checked before weighing every child. Students were weighted in to the nearest 0.1kg in light clothes and no shoes. When documents such as obtained from vaccination cards were available, school and confirmed from their parents. They were used to determine the age of the children. In the absence of documentation, a local seasonal calendar method was used by the team as they were trained on how to assess age of the children. The following method was used:

- The scale calibrated against zero reading was checked and also using a 1 kg weight and measured correctly.
- The participant asked to remove socks and shoes as well as any additional clothing that could contribute extra weight (i.e. jerseys, jackets, coats, sweaters).
- The participant asked to stand in the middle of the scale with body weight equally distributed on both feet and with hands at their sides.
- The participant asked to stand flat footed; feet slightly apart in a relaxed position facing the enumerator looking straight ahead.
- The participants stand still until the measurements were recorded and step aside from the scale and wait for zero reading to appear on the scale for second measurement.
- The weight recorded to the nearest 0.1kg.

The z-score values for BMI-for-age and height for age were calculated using WHO Anthro-Plus software. Calculated z-scores of BMI-for-age and height for age was used to classify thinness, overweight, and stunting using the new WHO 2007 reference value, respectively.

4.7.4. Dietary diversity

The dietary diversity of students was assessed whether they had eaten the different food groups from yesterday's sun rise to today's sun rise (24-hours recall method) prior to the survey date according to their responses. Then based on reports, food items consumed by the students were grouped in to seven food groups. The seven food groups were starchy staples (grains, roots, and tubers), legumes, nuts and seeds, vitamin-A rich fruits and vegetables, other fruits and vegetables, egg, dairy products (milk, yoghurt, and cheese); and flesh foods (meat, fish, poultry, and organ meats). Finally, dietary diversity score of students was calculated out of the seven food groups. A student with a DDS of four and above was classified as having good dietary diversity, otherwise classified as poor (40).

4.8. Variables of the study

4.8.1. Dependent variable

- Nutritional status: - stunting, thinness and overweight.

4.8.2. Independent variable

- Socio-demographic:- Age, sex, religion, ethnicity, mother's education, father's education, mother's occupation, father's occupation, marital status of their mothers, residence, income, currently living with, family size.
- Dietary intake: - Frequencies of food intake at home per 24 hour, Dietary diversity score.
- School feeding: -take meal at school, duration of school meal take.
- Environmental sanitation:- source of drinking water, use latrine, the student wash his/her hands with soap before eating.
- Health status (sickness in the last 2 weeks and type of illness (diarrhea, fever and others)).

4.9. Operational definition

- ✓ School feeding program (SFP) beneficiary - are students who took meals at school.
- ✓ School feeding program (SFP) non- beneficiary - are students who did not take meals at the school.
- ✓ Height-for-age at ≤ -3 SD, ≤ -2 SD and >-2 SD of the median value of the WHO international growth reference were defined as severely stunted, stunted and not stunted, respectively.
- ✓ BMI-for-age at ≤ -3 SD, ≤ -2 SD, between -1 SD and > -2 SD, between $>+1$ SD and $+2$ SD of the median value of the WHO international growth reference were defined as severely thin, thinness, normal and overweight, respectively (46).
- ✓ Minimum dietary diversity: the proportion of students who consume four or more out of seven food groups. Food groups include grains, roots, and tubers; legumes and nuts; dairy products; flesh foods, eggs; vitamin A-rich fruits and vegetables; other fruits and vegetables (47).
- ✓ Have no formal education- respondent's parent who did not attain any schooling.
- ✓ Have formal education- respondent's parent who attained primary and above education.

4.10. Data Quality Control

All data collectors and supervisors were oriented and trained on how to interview and record the data. The questionnaire was pre-tested by 5% of the calculated sample size from non-selected schools (Ziko Dololo and Alem Gebeya). By checking the weighing scale for functionality was measures taken to assure the quality of data. Moreover, the collected data was reviewed and errors were returned to the data collectors for correction on a daily base. Supervisors and the investigator were closely supervised the data collection procedure.

4.11. Data processing and analysis

Data were entered in Epi-Data version 4.6 and export in to Statistical product and Service Solutions (SPSS) version 25 software for statistical analysis. The homogeneity of the socio-demographic characteristic of the students among schools with and without FP was tested. The nutritional status of the students was compared. Bivariate and multivariable logistic regressions were done to identify factors associated with overweight, stunting and thinness. The crude Odds ratio was done and p-value <0.25 was taken as a cut-off point to select variables for the final model. During the multivariable logistic regression analysis, the adjusted Odds ratio was computed to determine the strength of association and control confounders. The p-value of less than 0.05 was considered statistically significant.

4.12. Ethical consideration

In order to the conduct study, ethical clearance letter was obtained from Wolkite University to Sankura woreda educational office and accordingly informed to respective school and concerned bodies. Since it causes less than minimum risk, the verbal consent was taken from school directors and assent was taken from students. Privacy and confidentiality were maintained throughout the study period by excluding personal identifiers from the data collection tools.

4.13. Dissemination Plan

The results of this study were submitted to the department of public health, College of medicine and Health Sciences, Wolkite University as part of graduate program. It will be disseminated to Sankura woreda educational office and to studied schools. The findings also will be presented at different seminars and conferences and will be published on international journals.

CHAPTER FIVE

5. RESULTS

5.1. Socio-demographic characteristics of the students and their parents

A total of 462 primary school students were recruited in the study, with a response rate of 97.9%. The results of the survey obtained from 679 students presented as follows. Out of 462 study subjects who responded to the interviews, 50.2% (n =232) of them were from schools had SFP and 49.8 % (n = 230) of the study participants were from schools had no SFP. The mean (+SD) age of the respondents from schools had SFP and had no SFP were 13.08 (+1.13) years and 12.81 (+1.18) years, respectively. Eighty nine percent of students from schools had SFP and 87.8% of students from schools had no SFP were live with their both biological parents. Most of their mothers, 71.7% among non-beneficiary and 72% of the beneficiary groups, did not attend formal education. From the majority of mothers 197 (84.9 %) in school feeding children and 196 (85.2 %) in non-school children were housewives. Most of the fathers of the children were farmers in both non-beneficiaries (78.4%) and beneficiary (83%) schools. Most of the Mothers of the children were housewife in both non-beneficiaries (85.2%) and beneficiary (84.9%) schools. Seventy six percent of students from schools had SFP and 86.1% of students from schools had no SFP were rural residence. Majority of the children who are the feeding program and out of the school feeding program had a family size of greater than five, this can be an indicator that big family size might always has a negative effect on nutritional status of the children when we see in prevalence of thinness and stunting in two group based on family size (Table 2).

Among the socio-demographic variables, the two groups were significantly different in father's occupation ($P < 0.05$) (Table 2).

Table 3: Socio-demographic characteristics of the primary school students and their parents, Sankura Woreda, May 2022 (n=462)

Variables	SFP schools = 232	Non SFP schools =230	P-value
Age in years (%)			0.58
8- 10	16 (6.9)	19 (8.3)	
10-14	216 (93.1)	211 (91.7)	
Sex (%)			0.459

Male	86 (37.1)	81 (35.2)	
Female	146 (62.9)	149 (64.8)	
Mother's education (%)			0.954
Have formal education	65 (28)	65 (28.3)	
Have no formal education	167 (72)	165 (71.7)	
Father's education (%)			0.789
Have formal education	96 (41.4)	98 (42.6)	
Have no formal education	136 (58.6)	132 (57.4)	
Mother's occupation (%)			0.779
House wife	197 (84.9)	196 (85.2)	
Government employee	14 (6)	12 (5.2)	
Daily laborer	4 (1.7)	7 (3)	
Merchant	17 (7.03)	15 (6.5)	
Father's occupation (%)			0.002*
Farmer	182 (78.4)	191 (83)	
Government employee	15 (6.5)	4 (1.7)	
Daily laborer	4 (1.7)	15 (6.5)	
Merchant	31 (13.4)	20 (8.7)	
Child currently living with (%)			0.949
Both biological parents	206 (88.8)	203 (88.3)	
Their mother	21 (9.1)	21 (9.1)	
Their father	5 (2.2)	6 (2.6)	
Residence (%)			0.084
Urban	56(24.1)	32 (13.9)	
Rural	176(75.9)	198 (86.1)	
Family size (%)			0.655
< 5	72 (31)	67 (29.1)	
≥ 5	160 (69)	163 (70.9)	

χ^2 Chi-square * statistically significant difference at P-value of 0.05

5.2. Dietary intake of the primary school students

The proportions of students who took more than two meals, 98.3% in SFP schools and 97.4% at non SFP schools. The number of students who had poor DDS (dietary diversity score) was higher in non SFP schools 130 (56.5%) compared to SFP schools 112 (48.3%) (Table 3).

Table 4:- Dietary status of the primary school students Sankura Woreda, May 2022 (n=462)

Variables	SFP schools=232	Non SFP = 230	P-value
Dietary diversity score (%)			0.076
Poor	112 (48.3)	130 (56.5)	
Good	120 (51.7)	100 (43.5)	
Frequency of food intake at home per 24 hours (%)			0.515
1 times	4 (1.7)	6 (2.6)	
≥2 times	228 (98.3)	224 (97.4)	

5.3. Environmental and health related factors

The numbers of students who wash their hands with soap before eating among SFP schools and non SFP schools were 37.5% and 21.7% respectively. The proportion of students who used latrine among SFP and NSFP were 55.6% and 42.2% respectively. 94.4% and 91.3% of the respondents drunk pipe and protected spring water among SFP and non SFP schools respectively. Twelve and 9 students were sick within two weeks before the data collection among SFP and non SFP schools respectively. Six (2.6%) of students in school with feeding program while 3 % in without feeding program had episodes of diarrhea two weeks preceding the data collection. Three (1.3%) of children in the school feeding and 3.1 % in non-school feeding students had fever two weeks before the data collection (Table 4).

Among the Environmental and health related variables, the two groups were significantly different in the child washes his/her hands with soap before eating ($P < 0.05$) (Table 4).

Table 5:- Environmental and health status of the primary school students Sankura Woreda, May 2022 (n=462)

Variables	SFP = 232	Non SFP = 230	P-value
Source of drinking water (%)			0.198
River/spring	13 (5.6)	20 (8.1)	
Pipe and protected spring	219 (94.4)	210 (91.3)	
Use latrine (%)			0.062
Yes	131 (56.5)	97 (42.2)	
No	101 (43.5)	133 (57.8)	
Did you wash your hands with soap before eating (%)			<0.001**
Yes	87 (37.5)	50 (21.7)	
No	145 (62.5)	180 (78.30)	
Illness (%)			0.516
Yes	12 (5.2)	9 (3.9)	
No	220 (94.8)	221 (96.1)	
Type of Illness (%)			0.431
Diarrhea	7 (58.3)	6 (66.7)	
Fever	3 (25)	3 (33.3)	
Other	2 (16.7)	0	

X² Chi-square ** statistically significant difference at P-value of 0.01

5.4. Nutritional status of primary school students

Students in Schools with SFP had better nutritional status than students in Schools without SFP. Thinness was higher among students who did not take meals at school 67 (29.1%) (95% CI= 25.4-33.4) than students who took meals at school 50 (21.5%) (18.2-25.2). Moreover, stunting was higher among students in schools did not having SFP 45 (19.6%) (10.7-20.7) compared with students in schools have SFP 36 (15.5%) (12.8-18.7).

However overweight was higher among students who took meals at school 14 (6%) (3-9.1) than students who did not took meals at school 12 (5.2%) |(2.5-8.3) (Table 5).

Table 6:- Nutritional status of primary school students Sankura Woreda, May 2022

Variables	Schools without FP = 232	Schools without FP = 230	P-value
Height for age z-score (HAZ) (%)			
Stunted	36 (15.5)	45 (19.6)	0.253
Normal	196 (84.5)	185 (80.4)	
Body mass index for age z-score (BAZ) (%)			
Thin	50 (21.6)	67 (29.1)	0.139
Overweight	14 (6)	12 (5.2)	
Normal	168 (72.4)	151 (65.7)	

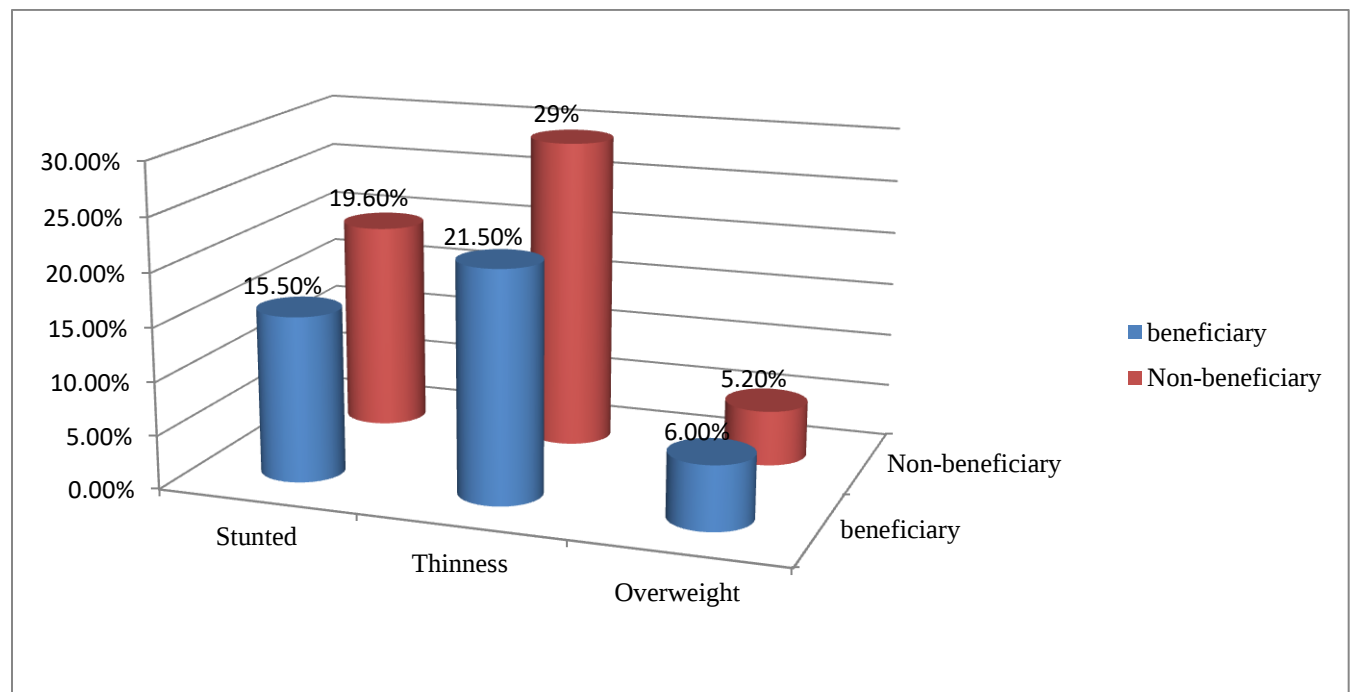


Figure 3:- Nutritional status of primary school students in Sankura Woreda, May 2022

5.5. Factors associated with stunting in primary school children

In the bivariate logistic regression analysis children having a mother with no formal education, living in a household did not use a latrine, taking a meal once per day at home, being rural residence and having poor DDS were statistically associated ($P < 0.25$) with stunting.

In the multivariable logistic regression analysis children who had poor DDS and having a mother with no formal education had a statistically significant association with stunting ($P < 0.05$). But students living in a household did not use a latrine, taking a meal once per day at home and being rural residence were not statistically associated ($P > 0.05$) with stunting (Table 6).

Students having a mother with no formal education are 2.3 times more likely to become stunted as compared to Students who have a mother with formal education [AOR = 2.3 (95% CI = 1.2–4.47), $P = 0.011$]. The odds of stunting 1.7 times higher among students who had poor DDS than who took diversified foods [AOR = 1.7 (95% CI = 1.05–2.89), $P = 0.033$] (Table 6).

Table 7:-Factors associated with stunting among the primary school children, Sankura Woreda, MaY 2022

Variables	Stunting		COR (95% CI)	AOR (95% CI)	P- value
	Stunted = 81	Normal = 381			
Educational status of the mother (%)					
Have formal education	13 (16)	117 (30.7)	1.00	1.00	
Have no formal education	68 (84)	264 (69.3)	2.32 (1.2,4.4)	2.3 (1.2,4.47)	0.011
Family use latrine (%)					
Yes	33 (40.7)	195 (51.2)	1.00	1.00	
No	48 (50.6)	186 (48.8)	1.52 (0.94,2.5)	1.5 (0.9,2.5)	0.11
Dietary diversity score (%)					
Poor	52 (64.2)	190 (49.9)	1.8 (1.1,3.0)	1.7 (1.05,2.89)	0.033
Good	29 (35.8)	191 (50.1)	1.00	1.00	
Residence (%)					
Urban	12 (14.8)	76 (19.9)	1.00	1.00	
Rural	69 (85.2)	305 (80.1)	1.4 (0.27,1.11)	1.4 (0.29,1.2)	0.503
Frequency of food intake at home per 24hrs (%)					
1 times	2 (2.5)	8 (2.1)	1.18 (0.25,5.6)	0.91 (0.18,4.6)	0.912
≥ 2 times	79 (97.5)	373 (97.9)	1.00	1.00	

AOR =Adjusted Odds Ratio; COR=Crude Odds Ratio; 95% CI= ninety five percent confidence interval

5.6. Factors associated with thinness in primary school children

In the bivariate logistic regression analysis students whose age 10-14 years, being a male, living in a household did not use a latrine and students who did not take meals at school were statistically associated ($P < 0.05$) with thinness .

In the multivariable logistic regression analysis students whose age 10-14 years (early adolescent), being a male and students who did not take meals at school were independent predictors of thinness ($P < 0.05$) in this study. But students living in a household did not use a latrine was not statistically associated ($P > 0.05$) with thinness (Table 7).

Students whose age 10-14 years are 2.5 times more likely to become thin as compared to students the age of 8-9 years [AOR = 2.5 (95% CI = 1.22-5.1), $P = 0.012$]. Being male is a strong indicator of thinness, males are 3.7 times likely to become thin as compared to females [AOR = 3.7 (95% CI = 1.07–6.06), $P = 0.023$]. Students who did not take meals at school are 1.6 times likely to become thin as compared to students who take meal at school [AOR = 1.6 (95% CI = 1.03–2.49), $P = 0.036$] (Table 7).

Table 8:- Factors associated with thinness among the primary school children, Sankura Woreda, May 2022

Variables	Thinness		COR (95%CI)	AOR (95%CI)	P- value
	Thin = 117	Normal = 319			
Age (%)					
8-10	16 (13.7)	19 (6)	1.00	1.00	
11-14	101 (86.3)	300 (94)	2.5 (1.24,5.05)	2.5 (1.22,5.14)	0.012
Sex (%)					
Male	70 (59.8)	92 (28.78)	3.67 (2.4,6.57)	3.7 (1.07,6.06)	0.023
Female	47 (40.2)	227 (71.2)	1.00	1.00	
Take meal at school (%)					
Yes	50 (42.7)	168 (52.7)	1.00	1.00	
No	67 (57.3)	151 (47.3)	1.49 (0.97,2.28)	1.6 (1.03,2.49)	0.036
Family use latrine (%)					
Yes	64 (54.7)	148 (46.4)	1.00	1.00	
No	53 (45.3)	171 (53.6)	1.39 (0.91,2.135)	1.4 (0.94,2.26)	0.089

5.7. Factors associated with overweight in primary school children

In the bivariate logistic regression analysis students having a mother and father with no formal education, students who didn't wash their hands before eating and living in a household did not use a latrine were statistically associated ($P < 0.25$) with overweight.

In the multivariable logistic regression analysis only having a mother with no formal education was independent predictors of overweight ($P < 0.05$). On the other hand having a father with no formal education, students who didn't wash their hands before eating and living in a household did not use a latrine were not statistically associated ($P > 0.05$) with overweight (Table 8).

Students having a mother with no formal education are 2.5 times more likely to become overweight as compared to Students who have a mother with formal education [AOR = 2.5 (95% CI = 1.1–5.8), $P = 0.03$] (Table 8).

Table 9:- Factors associated with overweight among the primary school children, Sankura Woreda, May 2022

Variables	Overweight		COR (95%CI)	AOR (95%CI)	P - value
	Overweight = 26	Normal = 319			
Family use latrine (%)					
Yes	16 (61.5)	148 (46.4)	1.00	1.00	0.246
No	10 (38.5)	171 (53.6)	1.85 (0.81,4.19)	1.6 (0.7,3.8)	
Educational status of the mother (%)					
Have formal education	13 (50)	89 (27.9)	1.00	1.00	0.03
Have no formal education	13 (50)	230 (72.1)	2.58 (1.15,5.79)	2.5 (1.1,5.8)	
Educational status of the father (%)					
Have formal education	15 (57.7)	127 (39.8)	1.00	1.00	0.149
Have no formal education	11 (42.3)	192 (60.2)	2.06 (0.91,4.63)	1.8 (0.8,4.2)	
Source of drinking water (%)					
River/spring	11 (42.3)	89 (27.9)	1.00	1.00	0.534
Pipe and protected spring	15 (57.7)	230 (72.1)	1.89 (0.84,4.28)	1.3 (0.5,3.1)	
Residence (%)					
Urban	11 (39.3)	59 (18.6)	1.00	1.00	0.06
Rural	17 (60.7)	258 (81.4)	2.8 (1.5,6.4)	2.3 (0.9,5.3)	

CHAPTER SIX

6. DISCUSSION

The findings from the current study also confirmed thinness was higher among students who did not take meals at school than students who took meals at school. However, regarding to stunting and overweight there is no significant difference between beneficiary and non-beneficiary students.

Taking a meal at school had a positive significant association with thinness. This finding was in line with the studies finding in Western Kenya, Ghana and Meketa woreda, North wollo (21,35,37). It can be explained that students who have eaten school meals may have a higher probability of meeting their nutritional requerment than students who do not eat school meals (37).

On the other hand, study conducted in Ghana (22) thinness was higher among students in schools with FP than their counterpart This difference may be due to differences in the quality and quantity of school meals (37).

The likelihood of thinness was higher among males compared to females. Similar findings were reported from North Wollo, Jamaica, India and Sari Lanka (37,48–50). The reason might be due to nutrient requirement of boys higher than that of girls (37).

Early adolescents were more likely to become thin as compared to middle childhood. This finding was in agreement with findings from Adwa Town (51) and Northern Amhara region (52). The possible reason is increased growth rate in the early adolescent stage as compared to the middle childhood (53).

Students who had poor DDS were more likely to experiencing stunting than their counterparts. This finding was supported by the studies conducted in India, Bangladesh, Egypt, Kenya and North Wolo (20,25,48,54,55). In Egypt and Kenya (55,56) students who took diversified foods were less likely to develop undernutrition. The reason for this might be the likelihood of students who took diversified foods better to meet nutrient requirements than students who regularly take monotonous diets.

Students who had uneducated mothers more likely to be stunted compared to educated mothers. Finding was in line with the studies conducted in North Wollo, Egypt, Kenya, Bangladesh and India (20,25,37,48,54,55). This may be because educated mothers are more likely to be knowledgeable about feeding practices and children care behaviors(37).

Overweight was higher among children in schools with the school feeding programme compared to those in schools without the programme. This finding was consistent with the study finding in Ghana (21). Possible reason it could be due to parents' lack of adequate knowledge on optimal nutritional practices to provide their children. This could also be as a result of the nutritional transition characterized by consumption of a more energy and high fat diet coupled with low physical activity.

Students who had uneducated mothers more likely to be overweight compared to their counterparts. Finding was in agreement with findings from Egypt and Ghana (21,55). The possible reason might be educated mothers have higher probability of being knowledgeable about optimal feeding practice.

6.1. Strength and limitation

Comparative nature of this study on nutritional status of students in schools with and without FP could be the strength of this study.

Even though I have tried to control for potential confounders there may still be residual confounders from unmeasured variables. Information about age of the children that was obtained from self-report might be underestimated. This may incur some information bias that may have impact on the estimates of anthropometric indicators. Efforts were made to cross-check self-report with school recorded age. The nutrient and energy content of school meal were not assessed in this study.

CHAPTER SEVEN

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

Based on the findings of this study, Thinness was higher among students who did not take meals at school than students who took meals at school. Though it was not significant, stunting was higher among students in Schools without SFP than students in schools with SFP. However overweight was higher among students in Schools with SFP than students in Schools without SFP.

Factors associated with stunting were students having uneducated mother and poor DDS. Whereas, students who did not take meal at school and, male and early adolescent students were significantly associated with thinness. Students having uneducated mother was factor that significantly associated with overweight.

7.2. Recommendations

Based on the result of the study the following recommendations were made:

- For health extension worker, to intensify public awareness and education on early adolescent nutrition. To create awareness on diversified foods, it supports healthy growth and development. To provide nutritional advice on optimal feeding practice by giving emphasis to illiterate mothers.
- For Woreda Health Office and Woreda Education Office should educate parents of students in schools on feeding program that school feeding is not a replacement feeding but rather a supplementary feeding to improve children's nutritional status.
- For school directors and teachers, to adopt the effective nutrition education for parents during Parent Teachers Association and School Management Committee(SMC) meetings in order to educate parents on their role on child nutrition.
- For researcher, to conduct further longitudinal study which addresses the sustainability and potential long term impacts of the program for a better policy implication.

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APPENDIX I

WOLKITE UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

1.1. Study Participant Information Sheet and verbal consent

Questionnaire designed to study nutritional status and associated factors among students in primary school with feeding and without feeding program, in Sankura Wereda, Southern Ethiopia.

Greeting:

My name is _____. I am working as the data collector of the study being conducted in this primary school. I kindly request you to lend me your attention to explain you about the study in general. Aim of this study is to assess nutritional status and associated factors among students in primary school with feeding and non-feeding program, in Sankura Wereda, Southern Ethiopia. The main purpose of the research is to gain better understand the benefits of school feeding program on nutritional status of children. The data collectors will collect the necessary information from study subjects and their parents, and from respective instrument, using interviewer administered structured questionnaire, which takes about 15minutes. Participating in this study does not have any risk or harm, direct benefit and incentives. The information acquired from participant will be confidential. Participating in this study is fully voluntary. Contact address: the Investigator: Tajudin Nesre, email; tajudinnesre62@gmail.com Mobile No: +251910432730

Consent Form

I have understood the verbal explanation of the information concerning this study and I understood what will be required of me and what will happen to me if I take part in it. I also understand that any time I may withdraw from this study without giving a reason and that the service utilization of my family and myself will not be affected for my refusal to be included in the study. Are you voluntary to participate in this study?

1. Yes: Continue to the next page

2. No: Skip to the next participant

1.2. Questionnaires

Guide to data collectors: Read the questions and fill the data carefully by making appropriate circle or writing the response on the space provided accordingly.

The questionnaire has four parts.

Part I. Demographic and socioeconomic characteristics of children and their parents

S.No	Questions	Possible answer	Skip
101	Age in years		
102	Sex	1)Male 2) Female	
103	What is your Religion	1) Muslim 2) Protestant 3) Orthodox 4)Catholic	
104	What is your Ethnicity	1) Silte 2) Gurage 3) Oromo 4) Amhara 5) Hadiya 6) Other, specify	
105	What is marital status your family?	1) Married 3) Divorced 4)Widowed 5) Other	
106	What is the occupation of the mother?	1) House wife 2) government employee 3) Daily laborer 4) merchant 5) others (specify)____	
107	What is the occupation of your father?	1) farmer 2) government employee 3) Daily laborer 4) merchant 5) others (specify)	
108	What is the level of education of the mother?	1) Have no formal education 2) Have formal education	

109	What is the level of education of the father?	1) Have no formal education 2) Have formal education	
110	Place of residence	1) urban 2) rural	
111	Currently with whom you live?	1) Both 2) mother 3) Father 4) Others	
112	How many family members in your house?		

Part II: Dietary intake (at home and at school) related questions

S.No	Questions	Possible answer	Skip
201	Do you take meal at school?	1) Yes 2) No	If No skip to Q. 205
202	When did you start using the program (years)	_____	
203	How many times you take meal at school per 24 hours?	1) Once 2) Twice	
204	How many days a week do you get school meals?	1) Every school day 2) 2-4 days a week 3) Once a week	
205	How many times you take meal at home per 24 hours?	1) 1 time 2) ≥ 2 times	

206, Foods eaten preceding 24 hours? If at least one food from the food groups has been given between sunrise yesterday and sunrise today, if ‘Yes’ write 1 in the column below. If no food has been given in the food groups, ‘No.’ write 2

	Food Group	Foods	1, Yes 0, No
1	Grains, roots and tubers:	Bread, biscuits, cookies, Porridge, rice, noodles, pasta(macaroni), Injera, kita, nufea, or other foods made from grains oats, maize, barley, wheat, White potatoes, white yams, Enset (false banana), cassava, or any other foods made from roots	
2	Legumes, nuts and seeds	Any foods made from beans, peas, lentils, nuts, or seeds	
3	Milk and milk products	Cheese, yogurt, or other milk products	
4	Eggs	Eggs	

5	Flesh Meats	Any meat, such as beef, lamb, goat, chicken, camel or duck, Liver, kidney, heart, tongue, brain, or other organ meats Fresh or dried fish, shellfish, or seafood	
6	Vitamin a rich fruits and vegetable	Ripe mangoes, ripe papayas, or ripe melon; Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside Any dark green leafy vegetables like gomen, spinach, swiss chard etc	
7	Other fruits and vegetables:	Any other fruits or vegetables (like cactus pear, strawberries Tomato, onion)	

Part III: Anthropometric measurement

Sr. no	Weight measurements(kg)	Height measurements(cm)
301		

Part two IV: Sanitation health related questions

S.No	Questions	Possible answer
401	What is the Source of your drinking water?	1) River/spring 2) Pipe and protected spring
402	Do you use latrine?	1) Yes 2) No
403	Do you wash your hands with soap before eating?	1) Yes 2) No
404	In the past 2 week, did you have sick?	1) Yes 2) No
405	If yes, what illness did you suffer from?	1) Diarrhoea 2) Fever 3) Cough 4) Other (specify)-----

Thank you!!

Annex II: Amharic Version Questionnaire

ወልቂጤ ዩኒቨርሲቲ

የመጠይቁ ቁጥር.....

ሕክምናና ጤና ሳይንስ ኮሌጅ

የሕብረተሰብ ጤና አጠባበቅ ት/ት ክፍል

ይህ መጠይቅ በደቡብ ኢትዮጵያ በስልጤ ዞን በሳነኩራ ወረዳ በሚገኙ ት/ት ቤቶች፤ የት/ት ቤት አመጋገብ ፕሮግራም ተጠቃሚ ከሆኑትና ካልሆኑት ህጻናት የስነ-ምግብ ሁኔታቸውን መሸሻልን በመገምገም ላይ የሚካሄድ ጥናት ነው።

ክፍል 1: ለጥናቱ ተሳታፊዎች ስለጥናቱ የተዘጋጀ መግለጫ

ስሜ ----- ይባላል። እኔ ----- የመጀመሪያ ደረጃ ት/ት ዉሰጥ ባሉ ተማሪዎች መካከል መረጃ ከሚሰበስቡት አንዱ ነኝ። ጥናቱን የሚያጠናው በወልቂጤ ዩኒቨርሲቲ ሕክምናና ጤና ሳይንስ ኮሌጅ የሕብረተሰብ ጤና አጠባበቅ ት/ት ክፍል የስነ-ምግብ ማስተር ተማሪ የሆነው ታጁዲን ነስሬ ነው።

የጥናቱ ዓላማ ፤ በሳነኩራ ወረዳ በሚገኙ ት/ት ቤቶች፤ የት/ት ቤት አመጋገብ ፕሮግራም ተጠቃሚ ከሆኑትና ካልሆኑት ህጻናት የስነ-ምግብ ሁኔታቸውን መሸሻልን ለመገምገም ሲሆን፤ የሚጠየቁትን ጥያቄ ትክክለኛ ነዉ ብለዉ የሚያምኑትን መልስ እንድሰጡኝ በትህትና እጠይቃለዉ። እርስዎ በዚህ ጥናት ተሳታፊ በመሆን ስለ የት/ት ቤት አመጋገብ ፕሮግራም ጥቅሙን ይበልጥ ኢንዱታውቁ ይረዳል። መጠየቁ ቢበዛ 15 ደቂቃ የሚፈጅ ሲሆን በዚህ ጥናት የእርስዎ ስም አይጻፍም፤ ሪፖርትም አይደረግም። ጥናቱ ላይ ስለ ተሳተፉ ተብሎ በገንዘብ መልክም ሆነ ለማበረታቻ የሚደረግ ነገር አይኖርም። ከእርስዎ የሚገኝ መረጃ ሁሉ በሚስጥር ይያዛል። የእርስዎ ተሳትፎ ፍፁም በፊቃደኝነት ላይ የተመሰረተ ሲሆን ማንኛውም ጥያቄ ያለ ፍላጎትዎ እንድመልሱ አይገደዱም። ያልተመቸዎትን ጥያቄ ካለ በፈለጉ ሰዓት መዝለልና ከጅምሩም ማቆም ይችላሉ። የጥናቱ ዓላማ ከሞላ ጎደል ገልጭአለዉ ብዬ አምናለዉ። ከጥናቱ ጋር በተያያዘ ጥያቄ ካልዎት አሁን መጠየቅ ይችላሉ። በተጨማሪም የጥናቱ ባለቤት የሆነዉን ታጁዲን ነስሬ በዚህ አድራሻ መጠየቅ ይችላሉ።

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ኢ-ሜይል-tajuddinnesre62@gmail.com

በጥናቱ ተሳታፊ ለመሆን ፈቃደኛ ኖት?

1. አዎ-----ወደ የሚቀጥለዉ ገፅ ይለፉ
2. አይ -----ወደ የሚቀጥለዉ ተሳታፊ ይለፉ

ክፍል 1: ሥነ-ህዝብ፣ ማህበራዊና ኢኮኖሚያዊ ጉዳዮች በተመለከተ የተዘጋጁ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	አማራጭ መልሶች	ይለፉ
101	የህፃኑ/ኗ እድሜ		
102	የህፃኑ/ኗ ፆታ	1) ወንድ 2) ሴት	
103	ሐይማኖትዎ ምንድነው ?	1) ሙስሊም 2) ኦርቶዶክስ 3) ፕሮስቴታንት 4) ካቶሊክ) 5) ሌላ ከሆነ ይጻፉ.....	
104	ብሔርዎ ምንድነው ?	1) ስልጤ 2) ጉራጌ 3) ኦሮሞ 4) አማራ 5) ሐዲያ 6) ሌላ _____	
105	የቤተሰብ የትዳር ሁኔታ ?	1) ያገባ እና አንድ ላይ የሚትኖር 3) የተፋቱ 4) ባሏ የሞተባት 5) ሌላ	
106	የእናትህ/ትሽ ስራ ምንድነው ?	1) የቤት እመቤት 2) የመንግስት ሰራተኛ 3) ገበሬ 4) ነጋዴ 5) ሌላ ከሆነ ይጻፉ_____	
107	የአባትህ/ትሽ ስራ ምንድነው ?	1) ገበሬ 2) የመንግስት ሰራተኛ 3) አርብቶ አደር 4) ነጋዴ 5) ሌላ ከሆነ ይጻፉ_____	
108	የእናት የትምህርት ሁኔታ?	1) መደበኛ ት/ት የተማረች 2) መደበኛ ት/ት የልተማረች	
119	የአባት የትምህርት ሁኔታ?	1) መደበኛ ት/ት የተማረ 2) መደበኛ ት/ት የልተማረ	
110	የመኖሪያ ቦታ	1) ከተማ 2) ገጠር	

111	በአሁኑ ሰዓት ከማን ጋር ነው የሚኖረው/ሪው?	1) ከእናቱ ና ከአባቱ 2) ከእናቱ 3) ከአባቱ 4) ሌላ ከሆነ ይግለፁ	
112	እቤት ውስጥ ስንት ልጆች አሉ		
115	የቤተሰብ ወርሃዊ ገቢ ምን ያህል ነው?		

ክፍል 2: የአመጋገብ ሁኔታን የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	አማራጮች	ዝላል
201	በ አሁኑ ጊዜ የት/ት ቤት ምገባ ፕሮግራሙ ተጠቃሚነህ/ሽ?	1) አው 2) አይ	አይ ካሉ ወደ ጥያቄ ቁጥር 205 ይለፉ
202	ከመቼ ጀምሮ ነው ተጠቃሚ የሆነከው/ የሆነሽው?	1) ከ2012 በፊት 2) በ 2012 3) በ 2013 4) ከ 2014 እስካሁን	
203	ት/ት ቤቱ ውስጥ በቀን ስንት ጊዜ ትመገባለህ/ሽ?	1) አንዴ 2) ሁለት	
204	በ ሳምንት ለስንት ቀናት ት/ት ቤቱ ውስጥ ትመገባለህ/ሽ?	1) ሁሌም 2) በ ሳምንት 2 – 4 ቀናት 3) አንዴ	
205	ቤት ውስጥ በተደጋጋሚ የሚጠቀሙ/ሚው ምግብ	1) ሽሮ 2) ጎመን 3) ክክ 4) አትክልት 5) ወተት 6) ሌላ	
206	እቤት ውስጥ በ24 ሰዓት ስንት ትመገባለህ/ሽ?	1) አንዴ 2) ሁለት ና ከዛ በላይ	
207	ባለፈው 24 ሰዓት ውስጥ ለልጅዎ የትኞቹ ምግቦች አብልተዋል? ሁሉም መልስ ሊሆኑ የሚችሉት ይምረጡ፤	1) ከጥራጠሬ, ከስራስር የተዘጋጀ እንደ ገንፎ፣ ዳቦ፣ ፓስታ፣ ሩዝ, የመሳሰሉት 2) ከአተር፣ ሽምብራ፣ በቄላ ለውዝ የተዘጋጀ ምግብ 3) የወተት ተዋፅዖ (ወተት፣አይብ፣እርጎ, የህፃናት ፎርሙላ) 4) ሥጋ ነክ ምግብ (የበሬሥጋ፣, ዓሳ, የዶሮ)	

		5) እንቁላል 6) በሻይታሚን ኤ የበለፀጉ አትክልተና ፍራፍሬ (ጎመን ዱባ, ካሮት፣ ስኳርድንች ብርቱኳን፣ ማነጎ የመሳሰሉት) 7) ሌሎች ፈራፍሬዎች..	
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ክፍል 3: የሰውነት መጠን ልኬት

ተ.ቁ	የክብደት ልኬት (በኪሎ ግራም)	የቁመት ልኬት (በሴንቲ ሜትር)
301		

ክፍል 4: ንጽህናን በተመለከተ ያሉ መጠይቆች

ተ.ቁ	ጥያቄዎች	አማራጮች	እለፍ
401	የመጠጥ ዉሃ ምንጩ ምንድነው	1) የወንዝ 2) በንቦ	
402	ሽንት ቤት ትጠቀማለህ/ሽ	1) አው 2) አይ	
403	ምግብ ከመብላትህ/ሽ በፊት እጅህን/ሽን በሳሙና ትታጠባለህ/ሽ	1) አው 2) አይ	

አመሰግናለሁ!!