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COLLEGE OF HEALTH SCIENCES

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**OVERWEIGHT AMONG IN-SCHOOL ADOLESCENTS IN ADDIS ABABA, ETHIOPIA: A
MIXED METHOD STUDY**

BY

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DECLARATION

I undersigned, declared that this thesis is my original work and has never been presented in this or any other university, and that all the resources and materials used for the thesis development are recognized and cited, and people who are involved are acknowledged.

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Acronyms and Abbreviations

AACA	Addis Ababa City Administration
AAU	Addis Ababa University
AOR	Adjusted Odds Ratio
BMI	Body Mass Index
BAZ	Body Mass Index for Age
CDC	Center for Disease Control and Prevention
CI	Confidence interval
CL	Confidence level
Cm	Centimeter
COR	Crude Odds Ratio
DALY	Disability Adjusted Life Years
DHS	Demographic Health Survey
EDHS	Ethiopian Demographic Health Survey
GSHS	Global School-based Student Health Survey
HPE	Health and Physical Education
IDI	In-depth interview
IDRC	International Development Research Center
IRB	Institutional Review Board
Kg	Kilogram
KII	Key informant interview

NCD	Non-communicable Disease
NSF	National Sleep Foundaion
PI	Primary investigator
REC	Research Ethics Committee
SPH	School of Public Health
SPSS	Statistical Package Software
SSA	Sub Saharan Africa
WHO	World Health Organization

Abstract

Background: Overweight including obesity is a key public health problem in many high income countries and it is steadily rising in low income and middle income countries. Specially overweight starts to develop in adolescence age and increase across age. But the magnitude and its underlying determinants have not been sufficiently studied among adolescents in urban settings of Ethiopia.

Objective: To assess the magnitude of overweight including obesity and explores its drivers among in-school adolescents from age 13-19 years in Addis Ababa, Ethiopia, 2024.

Methods: Institutional-based sequential explanatory mixed-method study was conducted among 405 adolescent boys and girls (13-19 years old) from both public and private high schools across three sub-cities in Addis Ababa, Ethiopia. Data collection was conducted through self-administered questionnaires and The WHO AnthroPlus software was employed to analyze anthropometric measurements and determine instances of overweight and obesity. The data were entered into Epi Info version 7 and then exported to SPSS version 27 for further processing. Frequency distributions and percentages were displayed in tables and figures. Both bivariable and multivariable logistic regression analyses were performed to explore the relationships between the dependent and independent variables. Statistical significance was determined using adjusted odds ratios with 95% confidence intervals and a p-value of less than 0.05. A qualitative content analysis approach using mixed sampling was employed to choose 19 participants for the qualitative study. Data were collected through indepth interview of overweight/obese students and their parents and key informant interview with school principals and sub cities school food program experts. Content analysis was conducted using Atlas Ti software.

Result: Total of 399 respondents participated in the study with a response rate of 98.5%. The overall prevalence of overweight including obesity was 23.6% (95% CI; 19.3, 28.1). Learning in private schools [AOR=4.32(95%CI; 1.94, 9.62)], consuming sugar and sweets daily [AOR=0.56(95%CI; 0.33, 0.97)] and not doing physical exercise [AOR= 2.09(95% CI; 1.17, 3.73)] were significantly associated with being overweight including obesity. The strong reasons underlying for the overweight including obesity prevalence among these adolescents were unhealthy meal preferences and choices that are influenced by peer pressure, limited physical

activity from the lack of physical education periods and inadequate playgrounds, reliance on motorized transportation meanses and excessive time spent on social media. The unhealthy school food environment both inside and outside the schools also contributed to their risk of being overweight including obesity, by encouraging the consumption of fast foods, sugary drinks, and sweets.

Conclusion: The results showed that overweight including obesity prevalence rates were higher among in school adolescent students in Addis Ababa which may increase the risk of non-communicable diseases at a later age. Therefore, an urgent public health plan of action is needed among adolescents to mitigate future complications of overweight and obesity in Addis Ababa.

Key words: Adolescent nutrition, Body mass index, Overweight, Obesity

1. Introduction

1.1. Background

The World Health Organization (WHO) defined overweight including obesity as excessive fat buildup which leads to co-morbidities that may impair health (1,2). The main cause contributing to overweight and obesity is disparity between calories consumed and expended. In recent decades, people around the world are progressively consuming foods that are high in sugar and fat, yet low in essential micronutrients. Furthermore there has been a decline in physical activity across many populations because of increasing sedentary lifestyle (3). Since the mid-1970s, the occurrence of overweight and obesity has nearly tripled globally and it turned in to a significance issue for public health. Overweight and obesity is the fifth most common cause of mortality, contributing to at least 2.8 million deaths per year (3).

Adolescence, the period that typically includes the age range 10-19 years, is the shift between childhood to adulthood. Adolescence is the second dynamic stages of human development after infancy. Although adolescence is generally a period of optimal health, countless young people face serious issues like overweight and obesity (4). These conditions during adolescence are particularly concerning, as they often continue into adulthood and significantly increase the risk of developing non-communicable diseases (5).

The worldwide rate of obesity rose from 4% in 1975 to 18% in 2016, impacting an estimated 124 million people (5). In Africa, although there has historically been a greater challenge with under-nutrition, there is now a concerning and rapid rise in overweight including obesity among adolescents (6). Similarly in Ethiopia, there has been a noticeable shift from under to overnutrition especially in urban areas (7, 8).

Adolescents who experience overweight and obesity are at a higher risk for a range of health issues, including hypertension, type 2 diabetes, heart disease, stroke, and dyslipidemia. These conditions, known as non-communicable diseases, significantly contribute to increased mortality rates in adulthood (9). Furthermore, overweight and obesity in adolescents can contribute to mental health problems and social stigma, such as poor self acceptance, low self confidence, anxiety, sleep disturbances and a shorter life expectancy in adulthood (9).

1.2. Statement of the problem

Overweight and obesity is now entering to the low income countries. Nations undergoing a significant transition from under to over-nutrition are grappling with enduring nutrition-linked to NCDs like cancer, hypertension, heart disease, and type 2 diabetes mellitus (10). Annually, overweight and obesity contribute to 2.8 million deaths globally, accounting for 2.3% of the total loss in disability-adjusted life years (DALY) (13). In addition, many adult diseases related to overweight and obesity have their origins in childhood and adolescence (10). Carrying excess weight during adolescence is linked to a higher risk of mortality from various chronic illnesses in adulthood diseases (12).

The 2017 WHO fact sheet reported that more than 340 million children and adolescents worldwide, aged 5 to 19 years, were classified as overweight (13). Every year, non-communicable diseases result in 40 million deaths and contribute to a loss of 1.5 million disability-adjusted life years (DALY) (11,12). From 2000 to 2015, the total adult mortality linked to non-communicable diseases rose by 16% (13).

Ethiopia, a low-income country, is witnessing a transition from underweight to overweight, particularly in urban areas. Previous reports have highlighted various factors contributing to this problem, including a inactive lifestyle, economic shifts, not engaging in physical exercises as well as the consumption of high amounts of saturated fats and sugary drinks (5). A study done in 2016 among high school adolescents in Addis Ababa found that 13.9% of the students were either overweight or obese (4).

The prevalence of overweight and obesity in children and adolescents persists to be a significant concern, as evidenced by recent findings. Moreover, there is a notable lack of comprehensive research specifically focused on Addis Ababa that explores the extent of overweight including obesity and factors contributing to it in adolescents. Given this gap, the current study seeks to investigate the magnitude and underlying drivers of overweight including obesity among high school adolescents across both private and public high schools in Addis Ababa, Ethiopia.

1.3. Significance of the study

Although Ethiopia is a country that has been largely affected by food insecurity and undernutrition, there is growing evidence suggesting an increase in overweight including obesity among adolescents. Overnutrition is becoming a significant health issue in low-income countries such as Ethiopia especially in the urban population (14). Therefore, this study will be highly valuable in identifying the growing issue of overweight and obesity, especially among adolescents in Addis Ababa. It will serve as baseline for program planners and researchers focused on nutrition and non-communicable diseases. Additionally, it can inform the development of policies and strategies to address overweight and obesity, and help design effective interventions targeting the rising prevalence of these conditions and their associated factors among school-aged adolescents.

2. Literature review

2.1. Magnitude of overweight including obesity

Overweight and obesity among adolescents is rising alarmingly and approaching an epidemic proportion in a number of low and middle income countries, leading a double burden of malnutrition. Consequently the risk of chronic health issues in later adulthood associated with obesity earlier in life are increasing (15,16).

The Global School-based Student Health Survey (GSHS), revealed a study that conducted across seven African nations that the percentage of overweight students ranged from 8.7% in Ghana to 31.4% in Egypt (17). Meanwhile, obesity rates varied from 0.6% in Benin to 9.3% in Egypt (17). Over the last thirty years, the public health significance of overweight has been progressively escalating worldwide, including in Sub-Saharan Africa (18,19).

In Sub-Saharan African (SSA) countries, the rates of overweight and obesity remain lower than those in high-income nations. However, these levels have significantly risen over the past twenty years and are increasing at a concerning pace (19,20). A study conducted in Cofimvaba, South Africa, on the occurrence of overweight and obesity among schoolchildren and adolescents revealed that 1.9% of the adolescents were underweight. Additionally, 14.8% were overweight and 2.8% were obese (24). A study found that the prevalence of overweight among South African adolescents aged 13 to 17 was 3.2% for boys and 4.9% for girls. In terms of obesity, the rates were 14% for boys and 17.9% for girls (34).

Studies conducted across various Ethiopian cities show that the prevalence of overweight and obesity differs by location. The Ethiopian Demographic Health Survey (EDHS) analysis found in urban areas, 12.1% of school-age children were overweight, and 2.8% were obese (25). A study on the magnitude and contributing factors of overweight and obesity among high school students in Bahir Dar City, Northwest Ethiopia, reported an overall prevalence of 12.5%. Among this, 7.7% were classified as overweight, and 10.7% were obese (26). A study conducted in Hawassa town, Northern Ethiopia, found that the prevalence of overweight and obesity for the 10-14 year age group was 12.5%. For the 15-19 year age group, the prevalence was 12.9% for overweight and 2.8% for obesity (28). A study conducted in Arada sub-city, Addis Ababa, on the prevalence of overweight and obesity among high school adolescents found that 8.6% of the students were overweight, while 0.8% were obese (3).

2.2. Factors associated with overweight including obesity

2.2.1. Socio-demographic factors

The increase in overweight including obesity epidemics is linked to fast economic and health related shifts, driven by socioeconomic and population shifts within society (29,32). Ghana school adolescents aged 13-15 years old, 10.4% girls and 3.2% boys were overweight including obesity (32). A study conducted in Gondar, Northwest Ethiopia, found that the prevalence of overweight and obesity was higher among female high school students (8.7%) compared to males (1.6%). Additionally, 10.1% of private school students were overweight or obese, while the prevalence was 4.2% among students in public schools (27). A study conducted in Hawassa town, Northern Ethiopia, revealed that the occurrence of overweight among adolescents was 12.5% for those aged 10-14 and 12.9% for those aged 15-19. The prevalence of overweight was 5.7% for males and significantly higher at 20.2% for females. Furthermore, the study found that 20.4% of private school students were overweight or obese, while the prevalence in public schools was approximately 9% (8).

A study conducted on the prevalence of childhood overweight/obesity and its contributing factors among elementary school children in Addis Ababa, Ethiopia, found that children attending private schools had a 6.8 times higher risk of being overweight compared to those in public schools. Additionally, children aged 15-18 were found to have a slightly higher risk of being overweight than those aged 10-15, with the older age group being 1.6 times more likely to be overweight. The study also revealed that children from families who owned cars were more likely to be overweight than those whose families did not own cars (35). A different study conducted in Arada sub-city, Addis Ababa, Ethiopia, examined the occurrence of overweight and/or obesity and its related factors among high school adolescents. It found that age, type of school, monthly income, and walking for at least 30 minutes per day were significantly linked to overweight and/or obesity in this group (3).

2.2.2. Dietary habit and overweight including obesity in adolescents

It has been recommended that assessing the energy content of meals and the frequency of meals could lead to healthier outcomes. The American Dietetic Association encourages the consumption of fruits and vegetables to help prevent overweight in children and adolescents, as they are low in energy density and rich in fiber. In contrast, consuming large portions of energy

dense foods is associated with a higher risk of overweight in later adulthood, and a diet high in junk food increases the likelihood of being overweight (4).

A study by Harrington found that the likelihood of a child becoming overweight increases by 1.6 times for every extra glass of sugar and sweet drink which exceeded their typical daily consumption. In Turkey, increasing fruit consumption and reducing intake of animal based foods were linked to a lower risk of overweight (36). A study conducted among high school adolescents in Gonder, Ethiopia, found that students who consumed just one sweet food item per week were 65% less likely to develop overweight or obesity than those who consumed two or more (27). In the study conducted on prevalence and determinants of overweight/obesity among high school adolescents in Addis Ababa, the risk of overweight/obesity significantly higher among adolescents who consumed more than one sweet food item during the last week than those who consumed at least one sweet food item (4).

2.2.3. Physical activity and sedentary lifestyle factors associated with overweight including obesity

Physical inactivity is increasing in numerous countries, which has significant consequences for the rise of non-communicable diseases (36). Physical activity levels are linked to body fat accumulation, with the amount of exercises used as prevention for overweight and obesity. During adolescence, male adolescents are more physically active than females (37).

Children in the Eastern Mediterranean region who engaged in sedentary activities for more than four hours a day were twice as likely to be overweight compared to those who spent less time on such activities (38). In addition, in America, young people who engaged in at least one hour of activities frequently each week were less likely to be overweight or obese. On the other hand, spending more than four hours a day on activities, such as watching television or playing video games, was identified as risk factor for overweight and obesity in children and adolescents (37).

2.2.4. Sleep duration factor associated with overweight including obesity

Sleep plays a crucial role in the growth, development, and overall health of children and adolescents. However, in today's society, adolescence is often marked by insufficient sleep due to early school start times. Research strongly suggests that individuals who consistently get less

sleep are at a higher risk of gaining weight compared to those who sleep seven to eight hours each night (39).

A British study tracking over 8,000 children from birth found that those children who slept less than ten and a half hours per night during three years old had a 45% likelihood of becoming overweight by seven years old, compared to children who slept more than 12 hours (40). Similarly, a study conducted in Peru on school-aged children (6-13 years old) showed a linking of short sleep duration to overweight. Children who slept less than ten hours had a 15% higher occurrence of overweight compared to those who slept between ten to eleven hours each night (41). A different study conducted in Addis Ababa, Ethiopia, examining sleep duration and its link to overweight/obesity in high school adolescents found that those with shorter sleep durations which is less than eight hours per day were significantly more likely to be overweight or obese compared to adolescents who had a normal sleep duration that is 8-10 hours per day (39).

2.2.5. School food environment factor associated with overweight including obesity

The school food environment, which is a primary source of nutrition for students, encompasses the types of food available within and outside the school. It is widely regarded as a key setting for health improving efforts aimed at encouraging healthier eating habits (43). According to Welker and colleagues, school food environment refers to the situations and locations where student obtain food, as well as the variety of choices available within and outside the school during the day (44). These food outlets, whether on school premises or nearby, can have a significant influence on children's dietary choices. Therefore, research that examines both on-campus and surrounding food outlets is crucial to gaining a better understanding of the school environment (45,46). For example, a study on school food environment in Dominica identified food outlets like local shops and school dietary programs, which offered a mix of homemade and store-bought snacks (47).

2.2.6 Nutritional knowledge and overweight including obesity

Overweight individuals who were worried about their weight had a high level of nutrition knowledge, as they actively explore information, leading to a greater understanding of nutrition (4). A study conducted in the USA found that nutritional awareness was not linked to overweight

or obesity. Additionally, there was no distinction in nutritional knowledge between obese and non obese adolescents. This suggests that interventions need to go beyond just educating about nutrition (36). Knowledge is a key in influencing eating habit (62). One study indicates that the increasing rates of overweight in adolescents could be related to a lack of awareness about obesity and overweight (63). A research carried out in England found that adolescents with lower nutritional knowledge were 5.3 times more prone to overweight than those with better knowledge. The research also highlighted that children have limited understanding of nutritious foods, suggesting that the society should provide effective and sufficient messages about healthier eating (64).

3. Conceptual Framework

The causes of overweight and obesity are thought to stem from a complex interplay of sociodemographic and behavioral influences. The WHO classified factors that can either contribute to or help prevent overweight and obesity. Key factors strongly linked to overweight and obesity include energy intake and physical inactivity, home and school environments and aggressive marketing of energy-dense foods (36).

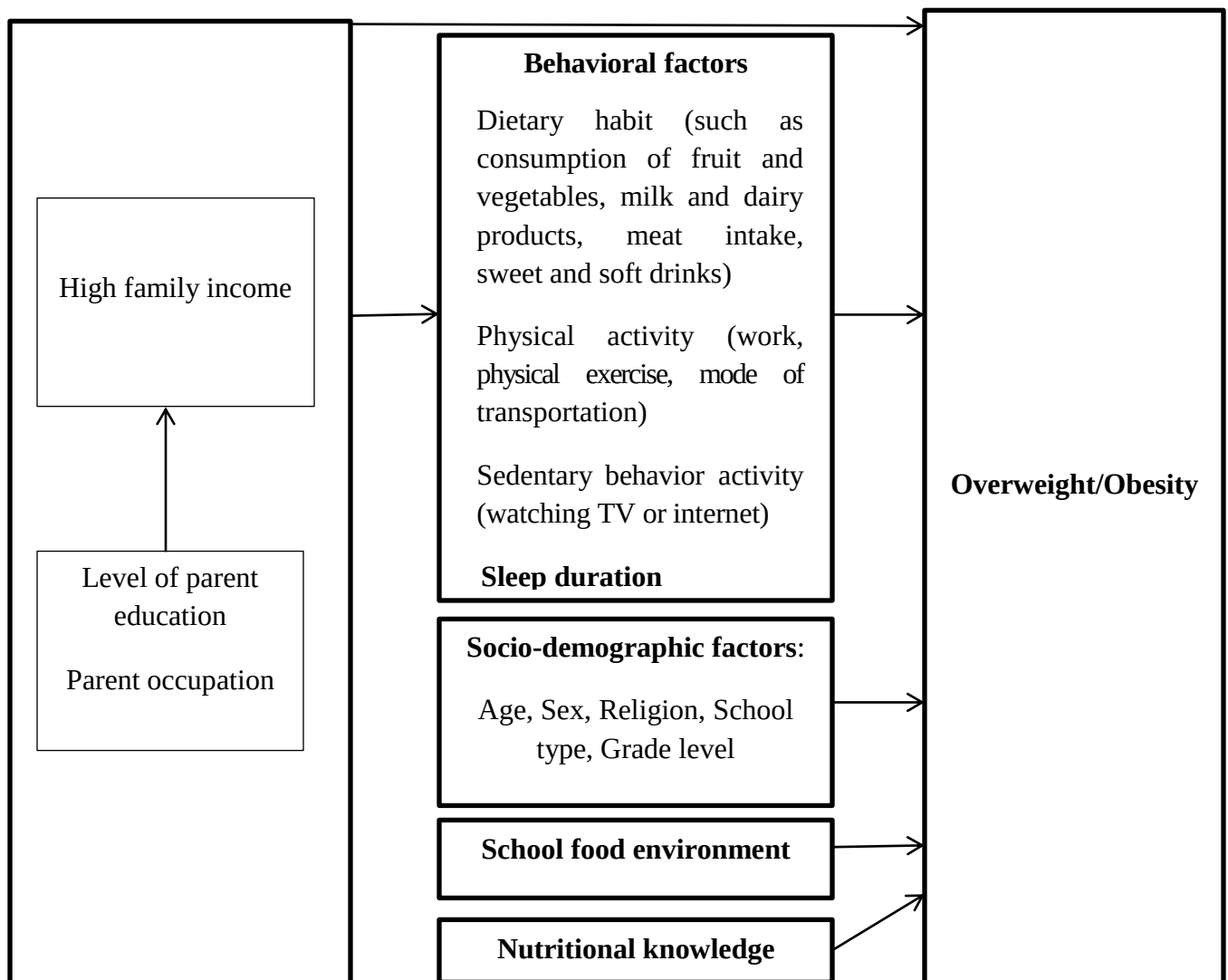


Figure 1: The conceptual framework, drawn from various studies to examine factors related to overweight including obesity.

4. Objectives

4.1. General objective

- To determine the magnitude of overweight including obesity with factors associated with it and explore its drivers among in-school adolescents from age 13-19 years in Addis Ababa, Ethiopia.

4.2. Specific Objectives

- To assess the magnitude of overweight including obesity among in-school adolescents in Addis Ababa, Ethiopia.
- To identify factors associated with overweight including obesity among in-school adolescents in Addis Ababa, Ethiopia.
- To explore drivers of overweight including obesity among in-school adolescents in Addis Ababa, Ethiopia.

5. Methods

5.1. Study area and period

The study was carried out from February to December 2024 in Addis Ababa City Administration (AACA), the capital city of Ethiopia, with 11 administrative sub cities and with a population of 5,461,000 according to Ethiopia population data 2023 (51). The 2022/23 Educational Bureau Statistics report indicates that there were 234 high schools, including 154 private and 80 public institutions, serving a total of 101,267 students (48).

5.2. Study design

Institutional based sequential explanatory mixed method study was carried out in Addis Ababa, Ethiopia. Qualitative content analysis approach was conducted for the qualitative study. It allows some degree of interpretation and enables one to focus on relevant aspects of a material (52).

5.3. Population

5.3.1. Population for the quantitative study

All adolescent high school students of Addis Ababa from grade 9-12 for 2023/2024 academic years was considered as the source population, where as;

All regular adolescent students from age 13-19 years of grade 9-12 in 2023/2024 attending in bole, nifassilk-lafto and lideta sub-city administration consisted of students enrolled in the selected schools during the data collection period considered as study population.

5.3.1.1 Inclusion criteria for the quantitative study

All regular adolescent students from grade 9 to 12 attending school throughout the data collection phase and who assent to participate and for whom parental consent was provided were included in the study. Where as, those who were severely ill during data collections were excluded from the study.

5.3.2. Study participants for the qualitative study

The study participants were selected participants from regular adolescent students of grade 9-12 enrolled in selected private high schools who were overweight/obese, Parents who had overweight/obese child on the selected private high school, private high school principals and

sub city school food program experts in bole, lideta and nifas silk lafto subcities of Addis Ababa during the academic year of 2023/2024.

5.3.2.1. Inclusion criteria for the qualitative study

For this research, adolescent students who were overweight/obese, parents of students who had overweight/obese child, private high school principal and sub city school food program expert who were voluntary were included.

5.4. Sample size determination

The sample size was calculated using the single population proportion formula, assuming prevalence of overweight/obese ($p=13.9\%$) from study conducted among adolescent high school students in Addis Ababa in 2016 (4). The sample was adjusted by a design effect of two, and a 10% nonresponse rate was finally included.

$$n = \frac{\left(Z_{\alpha/2} \right)^2 p(1-p)}{d^2}$$

Where, n=the required sample size

z= standard normal value at 95% confidence level =1.96

P=assumed population proportion of overweight/obesity=13.9 %

w=margin of error =5%

$$n = (1.96)^2 (0.139) (0.861) / (0.05)^2$$

$$n=184$$

As multistage sampling was used, the calculated sample size was doubled to account for design effects, which control for the potential biases introduced by using sampling methods other than simple random sampling, as well as a 10% non-response rate. Therefore, the total sample size for this study was: $N = 184 \times 2 + 10\% = 405$.

Sample size calculation for the second objective

To determine the sample size for the second objective Epi Info version 7 was used, applying the Double Population Proportions formula with assumptions of a 95% confidence level (CL), 80% power, and a 1:1 case-to-control ratio. The odds ratio and the proportion of potential predictor variables for overweight or obesity among in-school adolescents were derived from studies examining the link between physical exercise, dietary habits, and overweight or obesity. The following assumptions were made for the computation: prevalence of increased intake of sugar or sweets among overweight/ obese high school adolescents of Addis Ababa, Ethiopia was 34.7% and prevalence of increased intake of sugar or sweets among non-overweight adolescents was 65.3 % (36). Prevalence of physical exercise among these overweight or obese participants was 23.6% and prevalence of physical exercise among non- overweight or obese participants was 76.4% (36).

Table 1: Sample size calculation

Variables	Percent of cases (overweight/obese) exposed %	AOR	Assumptions			Final sample size for a 10% non-response rate and design effect of 2.
			Power	CI	Case to control ratio	
Physical activity	23.6	4.3	80	95	1	162
Dietary habit (Increased intake of sugar or sweets)	34.7	5.1	80	95	1	98

As a result, the sample size of 405, which was larger than that of the first objective, was used for this study.

5.5. Sampling methods

5.5.1. Sampling technique for the quantitative study

The research was conducted in Bole, Nifassilk-lafto and lideta sub cities of Addis Ababa, in which they selected randomly from each group after categorizing all the 11 sub cities in to three

group that is high, average and low using the socioeconomic status data of sub cities from Ethiopian statistics service (51). Addis Ababa education bureau was contacted to have letters of request to the selected three sub cities after the purpose of the study was explained. List of schools and number of students was identified by Education Statistics Annual Abstract of AACAA Education Bureau. Then each sub-city educational office was contacted to select private and government high schools and school principals from each school were contacted to facilitate access to students.

The study population was chosen through a multi-stage sampling method, which aimed to select 405 participants from 8 high schools, i.e. 272 were from the private and 133 were from the public based on the number of schools within the selected sub cities in Addis Ababa. There are 76 high schools in the three sub cities (51 private and 25 governmental), from that 8 study high schools (5 private and 3 public high schools) were distributed in proportion for the three sub cities based on the number of schools (Table 2).

Table 2: Proportional allocation of schools from each selected sub city, Addis Ababa, 2024

Subcity	Schools within each sub city		Selected schools from each sub city	
	Private	Public	Private	Public
Bole sub city	19	8	2	1
Nifassilk lafto sub city	22	9	2	1
Lideta sub city	10	8	1	1

Then, sections were chosen randomly from each grade in the selected schools using lottery method. Finally, students selected from each section through systematic sampling, with the class attendance sheet. The selected schools along with the allocated sample size are presented below (Table 3).

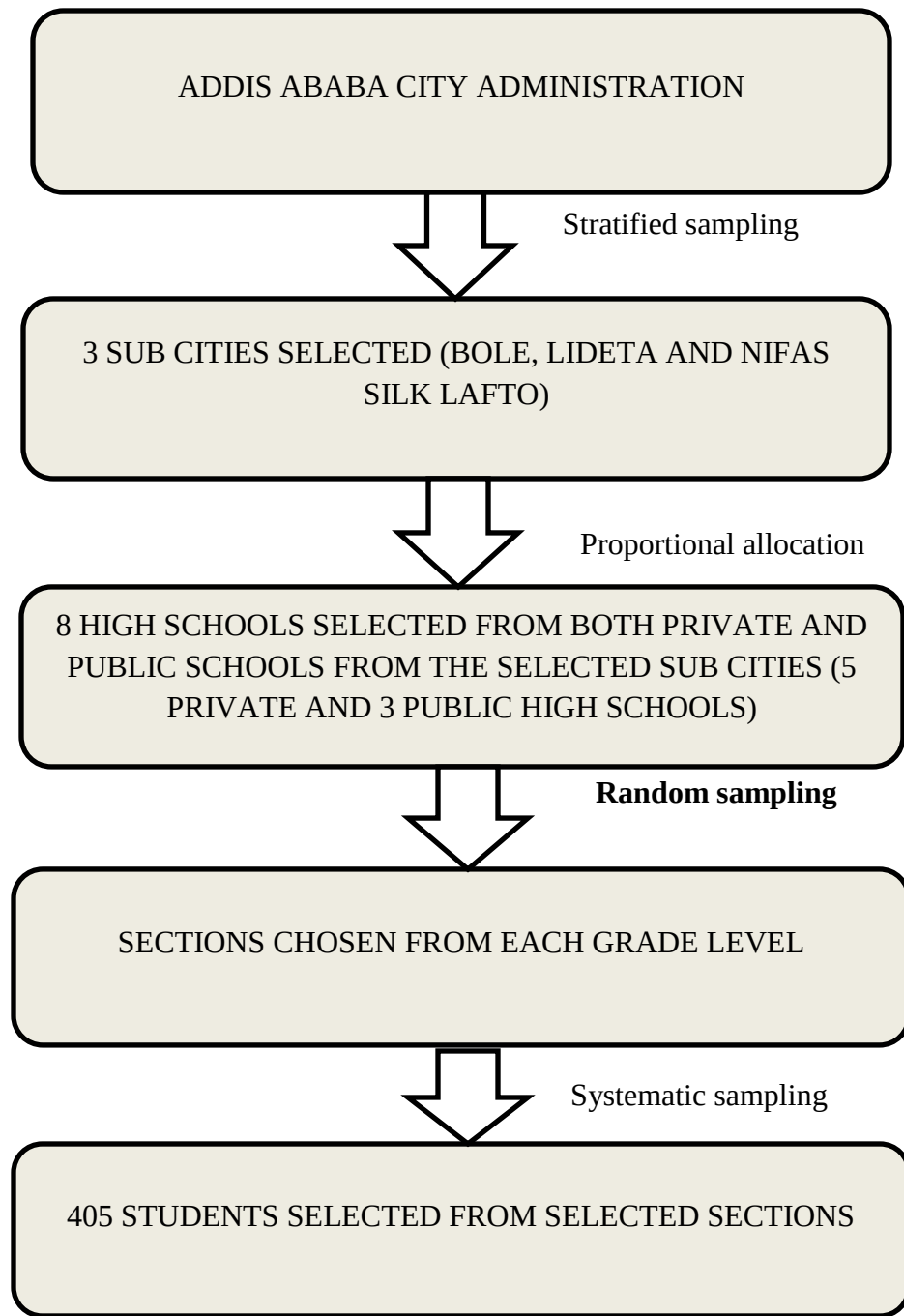


Figure 2: Representation of the sampling process for the study to select study participants in Addis Ababa, 2024

The total sample size was allocated to each school, grade, and section in proportion to their size. The number of students in the selected grades and sections was determined by asking the school administrators.

Table 3: Proportional distribution of respondent's samples assigned to selected school, Addis Ababa, 2024

Schools	The number of students in each school	Students selected from each school
Lem secondary and preparatory school	1951	48
Ethio parent school	457	65
Macmilan Academy	211	32
Balcha Secondary and preparatory school	1423	36
Omega Academy	492	70
Lebu secondary and preparatory school	1958	49
Niway challenge Academy	337	50
Southwest Academy	387	55

5.5.2. Recruitment of qualitative participants

To recruit participants, first three private high schools were chosen from each sub-city due to the high occurrence of overweight including obesity among high school adolescents from each school according to the quantitative study result. Then school administrators from each selected school were contacted to facilitate access to overweight/obese students and their parents.

This study purposely involved overweight/obese adolescent students, parents of overweight/obese students, high school principals and sub city school food program experts. Mixed sampling methods were employed to select respondents. Criteria sampling used for ensuring selection of parents who have overweight/obese child and gain insights into their attitudes and behaviors related to child nutrition and health. Purposive sampling was used to select overweight/obese students, private high school principals and sub city school food program experts.

Table 4: Number of IDI and KIIs conducted in the respective study area, Addis Ababa, 2024

Sub cities	IDI		KII	
	Students	Parents	School principals	Sub city school food program experts
Bole	3	1	1	1
Lideta	3	1	1	1
Nifas silk lafto	3	2	1	1
Total	9	4	3	3

5.6. Study variables

5.6.1. Dependent variable

- Overweight including obesity (Yes or no)

5.6.2. Independent variables

- Sociodemographic characteristics (age, sex, school type, parent educational status, parent occupation, monthly income)
- Dietary habits (meal interval, meat and eggs intake, fruits and vegetables intake, bread and cereals intake, fast foods intake, sugar and sweets intake)
- Physical exercise
- Sleep time
- Sedentary activity (watching TV, video game or internet)
- School food environment (healthy and unhealthy school food environment)

5.7. Operational definitions

Overweight: Body mass index-for-age Z-scores between +2 and +3

Obesity: BMI-for-age Z-score greater than +3

Physical activity: It calculates the average number of hours in a day or week spent on physical activity. (3).

Moderate exercise: Low-intensity aerobic exercise sessions, fast walking or hiking, and team sports such as volleyball or soccer (3).

Vigorous exercise: Running, high-intensity aerobic workouts, and team sports like soccer or basketball (3).

Household income: Monthly income of the household head, the housewife, and any income received from aid. (51).

Dietary habit: Tracks daily food consumption and meal preferences over the past year.

Short sleep duration: less than 8 hours of average sleep at night according to National Sleep Foundation (NSF) for adolescents.

Adolescent: A person of age between 13 and 19 years for this study.

5.8. Data collection and procedures

5.8.1. Data collection and procedure for Quantitative study

Data were gathered using a structured questionnaire, which was prepared after reviewing various literatures (4,36,39). The global physical activity questionnaires developed by the WHO, covering work, transportation, and physical activities, were used to measure overall physical activity (51). Three health officers for data collection were employed to collect data and training was provided for one day about the process of data collection.

Anthropometric measurements

Trained health professionals took the anthropometric measurements. Weight was measured to the nearest 0.1 kg and height to the nearest 0.1 cm using calibrated equipment and standardized methods. Participants were instructed to remove their shoes and heavy clothing before the measurements. Weight was recorded using a digital scale, ensuring the participant's weight was evenly distributed on both feet, while height was measured with a portable stadiometer. All equipment was calibrated each morning before measurements were taken.

5.8.2. Data collection and procedure for Qualitative study

The data for this study was collected through in-depth interviews with students and parents and key informant interviews with school principals and subcity school food program experts to get insight on perspective from institution level and triangulate the data obtained from IDI. Interview guide questions were developed based on objectives and literature reviews to identify key topics to be addressed. The guide starts with general inquiries to explore their understanding and incorporates probing prompts to elaborate responses. IDI and KII, interview guides were prepared in English and translated to Amharic with interviews lasting 16 to 25 minutes.

The IDIs and KIIs were organized and conducted by the researcher. Before interviewing the participants there were conversations with participants to determine the most convenient time and place to conduct an interview. The researcher explained study objective and obtained informed consent from the participants. A quiet place such as classrooms was chosen as much as possible to avoid the nuisance and to be focused and feel comfortable. The conversations were conducted in Amharic and all interviews were recorded with permission from the participant through a data collection process and anonymity was assured during the recording. Saturation was maintained when the same information repeatedly was observed.

5.9. Data quality management

5.9.1. Quantitative data quality control

The quality of the data was ensured by providing thorough training for data collectors on the study tools and questionnaires. A pilot test was carried out with 5% of the study participants in Arada sub-city, which was not part of the actual study. Any questions that were unclear were revised based on the feedback from the pretest. The reliability analysis was conducted on a 7 item questionnaire designed to measure overweight including obesity and the result indicated cronbach's alpha of 0.78, suggesting that the items are reliable and measure overweight including obesity. Data collectors submitted their daily collected data to the researcher and each questionnaire was reviewed daily for completeness and consistency before data entry. The researcher handled the data coding, entry, and cleaning process.

5.9.2. Trustworthiness of Qualitative study

To enhance the data's quality, the researcher is involved in every phase of the study, from crafting the interview guides to the final stages of data analysis and interpretation. A preliminary test was conducted in a school to refine the process and interview guides. Data collection took place in a chosen setting conducive to gathering good quality information.

Credibility

The researcher established credibility by thoroughly acquainting with the study environment and participants and fostering open communication. The interview guides underwent review and refinement by the researchers and advisors to ensure clarity and comprehensiveness for the participants. The researcher dedicated full school days for three weeks to immerse in the data collection process. The data source was multiple which includes students, parents, school principals and sub city school food program experts with place & person triangulation of data. The researcher's experience in data collection ensures credibility by providing a nuanced understanding of the data, which enhances trustworthiness of the study's findings. Moreover, the concept of data saturation was pursued by repetition and thoroughly exploring the topic.

Dependability

To ensure dependability, the researcher reviewed and cleaned the transcriptions by giving codes to the participants and read the transcriptions again and again to internalize and identify any inconsistencies. All responses were recorded in written form, with audio recordings used as supporting evidence to ensure consistency.

Transferability

To ensure transferability, the sampling process involved selecting a diverse group of individuals, as facilitated by school administrators. The interview guides were first prepared in English and then translated into Amharic. The data was carefully documented, encompassing audio recordings, transcripts, and translations to ensure a comprehensive record.

Confirmability

The Audit Trail technique was employed to ensure the study's confirmability by documenting the entire data collection process, analysis, and interpretation of the data. Quotes reflecting the real feeling of participants were included in writing with interpretation. Discussions with academic advisors during the data collection phase were essential to the study, as they offered valuable feedback that guided the research. Peer debriefing was conducted by discussing the research process, data analysis and key findings for valuable feedback.

Reflexivity

To ensure reflexivity, open-ended questions were used to allow participants to share their own experiences without influencing their answers that might lead to any unconscious biases arising from the background of the researcher particularly regarding food choices and body image, which might differ from those of the adolescents in Addis Ababa.

5.10. Data processing and analysis procedures

5.10.1. Data analysis for Quantitative study

The data was coded, cleaned, and entered into EPI-INFO version 7 before being exported to SPSS version 27 for analysis. The WHO AnthroPuls anthropometric calculator was used to compute the anthropometric indices. Descriptive analyses were conducted to determine the frequency and proportion of participants' characteristics. Bivariate logistic regression was used to identify variables associated with overweight including obesity, with a p-value of 0.25 or less considered significant. Multivariable logistic regression analysis was then applied to determine independent predictors of overweight including obesity, with a p-value of less than 0.05 considered statistically significant. The odds ratio was used to assess the strength of the associations, with results reported alongside 95% confidence intervals. The model's fit was evaluated using the Hosmer-Lemeshow goodness of fit test, which showed a value of 0.65. The variance inflation factor (VIF) was used to check for multicollinearity between parental education and occupation, with all VIF values were less than 5, implies the independent variables provide distinct and valuable information for predicting the outcome variable.

5.10.2. Data analysis for Qualitative study

The recorded interviews were transcribed in Amharic and then translated into English. Both the transcripts and translations were carefully reviewed for accuracy. The translated notes were read

multiple times to identify key categories and themes. Data was coded inductively, allowing themes to emerge directly from the data itself. Content analysis was conducted using Atlas.ti version 9 software to aid in coding and analysis. The process began with an immersive review of the data, included careful reading and re-reading to gain a thorough understanding of the content. Initial codes were created based on key elements relevant to the research question. These codes were then grouped into subcategories and categories, which were reviewed and adjusted to ensure they reflected the data. Next, potential themes were identified, defined and named the themes then shaping a cohesive narrative that highlights the core findings in relation to the research objectives. Quotations that effectively illustrated participants' perspectives, both in agreement and disagreement were used to support the findings.

5.11. Ethical considerations

Ethical approval and a permission letter have been obtained from the Research Ethics Committee (REC), School of Public Health, College of Health Sciences of Addis Ababa University with IRB reference number of SPH/296/2024. A support letter was obtained from the School of Public Health for the Ethiopian Statistics Agency and Addis Ababa Education Bureau. Permission was then granted by the education offices of the selected sub-cities for the schools. Students were first asked if they were willing to take part in the study. Those who agreed were given an informed consent form for their parents or guardians to sign, granting permission for their child's participation. Participants were free to withdraw at any point. To maintain confidentiality, no personal information were recorded on the questionnaire and after data collection, it was entered into a system and anonymized with numerical identifiers. Every effort was made to avoid causing any psychological or emotional harm to the participants.

5.12. Dissemination of Findings

The findings will be submitted to the School of Public Health, College of Health Sciences, Addis Ababa University. The results will be shared during the thesis defense, and once approved, the final report will be distributed to relevant stakeholders who can contribute to improving the implementation of intervention on overweight and obesity and effort will be made for publication in national or international journals.

6. Results

6.1. Quantitative study results

6.1.1. Socio demographic Characteristics

The study involved 405 adolescents from 8 high schools, including 5 private and 3 public schools, of which 399 took part in the study making a response rate of 98.5%. Of the 399 respondents 45.6% were males and 54.4% were females. Approximately one-third of the participants were from public schools, while about two-thirds were from private schools. 41.9% of students were under age group 13-16 and 58.1% were 17-19 years old. Regarding religion 62.7% were Orthodox, 18.5% were Protestant and around 16.3% were Muslim (Table 5).

Table 5: Socio demographic characteristics among high school adolescents in Addis Ababa, 2024 (n= 399)

Variables	Category	Frequency	Percent (%)
School type	Public	131	32.8
	Private	268	67.2
Sex	Female	217	54.4
	Male	182	45.6
Age (in years)	13-16	167	41.9
	17-19	232	58.1
Grade level	9	132	33.1
	10	101	25.3
	11	93	23.3
	12	73	18.3
Religion	Orthodox	250	62.7
	Protestant	74	18.5
	Muslim	65	16.3
	Catholic	6	1.5
	Others	4	1.0
Father educational status	Cannot read and write	11	2.8
	Read and write	37	9.3
	Primary school	27	6.8
	Secondary school	105	26.3
	Higher education and above	167	41.8
	I don't know	52	13.0
Mother educational status	Cannot read and write	15	3.8

Father occupation	Read and write	43	10.8
	Primary school	59	14.8
	Secondary school	101	25.3
	Higher education and above	141	35.3
	I don't know	40	10.0
	Business person	93	23.3
	Private organization	122	30.6
	Governmental organization	77	19.3
	Daily laborer	19	4.8
	Other	37	9.3
	Unemployed	10	2.5
	I don't know	41	10.2
Mother occupation	Business women	81	20.3
	Private organization	77	19.3
	Governmental organization	38	9.5
	Daily laborer	12	3
	House wife	144	36.1
	Other	25	6.3
	I don't know	22	5.5
House hold monthly income (in ETB)	<7688	61	15.3
	7689-15109	104	26.1
	>15110	234	58.6

6.1.2. Dietary habits and meal pattern

The eating habits of the respondents over the past year indicated that about one third of students consume fruit less than three times a week and about two third of participants consume three times or greater per week. About 47.1% reported consuming meat less than three times a week, another 52.9% consumed meat greater than or equal to 3 times per week. Regarding sugar and sweets intake, about one third of students consume sugar and sweets less than three times a week and about two third of participants consume three times or greater per week (Table 6).

Table 6: Eating habits of high school adolescents in Addis Ababa, 2024 (n= 399)

Variable	Category (over the past one year)	Frequency	Percent (%)
Fruit intake	<3 times/week	146	36.6
	>=3 times/week	253	63.4
Green and vegetables intake	<3 times/week	119	29.8
	>=3 times/week	280	70.2
Bread and cereals intake	<3 times/week	47	11.8

Meat intake	>=3 times/week	352	88.2
	<3 times/week	188	47.1
Milk, cheese and yogurt intake	>=3 times/week	211	52.9
	<3 times/week	231	57.9
Sugar and sweets intake	>=3 times/week	168	42.1
	<3 times/week	138	34.6
	>=3 times/week	261	65.4

The meal frequency reported by participants' shows that 18.1% ate fewer than three meals a day, while 30.8% ate more than three meals a day. About 70.9% of participants ate lunch daily, while 24.8% ate lunch frequently. Regarding fast foods intake, about one third of students consume fast foods daily and about two third of participants consume fast foods frequently (Table 7).

Table 7: Meal pattern of the adolescent students in Addis Ababa, 2024 (n= 399)

Variable	Category	Frequency	Percent (%)
Number of meals per day	<3 meal a day	72	18.1
	3 meals a day	204	51.1
	>3 meals a day	123	30.8
Breakfast	Daily	215	53.9
	Sometimes	163	40.9
	Never	21	5.2
Lunch	Daily	283	70.9
	Sometimes	99	24.8
	Never	17	4.3
Dinner	Daily	244	61.2
	Sometimes	117	29.3
	Never	38	9.5
Fast food	Daily	137	34.3
	Sometimes	262	65.7

6.1.3. Physical activity, sedentary lifestyle and sleep duration

The participants' physical activity shows about 39.6% participated in physical activities while 60.4 of the participants did not participate in physical activities. From 39.6% (158) of respondents who participate in physical activities, 33.5% did not participate in vigorous physical exercise over the past one year, while 66.5% of the respondents participated in vigorous exercise. The majority, 82.9%, did not engage in moderate physical activity, with only 17.1% participating

in it. Regarding transportation use and time spent on watching TV and internet, 53.4% of the adolescents traveled to and from school by car, while 43.4% walked. About 65.4% of the respondents spent more than 120 minutes a day watching TV, playing video games, or browsing the internet, while 34.6% spent less than 120 minutes on these activities each day. Sleep duration reported by the participants of short, normal and long sleep was 53.4%, 44.4% and 2.2 respectively (Table 8).

Table 8: Physical exercise and time spent watching TV and internet characteristics among high school students in Addis Ababa, 2024 (n= 399)

Variables	Category	Frequency	Percent (%)
Physical activity	Yes	158	39.6
	No	241	60.4
Vigorous exercise	Yes	105	66.5
	No	53	33.5
Moderate exercise	Yes	27	17.1
	No	131	82.9
Mode of transportation	Walking	173	43.4
	Driven	212	53.4
	Cycle	14	3.3
Duration of watching TV	<120 minutes in a day	138	34.6
	>=120minutes a day	261	65.4
Sleep duration	Short (<8 hours)	213	53.4
	Normal (8-10 hours)	177	44.4
	Long (>10 hours)	9	2.2

6.1.4. Prevalence of underweight, overweight and obesity

The mean BMI-for-age for adolescents is approximately 18.5 kg/m². Among all the respondents, 20.8% of adolescents were underweight. The overall prevalence of overweight including obesity was 23.6% (95% CI: 19.3, 28.1%), with 16.8% being overweight and 6.8% obese (Figure 3). Female adolescents had a higher prevalence of overweight including obesity at 24.4%, and the highest prevalence (26.9%) was seen in adolescents aged 13-16 years (Table 9).

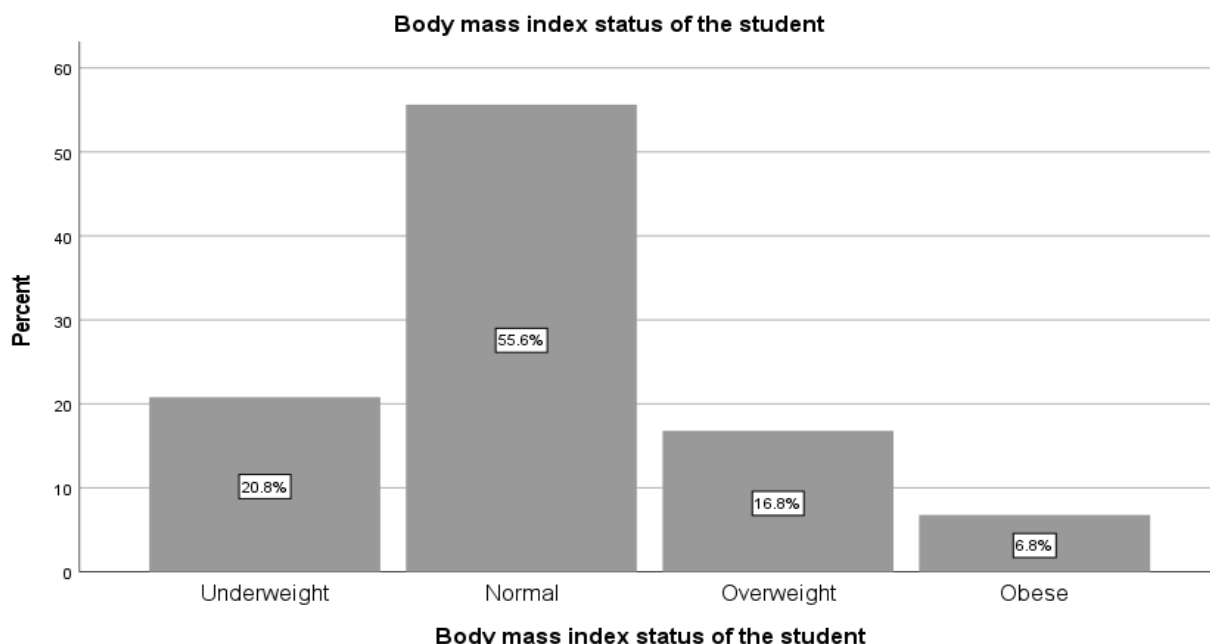


Figure 3: Bar chart of the BMI for age of students

6.1.5. Factors associated with overweight including obesity

Of the total private school adolescents, prevalence of overweight including obesity was 31.1% and among students studying in public high schools was 7.8%. From female respondents 24.4% was overweight including obesity, whereas 22.5% of male students were overweight including obesity. Of the total respondents who don't engage in moderate physical activities 56.5% was overweight including obesity.

Potential confounders, such as age, sex, religion, parent education and occupation, school type, house hold income, eating habit, physical exercise, sedentary lifestyle and sleep duration in relationship with overweight and obesity was analyzed using binary logistic regression and no significant statistical association was found between overweight or obesity and factors like religion, parent education and occupation, meal pattern, green and vegetables intake, milk, cheese and yoghurt intake, sedentary activity, transportation meanses and sleep duration.

Lastly, a multivariable logistic regression model was used to adjust for potential confounding variables. As shown in Table 9, type of school, sugar and sweets consumption and moderate physical inactivity were the independent factors for overweight including obesity. Adolescents attending in private high schools were 4.32 times overweight or obese than those who study at

public high schools [AOR=4.32 (95%CI; 1.94, 9.62)]. Adolescents who consume sugar and sweets greater than 3 times per week was 0.56 times being overweight or obesity than those who consume sugar and sweets less than 3 times per week [AOR=0.56 (95%CI; 0.33, 0.97)]. Engaging in physical exercise was found to help prevent overweight and obesity. Adolescents who did not participate in moderate physical activity were 2.09 times more likely to be overweight or obese compared to those who did [AOR= 2.09 (95% CI; 1.17, 3.73)].

Table 9: Binary logistic regression analysis of factors associated with overweight including obesity among high school students in Addis Ababa, 2024 (n= 399)

Variables	Categories	Overweight/Obesity		COR(95% CI)	AOR(95% CI)	p-value
		Yes (%)	No (%)			
Type of school	Public	10(7.8)	119(92.2)	1	1	1
	Private	84(31.1)	186(68.9)	5.37(2.68,10.76)*	4.32(1.94, 9.62)**	<0.001
Sex	Female	53(24.4)	164(75.6)	1	1	1
	Male	41(22.5)	141(77.5)	0.9(0.56, 1.43)	0.96(0.58, 1.61)	0.9
Age (in years)	13-16	45(26.9)	122(73.1)	1	1	1
	17-19	49(21.1)	183(78.9)	0.72(0.45, 1.15)	0.99(0.59, 1.66)	0.98
Household income	<7688	9(15)	51(85)	1	1	1
	7689-15109	15(15)	85(75)	1(0.4, 2.45)	0.81(0.3, 2.15)	0.67
	>15110	70(29.3)	169(70.7)	2.34(1.26, 4.34)*	1.22(0.6, 2.46)	0.58
Fruit intake	<3 times/week	27(18.5)	119(81.5)	1	1	1
	>=3 times/week	67(26.5)	186(73.5)	1.58(0.96, 2.62)	1.07(0.61, 1.87)	0.8
Bread and cereals intake	<3 times/week	6(12.8)	41(87.2)	1	1	1
	>=3 times/week	88(25)	264(75)	2.27(0.93, 5.54)	1.64(0.62, 4.35)	0.31
Meat and egg intake	<3 times/week	34(18.1)	154(81.9)	1	1	1
	>=3 times/week	60(28.4)	151(71.6)	1.8(1.11, 2.89)*	1.29(0.75, 2.2)	0.34
Sugar and sweets intake	<3 times/week	36(27.3)	96(72.7)	1	1	1
	>=3 times/week	58(21.7)	209(78.3)	0.74(0.45, 1.19)	0.56(0.33, 0.97)**	0.03
Fast foods intake	Daily	29(21.2)	108(78.8)	1	1	1
	Sometimes	65(24.8)	197(75.2)	1.22(0.74, 2.01)	1.55(0.9, 2.66)	0.1
Moderate physical exercise	Yes	20(74.1)	7(25.9)	1	1	1
	No	74(56.5)	57(43.5)	2.27(1.31, 3.91)*	2.09(1.17, 3.73)**	0.01

N.B: * Crude odds ratio significance, ** Adjusted odds ratio significance

6.2. Qualitative study Findings

6.2.1. Socio-demographic characteristics

A total of 13 IDI with parents and in school adolescent students and 6 KII with school principals and sub city school food program experts in three sub cities of Addis Ababa in three private high schools (6 participants from bole sub city, 6 participants from lideta sub city and 7 participants from nifas silk sub city) were conducted for three weeks and included in the analysis of this study. About 12 participants were males and 7 participants were females. The age of participants ranges from 16-53 years with a median age of 30 years.

Table 10: Socio-demographic characteristics of IDI and KII participants in Addis Ababa, 2024

Respondent categories		Students	Parents	School Principals	Sub city school food program experts
Sex	Male	4	2	3	3
	Female	5	2	-	-
Age range		16- 18	39- 53	32- 46	35- 38
Education Status	Secondary school	9	-	-	-
	Higher education	-	4	3	3
School	Ethio-parent school	3	1	1	-
	Omega school	3	1	1	-
	Southwest Academy	3	2	1	-
Sub city	Bole sub city	3	1	1	1
	Lideta sub city	3	1	1	1
	Nifas silk sub city	3	2	1	1

6.2.2 Theme, category and sub category of the qualitative study

The study findings are presented in three themes, namely: (1) Perception towards healthy diet and physical activity, which includes students', parents', school principals' and sub city school food program experts' understanding and opinion towards healthy diet and physical activity (2) Determinant factors for overweight including obesity, which includes dietary habit, physical

inactivity, high family income, unhealthy school food environment and lack of health education materials (3) Suggested solutions for future intervention which includes student responsibilities, parent responsibilities, school responsibilities and government responsibilities.

Table 11: Theme, category and sub category of qualitative study, 2024

Theme	Category	Sub category
Perception towards healthy diet and physical activity	Students' perception towards healthy diet and physical activity	Health, fitness and strength of body, weight loss
	Parents' perception towards healthy diet and physical activity	Burn calories, maintain health and fitness, strength of body
	School principals' perception towards healthy diet and physical activity	Health, disease prevention, burn calories, active engagement, healthy weight
	Sub city school food program experts' perception towards healthy diet and physical activity	Health, strength of body, weight loss, feeling good
Determinanat factors for overweight including obesity	Dietary habit	Meal patterns, meal preferences, peer influence on choosing foods
	Physical activity	Physical activity engagement, physical activity sessions, playground spaces for physical activity
	High family income	High family monthly income
	School food environment	Healthy school food environment, unhealthy school food environment
	Health education materials	Lack of health education materials, posters
Suggested solutions for future intervention	Student responsibilities	Engagement in activities, food choosing, social media time management
	Parent responsibilities,	Student support and discussion, food management, healthy home environment, social media management

	School responsibilities	Program creation, intervention on overweight and obesity, partnership with other organizations, guideline formation on healthy school environment and physical activity, awareness creation
	Government responsibilities	Collaboration, awareness creation, funding and resource, program and policy formation, intervention

6.2.3. Perceptions towards healthy diet and physical activity

Students' perception on healthy diet and physical activity

All of the students have the same understanding and opinions towards a healthy eating and physical exercise. Based on the responses, the students believe that maintaining a healthy diet and physical exercise is essential for sustaining health and overall well-being. It is also apparent that they lack a deeper understanding of the specific mechanisms through which these practices contribute to their well-being.

"I know it keep our self-healthy, but I don't prefer to eat vegetables. I like foods that give me energy." (17 years old male student)

Students consistently expressed the benefits of physical activity. They highlighted that engaging in regular exercise is essential for disease prevention, emphasizing its role in maintaining overall health. The students articulated that doing exercise contributes to a better body shape but also aids in weight management, allowing for achieving their fitness goals and leads to stronger muscles and improved physical performance.

"I think everybody should engage on physical activities. My grandfather can't walk but he moves his legs lying on the bed. It is important for our health, strength, and losing weight so everybody should do it." 16 years old male student

Parents' perception on healthy diet and physical activity

In exploring parents' perceptions of physical activity and healthy diets, all parents collectively emphasized that maintaining a healthy weight and overall well-being is related to diet and exercise. They recognized that physical activity plays a crucial role in burning calories and

enhancing cardiovascular health. However, they also voiced significant challenges in motivating their children to engage in regular exercise.

“I’ve learned that eating a balanced diet rich in nutrients is important for health, and it helps in managing weight. Physical activity is equally important because it helps to burn off excess calories and keeps the body healthy. I’ve noticed that my son’s lack of physical activity and preference for snacks contribute to his weight issues. We try to promote physical activities, but he often prefers watching TV or playing video games.”(53 years old father)

They reported ongoing efforts to encourage activities such as walking and sports require continuous reinforcement. Additionally, there was a shared acknowledgment of the importance of a nutritious diet, with an emphasis on incorporating fruits, vegetables, and proteins to support immune health. The parents understood that while exercise helps regulate weight and improve health, a balanced diet is equally vital for overall health management.

“From what I know, a healthy diet is vital for maintaining health and managing weight. Physical activity is also important because it helps to burn calories and strengthens the body.” (49 years old male parent)

School principals’ perception on healthy diet and physical activity

All the school principals have the same understanding and opinions towards healthy eating and physical exercise. Based on the responses, they believe that maintaining a healthy diet and physical exercise is essential for overall well-being. One school principal emphasizes the effect of lack of HPE sessions in the school and the dietary habits of students for their weight gain.

“As far as I know dietary habit, physical activity and genetic factor contribute to overweight. We try to engage students on physical activities but they only have 2 HPE periods per week for grade 9 and 10 and no HPE sessions for 11 and 12 students. They also eat fries, sweets, pizza, burger and others that prone them to this problem. So their diet and not engaging in activities are the main factors.” (46 years old male school principal)

Additionally, one school principal expressed a concern on the consequences of the problem and absence of policy that could address the problem.

“Weight gain is becoming a concerning issue. I knew one child who is overweight and can’t even move from one place to another within a short distance. He was 8 years old with 65 Kg and died due to overweight related diseases. So it needs a special attention. There should be curriculum that includes healthy diet and physical exercise in the school setting.” (37 years old male subcity school food program expert)

Sub city school food program experts’ perception on healthy diet and physical activity

Sub city school food program experts highlighted physical exercise is important for maintaining health and they don’t support the absence of physical activity sessions for 11 and 12 students. One sub city school food program responds that the government doesn’t see overweight and obesity as a problem.

“... HPE class shouldn’t be banned from the schedule because physical activity is mandatory; peoples go to Jim and pay money to do such activities so it’s not good to stop these classes but the policy regarding no HPE class for 11 and 12 students is above us. What you have is a very good topic and many of us don’t see it. On the inclusive program, we emphasize on many things, but we don’t focus in this and it is good for us to work more. It is a country issue so government should see it as a problem.” (35 years old male subcity school food program expert)

6.2.4. Determinant factors for overweight including obesity

Dietary habit of adolescent students

In examining the meal patterns of students regarding their eating habits, seven of the students reported consuming meals three to four times a day to their dietary routines. Conversely, two students indicated that they eat five to eight times daily; characterizing their eating habits as more in a group. In exploring students' meal preferences, all the students lean towards calorie-dense foods as well as snacks and sugary drinks. All of the students favored fast foods and junk foods like doughnuts, fries, ‘eritib’ over other meals. This preference was evident both within the school environment where convenience and accessibility played significant roles and outside of it, driven by their choices and peer influences. Students described these foods satisfying and often more appealing than regular meals.

“I don’t like to eat vegetables. I usually eat meat and eggs. I also eat fries, ‘eritib’ and snacks since it is available in the school and outside the school.” (18 years old female student)

All of the parents identified peer influence as a significant factor affecting the eating habits and food choices of their child. They reported that their friends’ preferences often dictate what they eat, leading to choices that may not support their health goals.

“My biggest concern is the influence of peer behavior on my daughter’s eating habits. At school, there is high consuming of unhealthy snacks and drinks, and this peer pressure makes it difficult for her to make healthier choices. (39 years old female parent)

Physical inactivity of adolescent students

Six of the students indicated a lack of engagement in physical activities due to their busy class schedules, which limit their opportunities to engage in physical activities. Additionally, they noted a lack of adequate spaces and playgrounds for these activities, making it challenging to incorporate exercise into their daily routines. This combination of time constraints and insufficient facilities hinders their ability to stay active and maintain their health. They also reported a significant reduction in physical education opportunities, highlighting that there are limited physical education periods available. Notably, students in grades 11 and 12 do not have any Health and Physical Education (HPE) periods this year, which has greatly diminished their chances to engage in physical exercises.

“Last year we engaged on physical activities but this year we have no schedule for physical activity since the curriculum is changed and we don’t do any activities within the school.” (18 years old female student)

All of the participants reported spending extended periods sitting and using social media, often prioritizing social media over physical activity. They noted that their prolonged engagement with social media contributes to a sedentary lifestyle, further limiting their opportunities for physical exercise.

“We are addicted on social medias and don’t even want to engage on physical activities. I think we have no routine on our daily life to engage on physical activities, but if we have one it will be good, and peoples will know the use of it.” (18 years old female student)

A school principal noted that almost all of the students rely heavily on transportation to come and go from school, which significantly limits their opportunities for physical activity. This reliance on vehicles or public transport reduces the time and desire to engage in exercise, leading to a more sedentary lifestyle.

“Most of the students are using cars or driven by their parents and it limits their physical activity. We learnt by walking long distance from home to school but they come and go by car.” (46 years old male school principal)

High Family income

A school principal observed a relationship between high family income and being overweight and obese among students. He noted that families with greater financial resources often provide access to a wider variety of food options, which can include high-calorie, processed foods.

“...and I think it is based on the economic standards of the family. As I see, most of the students who are overweight are in high economic status families. Maybe you will not see overweight students on governmental schools” (34 years old male private school principal)

Unhealthy school food environment

All of the students noted that they have a strong preference for unhealthy foods like fast foods, sweets and soft drinks, within and outside the school environment. They noted that easy access, convenience and taste to fast foods, sugary snacks, and soft drinks contribute to their usage of these foods.

“At home, my mom is very cautious about junk foods. She doesn’t allow us to eat them but here at school, it’s everywhere. Students eat those, and you will also eat them. Today, I was drinking coca from the cafeteria during break time. Whatever our family insists for us not to eat them, we all want to eat those foods since it is highly available within and outside the school environment.” (18 years old female student)

All parents expressed concerns about the high availability of unhealthy foods within the school setting that composed of soft drinks, chips, fast foods, sugary beverages, and other junk foods. They worry that this availability of unhealthy options will contribute to poor dietary choices among their children, which play a significant contribution to the increasing rates of overweight.

"The current school food setting is not very supportive of healthy eating. Most of the food options are snacks and sodas that are high in sugar and fat. This environment doesn't encourage students to choose healthier foods, and it's a challenge to promote better eating habits when the majority of available food is unhealthy." (39 years old female parent)

They also reported a high availability of unhealthy foods outside the school environment while healthy food options are nearly absent. This lack of access to nutritious alternatives contributes to poor dietary choices among students, fostering a culture of unhealthy eating.

"All the foods are prone to unhealthy foods. Outside the school, there is a high availability of fast foods and junk foods rather than fruits. And within school environment the chance of having healthy food is like zero." (34 years old male school principal)

Lack of health education materials for a healthy diet and physical exercise

School principals and sub city school food experts highlighted the absence of health education materials within the school, particularly those focused on nutritious foods and physical activity. This lack of educational resources limits students' awareness and understanding of nutritious foods.

"There are no posters or health education material regarding this issue, but they have mass sport once a week but there is no such materials." (37 years old male sub city focal person)

6.2.5. Suggested solutions for future intervention

Students' responsibilities

Self acceptance

Three of the students emphasized that self-acceptance is a first step for overweight and obese students who are seeking to improve their weight and overall health. Many expressed that recognizing and accepting their bodies will help and motivate them to pursue healthier choices.

“I think the first step we should do is accepting our self and our body and then try to improve by engaging in different activities and food management” (18 years old female student)

Healthy food choices

All of the parents identified that avoiding unhealthy foods and actively choosing healthier options are essential components of effective interventions for overweight. They emphasized the importance of involving their child in meal planning and cooking helps to foster better dietary choices. Additionally, maintaining consistency in healthy routines such as regular physical activity and healthy eating will be a key factor in achieving sustainable weight management.

“To support my daughter’s health, I focus on creating a positive environment at home. She should be involved in her meal planning and cooking to ensure that we include nutritious foods that she enjoys. Students also must participate in physical activities like walks.”(42 years old female parent)

Physical activity engagement

School principals emphasized that students should engage in physical exercise and participate in school activities and events for effective intervention of overweight and obesity.

“Students should engage on physical activities and choose their foods based on nutritious food since they are not child and shoul navigate their foods. It will also be good to participate in school activities and events” (32 years old male school principal)

Parents’ responsibilities

Choosing healthy foods and support on physical activities

All of the students and school principals stated parents have an important influence on the food choices made for their children and creating a healthy home environment, which will be essential for effective overweight and obesity intervention.

“Parents should arrange our food choices and create environment for physical activities within and outside environment. Families also have to send their children to Jim and following their diet since we eat what they give us at home.” (17 years old female student)

Managing social media time

School principals and parents mention that students' social media time should be managed by their parents as it leads to physical inactivity.

"The parents should choose their child foods and managing their social media time. They should also support them to engage on physical activities by giving necessary equipment's." (32 years old male school principal)

School responsibilities

Creating awareness

All students and parents emphasized that creating awareness as effective intervention strategies. They said that increasing understanding can lead to more informed decision-making regarding nutrition and physical activity.

"...the schools must give awareness to the students and teachers that being overweight are not something that makes you to be bullied or body shamed. When we tell the teachers about what other students did to us, they say okay and do nothing. And it will be good to avoid these whole situations by creating awareness." (17 years old female student)

Implementing anti-bullying programs

Two of the parents emphasized the necessity of implementing anti-bullying programs targeting body shaming and bullying within the school setting. They noted that such programs can create a safer and more inclusive environment for overweight students, helping to reduce stigma and emotional distress associated with their weight.

"One of my biggest concerns is body shaming and bullying. Overweight students often face teasing and discrimination from their peers, which can severely affect their self-esteem and mental health. Schools should implement anti-bullying programs that specifically address body shaming and create a more inclusive and supportive environment for all students." (42 years old female parent)

Comprehensive health education programs

One of the parents suggested the importance of comprehensive health education programs that encompass nutrition education, physical activity promotion, and awareness of healthy lifestyle choices.

"I believe that nutrition education classes that teach students about balanced diets and the importance of healthy eating is necessary. Schools should also offer regular physical education classes and create after-school sports programs to encourage physical activity."(42 years old female parent)

Healthy food environment within school cafeteria

Three of the parents highlighted that having nutritious food choices available in school cafeterias greatly impacts students' dietary decisions and encourages healthier eating habits. By providing a range of healthy options, schools can foster an environment that helps students make better food choices.

"Schools could improve their food offerings at the cafeterias by providing healthier options and promoting them more effectively."(39 years old female student)

Government responsibilities

Considering overweight as a problem

Sub cities school food program expert noted that acknowledging the problem is the first step towards implementing effective interventions.

"As a general, in our country this issue looks like a luxury for someone who doesn't know the prevalence and the effects. If you go and talk about this in governmental schools, their issue is to eat food and drink at least once or twice a day but it's an issue for private schools. So, we must work collaboratively to see it as a problem and ensure health for the students."(35 years old male sub city focal person)

Collaboration with responsible organizations

One of the school principal noted the necessity for collaboration between the education bureau and the health bureau in the developing and implementing comprehensive policies that support

ongoing intervention efforts to address both educational and health-related aspects of the problem.

“Two bodies have influence, education sector that creates the policies and health sectors. If they collaborate and work on the issue on schools, it will be better.” (34 years old male school principal)

Including responsible bodies during policy formation

One of sub city school food program expert emphasized the importance of including teachers and school principals in the policy creation process since it directly influences students' experiences and outcomes. He identified the banning of HPE class for grade 11 and 12 students were above their knowledge and it is causing the students not to engage in physical exercises. So, it needs to consider the perspectives of those who work closely with students, thereby enhancing the success of overweight intervention programs.

“I believe policy creation should include low levels. For example, for banning HPE class of 11 and 12 students, they do it above us. But the decision should include discussion with teachers, sub cities and other bodies before comes for implementation. Policies have come for discussion after formulation and that leads to policy changes.” (35 years old male sub city focal person)

Guideline for healthy food choices and healthy food environment

All of the school principals and sub-city focal persons stressed the need for government bodies to develop guidelines for nutritious food options in the school setting, aiming to create a healthier atmosphere for students.

“In governmental schools, they hardly get food to survive unless we offer them. But in private schools, their eating habit is not good, and they need more focus. Government should have policies that restrict unhealthy food options and soft drinks and having organic foods will improve student’s eating habit.” (35 years old male sub city focal person)

7. Discussion

This study assesses the magnitude and explores the drivers of overweight including obesity among in-school adolescents in Addis Ababa, Ethiopia. The prevalence of being overweight including obesity in this study was 23.6%. Attending private schools [AOR=4.32(95%CI; 1.94, 9.62)], Consuming sugar and sweets daily [AOR=0.56(95%CI; 0.33, 0.97)] and not doing physical exercise [AOR= 2.09(95% CI; 1.17, 3.73)] were significantly associated with being overweight including obesity. Strong reasons underlying for the overweight including obesity prevalence among these adolescents were unhealthy meal preferences and choices that are influenced by peer pressure, limited physical activity from the lack of play grounds, absent of physical education periods, reliance on transportation, excessive time spent on social media and an unhealthy school food environment within and outside the schools.

The findings of this study are similar to those of a study conducted in Addis Ababa on high school students, where the overall prevalence was 18.2% (39). A different study in South Africa reported a prevalence of 22.9% for overweight or obesity among schoolchildren aged 7 to 18 years (30).

The findings of this study are higher than those of a study conducted in Addis Ababa on high school adolescents, where the prevalence was 14.4% (39). This finding was higher than the results of studies conducted in the urban communities of Hawassa and Bahir Dar that was 15.6% (28) and 15.7% (44), respectively. However, overweight including obesity prevalence was less than that observed in India and Kuwait (32%) (36). One possible explanation for the differences in overweight including prevalence may be cultural variations in dietary habits and differences in socioeconomic.

In this study the prevalence of overweight including obesity was higher in adolescents studying in private high schools than governmental high schools. Similar finding was observed from different countries of India (33) and the same country study done in Gonder high school adolescents (27). This finding might be related to adolescents in private schools who come from families with higher socioeconomic status (8,27). This finding was supported by the qualitative study where it reveals that enrolling in a private high school related with high prevalence of overweight and obesity.

This study found that the prevalence of overweight and obesity was higher among adolescents in private high schools compared to those in public schools. A similar result was found in studies from India (33) and a study done in Gondar, Ethiopia (27). This could be linked to the fact that private school students often come from families with higher socioeconomic status (8, 27). The qualitative data further supported this, revealing a private high school often attended by students from higher income families, is a significant factor contributing to the prevalence of obesity. Participants noted that these schools typically offer greater access to unhealthy food options, such as fast food and sugary snacks, both within their cafeterias and in nearby areas. Additionally, the academic pressure prevalent in private institutions can lead to reduced physical activity, as students prioritize their studies over exercise.

Research indicates that a high consumption of sugar and sweets is strongly linked to obesity (53,54). In this study, adolescents who consumed sugar and sweets daily had a higher prevalence of overweight and obesity. It is thought that soft drink consumption plays a significant role in weight gain due to its high sugar content and insufficient compensation for overall energy intake. (55). The study found that consuming sugar and sweets three times a week or more was strongly linked to overweight and obesity, compared to consuming them less than three times a week. This result aligns with studies conducted in Ethiopia, Bangladesh, and Brazil (56). However, a study from Hawassa presented inconsistent results regarding the impact of sweet consumption on overweight and obesity rates (8).

The qualitative study also revealed that students noted that students have a strong preference for fast foods, sweets and sugars and soft drinks, within and outside the school environment. They noted that easy access, convenience and taste to fast foods, sugary snacks, and soft drinks contribute to their usage of these foods. These poor eating practices are worsened by the increased availability and accessibility of junk foods and sugar and sweets within the school food environment. In South Africa, food landscape shifted, with the widespread presence of fast food especially in urban areas, unhealthy options are easily accessible. (57). As a result of this accessibility, people often choose diets that are high in energy. Consequently, The food environment becomes conducive to obesity, promoting the consumption of unhealthy foods that are deficient in essential micronutrients, which in turn leads to increased calorie consumption and weight gain (58).

Participants in the study pointed to specific drinks, especially sugar-sweetened beverages, as a major contributor to being overweight and obese. These drinks are linked to weight gain because they significantly increase energy intake and are often consumed frequently.

Physical activity emerged as another independent predictor statistically linked to being overweight including obesity. Adolescents who engaged in moderate exercise for less than ten minutes were 2.09 times more likely to be overweight compared to those who exercised moderately [AOR= 2.09 (95% CI; 1.17, 3.73)]. This result is consistent with research done in Gondar and Addis Ababa, which also found a positive link between physical inactivity and overweight (36). The qualitative results of this study suggest that low levels of physical activity play a key role in the high rates of overweight among students. Participants highlighted several barriers, including the absence of physical education (PE) classes, insufficient playground facilities, and busy class schedules that leave little time for gym activities or recreational sports. These constraints significantly reduce opportunities for students to be active, which align with the quantitative data that shows low physical activity levels.

The qualitative findings of this study also reveal that overweight and obese students often experience fear of body shaming and social isolation, which discourages them from participating in events and activities that could help improve their weight. Those participants expressed that concerns about being judged or ridiculed by their peers lead them to withdraw from physical activities and social gatherings, further exacerbating their weight issues. This emotional barrier aligns with quantitative data indicating a strong link between social engagement and obesity prevalence. By creating a more inclusive and supportive school environment that fosters positive body image and encourages participation, educators can help mitigate these fears and promote healthier behaviors among overweight and obese students, ultimately addressing the underlying factors contributing to obesity.

A similar study conducted in Pakistan found a strong link between insufficient physical activity and overweight in adolescents (39). Likewise, research from China emphasized the importance of regular physical activity in decreasing the prevalence of overweight. Furthermore, findings from the USA reinforced that consistent exercise is a key factor in reducing overweight and obesity rates (39). This trend may be due to lower energy expenditure resulting from reduced levels of moderate physical activity.

8. Strength and Limitation of the study

8.1. Strength of the study

Previous studies in Addis Ababa have not utilized mixed methods approaches to explore the factors contributing to overweight. Therefore, the use of a mixed methods approach in this study is seen as strength. The qualitative aspect has provided additional insights and a deeper understanding that may have been overlooked in the quantitative phase.

8.2. Limitation of the study

The limitation could be recalling bias, social desirability bias and misreporting during interviews, which could influence the outcomes, as respondents might not accurately recall their food intake or activity levels. The absence of a clear connection with dietary intake might stem from inaccuracies in recalling dietary information, as well as underreporting snacks, fatty foods, and carbohydrate-rich items, which is often seen in individuals who are overweight and obese.

9. Conclusion and Recommendation

9.1. Conclusion

The study's findings showed that high school adolescents in Addis Ababa have high prevalence of overweight and obesity. Several factors were identified as significantly associated with this risk, including unhealthy meal preferences shaped by peer pressure, where students often choose calorie-dense foods. Additionally, limited opportunities for physical activity, stemming from a lack of adequate playgrounds, absence of physical education classes and students rely on transportation leads to lack of engagement on physical activities. The unhealthy school food environment both within and around schools, characterized by easy access to junk food and sugary drinks also promotes poor dietary choices.

To address this problem, it is crucial to implement targeted health promotion programs within schools that emphasize nutrition education, physical activity, and the creation of healthier food environments. Policymakers should consider stricter regulations on the availability of unhealthy food options in and around schools, which can foster healthier habits among adolescents, ultimately improving their long-term health and quality of life.

9.2. Recommendation

The rate of overweight and obesity among high school adolescents in Addis Ababa is increasing. Regarding the key findings, the following suggestions are made to address the issue of overweight and obesity among adolescents in the study area:-

For administration body:

- Collaboration among Addis Ababa health sectors and education sectors in developing sustainable health education programs on overweight and obesity in adolescents.
- Initiate awareness campaigns about overweight and obesity.
- Provide resources such as learning materials and fundings for clubs and other interventions that cater to prevention of overweight and obesity.

For schools:

- Increasing awareness among adolescents on adequate physical activity and healthy food choices through education and in school mini-media programs and creating an active school environment that supports physical engagement as a fundamental strateg.
- Creating healthy school food environment and controlling the foods which are going to be accessible for students.
- Prioritizing hiring or collaborating with health experts to implement comprehensive programs aimed at preventing and addressing overweight among students.
- Collaborate with community organizations and NGOs to create a supportive network for overweight intervention, to provide additional resources and support to students and families.

For parents and adolescent students:

- Having positive parent-child communication in addressing weight-related challenges.
- Encourage their children to participate in physical exercises.
- Self acceptance and build confidence for improving their health.
- Managing diet and choosing healthy foods with in and outside the school environment.

- Engaging in physical activities and extracurricular activities and events with in and out side of the school.
- Discussing with parents openly about their feelings and seeking help.

For researchers: Additionally, researchers should carry out interventional studies on overweight and obesity among children and adolescents.

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ANNEXES

Annex 1: Information sheet for quantitative study (English version)

Annex 1a. Information sheet for in-school adolescents

Addis Ababa University, School of Public Health

My name is..... I am collecting data for research currently conducting on the topic of “Overweight among in-school adolescents in Addis Ababa, Ethiopia, 2023. This study will have a great contribution in the control and prevention of adolescents’ overweight in Addis Ababa.

Procedure: You are chosen by chance, and we are inviting you to take part in the study. Your participation will help us to assess the prevalence and its associated factors of overweight/obesity among in-school adolescent students. We are going to ask you some questions about your personal characteristics, feeding practice, physical activity and sleep duration. Your honest answers are very important to our study. During the study period height and weight will be measured using standardized instruments. Only light clothes will be worn during measurement of body weight and Height will be measured using measuring board with bare foot.

Benefit: When you are participating in this research, there may not be a direct benefit to you; rather you will know your BMI for age. However, your participation is very indispensable to us in pointing out the prevalence and its associated factors of overweight/ obesity among in-school adolescent students in Addis Ababa.

Risk and/or Discomfort: There is no risk when you are participating in this research project except spending of your time about 20 minutes for the study.

Confidentiality: The information collected for this research project will be kept secure. Your name will not be written in this format and never be used in connection with any of the information you are going to give. All information given by you will be kept strictly confidential.

Right to Refusal or Withdraw: Your participation in this study will only be based on your willingness. You have an absolute right to refuse to participate in this research and you are not obliged to answer any question that you do not want to answer, and you may end it at any time you want.

Annex 1b. Information sheet for parents

Addis Ababa University, School of Public Health

My name is..... I am collecting data for research currently conducting on the topic of Overweight/obesity among in-school adolescents in Addis Ababa, Ethiopia, 2023. This study will have a great contribution in the control and prevention of adolescents' overweight in Addis Ababa.

Procedure: I would like to ask about your willingness for the participation of your child in our study. We will take measurement of your child's height and weight. We will also ask your child eating habit, physical activity and sleeping duration. During the study period height and weight will be measured using standardized instruments. Only light clothes will be worn during measurement of body weight and height will be measured using measuring board with bare foot.

Benefit: When your child is participating in this research, there may not be a direct benefit to him/her rather he/she will know their BMI for age. However, his/her participation is very indispensable to us in pointing to the prevalence and its associated factors of overweight/obesity among in-school adolescent students in Addis Ababa.

Risk and/or Discomfort: There is no risk when your child is participating in this research project except spending of their time about 20 minutes for the study.

Confidentiality: The information collected for this research project will be kept secure. Your child's name will not be written in this form. All information given by your child will be kept strictly confidential.

Right to Refusal or Withdraw: Your child's participation is voluntary and not obliged to take part in the study. If you feel discomfort with your child participation, please feel free to disagree.

Annex 2: Informed consent form for quantitative study

Annex 2a: Informed consent form for quantitative study for in-school adolescents

Based on the understanding of the above information, are you willing to participate in this study?

A) Yes B) No

I confirmed my agreement with my signature to participate in the study with clear understanding and recognition of the detailed objective of the study.

Signature (participant's) _____ Signature (collector) _____

Date _____ Date _____

Remark: for any inconvenience and problem related to the questionnaire please contact the principal investigator.

Name of principal investigator: Bezawit Fitsum

Tell: +251-961- 378885 Email: bezawitb91@gmail.com

Annex 2b: Informed consent form for parents

Having the above information, we honourly ask your willingness for your child participation in the study. Are you willing to let your child participate in the study?

1. If yes, you will put your signature below
2. If not, you can give your suggestion of refusal

I confirmed my agreement with my signature for my child participation in the study after the detailed objective of the study has been explained to me in the language I understand well.

Signature (parent's) _____

Signature (collector) _____

Date: _____

Date: _____

Remark: for any inconvenience and problem related to the questionnaire please contact the principal investigator.

Name of principal investigator: Bezawit Fitsum

Tell: +251-961- 378885

Email: bezawitb91@gmail.com

Annex 3: Survey questionnaire

Questionnaire ID No _____

School name _____

Grade level _____

Section _____

Name of data collector _____ Date of data collection-----

Part I: Socio-demographic characteristics

No	Questions	Response
1.1	Age of the respondent (years)	_____
1.2	Sex of the respondent	1. Male 2. Female
1.3	Type of school	1. Public 2. Private
1.4	What is your father's educational status?	1. Can not read and write 2. Read and write 3. Primary school 4. Secondary school 5. Higher education and above 6. I don't know
1.5	What is your mother's educational status?	1. Can not read and write 2. Read and write 3. Primary school 4. Secondary school 5. Higher education and above 6. I don't know
1.6	What is your father's occupation?	1. Daily laborer 2. Work in a private organization 3. Work in government organization 4. Business man 5. He doesn't work 6. I don't know 7. Other
1.7	What is your mother's occupation?	1. Daily laborer 2. Work in a private organization 3. Work in government organization 4. Business women 5. House wife 6. I don't know

		7. Other
1.8	How much is your family monthly income?	_____birr

Part II: Dietary information

The next questions ask about the diet that you usually eat. As you answer these questions please think of a typical week in the last year.

No	Questions	Response
2.1	How often did you eat fruits?	1. Less than once a week 2. Once a week 3. Two to four times per week 4. Once per day 5. More than twice per day
2.2	How often do you eat green and vegetables?	1. Less than once a week 2. Once a week 3. Two to four times per week 4. Once per day 5. More than twice per day
2.3	How often did you eat meat?	1. Less than once a week 2. Once a week 3. Two to four times per week 4. Once per day 5. More than twice per day
2.4	How often did you eat milk,cheeses and yoghurt?	1. Less than once a week 2. Once a week 3. Two to four times per week 4. Once per day 5. More than twice per day
2.5	How often did you eat sugar and sweets?	1. Less than once a week 2. Once a week 3. Two to times per week 4. Once per day 5. More than twice per day

Part III: Eating habit

The next questions ask about your dieting habit for the last one year.

No	Questions	Response
3.1	How many times do you usually eat per day?	1. <1 meal a day 2. 1 meal a day 3. 2 meals a day 4. 3 meals a day 5. >3 meals a day
3.2	How often do you eat breakfast?	1. Daily 2. Sometimes 3. Never

3.3	How often do you eat lunch?	1. Daily 2. Sometimes 3. Never
3.4	How often do you eat dinner?	1. Daily 2. Sometimes 3. Never
3.5	How often do you eat fast foods?	1. Daily 2. Sometimes 3. Never

Part IV: Physical activity questionnaire

Below are questions about an individual's physical activity levels. Please read the descriptions and answer the questions. Consider all activities, those you do at school as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Hard physical activity: Think about all the vigorous activities which take hard physical effort that you have done in the last 7 days. Vigorous activities make your breath harder than normal and may include heavy lifting, aerobics, or fast bicycling. Think only about those physical activities that you did for at least 10 minutes at a time.			
No	Questions	Response	Code
4.1	Do you engage in work besides your education?	Yes No	
4.2	During the last 7 days, on how many days did you do vigorous physical activities?	_____ days/week _____ don't know/not sure	
4.3	How much total time did you usually spend doing vigorous physical activities on one of those days?	_____ hours/day _____ minutes/day _____ don't know/not sure	
Moderate physical activity: Think about the activities which take moderate physical effort that you have done in the last 7 days. Moderate physical activities make your breath somewhat harder than normal and may include carrying light loads, bicycling at a regular pace, or doubles tennis. Do not include walking. Again, think about only those physical activities that you did for at least 10 minutes.			
No	Questions	Response	Code
4.4	During the last 7 days, how many days did you do moderate physical activities?	_____ hours/day _____ minutes/day _____ don't know/not sure	
4.5	How much total time did you usually spend doing moderate physical activities on one of those days?	_____ hours/day _____ minutes/day _____ don't know/not sure	
Walking: Now think about the time you spent walking in the last 7 days. This includes at work and at home, walking from place to place, and any other walking that you might do solely for recreation, sport, exercise or leisure.			

4.6	During the <i>last 7 days</i> , on how many days did you <i>walk</i> for at least 10 minutes at a time?	_____ days/week _____ don't know/not sure	
4.7	How much <i>total time</i> did you usually spend <i>walking</i> on one of those days?	_____ hours/day _____ minutes/day _____ don't know/not sure	
<i>Sitting:</i> Finally, think about the time you spent <i>sitting</i> on weekdays during the <i>last 7 days</i> . Include time spent at class, at home, while doing course work, and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, and sitting or lying down to watch television.			
4.8	During the <i>last 7 days</i> how much, <i>total time</i> did you usually spend sitting on one of a week day?	_____ hours/ weekday _____ minutes/weekday _____ don't know	

Part V. Sedentary activity questionnaire

The following question ask about your traveling in car, bus or train, on foot and time spent with using internet, playing game or watching television.

No	Questions	Response	Code
5.1	Which one do you usually use to go from home to school	Walking Cycle Driven	
5.2	Hours spent with TV programs, video games or internet	<30min a day 30-60min a day 60-90min a day ≥120minutes a day Never	

Part VI: Sleep duration information

Below questions ask about your night sleep duration. As you respond to these questions please think of a typical weekday (school days) and weekends sleep in the last week.

No	Questions	Response	Code
6.1	What time did you sleep on school days?	_____ hours/weekday	
6.2	What time did you sleep on weekends?	_____ hours/weekend	

Part VII: Anthropometric measurements

No	Measurements	Reading	Code
7.1	Height	In centimeters _____	
7.2	Weight	In kilograms (Kg) —	

Thank You!!

Annex 4: Information sheet for qualitative study

Annex 4a: Information sheet for in-depth interview for in-school adolescents

Addis Ababa University, School of Public Health

My name is..... I am collecting data for research currently conducting on the topic of “Overweight/obesity among in-school adolescents in Addis Ababa, Ethiopia, 2023. This study will have a great contribution in identifying the driving factors of overweight among adolescents in Addis Ababa, Ethiopia.

Procedure: You are chosen for this study because you are one of resource full person in this regard as you have experience and we are inviting you to take part in the study. During the study period you will be interviewed about your feeding practice, physical activity and other factors. Your honest answers are very important to our study.

Benefit: When you are participating in this research, there may not be a direct benefit to you. However, your participation is very indispensable to us in pointing the exploring the driving factors of adolescents’ overweight/obesity in Addis Ababa.

Risk and/or Discomfort: There is no risk when you are participating in this research project except spending of your time about 30 minutes for the study.

Confidentiality: The information collected for this research project will be kept secured. Your name will not be written in this format and never be used in connection with any of the information you are going to give. All information given by you will be kept strictly confidential.

Right to Refusal or Withdraw: Your participation on this study will only be on based on your willingness. You have an absolute right to refuse to participate in this research and you are not obliged to answer any question that you do not want to answer, and you may end it at any time you want.

Annex 4b: Informed sheet for parents/caregivers, school administrators and sub city school food experts

Addis Ababa University, School of Public Health

My name is..... I am collecting data for research currently conducting on the topic of “Overweight/obesity among in-school adolescents in Addis Ababa, Ethiopia, 2023. This study will have a great contribution in exploring the driving factors of adolescents’ overweight in Addis Ababa.

Procedure: You are chosen for this study because you are one of resource full person in this regard as you have experience and we are inviting you to take part in the study. Your participation will help us to explore the driving factors of adolescents’ overweight/obesity in Addis Ababa. During the study period you will be interviewed about your child/students eating habit, physical activity and school food environment. Your honest answers are very important to our study.

Benefit: When you are participating in this research, there may not be a direct benefit to you. However, your participation is very indispensable to us in pointing the exploring the driving factors of adolescents’ overweight including obesity in Addis Ababa.

Risk and/or Discomfort: There is no risk when you are participating in this research project except spending of your time about 30 minutes for the study.

Confidentiality: The information collected for this research project will be kept secured. Your name will not be written in this format and never be used in connection with any of the information you are going to give. All information given by you will be kept strictly confidential.

Right to Refusal or Withdraw: Your participation on this study will only be on based on your willingness. You have an absolute right to refuse to participate in this research and you are not obliged to answer any question that you do not want to answer, and you may end it at any time you want. If you feel discomfort to your participation, please feel free to disagree.

Annex 5: Informed consent form for qualitative study

Based on the understanding of the above information, are you willing to participate in this study?

A) Yes B) No

I confirmed my agreement with my signature to participate in the study with clear understanding and recognition of the detailed objective of the study.

Signature (participant's) _____

Signature (collector) _____

Date _____

Date _____

Remark: for any inconvenience and problem related to questionnaire please contact principal investigator.

Name of principal investigator: Bezawit Fitsum

Tell: +251-961- 378885 Email: bezawitb91@gmail.com

Annex 6: Topic guide of in-depth and key informant interview

Annex 6a: Topic guide of in-depth interview for in-school adolescents

Interview type	
Place of the interview	
Date of the interview conducted	
Interview leader	
Interview note taker	
Duration of the interview	
Transcriber	

ID:	Grade level:	Sub city:
Age:	Parent's education status:	Woreda
Sex:	Parent's occupation:	

1. What are your feeding and physical activity related events in your daily routine

Probe:

- What is your typical daily routine eating habits and dietary patterns?
- How would you describe your engagement in physical activities?
- What are the factors that influence your level of physical activity within and outside of the school setting?

2. What are your personal experiences and knowledge about nutritional foods and physical activity?

Probe:

- Can you share your knowledge/ views related to nutrition, and physical activity?
- How do you perceive your own body image?

3. What are the foods available on your school food environment within and outside the school?

Probe:

- Can you describe the availability of healthy food options (fruit and vegetables, whole grain, nuts...) and unhealthy foods (deeply fried foods, fast foods, junk foods, sweets and candies...) with in the school environment (immediate neighborhood)?

4. -How do you navigate food choices in relation to your overall health and well-being?

- What are the influences that influence your dietary choices?
 - Have you faced any challenges or pressures related to body image or weight within the school setting? Can you elaborate on these experiences?
 - Have you faced any challenges or pressures related to body image or weight outside the school setting? Can you elaborate on these experiences?
5. What are the supports that you think would be beneficial for overweight and obesity intervention?
- Probe:
- Is there any existence of resources and support systems at school that you found helpful?
 - What kind of support or resources do you think would be beneficial in promoting health and well-being within the school environment?
6. Tell me anything you considered important but not raised in this discussion (if you want to add anything)?

Annex 6b: Topic guide of in-depth interview for parents

Interview type	
Place of the interview	
Date of the interview conducted	
Interview leader	
Duration of the interview	

ID:	Education level:	Sub city:
Age:	Marital status:	Woreda:
Sex:	Occupation:	

1. What are your meal patterns and dietary preferences?

Probe:

- Can you describe the dietary practices within your family, particularly related to the meals provided to your child at school and at home?
- What are some of the challenges or considerations that influence the dietary habits within the home environment and during the school day?

2. What is your perception regarding nutritional foods and physical activity on adolescent health and well-being?

Probe:

- Can you share your knowledge of nutrition, and physical activity as they relate to the well-being of your child?
- Can you share your knowledge of physical activity as they relate to the well-being of your child?

3. What are your concerns about health-related related challenges faced by adolescents within the school setting?

Probe:

- What are the challenges your child is facing with in the school?

4. How would you characterize the current school food environment in terms of healthy and unhealthy foods?

Probe:

-How do you characterize the school food environment in terms of healthy and unhealthy foods within the school?

-How do you characterize the school food environment in terms of healthy and unhealthy foods outside the school?

5. What kinds of school-based resources or support systems do you believe would benefit the health and well-being of in-school adolescents?

Probe:

-What kinds of resources or support systems do you believe would benefit the health and well-being of in-school adolescents?

-Are there any challenges related to dietary habits, or physical activity that you feel should be addressed within the school environment?

6. Can you describe how you communicate with your children about health-related topics?

Probe:

-What are some of the ways in which you provide support for the health and well-being of your child?

7. What kinds of interventions or programs do you believe would be effective in addressing health challenges or promoting healthier behaviors among in-school adolescents?

8. Tell me anything you considered important but not raised in this discussion (if you want to add anything)?

Annex 6c: Topic guide of key informant interview for school administrators

Interview type	
Place of the interview	
Date of the interview conducted	
Interview leader	
Duration of the interview	

ID:	Education level:	Sub city:
Age:	Marital status:	School:
Sex:	Occupation:	

1. What are your responsibilities as school administrator?

Probe:

- Can you briefly describe your role and responsibilities as a school administrator?
- How long have you been in this position?

2. Can you explain the physical activity engagement of students with in the school?

Probe:

- What are the conditions of outdoor play areas and sports fields for the students?
- How you explain the availability of physical activity equipment, such as balls and other materials?

3. How would you characterize the current school food environment in terms of healthy and unhealthy foods?

Probe:

- How would you characterize the current school food environment in terms of healthy and unhealthy foods within the school?
- How would you characterize the current school food environment in terms of healthy and unhealthy foods outside the school?

4. Is there display and accessibility of health education materials or posters related to healthy food diet and physical exercise?

Probe:

- Is there display and accessibility of health education materials, posters or educational initiatives related to healthy food diet that promote healthy eating habits?

-Is there display and accessibility of health education materials or posters related to physical exercise?

5. What are the challenges associated with overweight and obesity among in-school adolescent students?

Probe:

-In what ways do these challenges impact student well-being, academic performance, and the overall school environment?

6. Can you provide insight into any specific initiatives or policies to be implemented to address nutritional challenges within the school setting?
 - Is there implementation of school policies that support healthy eating and physical activity?
 - How do administrative policies and decisions influence students' access to and choices of food within the school environment?
 - Can you identify any constraints or considerations in implementing policies to support healthy nutrition habits for students?
7. What strategies or interventions do you believe would be effective in fostering a healthier school food environment and addressing the challenges related to overweight and obesity among in-school adolescent students?

Probe:

- What strategies or interventions do you believe would be effective in fostering a healthier school food environment?
- What strategies or interventions do you believe would be effective in addressing the challenges related to overweight among in-school adolescent students?

8. Tell me anything you considered important but not raised in this discussion (if you want to add anything)?

Annex 6d: Topic guide of key informant interview for sub city school food program experts

Interview type	
Place of the interview	
Date of the interview conducted	
Interview leader	
Duration of the interview	

ID:	Education level:	Sub city:
Age:	Marital status:	School:
Sex:	Occupation:	

1. What are your responsibilities as school administrator?

Probe:

- Can you briefly describe your role and responsibilities as a school administrator?
- How long have you been in this position?

2. How would you characterize the current school food environment in terms of healthy and unhealthy foods?

Probe:

- How would you characterize the current school food environment in terms of healthy and unhealthy foods within the school?
- How would you characterize the current school food environment in terms of healthy and unhealthy foods outside the school?

3. Is there display and accessibility of health education materials or posters related to healthy food diet and physical exercise?

Probe:

- Is there display and accessibility of health education materials, posters or educational initiatives related to healthy food diet that promote healthy eating habits?
- Is there display and accessibility of health education materials or posters related to physical exercise?

4. Can you provide insight into any specific initiatives or policies to be implemented to address nutritional challenges within the school setting?

- Is there implementation of school policies that support healthy eating and physical activity?

- How do administrative policies and decisions influence students' access to and choices of food within the school environment?
 - Can you identify any constraints or considerations in implementing policies to support healthy nutrition habits for students?
 - How do administrative policies and decisions influence students' access to and choices of food within the school environment?
5. What role do you see sub cities focal persons playing in promoting healthier nutrition habits and reducing the prevalence of overweight among students?
- Probe:
- Are there any areas where you believe additional collaboration or support that would be beneficial?
6. What strategies or interventions do you believe would be effective in fostering a healthier school food environment and addressing the challenges related to overweight and obesity among in-school adolescent students?
- Probe:
- What strategies or interventions do you believe would be effective in fostering a healthier school food environment?
 - What strategies or interventions do you believe would be effective in addressing the challenges related to overweight among in-school adolescent students?
7. Tell me anything you considered important but not raised in this discussion (if you want to add anything)?

Annex 7: Information sheet for quantitative study (Amharic version)

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የህብረተሰብ ጤና አጠባበቅ

ትምህርት ክፍል

Annex 7.1 የመረጃ ቅጽ ለተማሪ

ጤና ይስጥልን ! _____ እባላለሁ። የመጣውት ከአዲስ አበባ ዩኒቨርሲቲ ጤና ሣይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ክፍል ሲሆን የመጣሁበት ምክንያት ጥናት ለማድረግ ነው። የጥናቱ ዓላማ ከመጠን በላይ ክብደት በጉርምስና ወቅት ያላቸው ግንኙነት በጥናት ለማወቅ ነው። በመሆኑም ይህ ጥናት እነዚህ ችግሮች በተለይም ደግሞ ከመጠን በላይ ክብደትና ተያያዝ ችግሮች በመቆጣጠርና በመከላከል ረገድ ትልቅ ሚና ይኖረዋል። በተጨማሪም ይህ ጥናት የተለያዩ መንግስታዊ፣ መንግስታዊ ያልሆኑ ድርጅቶች እና አጋር ድርጅቶች በነዚህ ችግሮች ዙሪያ እንዲሰሩና የተቻላቸውን እንዲያበረክቱ ያደርጋል የሚል ጽኑ እምነት አለኝ። በጥናቱ ጊዜ የአንተን/ቺን ክብደትና ቁመት ደረጃቸው በጠበቁ መሳሪያዎች እንለካለን። ክብደት በሚለካበት ጊዜ ቀለል ያሉ ልብሶች እንዲሁም ቁመት በሚለካበት ጊዜ ደግሞ በባዶ እግር ይሆናል። ለማጠናው ጥናት የተወሰኑ ጥያቄዎችን እጠይቅሁለሁ/ሻለሁ። በዚህ መጠይቅ የአመጋገብ ልምድ፣ ስለአካላዊ እንቅስቃሴ፣ በሌሊት የምትተኛውን/ ኚውን የእንቅልፍ መጠን በተመለከተ እጠይቅሁለሁ/ ሻለሁ። ከአንተ/ ቺ የምንሰበስበው መረጃ በሚስጥር እንጠብቃለን። ከአንተ/ቺ የምንሰበስበው መረጃ ከስምህ/ሽ ጋር አይያያዝም። በዚህ ጥናት ውስጥ ለመሳተፍ በቅድሚያ የተሳታፈውን ፍቃደኝነት እንጠይቃለን። መልስ ለመስጠት በማትፈልግበት ወይም በማትፈልገበት ጥያቄ ካለ አትገደድም/ ጅም። መጠይቁ 20 ደቂቃ ያህል ይፈጃል።

Annex 7.2 የመረጃ ቅጽ ለተማሪ ወላጅ

ጤናይስጥልን ! _____ እባላለሁ። የመጣውት ከአዲስ አበባ ዩኒቨርሲቲ ጤና ሣይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ክፍል ሲሆን የመጣሁበት ምክንያት ከመጠን በላይ ክብደት በጉርምስና ወቅት ያላቸው ግንኙነት በጥናት ለማወቅ ነው። የእርሶዎ ልጅ በእኛ ጥናት ውስጥ እንዲካተት/ እንዲትካተት የእርሶዎን ፊቃደኝነት እንጠይቃለን። የልጆዎን ክብደት እና ቁመት መጠን እንለካለን። በዚህ መጠይቅ የልጆዎን የአመጋገብ ልምድ፣ ስለአካላዊ እንቅስቃሴ፣ በሌሊት የምትኖሩት/ኚውን የእንቅልፍ መጠን በተመለከተ እንጠይቃለን። ከልጆዎ የምናገኘው መረጃ በጉርምስና ወቅት ከክብደት መጨመር ጋር ተያይዘው የሚመጡ የጤና ችግሮች ለመከላከል እቅድ ለማውጣት ይረዳናል። ከልጆዎ የሚናገረውን መረጃ በሚስጥር እንጠብቃለን። ልጆዎ የሚሰጠን/ የሚትሰጠን መረጃ ከስሙ/ ሟ ጋር አይያያዝም። በዚህ ጥናት ውስጥ ለመሳተፍ የእርሶዎ እና የልጆዎ ፊቃደኝነት የተጠበቀ ነው። መጠይቁ 20 ደቂቃ ያህል ይፈጃል።

Annex 8: Informed consent form for quantitative study (Amharic version)

Annex 8.1 የስምምነት ማረጋገጫ ቅጽ ለተማሪ

ይህንን ግንዛቤ ውስጥ በማስገባት በጥናቱ ላይ እንድትሳተፉ/ፊ በአክብሮት እጠይቃለሁ። እኔ ከዚህ በታች ፊርማዬ የተቀመጠው በጥናቱ በፍቃደኝነት እሳተፋለሁ ስል የሚከተሉትን ግንዛቤ ውስጥ በማስገባት ነው፡ 1. የጥናቱ ዓላማ

2. በጥናቱ የሚካተቱ ጥያቄዎችንና የጥናቱ አስፈላጊነት

በሚገባኝ ቋንቋ ስለተገለጸልኝና ስለተብራራልኝ በጥናቱ ለመሳተፍ በፊርማዬ አረጋግጣለሁ

ፊርማ(የተሳታፊ)_____

ፊርማ(የመረጃ ሰብሳቢ)_____

ቀን_____

ቀን_____

ማሳሰቢያ፡ ያልገባዎትዉይምጥያቄዎሆነበዎትሁኔታካለየጥናቱዋናተሳታፊንመጠየቅይችላሉ።

የጥናቱ ዋና ተሳታፊ ስም፡ ቤዛዊት ፍፁም

ስልክቁጥር፡ +251-961-37 88 85 ኢሜይል፡ bezawitb91@gmail.com

Annex 8.2 የስምምነት ማረጋገጫ ቅጽ ለተማሪ ወላጅ

ይህንን ግንዛቤ ውስጥ በማስገባት ልጄ በጥናቱ እንዲካተት/ እንዲትካተት የእርሶዎን ፊቃደኝነት በአክብሮት እንጠይቃለን። ልጄ በጥናቱ እንዲካተት/ እንዲትካተት እርሶዎ ፊቃደኝነዎት?

1. አዎ ከሆነ ከዚህ በታች በተቀመጠው የፊርማ ቦታ ላይ የተከበረ ፊርማዎን ያኑሩ

2. አይ ከሆነ ፊቃደኛ ያልሆኑበት ምክንያት ሀሳቦዎን መግለጽ ይችላሉ

እኔ ከዚህ በታች ፊርማዬ የተቀመጠው የጥናቱ ዓላማ በሚገባኝ ቋንቋ ስለተገለጸልኝና ስለተብራራልኝ ልጄ በጥናቱ እንዲካተት/እንዲትካተት በፊርማዬ አረጋግጣለሁ

ፊርማ(የቤተሰብ) _____ ፊርማ (የመረጃ ሰብሳቢ) _____

ቀን _____

ቀን _____

Annex 9: Survey questionnaire (Amharic version)

ክፍል አንድ: መስረታዊ መረጃዎችን የተመለከቱ ጥያቄዎች

የሚከተሉትን ጥያቄዎች በጥንቃቄ ካነበቡ በኋላ ለእያንዳንዱ በተሰጠው የመልስ መስጫ ቦታ መልሱን ይሙሉ።

የመጠይቅ መለያ ቁጥር _____ የትምህርት ቤት
ስም _____

የክፍል ደረጃ ክፍል ----- መረጃ ሰብሳቢ ስም _____

ተ.ቁ	ጥያቄ	መልስ
1.1	ዕድሜ	_____
1.2	ፆታ	1. ወንድ 2. ሴት
1.3	የትምህርት ቤት ዓይነት	1. የመንግስት 2. የግል
1.4	የአባትህ/ሽ የትምህርት ሁኔታ?	1. ማንበብ እና መጻፍ የማይችል 2. ማንበብ እና መጻፍ 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ዩኒቨርሲቲ እና ከዛ በላይ ያጠናቀቀ 6. አላውቅም
1.5	የእናትህ/ሽ የትምህርት ሁኔታ?	1. ማንበብ እና መጻፍ የማይችል 2. ማንበብ እና መጻፍ 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ዩኒቨርሲቲ እና ከዛ በላይ ያጠናቀቀ 6. አላውቅም
1.6	የአባትህ/ሽ የሥራ ሁኔታ?	1. የቀን ሰራተኛ 2. የግል ድረጅት ሰራተኛ 3. ነጋዴ 4. የመንግስት ሰራተኛ 5. ሥራ አይሰራም 6. አላውቅም 7. ሌላ

1.7	የእናትህ/ሽ የሥራ ሁኔታ?	1. የቀን ሰራተኛ 2. የግል ድረጅት ሰራተኛ 3. ነጋዴ 4. የመንግስት ሰራተኛ 5. የቤት እመቤት 6. አላውቅም 7. ሌላ
1.8	የቤተሰብህ/ሽ የወር ገቢ	----- ብር

ክፍል ሁለት፡ የአመጋገብ ሁኔታ

ከዚህ ቀጥሎ ባለፈው አንድ ዓመት አዘውትረህ/ሽ ስለተመገብካቸው/ሺያቸው ምግቦች

በተመለከተእጠይቃህለሁ/እጠይቃሽለሁ።

ተ.ቁ	ጥያቄ	መልስ
2.1	በተለምዶ ፍራፍሬዎች በምን ያህል ጊዜ ይመገባሉ?	1. በልጅ አላውቅም 2. በሳምንት ከአንድ ጊዜ በታች 3. በሳምንት አንድ ጊዜ 4. በሳምንት ከሁለት እስከ አራት ጊዜ 5. በቀን አንድ ጊዜ 6. በቀን ከሁለት ጊዜ በላይ
2.2	በተለምዶ አረንጓዴ ተክሎች እና አትክልቶች በምን ያህል ጊዜ ይመገባሉ?	1. በልጅ አላውቅም 2. በሳምንት ከአንድ ጊዜ በታች 3. በሳምንት አንድ ጊዜ 4. በሳምንት ከሁለት እስከ አራት ጊዜ 5. በቀን አንድ ጊዜ 6. በቀን ከሁለት ጊዜ በላይ
2.3	በተለምዶ ስጋና እና እንቁላል በምን ያህል ጊዜ ይመገባሉ?	1. በልጅ አላውቅም 2. በሳምንት ከአንድ ጊዜ በታች 3. በሳምንት አንድ ጊዜ 4. በሳምንት ከሁለት እስከ አራት ጊዜ 5. በቀን አንድ ጊዜ 6. በቀን ከሁለት ጊዜ በላይ
2.4	በተለምዶ ወተት፣ አይብ እና እርጉ በምን ያህል ጊዜ ይመገባሉ?	1. በልጅ አላውቅም 2. በሳምንት ከአንድ ጊዜ በታች 3. በሳምንት አንድ ጊዜ 4. በሳምንት ከሁለት እስከ አራት ጊዜ 5. በቀን አንድ ጊዜ 6. በቀን ከሁለት ጊዜ በላይ
2.5	በተለምዶ ስኳር አዘል እና ጣፋጭ ምግቦች በምን ያህል ጊዜ ይመገባሉ?	1. በልጅ አላውቅም 2. በሳምንት ከአንድ ጊዜ በታች 3. በሳምንት አንድ ጊዜ 4. በሳምንት ከሁለት እስከ አራት ጊዜ 5. በቀን አንድ ጊዜ 6. በቀን ከሁለት ጊዜ በላይ

ክፍል ሦስት፡ የአመጋገብ ልምድ

ከዚህ ቀጥሎ በአለፈው አንድ ዓመት ስለነበረህ/ሽ የአመጋገብ ሁኔታ እጠይቃለሁ/ሻለሁ።

ተ.ቁ	ጥያቄ	መልስ
3.1	አብዛኛውን ጊዜ በቀን ለምን ያህል ጊዜ ይመገባሉ?	1. በቀን ከአንድ ጊዜ በታች 2. በቀን አንድ ጊዜ 3. በቀን ሁለት ጊዜ 4. በቀን ሦስት ጊዜ 5. በቀን ከሦስት ጊዜ በላይ
3.2	በተለምዶ ቁርስ በምን ያህል ጊዜ ይመገባሉ?	1. በየቀኑ 2. አንዳንድ ጊዜ 3. በልጅ አላውቅም
3.3	በተለምዶ ምሳ በምን ያህል ጊዜ ይመገባሉ?	1. በየቀኑ 2. አንዳንድ ጊዜ 3. በልጅ አላውቅም
3.5	በተለምዶ ራት በምን ያህል ጊዜ ይመገባሉ?	1. በየቀኑ 2. አንዳንድ ጊዜ 3. በልጅ አላውቅም
3.7	በተለምዶ ፈጣን ምግቦችን(fast foods) በምን ያህል ጊዜ ይመገባሉ?	1. በየቀኑ 2. አንዳንድ ጊዜ 3. በልጅ አላውቅም

ክፍል አራት፡ የአካላዊ እንቅስቃሴ መጠይቅ

ከዚህ በታች ስለ ግለሰባዊ አካላዊ ተግባራት ደረጃዎች የቀረቡ ጥያቄዎች ናቸው። እባክዎን ዝርዝሮቹን ያንብቡና ራስዎን ፈጣን ግለሰብ አድርገው ባይቆጥሩም ጥያቄዎቹን ይመልሱ። ሁሉንም ተግባራት በመመልከት፣ በት/ቤት የሚሰሯቸውን፣ በቤት እና በጓሮ ስራዎች፣ ከቦታ ወደ ቦታ ለመሄድ ፣ እና በትርፍ ጊዜዎ ውስጥ ለመዝናኛ፣ ለእንቅስቃሴ ወይም ለስፖርት የሚሰሯቸውን።

	ጠንካራ የአካላዊ ተግባር ስለ ሁሉም ጠንካራ ተግባራት ከባድ አካላዊ ጥረት ስለሚጠይቁ ባለፉት 7 ቀናት ውስጥ ሰርቱዎቸው ስለነበሩ አካላዊ ተግባራት ብቻ ያስቡ። ጠንካራ ተግባራት ትንፋሽዎ ከተለመደው በላይ እንዲከብድ እና ከባድ እቃ ማንሳት፣ ኤሮቢክስ ወይም ብስኬጌት ማብረር ሊጨምሩ ይችላሉ። በአንድ ጊዜ ቢያንስ ለ 10 ደቂቃዎች ይሰሩዎቸው የነበሩ አካላዊ ተግባራትን ብቻ ያስቡ።		
ቁጥር	ጥያቄ	መልስ	ኮድ
4.1	ከትምህርትዎ በተጨማሪ በስራ ውስጥ ይሳተፋሉን?	1. አዎ 2. አይ	
4.2	ባለፉት 7 ቀናት ለምን ያህል ቀናት ጠንካራ አካላዊ ተግባራትን ሰርተው ነበር?	1. ቀናት/ባሳምንት 2. አላውቅም/እርግጠኛ አይደለሁም	

4.3	በእነዚህ ጠንካራ አካላዊ ተግባራት ከእነዚህ ቀናት በአንዱ በተለምዶ ምን ያህል ሰዓት በጠቅላላው አጥፍተው ነበር?	1. ሰዓት/በቀን 2. ደቂቃ/ በቀን 3. አላውቅም/እርግጠኛ አይደለሁም	
	መካከለኛ አካላዊ ተግባር ባለፉት 7 ቀናት ውስጥ ሰርቱዎቸው ስለነበሩ መካከለኛ አካላዊ ጥረቶች ያስቡ። መካከለኛ አካላዊ ተግባራት አተነፋፈስዎን በተወሰነ ደረጃ ከተለመደው የበለጠ አስቸጋሪ ያደርጓቸዋል። እንዲሁም ቀላላል ጫነቶችን፣ ብስክሌት ለመደበኛ ፍጥነት መንዳት፣ ወይም ጠረጴዛ ቴኒስ መጫወት ሊጨምሩ ይችላሉ። መራመድ አይጨምርም፣ እንደገና ቢያንስ ለ 10 ደቂቃዎች ሰርተዎቸው የነበሩ አካላዊ ተግባራትን ብቻ ያስቡ።		
ቁጥር	ጥያቄ	መልስ	ኮድ
4.4	ባለፉት 7 ቀናት ለምን ያህል ቀናት መካከለኛ አካላዊ ተግባራትን ሰርተው ነበር?	1. ሰዓት/በቀን 2. ደቂቃ/ በቀን 3. አላውቅም/እርግጠኛ አይደለሁም	
4.5	በእነዚህ መካከለኛ አካላዊ ተግባራት ከእነዚህ ቀናት በአንዱ በተለምዶ ምን ያህል ሰዓት በጠቅላላው አጥፍተው ነበር?	1. ሰዓት/በቀን 2. ደቂቃ/ በቀን 3. አላውቅም/እርግጠኛ አይደለሁም	
	መራመድ (Walking) አሁን ባለፉት 7 ቀናት ውስጥ በመራመድ ስለጠፋዎቸው ጊዜዎች ያስቡ። እነዚህም በት/ቤት እና በቤትዎ፣ ከቦታ ወደ ቦታ በእግር ለመጓዝ፣ እና ለመዝናኛ፣ ለስፖርት የእንቅስቃሴ ተግባራት ወይም ለመዝናኛ ያደረጉዎቸውን ብቻ ሊጨምሩ ይችላሉ።		
4.6	ባለፉት 7 ቀናት ለምን ያህል ቀናት በአንድ ጊዜ ቢያንስ ለ 10 ደቂቃዎች ተጉዘው ነበር?	1. ቀናት/በሳምንት 2. አላውቅም/እርግጠኛ አይደለሁም	
4.7	በመራመድ ከእነዚህ ቀናት በአንዱ በተለምዶ ምን ያህል ሰዓት በጠቅላላው አጥፍተው ነበር?	1. ሰዓት/በቀን 2. ደቂቃ/ በቀን 3. አላውቅም/እርግጠኛ አይደለሁም	
	መቀመጥ(Sitting) በመጨረሻ፣ ባለፉት 7 ቀናት በሳምንቱ እረፍት ቀናት በመቀመጥ ያጠፋዎቸውን ጊዜያት ያስቡ። እነዚህም በትምህርት ክፍል፣ በቤት፣ የትምህርት ስራ ሲሰሩ እና በትርፍ ጊዜዎ ያጠፋትን ሰዓት ይጨምራሉ። ይህም በዴስክ ላይ፣ ጓደኞችዎን በመገናኘት፣ ቴሌቪዥን ለመመልከት ተቀምጠው ወይም ተጋድመው ያጠፋትን ጊዜ ይጨምራል።		
4.8	ባለፉት 7 ቀናት በሳምንቱ ቀናት ተቀምጠው ለጠቅላላው ምን ያህል ጊዜ አጥፍተዋል?	1. ሰዓታት/ሳምንታት 2. ደቂቃዎች/ሳምንታት 3. አላውቅም	

ክፍል አምስት፡ የሰደንታረ ክንውን መጠይቅ

ከዚህ ቀጥሎ ከቦታ ቦታ ሲንቀሳቀሱ በብዛት የሚጠቀሙባቸው መጓጓዣ እንደ መኪና፣ ባቡር፣ የእግር ጉዞ እና ከኢንቴርኔት፣ ከተለያዩ ጌሞች ወይም ከቴሌቪዥን ጋር የሚያሳልፉትን ጊዜ የሚጠይቁ ናቸው።

ቁጥር	ጥያቄ	መልስ	ኮድ
5.1	ከቤት ወደ ትምህርት ቤት ለመሄድ የምትጠቀሙ/ሚው የመጓጓዣ አይነት	1. የእግር ጉዞ 2. ብስክሌት 3. መኪና	
5.2	በተለምዶ በቲቪ ፕሮግራሞችን ፣ በቪዲዮ ጌሞች ወይም በኢንቴርኔት ምን ያህል ጊዜ ያጠፋሉ	1. <30 ደቂቃ 2. 30-60 ደቂቃ 3. 60-90 ደቂቃ 4. >=120 ደቂቃ 5. ምንም ደቂቃ አላጠፋም	

ክፍል ስድስት፡ የእንቅልፍ መጠን መረጃ መጠይቅ

ከዚህ በታች ስለ ግለሰባዊ የሌሊት እንቅልፍ ጊዜ የቀረቡ ናቸው። እባክዎን ጥያቄዎቹን ሲመልሱ በሳምንታት ወይም በትምህርት ጊዜያቶች (ከሰኞ እስከ አርብ) እና በእረፍት ቀናት (ቅዳሜና እሁድ) የሚተኙትን እንቅልፍ ብቻ ያስቡ።

ቁጥር	ጥያቄ	መልስ	ኮድ
6.1	በትህምርት ጊዜያቶች በስንት ሰዓት ይተኛሉ?	_____ ሰዓታት/ሳምንታት	
6.2	በእረፍት ቀናት በስንት ሰዓት ከእንቅልፍ ይነሳሉ ?	_____ ሰዓታት/የእረፍት ቀናታት	

ክፍል ሰባት፡ አንትሮፖሜትሪክ ልኬት

ቁጥር	ልኬት	ንባብ	ኮድ
7.1	ቁመት	በሴንቲ ሜትር _____	
7.2	ክብደት	በኪሎ ግራም _____	

ስለትብብርዎት በጣም እናመሰግናለን።

Annex 10: Information sheet for qualitative study (Amharic version)

Annex 10a: በትምህርት ቤት ውስጥ የሚገኙ ወጣቶች ጥልቅ ቃለ መጠይቅ የመረጃ ወረቀት

አዲስ አበባ ዩኒቨርሲቲ፣ የህዝብ ጤና ትምህርት ቤት

ስሜ..... ይህ ጥናት በአዲስ አበባ በጉርምስና ዕድሜ ላይ የሚገኙ ወጣቶች የ' ከመጠን ያለፈ ውፍረት/ውፍረት ተግዳሮቶችን በመለየት ትልቅ አስተዋፅዖ ይኖረዋል.

አሰራር፦ ለዚህ ጥናት ተመርጠሃል ምክንያቱም በዚህ ረገድ ልምድ ስላሉት እና በጥናቱ እንድትሳተፍ እየጋበዝንህ ስለሆነ በዚህ ረገድ ሙሉ ሰው ስለሆንክ ነው. የእርስዎ ተሳትፎ በትምህርት ቤት ውስጥ ባሉ ጎረቤቶች ተማሪዎች መካከል ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ተግዳሮቶችን እንድንመረምር ይረዳናል. በጥናቱ ወቅት ስለ አመጋገብ ልምምድዎ, የአካል ብቃት እንቅስቃሴዎ እና ሌሎች ምክንያቶች ቃለ መጠይቅ ይደረግልዎታል. ታማኝ መልሶችህ ለጥናታችን በጣም አስፈላጊ ናቸው.

ጥቅም፦ በዚህ ጥናት ውስጥ ስትሳተፍ ለእርስዎ ቀጥተኛ ጥቅም ላይኖረው ይችላል. ነገር ግን፣ በአዲስ አበባ ውስጥ በትምህርት ቤት ውስጥ ባሉ ጎረቤቶች ተማሪዎች መካከል ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ተግዳሮቶችን በመጠቀም የእርስዎ ተሳትፎ ለእኛ በጣም አስፈላጊ ነው.

ስጋት እና/ወይም ምችት ማጣት፦ በዚህ የምርምር ፕሮጀክት ውስጥ ስትሳተፉ ለጥናቱ 20 ደቂቃ ያህል ጊዜዎን ከማሳለፍ በስተቀር ምንም አይነት አደጋ የለም:

ምስጢራዊነት፦ ለዚህ የምርምር ፕሮጀክት የተሰበሰበው መረጃ ደህንነቱ የተጠበቀ ይሆናል. ስምዎ በዚህ ቅርጽ አይጻፍም እና እርስዎ ከሚሰጡት ማንኛውም መረጃ ጋር በተያያዘ በጭራሽ ጥቅም ላይ አይውልም. በአንተ የተሰጡ ሁሉም መረጃዎች በጥብቅ ሚስጥራዊ ይሆናሉ.

ያለመቀበል ወይም የመውጣት መብት፦ በዚህ ጥናት ላይ ያለዎት ተሳትፎ በፍቃደኝነትዎ ላይ የተመሰረተ ብቻ ይሆናል. በዚህ ጥናት ውስጥ ላለመሳተፍ ፍጹም መብት አለህ እና መልስ መስጠት የማትፈልገውን ማንኛውንም ጥያቄ የመመለስ ግዴታ የለብህም እና በማንኛውም ጊዜ ልትጨርሰው ትችላለህ ትፈልጋለህ.

Annex 10b: ለወላጆች/ተንከባካቢዎች እና ለትምህርት ቤት አስተዳዳሪዎች በመረጃ የተደገፈ ወረቀት

አዲስ አበባ ዩኒቨርሲቲ፣ የህዝብ ጤና ትምህርት ቤት

ስሜ..... ይህ ጥናት በአዲስ አበባ በጉርምስና ዕድሜ ላይ የሚገኙ ወጣቶች የ' ከመጠን ያለፈ ውፍረት/ውፍረት ተግዳሮቶችን በመለየት ትልቅ አስተዋፅኦ ይኖረዋል

አሰራር፦ ለዚህ ጥናት ተመርጠሃል ምክንያቱም በዚህ ረገድ ልምድ ስላሉት እና በጥናቱ እንድትሳተፍ እየጋበዝንህ ስለሆነ በዚህ ረገድ ሙሉ ሰው ስለሆንክ ነው። የእርስዎ ተሳትፎ በትምህርት ቤት ውስጥ ባሉ ጎረምቶች ተማሪዎች መካከል ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ተግዳሮቶችን እንድንመረምር ይረዳናል። በጥናቱ ወቅት ስለ ልጅዎ/ተማሪዎችዎ የአመጋገብ ልማድ፣ የአካል ብቃት እንቅስቃሴ እና የእንቅልፍ ቆይታ ቃለ መጠይቅ ይደረግልዎታል። ታማኝ መልሶችህ ለጥናታችን በጣም አስፈላጊ ናቸው።

ጥቅም፡ በዚህ ጥናት ውስጥ ስትሳተፍ ለእርስዎ ቀጥተኛ ጥቅም ላይኖረው ይችላል። ነገር ግን በአዲስ አበባ በጉርምስና ዕድሜ ላይ የሚገኙ ወጣቶች ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ተግዳሮቶችን እና የቁጥጥር ዘዴዎችን በመጠቀም የእርስዎ ተሳትፎ ለእኛ በጣም አስፈላጊ ነው።

ስጋት እና/ወይም ምችት ማጣት፡ በዚህ የምርምር ፕሮጀክት ውስጥ ስትሳተፉ ለጥናቱ 20 ደቂቃ ያህል ጊዜዎን ከማሳለፍ በስተቀር ምንም አይነት አደጋ የለም

ምስጢራዊነት፦ ለዚህ የምርምር ፕሮጀክት የተሰበሰበው መረጃ ደህንነቱ የተጠበቀ ይሆናል። ስምዎ በዚህ ቅርጽ አይጻፍም እና እርስዎ ከሚሰጡት ማንኛውም መረጃ ጋር በተያያዘ በጭራሽ ጥቅም ላይ አይውልም። በአንተ የተሰጡ ሁሉም መረጃዎች በጥብቅ ሚስጥራዊ ይሆናሉ።

ያለመቀበል ወይም የመውጣት መብት፡ በዚህ ጥናት ላይ ያለዎት ተሳትፎ በፍቃደኝነትዎ ላይ የተመሰረተ ብቻ ይሆናል። በዚህ ጥናት ውስጥ ላለመሳተፍ ፍጹም መብት አለህ እና መልስ መስጠት የማትፈልገውን ማንኛውንም ጥያቄ የመመለስ ግዴታ የለብህም እና በማንኛውም ጊዜ ልትጨርሰው ትችላለህ ትፈልጋለህ። በተሳትፎዎ ላይ ምችት ከተሰማዎት፣ እባክዎን ላለመስማማት ነፃነት ይሰማዎ።

Annex 11: Informed consent form for qualitative study (Amharic version)

የስምምነት ማረጋገጫ ቅጽ

ይህንን ግንዛቤ ውስጥ በማስገባት በጥናቱ ላይ እንድትሳተፉ/ፊ በአክብሮት እጠይቃለሁ። እኔ ከዚህ በታች ፊርማዬ የተቀመጠው በጥናቱ በፍቃደኝነት እሳተፋለሁ ስል የሚከተሉትን ግንዛቤ ውስጥ በማስገባት ነው፡ 1. የጥናቱ ዓላማ

2. በጥናቱ የሚካተቱ ጥያቄዎችንና የጥናቱ አስፈላጊነት

በሚገባኝ ቋንቋ ስለተገለጸልኝና ስለተብራራልኝ በጥናቱ ለመሳተፍ በፊርማዬ አረጋግጣለሁ

ፊርማ(የተሳታፊ)_____	ፊርማ(የመረጃ ሰብሳቢ)_____
ቀን _____	ቀን _____

ማሳሰቢያ፡ ያልገባዎትወይም ጥያቄዎህን በዎትሁኔታ ካለ የጥናቱ ዋና ተሳታፊ መጠየቅ ይችላሉ።

የጥናቱ ዋና ተሳታፊ ስም፡ ቤዛዊት ፍፁም

ስልክ ቁጥር፡ +251-961-37 88 85 ኢሜይል፡ bezawitb91@gmail.com

Annex 12: Topic guide for In-depth and key informant interview (Amharic version)

Annex 12a: በትምህርት ቤት ውስጥ ላሉ ተማሪ ጥልቅ ቃለ መጠይቅ ርዕስ መመሪያ

የቃለ መጠይቅ አይነት	
የቃለ መጠይቁ ቦታ	
የቃለ መጠይቁ ቀን	
የቃለ መጠይቅ መሪ	
የቃለ መጠይቁ ቆይታ	

መታወቂያ	
ዕድሜ	
የትምህርት ደረጃ	

1. በዕለት ተዕለት እንቅስቃሴዎ ውስጥ ከእርስዎ አመጋገብ እና አካላዊ እንቅስቃሴ ጋር የተያያዙ ክስተቶች ምንድን ናቸው?

ምርመራ:-

- የእርስዎ የተለመዱ የዕለት ተዕለት የአመጋገብ ልምዶች እና የአመጋገብ ስርዓቶች ምንድን ናቸው?
- በአካል ብቃት እንቅስቃሴ ውስጥ ያለዎትን ተሳትፎ እንዴት ይገልጹታል?
- በትምህርት ቤት ውስጥ እና ከትምህርት ውጭ ባለው የአካል ብቃት እንቅስቃሴዎ ላይ ተጽዕኖ የሚያሳድሩ ነገሮች ምንድን ናቸው?

2. ስለ አመጋገብ ምግቦች እና የአካል ብቃት እንቅስቃሴዎች ያለዎት የግል ልምዶች እና እውቀት ምንድናቸው?

ምርመራ:-

- ከአመጋገብ እና የአካል ብቃት እንቅስቃሴ ጋር በተገናኘ የእርስዎን እውቀት/አመለካከት ማጋራት ይችላሉ?
- የራስዎን የሰውነት ምስል እንዴት ይገነዘባሉ?

3. በትምህርት ቤትዎ ውስጥ እና ከትምህርት ቤት ውጭ ያሉ ምግቦች ምንድናቸው?

ምርመራ:-

- ጤናማ የሆኑ የምግብ አማራጮችን (ፍራፍሬ እና አትክልት፣ ሙሉ እህል፣ ለውዝ...) እና ጤናማ ያልሆኑ ምግቦችን (በጥልቀት የተጠበሱ ምግቦች፣ ፈጣን ምግቦች፣ አላስፈላጊ ምግቦች፣ ጣፋጮች እና ከረመላዎች...) በትምህርት ቤት አካባቢ (ወዲያውኑ ሰፈር) መኖራቸውን መግለጽ ይችላሉ?
- ከአጠቃላይ ጤናዎ እና ደህንነትዎ ጋር በተያያዘ የምግብ ምርጫዎችን እንዴት ይጓዛሉ?

4. በአመጋገብ ምርጫዎ ላይ ተጽእኖ የሚያሳድሩ የእኩዮች ተጽእኖዎች ምንድን ናቸው?

ምርመራ:-

- በትምህርት ቤት አቀማመጥ ውስጥ ከአካል ምስል ወይም ክብደት ጋር የተያያዙ ተግዳሮቶች ወይም ጫናዎች አጋጥመውዎታል? በእነዚህ ልምዶች ላይ ማብራራት ይችላሉ?

- ከትምህርት ቤት አቀማመጥ ውጭ ከአካል ምስል ወይም ክብደት ጋር የተያያዙ ተግዳሮቶች ወይም ጫናዎች አጋጥመውዎታል? በእነዚህ ልምዶች ላይ ማብራራት ይችላሉ?

5. ለክብደት/ውፍረት ጣልቃገብነት ይጠቅማሉ ብለው የሚያስቧቸው ድጋፎች ምንድን ናቸው እና ምርመራ:-

- አጋዥ ሆነው ያገኟቸው ሃብቶች እና የድጋፍ ሥርዓቶች በትምህርት ቤት ውስጥ አሉ?

- በትምህርት ቤት አካባቢ ጤናን እና ደህንነትን ለማስተዋወቅ ምን አይነት ድጋፍ ወይም ግብአት ጠቃሚ ነው ብለው ያስባሉ?

6. ጠቃሚ ነው ብለው ያሰቡትን ነገር ግን በዚህ ውይይት ውስጥ ያልተነሱትን (ምንም ማከል ከፈለጉ) ንገሩኝ?

Annex 12b: ለወላጆች/ተንከባካቢዎች ጥልቅ ቃለ መጠይቅ ርዕስ መመሪያ

የቃለ መጠይቅ አይነት	
የቃለ መጠይቁ ቦታ	
የቃለ መጠይቁ ቀን	
የቃለ መጠይቅ መሪ	
የቃለ መጠይቁ ቆይታ	

መታወቂያ	
ዕድሜ	
የትምህርት ደረጃ:	

1. የእርስዎ የአመጋገብ ምርጫዎች ምንድን ናቸው?

ምርመራ:-

- በቤተሰብዎ ውስጥ በተለይም ለልጅዎ በትምህርት ቤት እና በቤት ውስጥ ከሚቀርቡት ምግቦች ጋር የተያያዙ የአመጋገብ ልምዶችን መግለጽ ይችላሉ?

- በቤት አካባቢ እና በትምህርት ቀን ውስጥ ባለው የአመጋገብ ልማዶች ላይ ተጽእኖ የሚያሳድሩ አንዳንድ ተግዳሮቶች ወይም ታሳቢዎች ምንድን ናቸው?

2. በጉርምስና ዕድሜ ላይ ባሉ ወጣቶች ጤና እና ደህንነት ላይ የተመጣጠነ ምግብ እና የአካል ብቃት እንቅስቃሴን በተመለከተ የእርስዎ አመለካከት ምንድነው?

ምርመራ:-

- ስለ አመጋገብ እና የአካል ብቃት እንቅስቃሴ እውቀትዎን ከልጅዎ ደህንነት ጋር በማያያዝ ማጋራት ይችላሉ?

- ከልጅዎ ደህንነት ጋር ስለሚዛመዱ የአካል ብቃት እንቅስቃሴ እውቀትዎን ማካፈል ይችላሉ?

3. በትምህርት ቤት አካባቢ በጉርምስና ዕድሜ ላይ የሚገኙ ወጣቶች የሚያጋጥሟቸውን ከጤና ጋር በተያያዙ ችግሮች ላይ የሚያሳስብዎት ነገር ምንድን ነው?

ምርመራ:-

- ልጅዎ በትምህርት ቤት ውስጥ የሚያጋጥሙት ፈተናዎች ምንድናቸው?

4. አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ ጤናማ እና ጤናማ ካልሆኑ ምግቦች አንፃር እንዴት ይገለጻል?

ምርመራ:-

- የትምህርት ቤቱን የምግብ አካባቢ ከጤናማ እና ጤናማ ያልሆኑ ምግቦች አንፃር እንዴት ይለያል?

- ከትምህርት ቤት ውጭ ካሉ ጤናማ እና ጤናማ ምግቦች አንፃር የትምህርት ቤቱን ምግብ አካባቢ እንዴት ይገለጻል?

5. በትምህርት ቤት ውስጥ ላሉ ጎረምቶች ጤና እና ደህንነት የሚጠቅሙ ምን ዓይነት በት/ቤት ላይ የተመሰረቱ ግብአቶች ወይም የድጋፍ ሥርዓቶች ናቸው ብለው ያምናሉ?

ምርመራ:-

- በትምህርት ቤት ውስጥ ላሉ ጎረምቶች ጤና እና ደህንነት ምን ዓይነት ሀብቶች ወይም የድጋፍ ሥርዓቶች ይጠቅማሉ ብለው ያምናሉ?

- ከአመጋገብ ልማዶች ወይም ከአካላዊ እንቅስቃሴ ጋር የተገናኙ ተግዳሮቶች አሉ በትምህርት ቤት አካባቢ?

6. ከጤና ጋር በተያያዙ ጉዳዮች ከልጆቻቸው ጋር እንዴት እንደሚነጋገሩ መግለጽ ይችላሉ?

ምርመራ:-

- ለልጅዎ ጤና እና ደህንነት ድጋፍ የሚሰጡባቸው አንዳንድ መንገዶች የትኞቹ ናቸው?

7. የጤና ችግሮችን ለመቅረፍ ወይም በትምህርት ቤት ውስጥ ባሉ ጎረምቶች መካከል ጤናማ ባህሪያትን ለማስተዋወቅ ምን ዓይነት ጣልቃገብነቶች ወይም ፕሮግራሞች ውጤታማ ናቸው ብለው ያምናሉ?

8. ጠቃሚ ነው ብለው ያሰቡትን ነገር ግን በዚህ ውይይት ውስጥ ያልተነሱትን (የሆነ ነገር ማከል ከፈለጉ) ንገሩኝ

Annex 12c: የትምህርት ቤት አስተዳዳሪዎች ቃለ መጠይቅ ርዕስ መመሪያ

የቃለ መጠይቅ አይነት	
የቃለ መጠይቁ ቦታ	
የቃለ መጠይቁ ቀን	
የቃለ መጠይቅ መሪ	
የቃለ መጠይቁ ቆይታ	

መታወቂያ	
ዕድሜ	
የትምህርት ደረጃ:	

- እንደ የትምህርት ቤት አስተዳዳሪ ኃላፊነቶቻችሁ ምንድን ናቸው?
ምርመራ:-
 - እንደ የትምህርት ቤት አስተዳዳሪ ያለዎትን ሚና እና ኃላፊነቶች በአጭሩ መግለጽ ይችላሉ?
 - በዚህ አቋም ውስጥ ምን ያህል ጊዜ ቆዩ?
- በትምህርት ቤት ውስጥ የተማሪዎችን የአካል ብቃት እንቅስቃሴ ማብራራት ይችላሉ?
ምርመራ:-
 - ለተማሪዎቹ የውጪ መጫወቻ ቦታዎች እና የስፖርት ሜዳዎች ሁኔታዎች ምንድን ናቸው?
 - የአካል ብቃት እንቅስቃሴ መሳሪያዎችን እንደ ኪሶች እና ሌሎች ቁሳቁሶች መኖራቸውን እንዴት ያብራራሉ?
- አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ ጤናማ እና ጤናማ ካልሆኑ ምግቦች አንፃር እንዴት ይገለጻሉ?
ምርመራ:-
 - አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ በትምህርት ቤቱ ውስጥ ካሉ ጤናማ እና ጤናማ ያልሆኑ ምግቦች አንፃር እንዴት ይገለጻሉ?
 - አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ ከትምህርት ቤት ውጭ ካሉ ጤናማ እና ጤናማ ምግቦች አንፃር እንዴት ይገለጻሉ?
- ከጤናማ ምግብ አመጋገብ እና የአካል ብቃት እንቅስቃሴ ጋር የተያያዙ የጤና ትምህርት ቁሳቁሶች ወይም ፖስተሮች ማሳያ እና ተደራሽነት አለ?
ምርመራ:-
 - ጤናማ የአመጋገብ ልማዶችን ከሚያበረታቱ ጤናማ ምግብ አመጋገብ ጋር የተያያዙ የጤና ትምህርት ቁሳቁሶች፣ ፖስተሮች ወይም ትምህርታዊ ተነሳሽነት ማሳያ እና ተደራሽነት አለ?
 - የአካል ብቃት እንቅስቃሴን በተመለከተ የጤና ትምህርት ቁሳቁሶች ወይም ፖስተሮች ማሳያ እና ተደራሽነት አለ?

5. በትምህርት ቤት ውስጥ ባሉ ጎረቤቶች ተማሪዎች መካከል ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ጋር ተያይዘው የሚያጋጥሟቸው ፈተናዎች ምንድን ናቸው?
ምርመራ:-
- እነዚህ ተግዳሮቶች የተማሪዎችን ደህንነት፣ የአካዳሚክ አፈጻጸም እና አጠቃላይ የትምህርት ቤት አካባቢን የሚነኩት በምን መንገዶች ነው?
6. በትምህርት ቤት ውስጥ ያሉ የአመጋገብ ችግሮችን ለመፍታት ስለሚተገበሩ ማናቸውንም ልዩ ተነሳሽነት ወይም ፖሊሲዎች ግንዛቤን መስጠት ትችላላህ?
- ጤናማ አመጋገብ እና የአካል ብቃት እንቅስቃሴን የሚደግፉ የትምህርት ቤት ፖሊሲዎች ትግበራ አለ?
- የአስተዳደር ፖሊሲዎች እና ውሳኔዎች ተማሪዎች በትምህርት ቤት አካባቢ ውስጥ የምግብ አቅርቦት እና ምርጫ ላይ ተጽእኖ የሚያሳድሩት እንዴት ነው?
- ለተማሪዎች ጤናማ የአመጋገብ ልማዶችን ለመደገፍ ፖሊሲዎችን በመተግበር ላይ ማናቸውንም ገደቦች ወይም ግምትዎች ላይተው ማወቅ ይችላሉ?
7. ጤናማ የትምህርት ቤት ምግብ አካባቢን ለማሳደግ እና በትምህርት ቤት ውስጥ በጉርምስና ዕድሜ ላይ ያሉ ተማሪዎች ከመጠን ያለፈ ውፍረት እና ውፍረት ጋር የተያያዙ ችግሮችን ለመፍታት ምን አይነት ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ናቸው ብለው ያምናሉ?
ምርመራ:-
- ጤናማ የትምህርት ቤት ምግብ አካባቢን ለማሳደግ ምን አይነት ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ናቸው ብለው ያምናሉ?
- በትምህርት ቤት ውስጥ በጉርምስና ዕድሜ ላይ ያሉ ተማሪዎች ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ጋር የተያያዙ ተግዳሮቶችን ለመፍታት ምን ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ይሆናሉ ብለው ያምናሉ?
8. ጠቃሚ ነው ብለው ያሰቡትን ነገር ግን በዚህ ውይይት ውስጥ ያልተነሱትን (ምንም ማከል ከፈለጉ) ንገሩኝ?

Annex 12d: የክፍለ ከተማ የትኩረት ሰዎች ቃለ መጠይቅ ርዕስ መመሪያ

የቃለ መጠይቅ አይነት	
የቃለ መጠይቁ ቦታ	
የቃለ መጠይቁ ቀን	
የቃለ መጠይቅ መሪ	
የቃለ መጠይቁ ቆይታ	

መታወቂያ	
ዕድሜ	
የትምህርት ደረጃ:	

- እንደ ክፍለ ከተማ የትኩረት ሰው ኃላፊነቶቻችሁ ምንድን ናቸው?
ምርመራ:-
- እንደ የትምህርት ቤት አስተዳዳሪ ያለዎትን ሚና እና ኃላፊነቶች በአጭሩ መግለጽ ይችላሉ?
- በዚህ አቋም ውስጥ ምን ያህል ጊዜ ቆዩ?
- አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ ጤናማ እና ጤናማ ካልሆኑ ምግቦች አንፃር እንዴት ይገለጻሉ?
ምርመራ:-
- አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ በትምህርት ቤቱ ውስጥ ካሉ ጤናማ እና ጤናማ ያልሆኑ ምግቦች አንፃር እንዴት ይገለጻሉ?
- አሁን ያለውን የትምህርት ቤት ምግብ አካባቢ ከትምህርት ቤት ውጭ ካሉ ጤናማ እና ጤናማ ምግቦች አንፃር እንዴት ይገለጻሉ?
- ከጤናማ ምግብ አመጋገብ እና የአካል ብቃት እንቅስቃሴ ጋር የተያያዙ የጤና ትምህርት ቁሳቁሶች ወይም ፖስተሮች ማሳያ እና ተደራሽነት አለ?
ምርመራ:-
- ጤናማ የአመጋገብ ልማዶችን ከሚያበረታቱ ጤናማ ምግብ አመጋገብ ጋር የተያያዙ የጤና ትምህርት ቁሳቁሶች፣ ፖስተሮች ወይም ትምህርታዊ ተነሳሽነት ማሳያ እና ተደራሽነት አለ?
- የአካል ብቃት እንቅስቃሴን በተመለከተ የጤና ትምህርት ቁሳቁሶች ወይም ፖስተሮች ማሳያ እና ተደራሽነት አለ?
- በትምህርት ቤት ውስጥ ያሉ የአመጋገብ ችግሮችን ለመቅረፍ የሚተገበሩ ማናቸውንም ልዩ ተነሳሽነት ወይም ፖሊሲዎች ግንዛቤን መስጠት ይችላሉ?
ምርመራ:-
- ጤናማ አመጋገብ እና የአካል ብቃት እንቅስቃሴን የሚደግፉ የትምህርት ቤት ፖሊሲዎች ትግበራ አለ?

- የአስተዳደር ፖሊሲዎች እና ውሳኔዎች ተማሪዎች በትምህርት ቤት አካባቢ ውስጥ የምግብ አቅርቦት እና ምርጫ ላይ ተጽእኖ የሚያሳድሩት እንዴት ነው?

- የአስተዳደር ፖሊሲዎች እና ውሳኔዎች ተማሪዎች በትምህርት ቤት አካባቢ ውስጥ የምግብ አቅርቦት እና ምርጫ ላይ ተጽእኖ የሚያሳድሩት እንዴት ነው?

5. የክፍለ ከተሞች ፎካል ሰዎች ጤናማ የአመጋገብ ልማዶችን በማስተዋወቅ እና በተማሪዎች መካከል ያለውን ከመጠን ያለፈ ውፍረት እና ውፍረት ለመቀነስ ምን ሚና ሲጫወቱ ይመለከታሉ? ምርመራ:-

- ተጨማሪ ትብብር ወይም ድጋፍ ጠቃሚ ነው ብለው የሚያምኑባቸው ቦታዎች አሉ?

6. ጤናማ የትምህርት ቤት ምግብ አካባቢን ለማዳበር እና በትምህርት ቤት ውስጥ ባሉ ጎረምሳ ተማሪዎች መካከል ከመጠን ያለፈ ውፍረት እና ውፍረት ጋር የተያያዙ ችግሮችን ለመፍታት ምን አይነት ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ይሆናሉ ብለው ያምናሉ?

ምርመራ:-

- ጤናማ የትምህርት ቤት ምግብ አካባቢን ለማሳደግ ምን አይነት ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ናቸው ብለው ያምናሉ?

- በትምህርት ቤት ውስጥ በጉርምስና ዕድሜ ላይ ያሉ ተማሪዎች ከመጠን ያለፈ ውፍረት እና ከመጠን ያለፈ ውፍረት ጋር የተያያዙ ተግዳሮቶችን ለመፍታት ምን ስልቶች ወይም ጣልቃገብነቶች ውጤታማ ይሆናሉ ብለው ያምናሉ?

7. ጠቃሚ ነው ብለው ያሰቡትን ነገር ግን በዚህ ውይይት ውስጥ ያልተነሱትን (የሆነ ነገር ማክል ከፈለጉ) ንገሩኝ?