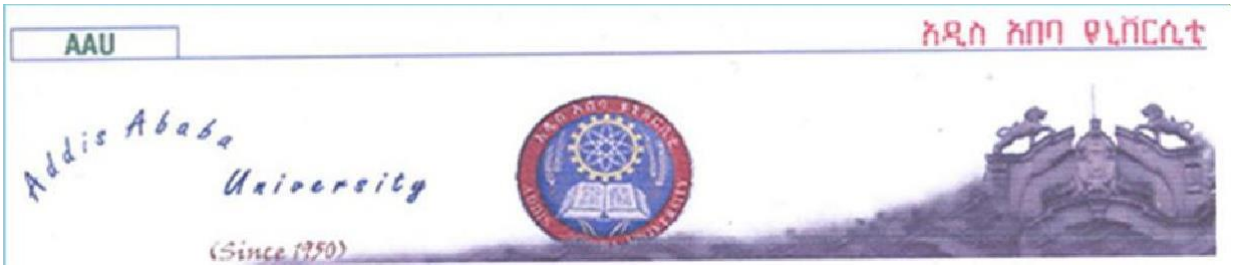

COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR FOOD SECURITY STUDIES

FOOD SECURITY STATUS, DIETARY DIVERSITY, COPING STRATEGIES AND WASH KNOWLEDGE, ATTITUDE AND PRACTICE OF INTERNALLY DISPLACED HOUSEHOLDS SETTLED IN SULULTA SUBCITY, OROMIA REGION

BY LENSA ABI

MSC THESIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES, COLLEGE OF DEVELOPMENT STUDIES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR MASTER OF SCIENCE DEGREE IN FOOD SECURITY AND DEVELOPMENT

OCTOBER, 2023

ADDIS ABABA, ETHIOPIA

COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR FOOD SECURITY STUDIES

FOOD SECURITY, DIETARY DIVERSITY, COPING STRATEGIES AND WASH KNOWLEDGE, ATTITUDE AND PRACTICE OF INTERNALLY DISPLACED HOUSEHOLDS SETTLED IN SULULTA SUB CITY, OROMIA REGION

BY: LENSA ABI

THESIS SUPERVISORS: PROF. MOGESSIE ASHENAFI

DR MESKEREM ABI

M.SC. THESIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES, COLLEGE OF DEVELOPMENT STUDIES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR MASTER OF SCIENCE DEGREE IN FOOD SECURITY AND DEVELOPMENT

OCTOBER, 2023

ADDIS ABABA, ETHIOPIA

Declaration

I, Lensa Abi, certify that this thesis is my original work, that it has not been submitted for a degree or qualification at any other academic institution, and that all data sources utilized in the thesis have been appropriately acknowledged.

Lensa Abi Teka

Approval Sheet

Addis Ababa University
College of Development Studies
Centre for Food Security Studies

As supervisors of the thesis, we certify that I have read and evaluated the thesis entitled *"food security status, dietary diversity and coping strategies and water, sanitation and hygiene KAP of internally displaced households settled in Sululta sub city, Oromia*" and recommend Open Defense as fulfilling the requirement for the Master of Science Degree in Food Security and Development.

Lensa Abi	6/15/2024	
Name of candidate	Date	Signature
Prof. Mogessie Ashenafi	6/10/2024	
Thesis Advisor	Date	Signature
Meskerem Abi (PhD)	6/15/2024	
Thesis Supervisor	Date	Signature

As members of the Examining Board of the Thesis Open Defense, we certify that we have read and evaluated the thesis entitled *"food security status, dietary diversity and coping strategies and water, sanitation and hygiene KAP of internally displaced households settled in Sululta sub city, Oromia."* and recommend for the degree of Master of Science Degree in Food Security and Development.

……..……	…….……..	……..
Name, Chairman	Signature	Date
……	…….……..	……..
Name, Internal Examiner	Signature	Date
……..…	…….……..	……
Name, External Examiner	Signature	Date

Final approval and acceptance of this thesis is contingent upon the candidate's submission of the final copy of the thesis, incorporating all the comments by the Examining Board,

_____

Chairperson of the center or Graduate Program Coordinator

Table of Contents

List of Figure

List of table

Acknowledgment

First and foremost, my greatest gratitude reaches to the almighty God, who helps me just from the beginning to the end and allows me to see the fruit of my effort. Next, I would like to thank my advisors, Prof. Mogessie Ashenafi and Dr Meskerem Abi, for their collaboration and support during the thesis's development and completion. My special thanks go to Mr Dereje Girma, particularly for his genuine assistance and facilitation during data collection activities. I would also like to extend my appreciation to key informants from the local government and Kebele level for their assistance. I am most grateful to my whole family for their consistent encouragement and moral support all the time. Finally, I would like to thank the IDP households residing in Sululta Sub city, particularly the study participants, for their willingness to share information with me and their time and valuable contributions in general

ABSTRACT

Internally Displaced Peoples (IDP) often struggle to meet basic needs such as food, water, and sanitation. This study assessed the food security, coping strategies, dietary diversity, and knowledge, attitude, and practice of water, sanitation, and hygiene among internally displaced households in Sululta Sub city. Data were collected through surveys with a total of 226 randomly selected IDPs households, key informant interviews, and focus group discussions, and analyzed using descriptive statistics in STATA for Windows 13. In addition, food security status was analyzed using the Household Food Insecurity Access Scale (HFIAS), household dietary diversity scale (HDDS), coping strategies, and Water, sanitation and hygiene (WASH) knowledge, attitude and practice. The study found that the majority of respondents (79%) were female heads of households responsible for food preparation and water-related activities. The HFIAS result indicated that only 8% of households were food secure, while 56% faced severe food insecurity, implying. the prevalence of food insecurity in the study area. Furthermore, the HDDS result showed low dietary diversity among the study households with 52% of households consuming fewer than three food groups. Common coping strategies included skipping meals, reducing portion sizes, and relying on cheaper or less-preferred food items. The study further revealed low WASH knowledge, attitudes and practices; only 24.2% had adequate sanitation knowledge, 30.3% had a positive attitude towards WASH, and 33.6% practiced proper hygiene. The findings revealed that awareness of critical times for handwashing and the causes of diarrhea was limited, with only 26% of respondents knowing the correct preparation of Oral Rehydration Solution (ORS). Although 57% of the respondents perceived the water quality as good, only 21% were satisfied with the drainage system. The findings highlight the severe food insecurity and low dietary diversity among IDPs. Recommendations include stabilizing food markets, developing strategies to address urban household food insecurity, and creating job opportunities. Enhancing WASH knowledge and practices, particularly regarding handwashing and diarrhea prevention, is also crucial.

Keywords: Food security status, coping mechanism, Dietary diversity, IDP household, WASH, KAP

LIST OF ACRONYMS AND ABBREVIATIONS

CSA	Central Statistical Agency
CSI	Coping Strategy Index
FAO	Food and Agriculture Organization
FEWS NET	Famine Early Warning Systems Network
FSIN	Food Security Information Network
FSNWG	Food Security and Nutrition Working Group
GRFC	Global Report on Food Crises
GNAFC	Global Network Against Food Crises
HDDS	Household Dietary Diversity Score
HFIAS	Household Food Insecurity Access Scale
HFIAP	Household Food Insecurity Access Prevalence
HNO	Humanitarian Needs Overview
IDMC	Internal Displaced Monitoring Center
IDP	Internally Displaced Persons
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WHO	World Health Organization
WASH	Water, Sanitation and Hygiene

CHAPTER ONE: INTRODUCTION

1.1. Background

Food insecurity and malnutrition are pressing global issues that affect millions of people worldwide, particularly in the context of internal displacement, particularly during times of crisis (World Health Organization (WHO), 2022). Internally displaced persons (IDPs) are often forced to flee their homes due to conflicts, natural disasters, or other crises, leading to a disruption of their livelihoods and access to food sources. As a result, IDPs are particularly vulnerable to food insecurity and malnutrition.

Conflict, climatic extremes, economic shocks, and growing inequality are the main causes of food insecurity and malnutrition. These factors frequently occur together, posing a continuing challenge to the quantity and quality of foods that people can access. Most of the time, provision of adequate quantity and quality of food is more difficult for governments in many countries in order to lessen the effects of crises on food insecurity and malnutrition. In terms of having access to food in sufficient quantities, variety, and micronutrient content, household food security is essential for nutrition; however, it is insufficient to prevent individual malnutrition (Ghattas, 2014; Ermias et al., 2017). In order to maintain health and effectively utilize the food that is consumed, nutrition fundamentally calls for access to food as well as adequate health care services, safe drinking water, sanitation, and hygiene of people and their surroundings (FAO et al., 2012; Fanzo, 2015; Hutton and Chase, 2016).

According to the Global Report on Food Crises (GRFC) (2021), about 40 million individuals in 36 countries faced worse food insecurity, with more than half a million enduring catastrophic level hunger. Similarly, 29.3% of the estimated global population (2.3 billion people) was moderately or severely food insecure, with 11.7% (923.7 million people) experiencing severe food insecurity (FAO et al., 2022). Similarly, in 2022, 193 million people in 53 countries faced acute food insecurity and in need of immediate assistance (GRFC, 2022). Furthermore, according to the FAO et al., (2021) report, nearly one-third of the world's population (2.37 billion) did not have access to adequate food in 2020. Conflict, climate change, and economic shocks have all contributed to global food crises. These conditions have been aggravated in 2020 and 2021 by the COVID-19 epidemic and the crisis in Ukraine (GFRC, 2022).

In Eastern Africa, particularly in Ethiopia, Sudan, and Somalia, there are the highest rates of acute malnutrition and food insecurity has been recorded (WFP, 2022a). For instance, by 2022, 6.6 and 6.7 million people in South Sudan and Somalia, respectively, experienced severe and acute food insecurity (WFP, 2022a). Similarly, an estimated 22.6 million people in Ethiopia were food insecure in 2022 (WFP, 2022b). Women and children are more susceptible to malnutrition in countries experiencing a food crisis. According to the Food Security Information Network and the Global Network Against Food Crises (FSIN and GNAFC), in total, 7.2 million children were stunted, and 31.9 million were wasted in 2021).

Since November 2020, the conflict in Northern Ethiopia has Worsened food insecurity and malnutrition, with over 13 million people in Oromia, Tigray, Amhara, and Afar regions in need of assistance (FEWS, 2022). Malaria, measles, acute respiratory infections, and other vaccine-preventable diseases with a high risk of outbreaks, such as cholera, have increased in number. Over 2.8 million people have been displaced as a result of the conflict, political unrest, unpredictable natural disasters (e.g. flooding) and they are living in overcrowded conditions with limited access to food, nutrition, health, and water and sanitation infrastructure (WHO, 2022).

1.2. Statement of the problem

Ethiopia is currently facing a severe food insecurity crisis due to conflicts, displacement, and significant increases in food prices. The purchasing power of the impoverished population is not anticipated to improve significantly. This situation is particularly detrimental for IDPs who rely on aid and food purchases to survive, as they lack access to their own food production. This further diminishes their purchasing power and exacerbates their vulnerability to food insecurity. Additionally, their livelihoods may be at risk as a result of these challenges (WFP, 2022a; FEWS NET, 2022).

Moreover, internally displaced households often lack the necessary resources and land to engage in productive agricultural activities, resulting in food shortages and reliance on external assistance. Limited access to diverse food items, such as fruits, vegetables, and animal products, contributes to poor dietary diversity and increases the risk of malnutrition and related health issues. Internally displaced households in Sululta Sub city face numerous challenges in coping with the adverse effects of displacement. Disrupted livelihoods and limited economic

opportunities often force households to resort to negative coping strategies, such as reducing food consumption, engaging in exploitative labor, or selling assets. These coping mechanisms can have long-term negative consequences, perpetuating cycles of poverty and dependency. Displaced households in Sululta Sub city often encounter significant challenges in accessing clean water, sanitation facilities, and practicing proper hygiene. The influx of internally displaced populations puts a strain on existing infrastructure and services, leading to inadequate WASH facilities and increased health risks. Limited knowledge and awareness of hygienic practices further exacerbate the problem, contributing to the spread of waterborne.

Furthermore, sites for internally displaced persons (IDPs) in Ethiopia predominantly consist of densely populated public buildings, where numerous households share communal spaces, with or without proper partitions. IDP families face challenges in accessing water and lack knowledge of proper hygiene practices, including fecal waste management and appropriate use of latrines. These unsatisfactory hygiene and sanitation conditions, coupled with the high population density in the camps, heighten the risk of diarrheal diseases. Consequently, they experience significant hardships due to inadequate living standards, illness, and malnutrition, aggravated by limited and insufficient access to safe water, hygiene, and sanitation facilities (UNOCHA, 2020).

However, existing studies have primarily focused on the food security and coping strategies of IDPs, with limited emphasis on the status of WASH among this population (e.g., Kiya, 2022; Solomon, 2022; IDonije et al., 2022). Only a few studies have assessed the knowledge, attitude, and practices of IDPs regarding water, sanitation, and hygiene (Adedeji et al., 2021). Additionally, no study has been conducted specifically in Sululta sub city to assess the food security status and knowledge, attitude and practice of WASH among IDP households. Therefore, this study aims to address the knowledge gap by assessing the food security status and KAP of IDPs regarding the water, sanitation, and hygiene situation among internally displaced households in Sululta sub city.

1.3. Objectives

1.3.1. General objective

The overall objective of this study is to investigate food security status, dietary diversity and coping strategies and water, sanitation and hygiene KAP of internally displaced households settled in Sululta sub city, Oromia.

1.3.2. Specific objectives

More specifically, the research was intended to:

1. Analyze household food security status and coping mechanism of IDP in the study area
2. Evaluate Household dietary diversity of IDPs
3. Identify factors associated with food security status of IDP in the study area
4. Assess the level of knowledge among IDPs regarding water, sanitation, and hygiene
5. Explore the attitudes of IDPs towards Water, sanitation and hygiene
6. Analyze water, sanitation and hygiene practices implemented within households

1.4. Research questions

1. What is the food security status of the IDP households and what experiences of food insecurity do they face?
2. What are the major mechanisms used by the IDPs household to cope up with food insecurity in the study area?
3. How is the household diet diversity of IDP households in the study area?
4. What are the factors that are associated with food security of internally displaced persons?
5. What is the level of knowledge, attitude and practice of IDP households in household and environmental water, hygiene and sanitation (WASH)?

1.5. Significance of the study

The research will help to advance academic understanding on internal displacement. This research will help to clarify the food security, water, sanitation, and hygiene status of internally displaced

households in Sululta sub city. The study's findings may be used to provide insight into the food insecurity experiences of IDPs, as well as to assist development practitioners in developing and designing appropriate food security and WASH initiatives as a corrective measure to the existing condition in the community. The study is used in communities to raise awareness of hygiene issues in the local community. The study can also be used as a resource for other scholars who desire to conduct research on the subject. Furthermore, the research will expand on previous findings.

1.6. Scope and Limitation of the Study

This study was carried out to assess food security, household dietary diversity, coping strategies and water, sanitation and hygiene status of internally displaced households settled in Sululta sub city. The scope of the study did not include the host community living in Sululta Sub city; it is limited and restricted to internally displaced peoples households settled in Sululta sub city. This is due to limited resources in terms of time, budget, and other material limitations. Several limitations may impact the study. First, the findings may not be generalizable to other regions due to the specific context of the study area. Second, self-reporting bias may be present in the survey data. Third, the qualitative data may be influenced by participant subjectivity or social desirability bias. Additionally the study did not assess and measure the nutritional status of the children due to limited access to budget and material.

1.8. Organization of the study

The study covered five chapters. Chapter one consists of the background of the study, the statements of the problem, objectives, research questions, significance of the study, scope and limitation of the study, operational meaning and organization of the study. Chapter two consists of the literature of the study: theoretical review, empirical literature review and conceptual framework. Chapter three consists of methods and materials used for the study. Chapter Four consists of results and discussion. And chapter five consists of conclusion and recommendation.

CHAPTER TWO: LITERATURE REVIEW

2.1. Concepts of Food security

According to FAO (2012), food security is the condition in which everyone, at all times, has physical, social, and economic access to an adequate supply of, and access to, food that is safe, nutritious, and meets their dietary needs and food preferences for an active and healthy life. There are four aspects of food security listed in this definition: availability, access, utilization, and stability.

Food availability refers to the physical presence of food, whether it is produced at home or purchased from a store, as well as the amount of food that is readily available for consumption by the household as a whole. It is based on the availability of local markets, transportation, and a seasonality in the food supply (FAO, 2006). According to USAID (1992), when "individuals have regular access to sufficient quantities of appropriate, necessary types of food from domestic production, commercial imports, commercial aid programs, or food stocks."

Food access refers to having enough money to buy the right foods for a healthy diet. This depends on the amount of money available, how it is distributed among the household members, and the cost of food. According to USAID (1992), it is also when "individuals have sufficient resources or incomes to produce, buy, or barter for levels of appropriate foods needed to maintain consumption of an adequate diet/nutrition level." This is possible if a household has access to food in a quantity and quality sufficient to guarantee a healthy diet (FAO, 2006). According to Tesfay et al. (2014) and Omotayo et al. (2022), household resources, food prices and purchasing power, as well as sociopolitical factors like discrimination and gender inequality influence it.

Food utilization is the term used to describe how food should be used biologically. This involves eating a diet that provides enough energy and essential nutrients, having access to potable water and good sanitation, and having a basic understanding of nutrition, food processing, and child care. USAID (1992) added the following definition: "Food is used appropriately; appropriate food processing and storage techniques are used; adequate knowledge of nutrition and childcare techniques exists and is used; and adequate health and sanitation services exist." Additionally, it is how the use of food in the home is connected to other aspects of a healthy environment, such

as access to clean water, sanitary conditions in homes, and proper waste disposal (Hutton and Chase, 2016).

Food stability is the fourth component of food security that cuts across the other three. Stability refers to the temporal dimension, or timeframe, of food security as implied by the wording "at all times" in the USAID (1992) definition of food security. Stability is defined as, "The ability to access and utilize appropriate levels of nutritious food over time.**"**

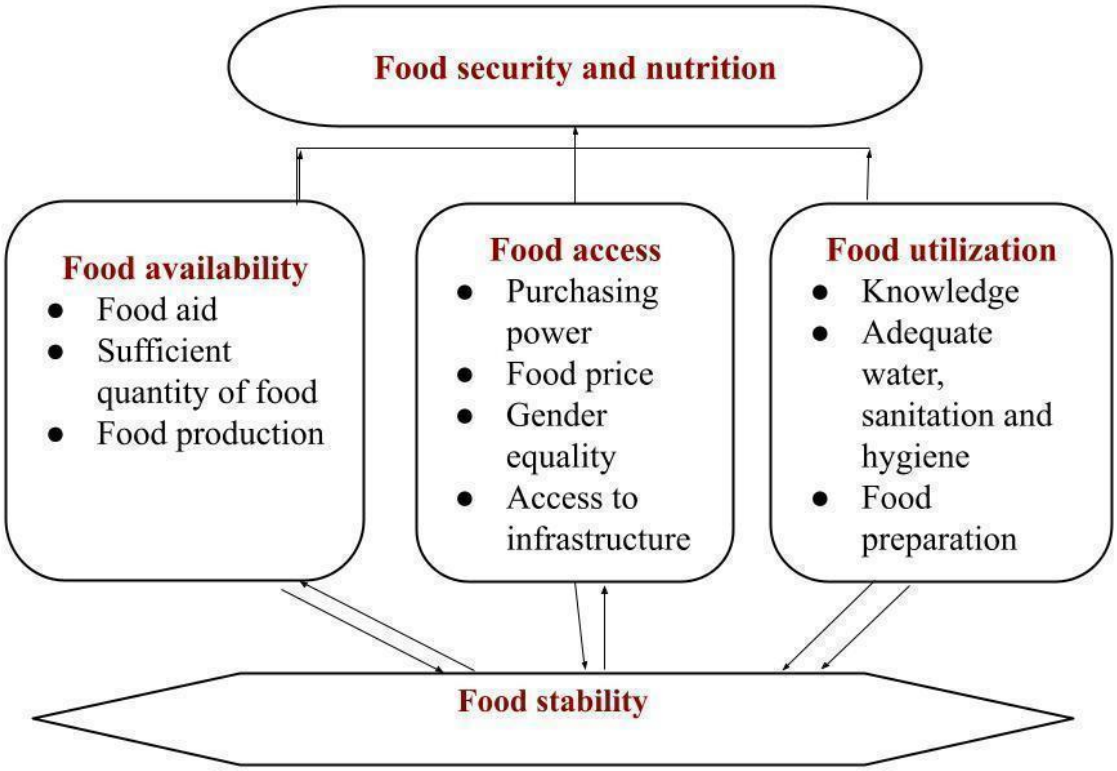

Figure 2.1: Components of food security

Source: Adapted from literature review

2.1.1. Indicators and measurements of food security

There are several indicators that can be used to measure food security. These indicators can be composite or individual measures and can focus on factors contributing to food security rather

than on food security outcomes (Carletto et al., 2013; manikas et al, 2023). One of the most commonly used food security indicators is the measurement of household dietary diversity, household food access, household food utilization and coping strategies during food shortages, and these are briefly explained as follows:

Household dietary diversity

The household dietary diversity score (HDDS) measures a household's financial capacity to access a range of foods and show how easily households can afford food. It is used to assess the utilization component of food security. Specifically, it helps to measure the quality and quantity of food to meet all households' members' nutritional requirements for productive lives (Swindale and Bilinsky, 2006). According to earlier research (Hoddinot and Yohannes, 2002; Hatloy et al., 2000), dietary diversity is correlated with socioeconomic status and household food security. HDDS measures a number of food groups consumed over a period of a week (FAO and WFP, 2009). Food groups including Cereals, Pulses/legumes, Root and tubers, Vegetables, Fruits, Fish and seafood, Eggs, Milk and milk products, Meat/poultry, Oil/fats, Sugar/honey, and spices/beverages are used to calculate the HDDS and measure the food security status.

Household Food Insecurity Access Scale

Household Food Insecurity Access scale (HFIAS) is a food security measurement used to investigate household food security status based on the response of sampled households (Regassa et al., 2012). It provides information on food insecurity (access) at the household level (Coates et al. 2007). There are nine occurrence questions asked to determine whether a specific condition associated with the experience of food insecurity ever occurred during the previous 4 weeks prior to surveys. Each occurrence question is rated by using Likert scales: rarely, sometimes, and often. The HFIAS variable is calculated for each household by summing the codes for each frequency-of-occurrence question. The maximum score for a household is 27 (the household response to all nine frequency-of occurrence questions is "often", coded with response code of 3); the minimum score is 0 (the household responded "no" to all occurrence questions, frequency-of-occurrence questions were skipped by the interviewer, and subsequently coded as 0 by the data analyst). The higher the score, the more food insecurity (access) the household experienced. The lower the score, the less food insecurity (access) a household experienced.

Moreover, households' food insecurity access prevalence (HFIAP) is used to classify households into four levels of food security status: (1) food secure, (2) mildly food insecure, (3) moderately food insecure and (4) severely food insecure. The classification is made to indicate household vulnerability to food shortage and reveal its seriousness (Maxwell et al., 2014). The overall household food insecurity prevalence is computed as the proportion of food-insecure households out of the total interviewed households.

Household coping strategy

Household coping strategy is measured by Coping Strategy Index (CSI). CSI is one of the tools for measuring food insecurity and behavioral responses to household food shortages (Maxwell and Caldwell, 2008). This index tracks people's coping mechanisms and behaviors when they do not have access to enough food. These coping mechanisms are simple, straightforward to understand, and correlates well with more complex measures of food security. Information on coping mechanisms can be gathered more quickly, easily, and affordably than actual household food consumption data. CSI measures the strategies people rely on when they do not have access to adequate food or enough money to buy food. A series of questions about how households manage to cope with a shortfall in food for consumption results in a simple numeric score. This index results in a score that reflects current and perceived future food security status. Changes in the index provide a rapid indication of whether food security is getting worse, or the situation is improving; a higher score indicates a greater level of coping, and hence increased food insecurity. A series of questions about how households manage to cope with a shortfall in food for consumption during the past 30 days or 12 months are asked using a 'Yes' or 'No' response for each household. The CSI score indicates whether household food security status is declining or improving.

2.2. Concepts of Water, sanitation and hygiene

Water, sanitation, and hygiene (WASH) are also critical components of food security, as they are essential for the preparation, storage, and consumption of safe and nutritious food. However, IDPs often face challenges in accessing clean water and sanitation facilities, which can increase the risk of waterborne diseases and further exacerbate food insecurity.

Water, Sanitation, and Hygiene (WASH) plays a critical role in measuring food availability and utilization status. For instance, water sources are used not only for domestic purposes such as drinking and cooking but also for food production (crops, horticulture, poultry, and livestock) and income-generating activities, which are vitally important for ensuring food availability and utilization. However, water sources for drinking and cooking can become contaminated if there is no sanitation, implying that people will be vulnerable to illness and infection without access to clean water. Consequently, pathogenic agents can spread among families and communities without soap and other hygiene supplies, such as feminine hygiene products (UNHCR 2022). Water is crucial for the growth, health, and well-being of humans as well as for sustainable development, the eradication of hunger and poverty. However, the advantages of having a better source of drinking water can only be realized if there is also access to improved sanitation services and good hygiene practices are well protected. Sanitation services are more than just latrines and toilets: good hygiene practices, adequate services, and structures combined provide the hygienic environment that each individual requires to combat diseases and grow healthy.

Moreover, maintaining good hygiene is essential for a long, healthy life and for preventing the spread of infectious diseases. Beside, Safe drinking water, sanitation, and hygiene are fundamental to an improved standard of living, including the protection of health and the environment, improved educational outcomes, greater convenience, dignity and gender equality (Agbadi et al., 2019; Prüss-Üstün et al., 2019). Most often, IDPs have lower access to improved water, sanitation, and hygiene services that can cause infectious diseases as its determinants of child stunting (Hutton and Chase, 2016; FAO et al., 2020). Lower access to clean water, adequate sanitation and hygiene are closely linked to repeated diarrhoeal diseases and parasite infestations of children leading to reduced absorption of nutrients, which contribute to malnutrition (Fewtrell et al., 2007; Perez-Escamilla et al., 2018).

2.3. Concepts of internally displaced persons

Internally Displaced Persons (IDPs) refers to persons or groups of persons who have been forced or obliged to flee or leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or man-made disasters, and who have not crossed an international border"

(IDMC, 2004). Moreover, internal displacement has an impact not only on the lives of those who are displaced, but also on the living conditions of host communities. Impairing or halting IDPs' productive activities, income, and spending has a direct impact on the economy, with potential ripple effects on their hosts, providers, and customers. Longer-term expenses of aid supply, income supplements, and unemployment, as well as a drop in income tax and local revenues, are among the consequences (Cazabat, 2020). IDPs also have less options to reclaim their livelihood activities, so acute food shortages can develop into chronic food shortages, which can contribute to malnutrition (IOM, 2021).

According to the IDMC (2022), there are currently more than 71.1 million IDP worldwide at the end of 2022. Internally displaced people are often subject to heightened vulnerability in several areas. They suffer significantly higher rates of mortality than the general population and remain at high risk of physical attack, sexual assault, and abduction. They are frequently deprived of adequate shelter, food, and health services. The global report on Internal Displacement indicates that displacement trends are aggravating food insecurity and alarming most acute humanitarian crises.

2.4. Empirical literature on food security and WASH

2.4.1. Food security status of internally displaced persons

Malnutrition in children under the age of five is directly linked to household food insecurity as a result of inadequate food consumption and poor diet (Drammeh et al., 2019; Sasson, 2012). It is indirectly linked to a number of factors, such as tainted drinking water and poor sanitation and hygiene, making children more susceptible to infectious diseases like diarrhea and intestinal worms (Yigzaw et al., 2019; Shrestha et al., 2020).

According to Solomon's (2021) study on the determinants of food insecurity and coping mechanisms used by internally displaced households in Gelan town, respectively 11.3%, 43%, and 23% of the households experienced mild, moderate, and severe food insecurity. according to kiya (2022) study on food security status and coping mechanisms of internally displaced people in Burayu Town, about 7.2% of IDPs were were food secured, while 29%, 38.5%, and 25.3% were mildly food insecure, moderately food insecure and severely food insecure respectively.

According to Singh et al. (2017) qualitative food security assessment of the IDP in Kenya, many of these IDPs still struggle to access basic necessities like food and water, which has a negative impact on morbidity and mortality.

2.4.2. Household dietary diversity of internally displaced persons

Indeed, dietary diversity plays a crucial role in ensuring high-quality diets and adequate nutrient intake. It refers to the variety of foods or food groups consumed within a specific reference period. In the literature, the terms "dietary diversity" and "dietary variety" are often used interchangeably (Ruel et al., 2003). Having a diverse diet is essential for vulnerable populations, including internally displaced persons (IDPs), as it helps mitigate the risk of nutritional deficiencies. Poor nutritional status and vulnerability to deficiencies are common among IDPs due to insufficient nutrient intake and food insecurity (Olwedo, 2008; Singha et al., 2015). Dietary diversity serves as an indicator of adequate nutrient intake, a healthy diet, and food security. It ensures that individuals at risk of nutritional deficiencies receive the necessary macro- and micronutrients for optimal health and well-being (Singh et al., 2020).

Research conducted in displacement settings across Ethiopia has consistently shown that internally displaced households face limited dietary diversity. For example, a study conducted in the West Guji zone of Oromia reported that 95% of displaced households relied on a diet dominated by cereals and pulses, with minimal consumption of fruits, vegetables, and animal-source foods (CSA, 2015). Another study in Ethiopia's Tigray region found that displaced households had significantly lower dietary diversity scores compared to non-displaced households. The study indicated that the lack of access to diverse food items contributed to micronutrient deficiencies among the displaced population (Berhe et al., 2019).

2.4.3. Coping strategies mechanism of internally displaced persons

Begging and selling government-provided rations for cash are common coping mechanisms reported among IDPs (Dereje, 2019; Abiyu, 2021). These strategies are often employed to access additional income or resources to meet immediate needs. Additionally, skipping meals, reducing food intake, or even completely skipping meals are coping strategies that IDPs may resort to in order to manage limited food availability (Dereje, 2019). Furthermore, the decision to refuse sending children to school can be another coping mechanism adopted by IDPs. This may be due

to the prioritization of immediate survival needs over education, as well as the challenges in accessing educational facilities in their new environment (Dereje, 2019).

A study conducted among internally displaced households in Ethiopia's Somali region highlighted the adoption of negative coping strategies to manage food insecurity. These strategies included reducing meal portion sizes, skipping meals, and engaging in negative coping mechanisms such as child labor and selling assets (Pawlos et al., 2017). Research in Uganda on coping strategies of internally displaced households found that households resorted to negative coping mechanisms, such as engaging in illegal activities or relying on unsustainable livelihood strategies, to meet their basic food needs (Nakamanya et al., 2017).

2.4.4. KAP of Water, sanitation and Hygiene among internally displaced persons

Indeed, inadequate knowledge, attitude, and practices regarding water sanitation and hygiene (WASH) among internally displaced persons (IDPs) can have detrimental effects on household food security and the nutritional status of children under the age of five (Gashew, 2020; Marie-Rosette Nahimana et al., 2017). According to estimates by the World Health Organization (WHO) and UNICEF in 2020, a significant portion of the global population lacks access to managed drinking water, managed sanitation facilities, and proper handwashing facilities. Specifically, 26% (2.0 billion people) do not have access to managed drinking water, 46% (3.6 billion people) lack access to managed sanitation, and 29% (2.3 billion people) do not have access to a facility for handwashing with soap and water.

In Ethiopia, poor sanitation and hygiene conditions, limited access to safe water, and other related factors contribute to a significant burden of communicable diseases. It is estimated that 60% to 80% of such diseases in Ethiopia are attributed to these factors. Additionally, UNICEF (2018) suggests that around 50% of the effects of undernutrition can be attributed to environmental factors, including poor hygiene practices, lack of access to safe water, and inadequate sanitary facilities. According to a report by the United Nations High Commissioner for Refugees (UNHCR), access to clean water sources and sanitation facilities is a significant challenge for internally displaced households in Ethiopia, including those in the Oromia region. The report indicated that a substantial proportion of displaced households lack access to improved water sources and improved sanitation facilities (UNHCR, 2020). A study conducted in a displacement

camp in Ethiopia's Gambella region revealed that displaced households faced WASH-related challenges, including inadequate access to clean water, poor sanitation facilities, and limited knowledge of hygienic practices (Tefera et al., 2017).

2.4.5. Factors associated with food security status of IDPs

Food security is associated with a variety of factors, including what is available and how much is eaten. All of these factors, on an individual, household, community, national, or international level, shape the external environment. The majority of IDPs struggle to gather sufficient financial resources to cover even their most basic needs (Dereje, 2019). They used to get their food directly from their own production and had access to resources before they were displaced. However, in the location of the displacement, they are either begging on the streets or waiting for humanitarian aid (Carrillo, 2009). In addition, the majority of IDPs were unable to find employment because they lacked the social networks and resources necessary to launch their own businesses, and the host community discriminated against them (Dereje, 2019). In fact, IDP households are less socioeconomically stable than host communities; as a result, their diets are less diverse, which has an impact on malnutrition, particularly in young children under the age of five (Peter et al., 2014). In a previous study, it was found that being male is associated , age, size, educational attainment, occupation, and level of monthly income of the household head were some of the factors that affected the food security of IDP households.

2.5. Conceptual framework

The conceptual framework demonstrates that the food security status of internally displaced persons (IDPs) is a multifaceted issue influenced by a variety of interrelated factors. At the core of this framework is the socioeconomic status of IDP households, which encompasses income levels and employment status, directly impacting their food security status. This, in turn, affects dietary diversity, indicating that a secure food status is conducive to a more varied and nutritious diet. Conversely, when food security is compromised, IDP households may employ coping strategies such as reducing food consumption or borrowing food to mitigate the situation.

Furthermore, the framework highlights the critical role of Water, Sanitation, and Hygiene (WASH) knowledge, attitudes, and practices. It posits that a comprehensive understanding of

sanitation principles and hygiene, coupled with positive attitudes towards the importance of WASH, leads to better WASH practices. These practices are not only essential for maintaining health and nutrition but also have a reciprocal relationship with food security status, creating a feedback loop that underscores the importance of environmental factors such as the availability of water sources and sanitation facilities.

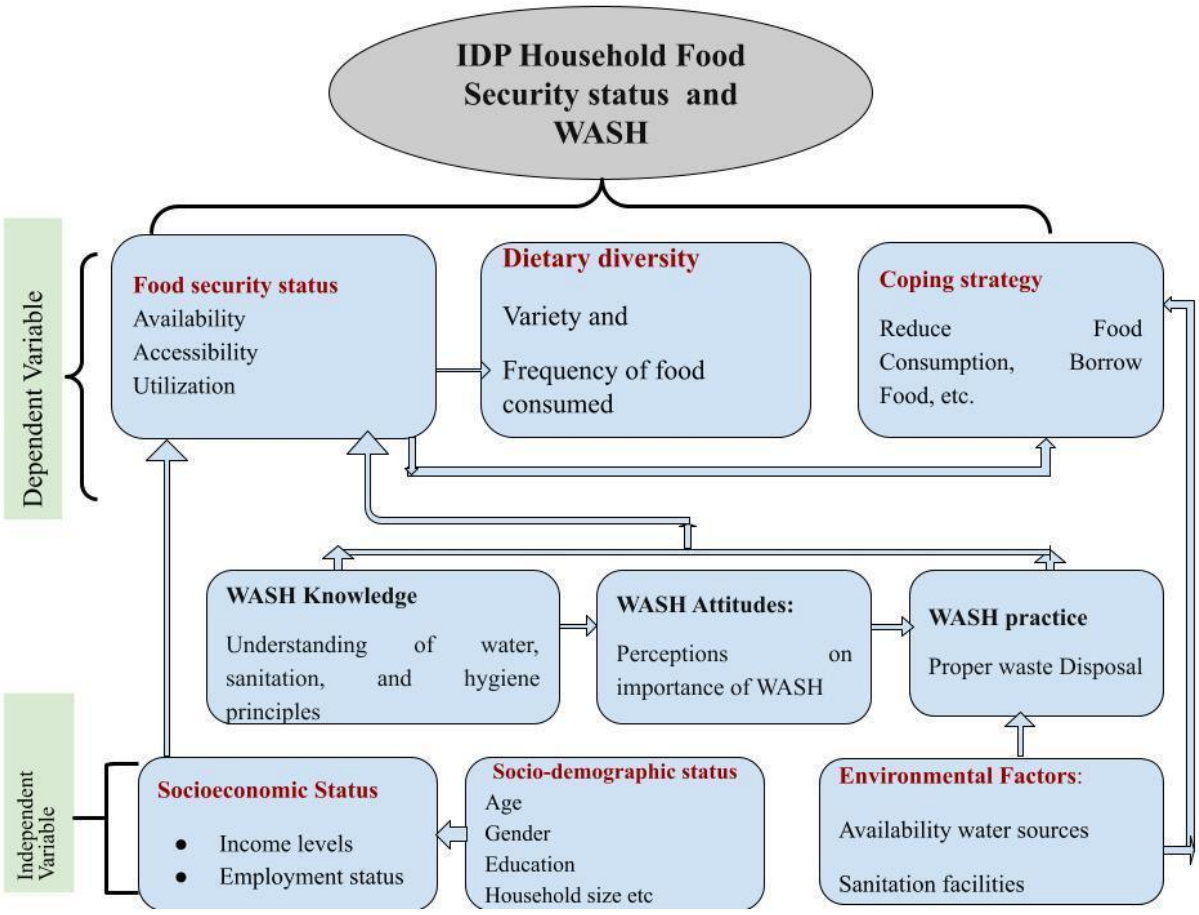

Figure 2.2: Conceptual framework for IDPs household food security and KAP on WASH

Source: Adapted from literature review (2023)

CHAPTER THREE: MATERIALS AND METHODS

3.1. Study Area

The study was conducted on internally displaced persons sites found in Sululta Sub city, Shaggar city of Oromia region (Figure 3.1). Geographically, it lies between 09º 17’ 84’’ N Latitude and 38º 75’ 79’’ East Longitude. The sub city is situated 23 km to the north of Addis Ababa Fiche Road. Existing evidence shows that the total number of IDPs from Ethio-Somali Region who were resettled in Oromia Special Zone Surrounding Finfinne is 19,822 (Tesfaye, 2019). Among them, 1743 numbers of internally displaced persons are found in Sululta sub city (STAO, 2023).

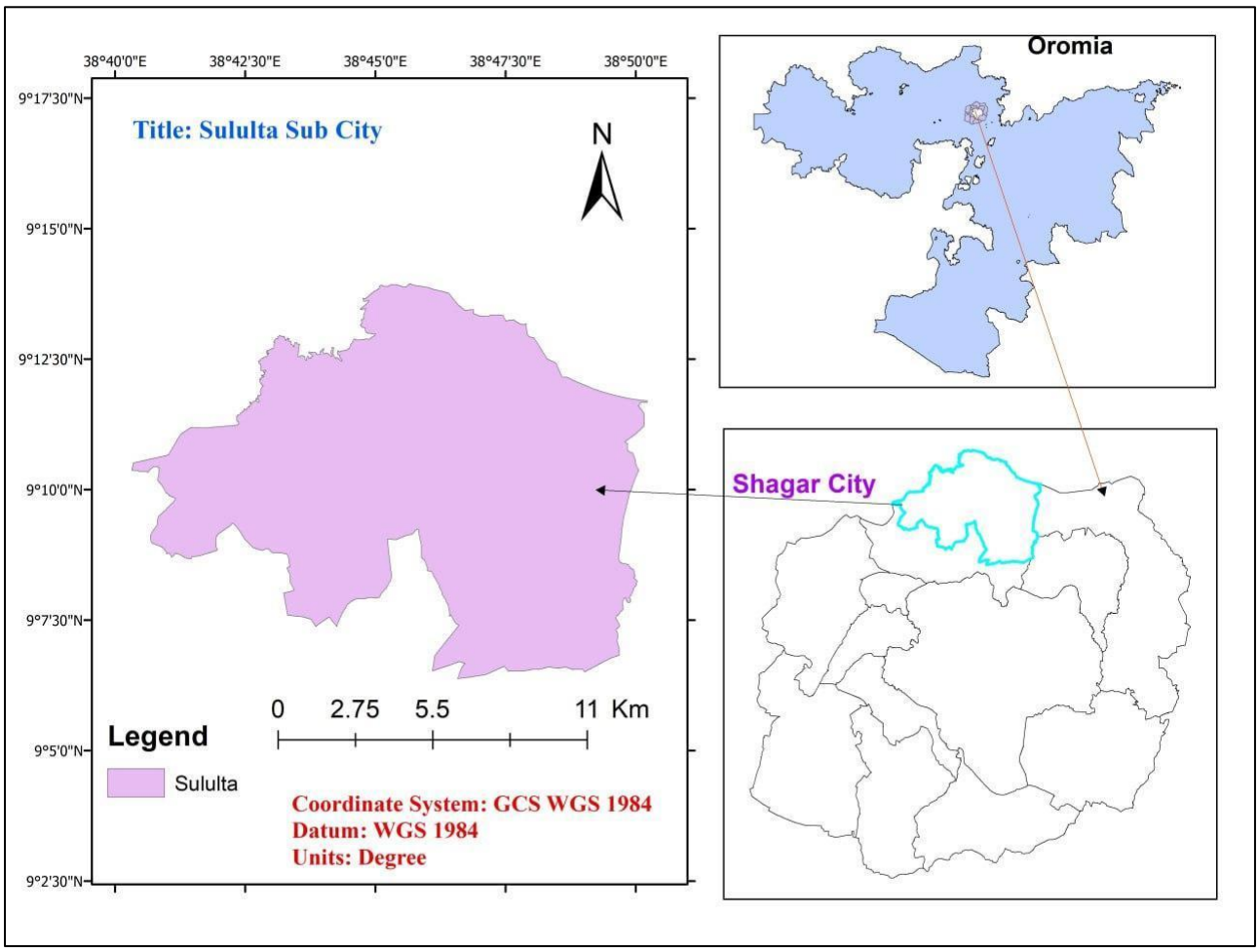

Figure 3.1: Map of the study area

Source: Developed by ArcGIS, 2024

According to information from the Sululta Sub city administration office, there are three settlement sites in Sululta sub city; there is no difference between them; however, due to space constraints, they live separately. Tullu Faatii (Ashawa), Barrisa (Jeje), and Luuguu (Balderas) are the names of these three settlements.

3.2. Research design and approach

The study employed a descriptive research design. The basic purpose of descriptive research is to effectively characterize features of an identified population (Akhtar et al., 2016). This study employed a mixed-methods approach that combined qualitative and quantitative techniques. According to Bowers et al. (2013) and Creswell et al. (2011), a mixed method is a research strategy in which researchers gather and analyze both quantitative and qualitative data within the same study. Qualitative approach was used to explore household and individual experiences that will be used to supplement a quantitative dataset (Creswell, 2002).The main foundation of qualitative research methods is participant views that have been subjected to analytical induction, such as identifying common themes from participant views. These consist of open-ended questionnaires, focus groups, interviews, and observations. Quantitative methods involve gathering, analyzing, interpreting, and documenting study results. Cross-sectional study design was used for this study. Cross-sectional study design is a type of observational study design that is used to collect data from many different individuals at a single point in time. The design of data collection is selected purposely because of the time and resources. Household surveys were conducted for this study during March and April 2023.

3.3. Study population/Target Population

The study population consisted of all households of internally displaced people living in Sululta sub city during the study period. The majority of respondents were women who were in charge of food procurement and preparation in the home. If the women were not available, the information was obtained from the men who were the heads of the households. The sample consisted of respondents who agreed to participate in the study and provided written consent.

3.4. Inclusion and exclusion criterias

All internally displaced households who lived in the study area during the period of data collection were included in the study. Whereas, internally displaced households who had a physical deformation and/or missing limbs and did not have the ability to participate were excluded from the study.

3.5. Sampling technique and sample size determination

This study used a combination of probability and non-probability sampling methods to select the study households living in Sululta sub city. Sululta sub city was selected purposely due to internally displaced persons based on the closeness of the study site to Addis Ababa. According to information from the Sululta Sub city Administration office (2023), Sululta sub city has a total IDP population of 2,686 and 517 IDP households. The IDP settlements are located in three main sites: Luuguu with 208 households, Barrisa with 188 households, and Tulu Fati with 121 households. The study households from the three settlement areas were randomly selected and considered for this study. The sample size was calculated using Yamane's (1967) simplified formula.

$$n=\frac{N}{1+N(e)2}$$

The sample size was determined using a 95% confidence interval with a 5% margin of error of the population. Where: n = the sample size, N = the target population size, e = the level of precision

$$n=\frac{517}{1+517(0.05)2}=226$$

Therefore, a total of 226 IDPs households were selected for this study.

3.6. Data types and source

In this study, both quantitative and qualitative data types were used. Primary data for this study was collected from research participants by using both quantitative (survey) and qualitative

methods (key informant interviews, focus group discussions and observation). Furthermore, Secondary data was collected from the electronically and non-electronically available published sources (books, journal articles, research proceedings, theses, dissertations, magazines, and newspapers) and reports of national and international governmental and non- governmental organizations from libraries and websites.

3.7. Data collection tools and techniques

Taherdoost (2002) defines data collection as "the process of collecting data and measuring information on targeted variables in an established system, which then allows one to answer relevant questions and evaluate outcomes. The researcher employed different data collection instruments to get relevant and sufficient data that were needed in the study. By the research methods employed, a questionnaire, interview guide, FGD guide, and observation checklist were used as data collection tools for the study.

Household survey questionnaire: The study conducted a comprehensive household survey with a total of 226 IDP households. The structured questionnaire used during the survey collected quantitative information on the food security and WASH (Water, Sanitation, and Hygiene) knowledge, attitudes, and practices of the IDP population. Specifically, the household survey gathered data on the socioeconomic and demographic characteristics of the households, as well as key indicators related to food security and WASH. This included the Household Food Insecurity Access Scale (HFIAS) to measure household food insecurity, the Household Dietary Diversity Score (HDDS) to assess dietary diversity, and the Coping Strategies Index (CSI) to capture household coping mechanisms. Additionally, the survey collected data on the households' knowledge, attitudes, and practices related to water, sanitation, and hygiene (WASH KAP). The questionnaire was first written in English and then translated into Afaan Oromo, the local language. Four experienced data collectors, who were fluent in Afaan Oromo, were responsible for administering the survey within the IDP households.

Key informant interviews

The study also conducted a total of 8 key informant interviews (KIIs) with purposely selected participants, such as community representatives and locals with first-hand knowledge of the IDP community. These KIIs provided an opportunity to gather in-depth insights and specialized

knowledge from influential community members and subject matter experts. The KII participants were identified through a purposive sampling approach, ensuring the inclusion of individuals who could offer a diverse range of perspectives and expertise related to the food security and WASH situation in the IDP settlements. The KIIs were conducted in a semi-structured format, allowing for in-depth discussions and the flexibility to probe deeper into issues that emerged during the conversations. The interviews were audio-recorded, with the consent of the participants, and later transcribed for qualitative analysis.

Focus Group Discussion (FGD):

To capture the perspectives and experiences of the IDP community in Sululta sub city regarding food security and WASH (Water, Sanitation, and Hygiene) status, the study conducted two focus group discussions (FGDs). One FGD was held with a group of female participants, while the other had a mixed gender composition. The participants were recruited from the three IDP settlement sites using a purposive sampling approach to ensure balanced representation. Each FGD consisted of a group discussion of 6-12 persons guided by a facilitator, who used semi-structured discussion guides to explore key topics, including access to food and water resources, sanitation practices, coping strategies, and community-based initiatives. Visual aids were used to stimulate discussion and encourage participant engagement. Each FGD session lasted 90 minutes to 2 hours, and the discussions were audio-recorded and transcribed for qualitative analysis.

Field observation:

In addition to the FGDs and KIIs, the research team also carried out field observations within the IDP settlements. Field observation is a qualitative research method that provides an inside look at the community and its surroundings. This method provides a deeper understanding of the problems in their (local) context by observing and talking to people about the topic of interest or the problematic. Human behavior researchers indicate that there is sometimes a difference between what people claim they do and what they really do. As a result, observable behavior is typically a more reliable measure than self-reported data. All three sites were visited, and observations of houses, latrines, water sources, and daily activities related to food security and WASH were conducted.

3.8. Data analysis techniques

Data of the survey were analyzed using STATA 13. Data are presented as means with standard deviations (SDs) for continuous data, and frequencies and percentages for categorical variables. Descriptive statistical analysis was used to compute frequency, percentage for categorical variables like household socio and demographic characteristic, food insecurity, Household dietary diversity and coping strategy, KAP on Water, sanitation and Hygiene. The Chi-Square Test was used to determine whether there is a significant difference between being food secure or not and socio-demographic variables relating to the household head: gender, age, family size, educational level, occupation, and monthly income.

A. Household Food Insecurity Access Scale

Following Coates et al. (2007), HFIAS was used to assess household food insecurity. By measuring the severity of food insecurity for that time period as reported by the households themselves, HFIAS determines whether households have experienced issues with food access in the previous 30 days. Nine questions about the household's experience with food insecurity in the 30 days prior to the survey were posed to the respondents. First, the respondent was asked if the condition in the question occurred at all in the previous four weeks (yes/no). If the respondent selects "yes" to an occurrence question, a question about frequency-of-occurrence is posed to ascertain how frequently (more than ten times) the condition occurred over the course of the previous four weeks. Following evaluation of all nine questions, households are divided into four levels of food security: (1) food secure, (2) mildly food insecure, (3) moderately food insecure.

Finally, a HFIAS category ***variable*** is calculated for each household by assigning a code for the food insecurity (access) category in which it falls. The data should have coded frequency-of-occurrence as 0 for all cases where the answer to the corresponding occurrence question was “no” (i.e., if Q1=0 then Q1a=0, if Q2=0 then Q2a =0, etc.) prior to assigning the food insecurity (access) category codes. The four food security categories should be created sequentially, in the same order as shown below, to ensure that households are classified according to their most severe response. 1 = Food Secure, 2=Mildly Food Insecure Access, 3=Moderately Food Insecure Access, 4=Severely Food Insecure Access

- HFIA category = 1 if [(Q1a=0 or Q1a=1) and Q2=0 and Q3=0 and Q4=0 and Q5=0 and Q6=0 and Q7=0 and Q8=0 and Q9=0]
- HFIA category = 2 if [(Q1a=2 or Q1a=3 or Q2a=1 or Q2a=2 or Q2a=3 or Q3a=1 or Q4a=1) and Q5=0 and Q6=0 and Q7=0 and Q8=0 and Q9=0]
- HFIA category = 3 if [(Q3a=2 or Q3a=3 or Q4a=2 or Q4a=3 or Q5a=1 or Q5a=2 or Q6a=1 or Q6a=2) and Q7=0 and Q8=0 and Q9=0]
- HFIA category = 4 if [Q5a=3 or Q6a=3 or Q7a=1 or Q7a=2 or Q7a=3 or Q8a=1 or Q8a=2 or Q8a=3 or Q9a=1 or Q9a=2 or Q9a=3]

B. Household dietary diversity score

Household dietary diversity was measured by using HDDS (Swindale and Bilinsky, 2006). As it is indicated in section 2.1.2, HDDS aims to reflect the economic ability of households to access a variety of foods. Twelve food groups were used to calculate the HDDS and measure the food security status (Table 3.1)

Table 3.1: classification of Household dietary diversity

Question No	Food group	Question No
A	Cereals	if yes = 1, no = 0
B	Tubers and roots	if yes = 1, no = 0
C	Vegetables	if yes = 1, no = 0
D	Fruits	if yes = 1, no = 0
E	Meat	if yes = 1, no = 0
F	Eggs	if yes = 1, no = 0
G	Fish and other seafood	if yes = 1, no = 0
H	Legumes, nuts, and seeds	if yes = 1, no = 0
I	Milk and milk products	if yes = 1, no = 0
J	Oils and fats	if yes = 1, no = 0
K	Sweets	if yes = 1, no = 0
L	Spices, condiments, and beverages	if yes = 1, no = 0

Each food group is assigned a score of 1 (if consumed) or 0 (if not consumed). The household score was range from 0 to 12 and is equal to the total number of food groups consumed by the household:

HDDS (0-12) = Sum (A + B +C + D + E + F + G + H + I + J + K + L)

The HDDS indicator is calculated using 12 food groups consumed by household members

$$\text{Average HDDS} = \frac{Sum\ (HDDS)}{Total\ Number\ of\ Households}$$

C. Coping Strategies Index (CSI)

The CSI tool relies on counting coping strategies that are not equal in severity. Different strategies are "weighted" differently, depending on how severe they are considered to be by the people who rely on them. The frequency answer is then multiplied by a weight that reflects the severity of individual behaviors. Finally, the totals are added. The simplest procedure for doing this is to group individual coping behaviors according to similar levels of severity and assign a weight to each group, from lowest (least severe) to highest (most severe). A range of weights from one to four usually works well. Recall that the frequency is a measure of how many days in the past week a household had to rely on the various coping strategies ranging from "never" (0) to "every day" (7). That frequency score is then multiplied by the severity weight.

D. KAP of Water, sanitation and hygiene

Data for WASH was collected using questionnaires and on-site observation as in ACF international (2015). The respondents' overall KAP percentage was calculated in accordance with Macas and Glasauer (2014).

$$Percent\ of\ knowlege \text{ score} = \frac{Sum\ of\ correct\ responses\ given\ by\ all\ respondents}{Total\ number\ responses\ given\ by\ all\ respondents} \text{ X } 100$$

Total respondents' positive attitudes were calculated as

$$Percent\ of\ positive\ attitude \text{ score} = \frac{Sum\ of\ the\ scores\ of\ all\ respondents}{Total\ number\ responses\ given\ by\ all\ respondents} \text{ X } 100$$

Likewise, the average appropriate practice was calculated as

$$Percent\ of\ appropriate\ practices \text{ score} = \frac{Sum\ of\ appropriate\ responses}{Total\ number\ responses\ given\ by\ all\ respondents} \text{ X } 100$$

3.9. Study variables

3.9.1. Dependent variable

The dependent variables were food security status of households, coping strategies index, household dietary diversity and water sanitation and hygiene related knowledge, attitude and practices of households.

3.8.2. Independent variables

The independent variable is a variable that stands alone and isn't changed by the other variables that are trying to measure. Independent variables include socio-demographic and economic factors such as age of household head, sex of the household head, occupational status, educational status, and head of household.

Age of household head: Age is an important factor that influences household management and role distribution. This is due to the fact that age defines the various roles played by various household members and has an impact on family decision-making (Janepha, 2015).

Sex of household head: Females play a significant role in achieving food availability, accessibility, and utilization, and gender has been argued as a significant factor in food security.

Marital status: Marital status was significant at 5% and the coefficient indicated that households headed by married people are more probable to be food insecure than those headed by unmarried people.

Monthly income of household: Increased monthly income per adult reduces household food insecurity by improving access to food resources in urban centers.

Educational level: The educational level of the head of the household is one of many factors that can affect a household's food security. It is categorical variable

Occupation of household head: The occupation of the head of household (defined as the main wage earner) has traditionally been used to determine a respondent's social class.its categorical variable. The availability of job opportunities contributes to the diversification and augmentation

of household income. Urban households' food insecurity is determined by changes in their access to work) Girma, 2012).

Household size: Household size refers to the total number of members who legally reside or will reside in a dwelling unit. Its continuous variable. Gebre (2012) discovered findings from a study on the factors that contribute to food insecurity in Ethiopian households in Addis Ababa. The obtained results showed that, in the study area, larger households have a tendency to be more food insecure than smaller families.

3.10. Data quality control

In order to ensure the validity of data, the initial English version of the questionnaire for the household was translated into the local and IDP community's primary language (Afan Oromo) by the researcher and was checked by another person who speak Afaan oromo fluently to minimize language bias the data collectors were fluent speakers of local/Afaan Oromo language.

3.11. Ethical Consideration

Ethical clearance was obtained from the Ethical Review Committee of the Centre for Food Security Studies before the start of the study. After the purpose of the study is explained, verbal consents were obtained from study participants before data collection. Participants were informed that participating in the study was based on voluntary and refusal to answer any questions would be possible. The right to withdraw from the study at any time during the interview was assured. Anonymity of respondents and confidentiality of information obtained from them was maintained. The interviews were conducted in private to ensure privacy. In general, the study was conducted according to AAU ethical policy.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

This chapter presents the findings of the study, and it encompasses four sub-sections. The first subsection presents the demographic and socioeconomic characteristics of the study households, while the second subsection presents the food security status of the IDP households. Factors associated with food security status of IDP are presented in the fourth subsection, and finally the fourth subsection presents water, sanitation, and hygiene knowledge, attitude, and practice among the IDP households in the study area.

4.1. Socio-economic and demographic characteristics of the household

The demographic characteristics of the IDP households in the study area are presented in Figures 4.1 and 4.2. The majority of the study participants were female (76%), with an age range of 25-35 years. The results show that 52% of the study households were between 25 and 35 years old, indicating that the majority of the households were headed by young adults.

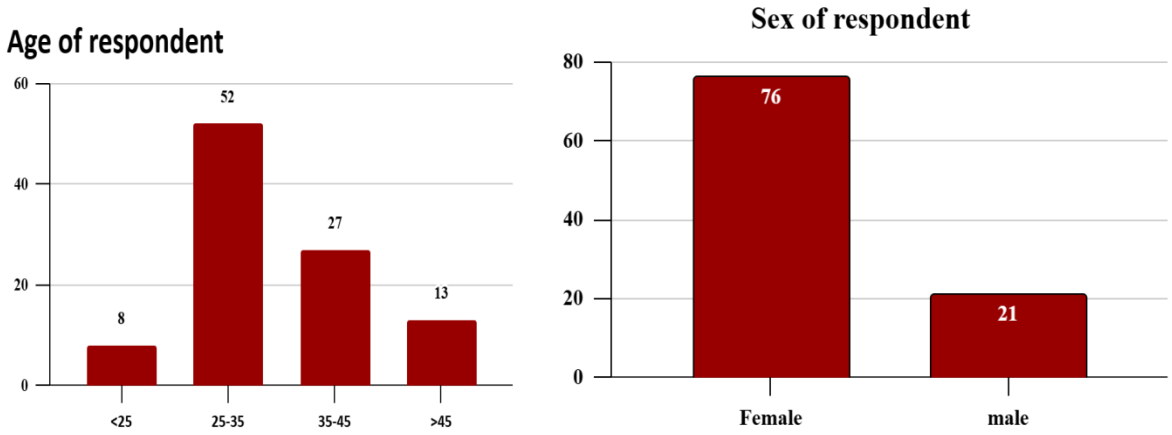

Figure 4.1: Age and sex of respondent

Source: Surveys, 2023

In terms of education, 60% of IDP households had completed elementary school, while 27% had finished secondary school, and 4% had attended higher education. Only 9% of the respondents had no writing and reading skills.

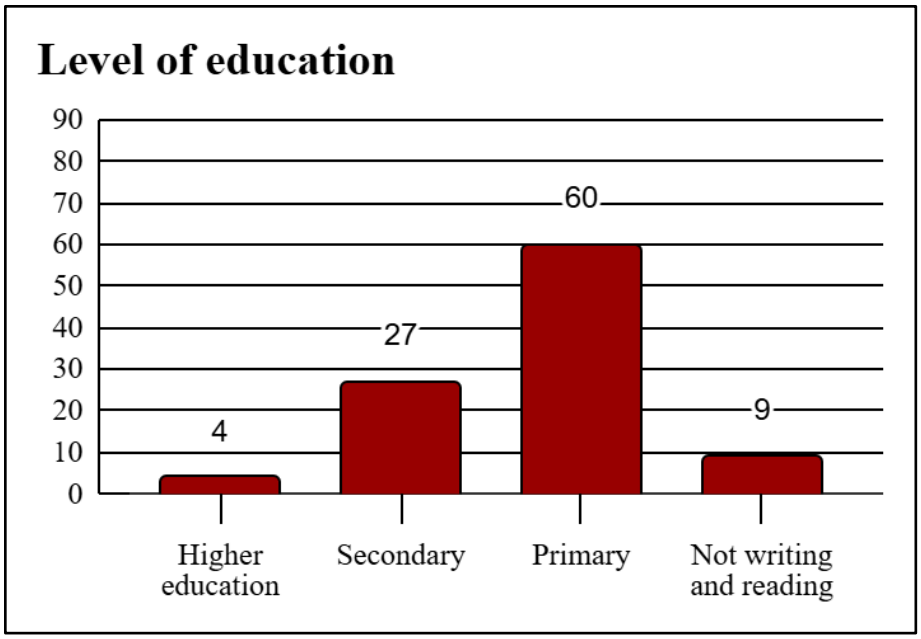

Figure 4.2: Educational status of study households

Source: Surveys, 2023

The lack of income restricts the purchasing power of IDPs, making it difficult for them to afford nutritious and sufficient food for their families. This contributes to increased food insecurity among households. The results presented in Figure 4.3 show that the monthly income for the majority of households (65%) was less than 3000 ETB. Only a few of them (9%) had a monthly income higher than 4000 ETB. Employment opportunities provide IDPs with a stable income, enabling them to meet their food needs. Access to jobs helps alleviate poverty and enhances household food security.

Regarding the income source, 50% of the study households were self-employed, while 32% of them were generating their income through daily labor. These findings are supported by the studies conducted in Adama and Burayu by Alemneh (2022), which revealed that IDPs rely on their own efforts to generate their income and make their lives better, as there are no opportunities for facilitating different necessary supports such as credit services. It is only through their own support. About 8% of the households were not engaged in any activities and were not employed. Remittances and aid could be the source of income for such households.

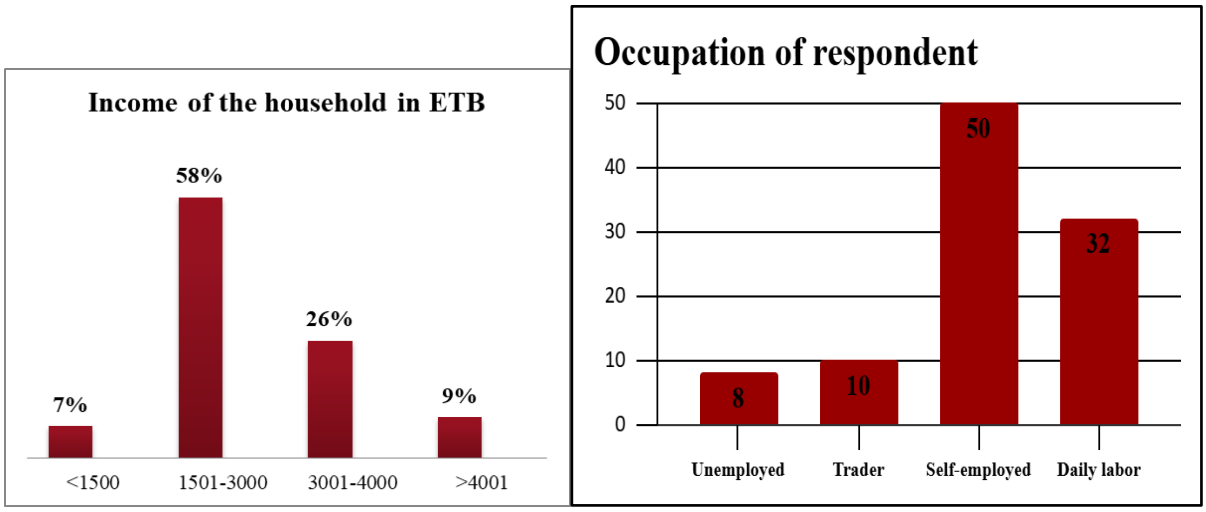

Figure 4.3: Monthly income and occupation of IDP households

Source: Surveys, 2023

According to the FGD with women, the majority of people sell chat, but they do not get good results because they do not have a business license and cannot sell in one place. Some people return to Somalia to work to support their families here. They stated that

"Living in the settlement is extremely difficult because we all arrived in Sululta without even the basics for survival. We are suffering here. We couldn't feed our family because we didn't get enough food assistance or jobs. Our children are not receiving adequate nutrition. We are suffering from a severe cold, with insufficient food and clothing. We do not have the money or assets to start our own business, nor are we given job opportunities. Host communities do not hire us because they believe we are unstable at work". FGD participant

The study findings indicate that young adults, with limited education and income-generating opportunities, head the majority of IDP households in the study area. The lack of income and access to employment opportunities contributes to food insecurity and poverty among IDP households. The reliance on self-employment and daily labor indicates the limited access to formal employment opportunities. The challenges faced by IDPs in generating income and accessing employment opportunities are further exacerbated by the lack of access to credit services and other necessary support.

The study's findings are consistent with the existing literature on the challenges faced by IDPs in accessing employment opportunities and generating income. The lack of access to education and employment opportunities is a common challenge faced by IDPs, which can lead to poverty and food insecurity (Alemneh, 2022). The reliance on self-employment and daily labor is also consistent with the existing literature, which highlights the importance of entrepreneurship and self-employment in addressing poverty and food insecurity among IDPs (Alemneh, 2022).

4.2. Food security status of IDP households

4.2.1. Household food security status as measured by HFIAS

The findings revealed that 95% of households are concerned about not having enough food due to lack of money and other resources to purchase food (Table 4.1). Because the participants in the study area were displaced persons residing in urban areas, they might have land or other financial resources to have access to food. Similarly, approximately 90% of them reported that they were unable to obtain the food that they preferred. Because they are only interested in getting food at the time.

Furthermore, approximately 83% of households reported going hungry overnight due to a lack of food. According to the FGD, reports with women groups revealed *"Sometimes we go for days without any food in the house. It's really hard to see our children hungry. We never know where the next meal is going to come from. Our main worry is making sure our kids have enough to eat." FGD participant*

Table 4.1. Household food insecurity access scale

No.	Question	Yes Response		Frequency in a month		
		N	%	Rarely (1-2 times)	Sometimes (3-10 times)	Often
1	Worry about food	214	94.69	17.26	46.02	31.42
2	Unable to eat preferred foods	203	89.82	13.27	50.88	25.66
3	Eat just a few kinds of foods	203	89.82	23.01	37.17	29.65
4	Eat foods they really do not want eat	168	74.34	42.04	25.22	7.08
5	Reduce amount of meal	160	70.80	11.50	38.05	21.24
6	Reduce frequency of meal	152	67.26	11.06	42.04	14.16
7	No food of any kind in the household	113	50.00	17.26	22.12	10.62
8	Go to sleep hungry	83	36.73	23.01	11.95	1.77
9	Go a whole day and night without eating	39	17.26	16.37	0.88	-

Source: Surveys, 2023

Figure 4.2 highlights the levels of food security among families in the study area, as assessed by the Household Food Insecurity Access Prevalence (HFIAP). This tool helps us understand how many families have reliable access to food. It identifies four categories: those who are food secure, and those who face mild, moderate, or severe food insecurity.

According to the survey data, a mere 8% of households were categorized as food secure, indicating a stable access to adequate food. The remaining 92% faced some challenges with food security. Specifically, 20% were mildly food insecure, occasionally worrying about having enough food. Another 16% were moderately food insecure, often facing limited choices and variety in their diet. The most concerning is the 56% who were severely food insecure, frequently experiencing actual shortages of food and hunger.

Comparing these figures with other studies, the level of food security in our study is notably low. For example, a study in Gelan town reported that 82% of households were not food secure (Solomon, 2021). In Burayu town, the figure was 92.8% (Kiya, 2022). Similarly, in the Bamenda health district of Cameroon, Tambe et al. (2023) observed that 91.6% of households were food insecure.

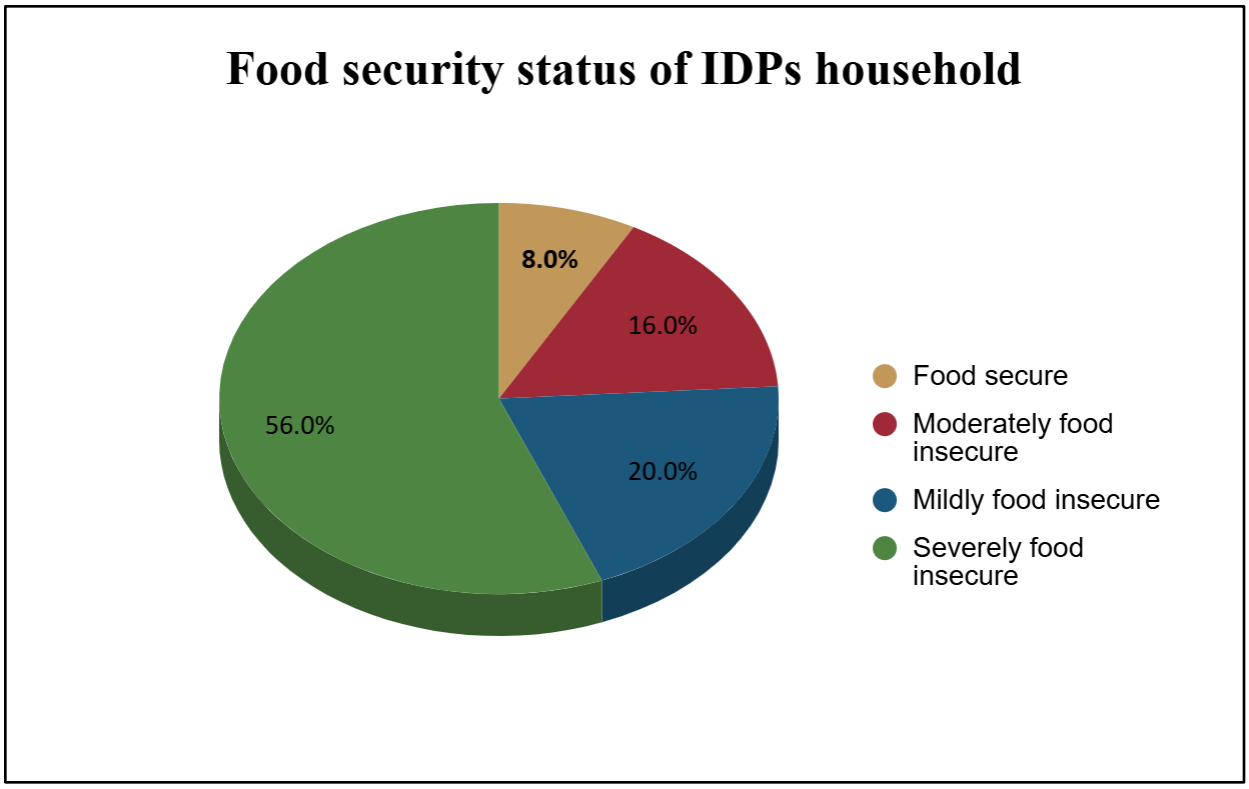

Figure 4.4: Food security status of IDPs household

Source: Surveys, 2023

4.2.2. Household food security as measured by HDDS

The Household Dietary Diversity Score (HDDS) is an important measure that provides a snapshot of a household's economic ability to access a variety of foods. Research has linked an increase in dietary diversity to higher socioeconomic status and greater household energy availability, which are key components of food security (Hoddinot and Jonathan, 2002; Hatloy et al., 2000). Survey revealed that the internally displaced person (IDP) households predominantly consumed staple cereals (94%), legumes (65%), roots and tubers (45%), and vegetables (38%). As indicated in Figure 4.3, it was observed that fruits and animal-sourced foods were notably absent from the diets of the majority of IDPs. Focus group discussions shed light on the dietary habits within Sululta sub city, where residents reported a reliance on cereal-based foods such as rice, spaghetti, and bread, complemented by vegetable-based foods like potatoes and tomatoes. This preference is attributed to affordability and availability. Meat and dairy products are less commonly consumed due to their higher cost and limited availability in the area, leading many residents to depend on staple foods to meet their nutritional needs. The absence of regular consumption of

animal-sourced food or dairy products indicates a low HDDS among IDP households. This finding aligns with studies conducted in Gelan town, Ethiopia (Solomon, 2021), and Kenya (Singh, 2013), which also reported cereals and legumes as the dominant food groups consumed by IDP households. Furthermore, a study in Kenya by Gichunge et al., (2022) corroborates these findings, indicating that households with a low HDDS primarily consumed cereals (90%) and legumes (41.7%).

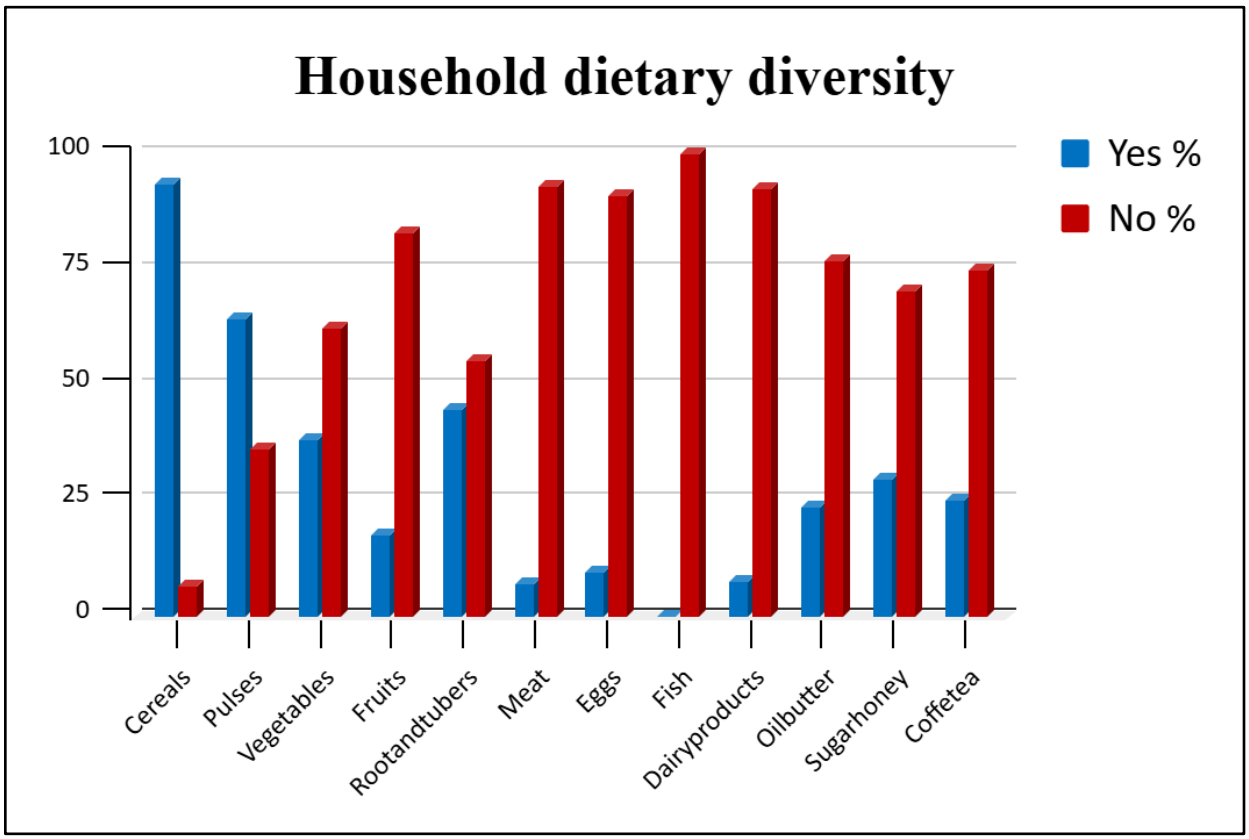

Figure 4.5: IDP household dietary diversity

Source: Surveys, 2023

In assessing the dietary habits of households, the Household Dietary Diversity Score (HDDS) categorizes them based on the variety of food groups consumed over a week. According to Swindale and Bilinsky (2010), these categories are defined as follows: Low dietary diversity, Households consuming 3 or fewer food groups, Medium dietary diversity: Households consuming 4 to 5 food groups, and High dietary diversity: Households consuming 6 or more food groups.

The study reveals that 52% of households fell into the low dietary diversity category, indicating a very limited range of foods in their diet. Another 34% had medium dietary diversity, showing a slightly better but still restricted variety of food groups. Only a small fraction, 14%, achieved high dietary diversity, enjoying a broader spectrum of food groups (as shown in Figure 4.4).

The result contrasts with Solomon's (2021) report, where over 54% of IDP households were found to consume more than 6 food groups, suggesting a higher level of dietary diversity. The discrepancy highlights a significant gap in dietary variety for IDPs residing in the Sululta area, with the majority facing a narrow scope of nutritional options. Furthermore, the findings indicate a lower prevalence of low dietary diversity compared to the Nakwamekwei Camp in Kenya, where Gichunge et al. (2022) reported that 37.7% of IDP households consumed fewer than three food groups.

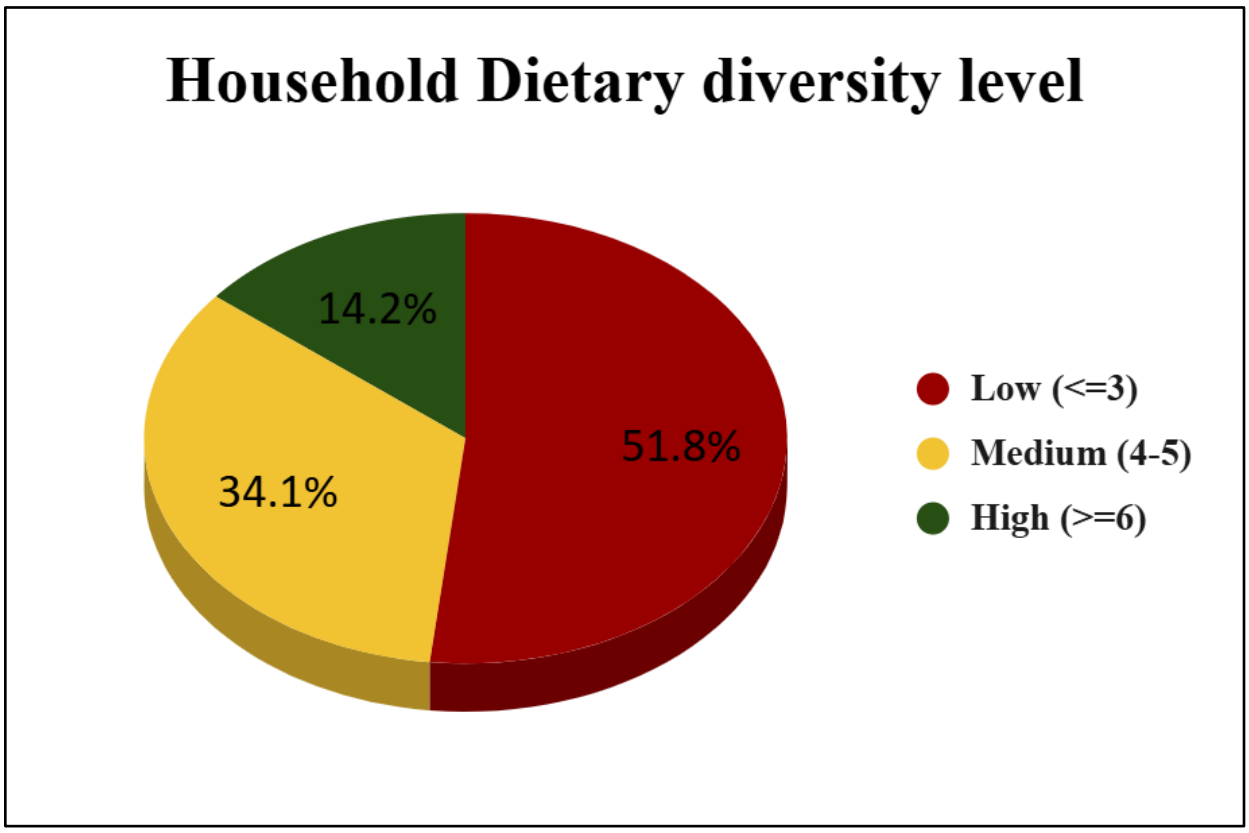

Figure 4.6: IDP household Dietary diversity level

Source: Surveys, 2023

4.2.3. Household coping strategies

IDP households are frequently forced to employ a variety of strategies to deal with food insecurity. Figure 4.5 showed that 97% of the households used less expensive food sold on the street as a coping strategy, 98% limited the portion size of food at meal time, 99% restricted consumption for children, and almost all reduced the number of meals eaten in a day, skipping entire days without eating.

According to the FGD, most households spend entire days talking to each other without eating anything, forgetting their hunger in the process. This social support network is critical for their survival, as it provides a sense of community and belonging that helps them cope with the challenges of living in a resource-scarce environment. Additionally, some households have resorted to collecting wild foods from nearby forests, locally known as 'Gora,' to supplement their meager diets.

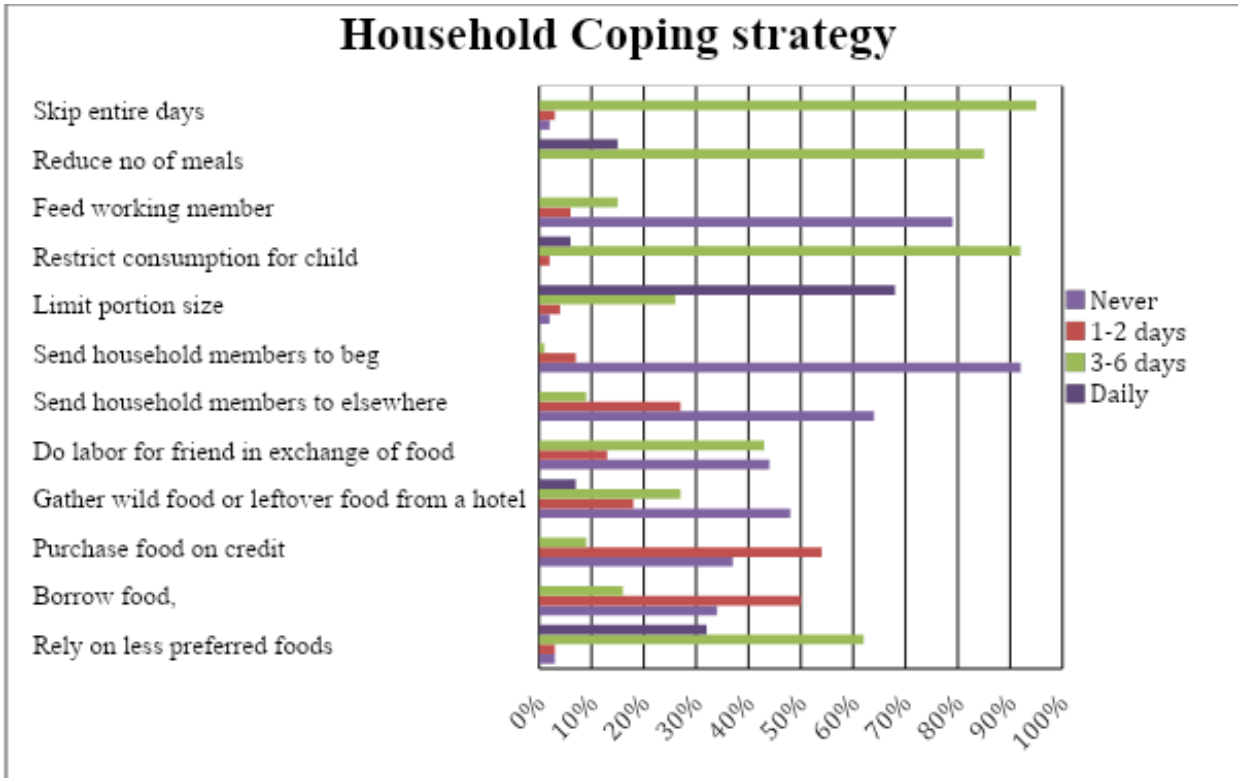

Figure 4.7: Household coping strategies

Source: Surveys, 2023

Moreover, the majority of them responded that their husbands had returned to Somalia to work and send money to their families because there is no work here, especially for men. Most of the time, children do not want to go to school because they prefer to stay home rather than starve at school because of a lack of food. In line with this, Endris (2022) also found that IDPs households are skipping children from the school. Similarly, Militao et al., (2022) revealed that a wide range of lived experiences and coping strategies were including cooking whatever is available, skipping meals, receiving money or food from friends and relatives, eating unsafe and low-quality foods, taking on additional work, cooking least-preferred foods, and having a monotonous and less-nutritious diet.

4.3. Factors associated with food security status of internally displaced people

A. Sex of household head

The findings on food security among households headed by females versus males present a nuanced picture. The data indicates that 78% of female-headed households reported food security, a significantly higher percentage compared to the 22% of male-headed households. This suggests that households led by women are more likely to have stable access to food. However, the chi-square analysis reveals that the difference in food security between male and female-headed households is not statistically significant (Table 4.2), aligning with the findings from the Abu Shock IDP camp study by Soliman et al. (2016), which also found no significant relationship between the gender of household heads and food security status ($\chi 2 = 2.593$, n= 140, P= 0.273). This stands in contrast to Solomon's (2020) research, which suggested that male-headed households had a higher likelihood of being food secure compared to those led by females and also (Kiya, 2022) suggested that gender of household head and food security status have significant at ($p<0.01$).

The focus group discussions (FGD) in Sululta sub city provide context to these statistics, indicating that male heads of households face challenges in securing employment due to perceptions of unreliability by the host community. Consequently, women have stepped up to fill the economic void, taking on various jobs to feed their families. In situations where employment is not available, they resourcefully gather firewood and animal dung from forests to sell, ensuring a means of income. The role of female heads in maintaining household food security is critical,

as they navigate through limited resources and societal constraints to provide for their families. Their efforts are a testament to the resilience and adaptability of women in the face of adversity. The broader implications of these findings suggest that enhancing employment opportunities for both men and women, along with addressing societal perceptions, could significantly improve the food security status of households in Sululta sub city and similar settings

Table 4.2. Chi-Square test for the relationship between the sex of IDPs household with food security status

Sex	Food security status		
	Food secure (N=18)	Food insecure (N=208)	Total (N=226)
	Percent	Percent	Percent
Female	78	79	79
Male	22	21	21
Total	100	100	100
Pearson chi2= 0.0241 Significance level = 0.877			

Source: Surveys, 2023

B. Age of household head

The analysis of the study delves into the relationship between household food security and the age of the household head. It reveals that a majority, 61%, of households led by individuals aged 25-50 years were food secure. This figure drops to 28% for the age group of 35-45 years and further declines to 11% for those over 45 years. Despite these variations, Table 4.3 clarifies that the age of the household head does not significantly influence food security, as evidenced by the Chi-square test result ($p = 0.812$). This finding aligns with the research conducted by Akukwe (2020), which also reported no significant correlation between the age of the household head and their food security status.

While the statistical analysis suggests that age is not a determining factor for food security, the observed trend indicates that younger household heads tend to report higher food security. This could be attributed to factors such as employment opportunities, physical ability to engage in labor-intensive work, or social support systems that are more accessible to younger individuals. However, as the age increases, particularly beyond 45 years, there is a noticeable decrease in food security, which may reflect challenges such as reduced income, health issues, or lesser adaptability to economic stresses.

Table 4.3. Chi-Square test for the relationship between the Age of IDPs household with food security status

Age of household	Food security status		
	Food secure (N= 18)	Food insecure (N=208)	Total (N=226)
	Percent	Percent	Percent
<=25	-	4	4
25 – 35	61	62	62
35 -45	28	22	22
> 45	11	12	12
Total	100	100	100
Pearson chi2= 0.9540 Significance value = 0.812			

Source: Surveys, 2023

C. Family size

The Chi-Square analysis revealed no significant relationship between household size and food security status (Table 4.4). This finding contradicts the common assumption that larger households, with their increased food consumption needs, would be more susceptible to food insecurity. However, the data suggests that household size alone is not a factor of food security. This could be due to various factors such as income levels, access to social support systems, and the presence of coping strategies that mitigate the impact of larger family sizes on food security. This finding may seem counterintuitive, given that larger households typically face greater demands on food resources, which can lead to increased food insecurity (Drammeh et al., 2019). Moreover, larger families often adopt coping strategies such as reducing the amount and frequency of meals, which can adversely affect the nutritional quality of their diet (Ihab et al., 2015).

Recent research supports the notion that household size can have a negative effect on food security, suggesting that as the number of individuals in a household increases, the likelihood of experiencing food insecurity also rises (Akbar et al., 2023). This is particularly relevant when considering the additional mouths to feed without a proportional increase in household resources. Furthermore, the typical food-secure household spends more on food than the food-insecure household of the same size and composition, indicating that financial constraints are a key factor in food security (Alisha Coleman et al, 2022).

Table 4.4. Chi-Square test for the relationship between the household size of IDPs household head with food security status

Household size	Food security status		
	Food secure (N= 18)	Food insecure (N=208)	Total (N = 226)
	Percent	Percent	Percent
< 3	-	7	6
3 -6	72	58	59
6 -9	22	30	30
>9	6	5	5
Total	100	100	100
Pearson chi2 =2.1456 Significance level = 0.543			

Source: Surveys, 2023

D. Education level of household head

The Chi-Square results from our study reveal a significant correlation between the educational status of IDP households and their food security status (Table 4.5). This is consistent with findings from Akukwe's (2020) research in Nigeria, which demonstrated that food security tends to improve with higher educational levels. Education plays a pivotal role in enhancing food security. It equips individuals with the knowledge and skills necessary to improve agricultural productivity, manage resources efficiently, and make informed decisions about nutrition and health. Higher education levels are associated with better employment opportunities, which can lead to increased income and the ability to afford a more diverse and nutritious diet (Mutisya et al.,2016).

Table 4.5. Chi-Square test for the relationship between the education level of IDPs household head with food security status

Education	Food security status		
	Food secure((N=18)	Food insecure (N=208)	Total (N=226)
	Percent	Percent	Percent
Not writing and reading	28	8	9
Primary	33	62	60
Secondary	33	27	27
higher education	6	3	4
Total	100	100	100
Pearson chi2= 9.9473 Significance level = 0.019			

Source: Surveys, 2023

E. Occupation of household

The Chi-Square analysis revealed the occupation of the household did not show statistical significance in relation to food security status (P<0.001, Table 4.6). This aligns with Solomon's (2020) findings that employment opportunities do not necessarily correlate with food security among subsidized housing families. Similarly, Loopstra & Tarasuk (2013) found that changes in employment and welfare had no significant impact on the severity of food insecurity in this demographic. The inverse relationship between part-time employment and changes in food insecurity severity further supports this notion.

During the focus group discussions (FGDs), participants may have shared experiences that reflect these findings. They stated that "*Many of us have experienced full-time work and yet, the struggle to ensure enough food on the table persists. It's evident that while having a job is important, it's not the only thing that matters when it comes to feeding our families. We've come to realize that food security is influenced by a mix of factors including the income we earn, the support we receive from our community, and the overall cost of living. These elements collectively shape our ability to provide for our households.*"

Table 4.6. Chi-Square test for the relationship between the occupation of IDPs household head with food security status

Occupation	Food security status		
	Food secure (N =18)	Food insecure (N=208)	Total (N= 226)
	Percent	Percent	Percent
Daily labor	22	33	73
Self employed	56	49	50
Trader	22	9	10
Unemployed	-	9	8
Total	100	100	100
Pearson chi2 (3) = 5.5343 Significance level = 0.137			

Source: Surveys, 2023

F. Marital status

The Chi-Square results from the study indicate that marital status does not have a statistically significant impact on food security status (P<0.001, Table 4.7). This finding aligns with Soliman et al. (2016), which also reported no significant relationship between marital status and food security. The lack of a significant association between marital status and food security suggests that being married or unmarried does not inherently affect a household's ability to secure food. This could be due to a variety of factors, such as the distribution of income within the household, access to social support systems, and the overall economic stability of the family unit.

Table 4.7. Chi-Square test for the relationship between the marital statuses of IDPs household head with food security status

Marital status	Household food security status		
	Food secure (N=18)	Food insecure(N=208)	Total
	Percent	Percent	Percent
Married	94	90	90
Divorced	6	7	7
Widowed	-	3	3
Total	100	100	100
Pearson chi2 = 0.6781 Significance level = 0.712			

Source: Surveys, 2023

G. Monthly income

Increases in household food security are closely linked to higher levels of monthly household income. This is evidenced by the positive and statistically significant coefficient of household heads' monthly income at the 5% level, as shown in Table 4.8 of the research paper. Solomon (2020) supports this finding, noting that as household income increases, so does the ability to purchase sufficient food in both quantity and quality. Key informant interviews (KIIs) with community leaders among IDPs reflect, "Families with steady incomes manage better. They can plan for the future, save a little, and even help others in need."

Table 4.8. Chi-Square test for the relationship between the monthly income of IDPs household head with food security status

Income of household	Food security status		
	Food secure (N = 18)	Food insecure (N=208)	Total (N=226)
	Percent	Percent	Percent
1501 -3000	-	156	156
3001 – 4000	10	28	38
<=1500	0	23	23
>4001	8	1	9
Total	18	208	226
Pearson chi2 (3) = 113.3530 Significance level = 0.000			

Source: Surveys, 2023

4.4. Water, sanitation and hygiene knowledge, attitude and practice

4.4.1. Water, sanitation and hygiene knowledge

Hand washing

The research findings on the knowledge regarding hand washing, The respondents were asked to identify the most critical times they should wash their hands. Majority of the study households (64%) responded that they washed their hands before praying (Figure 4.8). Relatively higher proportion of the households (39%) responded that they washed their hands after using the toilet. The lower percentages for hand washing before eating (20%) and cooking (14%) indicate potential gaps in knowledge or prioritization. This could be due to a lack of understanding of the risks associated with foodborne illnesses or a cultural undervaluation of these practices compared to other hygiene activities.

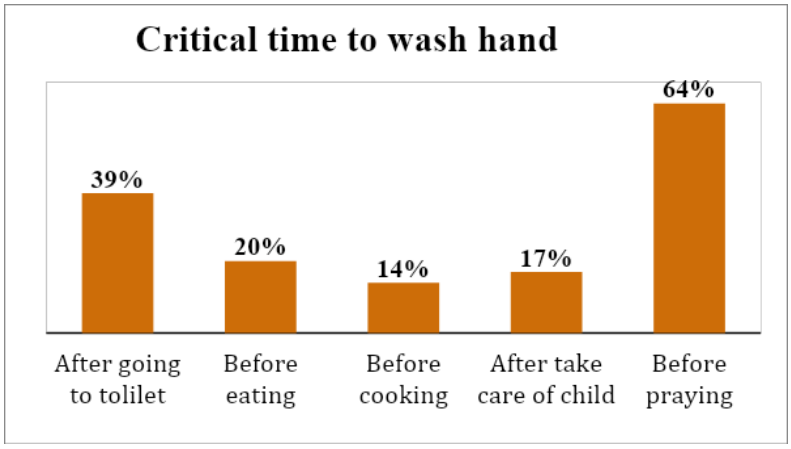

Figure 4.8: Critical time to wash hand

Source: Surveys, 2023

Diarrheal cases

The FGDs conducted with IDP households revealed a concerning lack of knowledge regarding the causes of diarrheal diseases. Despite the fact that 14% of respondents acknowledged that eating food with dirty hands could lead to diarrhea, this figure is surprisingly low given that hand hygiene is a well-documented preventive measure against the spread of many water-borne diseases. Furthermore, 30% of households identified poor or dirty water as a cause of diarrhea,

which aligns with scientific understanding, but again, the proportion is less than expected. This could point to a lack of awareness about the broader implications of water quality on health.

Interestingly, 6% of households attributed diarrhea to too much chlorine, and 18% to God will. These responses highlight the diverse beliefs about health and illness in the community and underscore the importance of culturally sensitive health education that addresses such misconceptions.

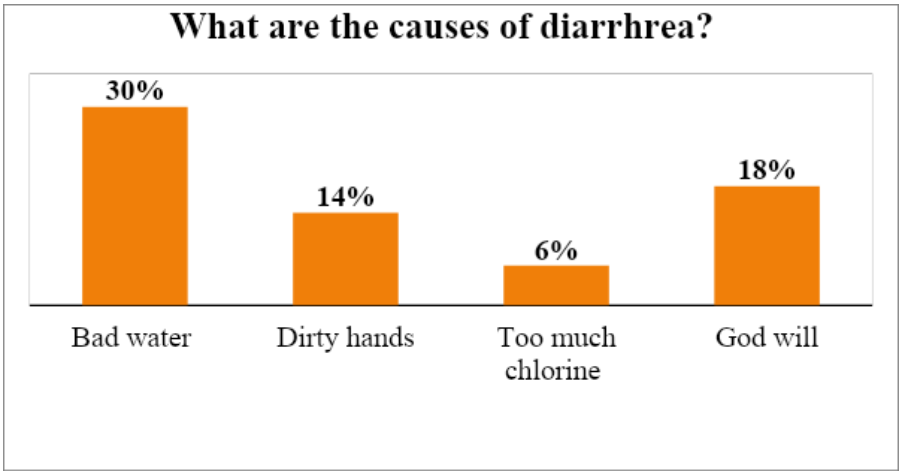

Figure 4.9. Causes of diarrhea

Source: Surveys, 2023

Diarrhea is most commonly caused by contaminated water or food. Diarrhea is the disease that is most commonly caused by contaminated water or food. As a result, 43% of respondents responded that they were able to prevent diarrhea through drinking safe water. This finding is in line with the study conducted (Gashaw, 2020). The study revealed that 39% of the study households were able to prevent diarrhea through drinking safe water. However, only 15% of respondents were effective at preventing food diarrea through covering food, washing fruits, using safe waste disposal and protecting flies. It is also noted that 21% of the respondents responded that hand washing before and after eating helped to prevent diarrhea.

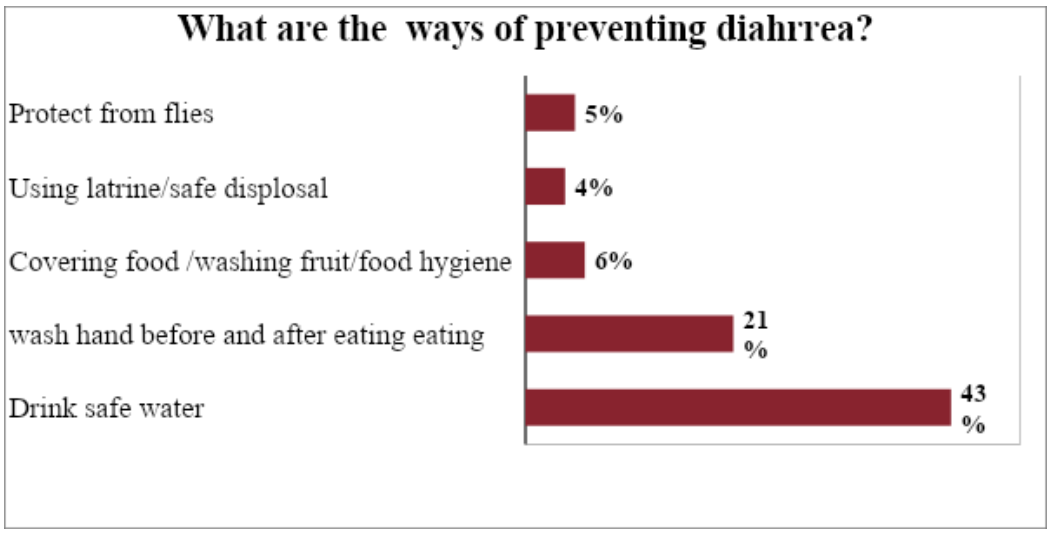

Figure 4.10: Ways of preventing diarrhea

Source: Surveys, 2023

According to the survey results, about 32% of respondents had adequate knowledge of the signs of safe water, while only about 20% of them knew the reason that water was not good (Table 4.9). Similarly, only 23% of study households were aware of the causes of diarrhea. The study found that 23% of households were not aware of the causes of diarrhea and 28% of respondents were knowledgeable about the critical time for hand washing. This finding was almost in line with the study conducted in Nigeria by John et al., (2020). Average knowledge on WASH was observed in 24.2% of the respondents. This finding was almost comparable (26.5%) with a study conducted in Addis Ababa (Gashaw, 2020). However, it was lower than (42.2%) one conducted in Tigray Region (Abera et al., 2020).

Table 4.9: Household knowledge regarding WASH

Knowledge	**Average percentage**
Sign of safe water	31.8
Reason for water not to be good	19.6
Know causes of diarrhea	22.8
Ways of preventing diarrhea	16.9
Method to prepare ORS	26.1
Critical time to wash hands	28.1
Average WASH knowledge	**24.2**

Source: Surveys, 2023

4.4.2. Water sanitation and hygiene Attitude

Toilet facilities

Figure 4.11 shows that nearly half of the respondents (68%) were satisfied with the privacy of the toilet, whereas only 32% of the respondents were satisfied with the safety of the toilet. Large majority (94%) of respondents responded that it was not easy to clean the latrine. According to FGD and KII, the majority of households were worried about having a safe, easily cleanable latrine. In addition, they stated that "*There are communal toilets, but it is difficult to say that we have a toilet. It is insufficient to provide all of these households with a single public latrine. Furthermore, it is far from some of the households, and the toilet occasionally fills up and overflows during the summer. As a result, it is difficult to defecate on that. The main issue that needs to be addressed right away is a lack of toilet facilities".*

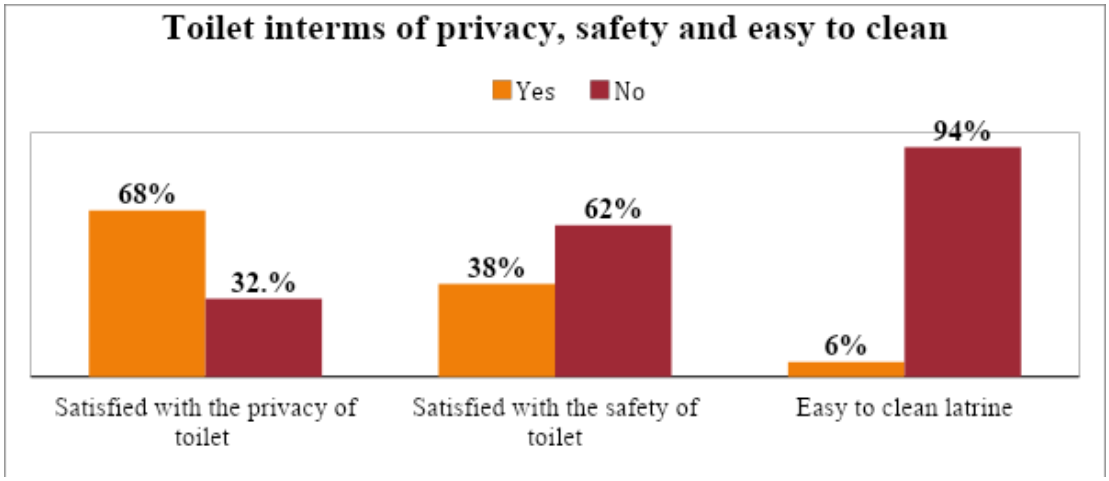

Figure 4.11: Toilet in terms of privacy, safe and easy to clean

Source: Surveys, 2023

The researcher has observed the privacy and safety of the toilet in the study area (Figure 4.12. It was located far away from their house and had no privacy to use, as it was indicated during the surveys and the focus groups discussions.

Figure 4.12: Toilet location (Picture taken by researcher)

Source: Picture taken by researcher, 2023

The results show that 57% of respondents had a positive perception of the quality of water. However, only 4% of the respondents were satisfied with the privacy of the shower, and only 6% responded that the latrine was easy to clean (Table 4.10). The majority of the community used a shared public toilet. Communal toilets have been constructed for men and women separately, but they lack privacy and. According to FGD results, a large number of women used a toilet in the morning because they felt ashamed due to lack of privacy. Furthermore, since toilets are far from homes, it is more difficult to use at midnight especially for women and children. Average Positive attitude on WASH was observed in 33.6% of respondents. These findings were less than (54%) the study conducted in Addis Ababa (Gashaw, 2020) and 49% in Tigray Region (Abera et al., 2020).

Table 4.10: Household attitude regarding WASH

No.	Attitude	Average percentage
1	Good perception on water quality provided by the water network	57.08
2	Water can transmit diseases	58.85
3	Satisfied with the privacy of the toilet	68.58
4	Satisfied the safety of the toilet	38.05
6	Easy to clean latrine	6.19
7	Happy with the shower provided in the plot	4.42
8	Enough communal waste collectors in the camp	11.50
9	Happy with the drainage system	21.24
10	Agree to pay for the garbage collection	25.00
	Average positive attitude of WASH	**30.3**

Source: Surveys, 2023

4.4.3. Water sanitation and hygiene Practice

Water sources

A majority of the households have access to improved water facilities. Within the access to water sources, most of the households (94%) reported communal tap/standpipe as their principal source for cooking and other activities in the household compared to (18%) who reported household tap water connection to their households. The survey also looked at finding out the alternative source of drinking water for the households. Figure 4.6 revealed that the majority of households reported public tap/standpipe as their alternative source of domestic drinking water for their households at 90%. While about 23% of the households maintained a household tap stand and 4% bottle drinking water for household members.

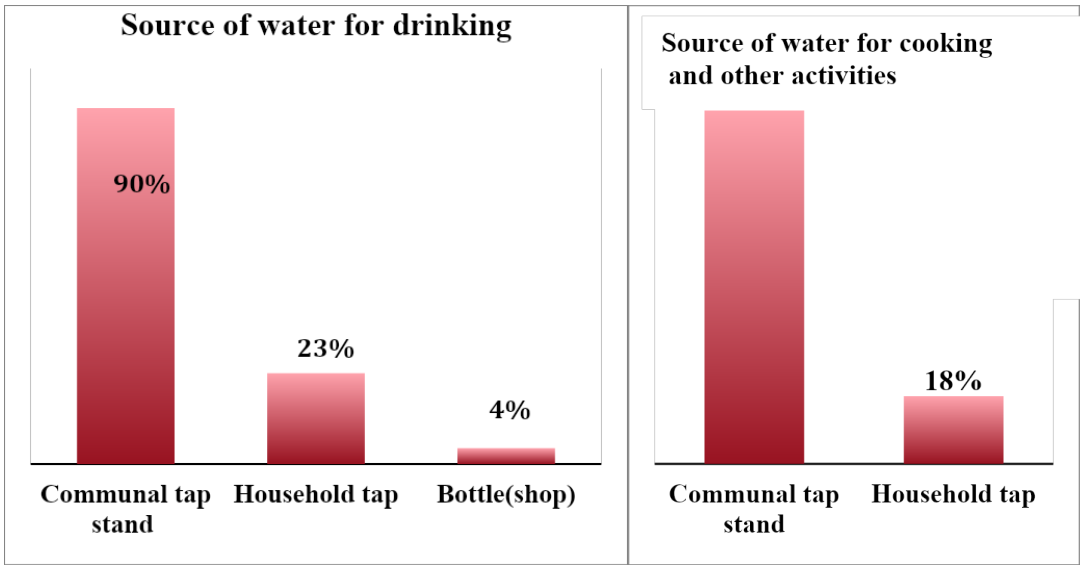

Figure 4.13: IDPs household source of water for drinking, and cooking and other activities

Source: Surveys, 2023

During data collection, the researcher observed that there is enough water that stands for the community but that the area around the standpipe is not clean (Figure 4.7). In addition, it was noted that most households store drinking water inside their homes in Jerrycan, though some also used bows. It was also noted that most of the Jerrycan were not covered or cleaned. Everybody opens it to drink from it, but they never remember to close it. Water storage containers were also insufficient. Additionally, because the area around the shared water is unclean, it is a source of diarrheal illnesses and other infections that are brought on by contaminated water.

Figure 4.14: Water sources for IDP households residing in sululta area

Source: Picture taken by researcher

Shower facilities

The majority of respondents (83%), took their shower inside the house in a bowl, while 14% took a shower inside the toilet. However, only 3% of respondents responded that they took a shower inside their private shower. The result implies that only a large majority of study households were taking showers in a place where it is not safe or not private. The survey results were in line with the FGD results. The participants reported that they were not comfortable while taking showers inside the toilet and at home. Even worse, there are no partitions that are used for taking showers.

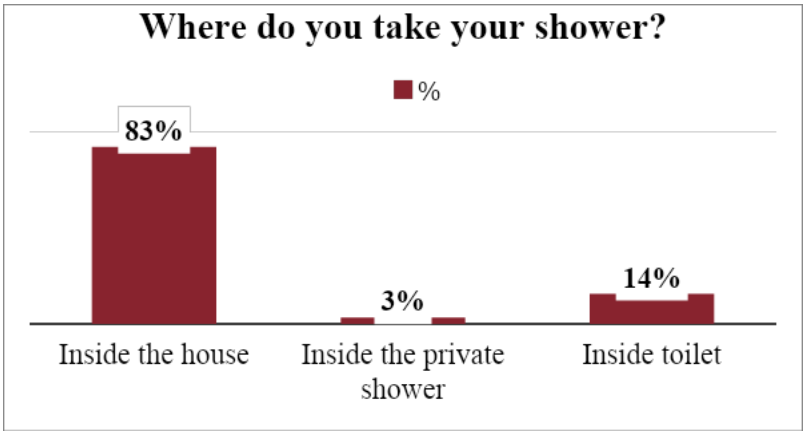

Figure 4.15: Showering place

Source: Surveys, 2023

Waste management

As shown in Figure 4.14, the majority of respondents (33%) use plastic bags for waste disposal, while very few of them (5%) use a bin inside the house to dispose of their wastes. However, half of the study households threw the garbage outside the camp without using a garbage container. A few proportion (10%) of the study households dispose of the garbage in public bin.

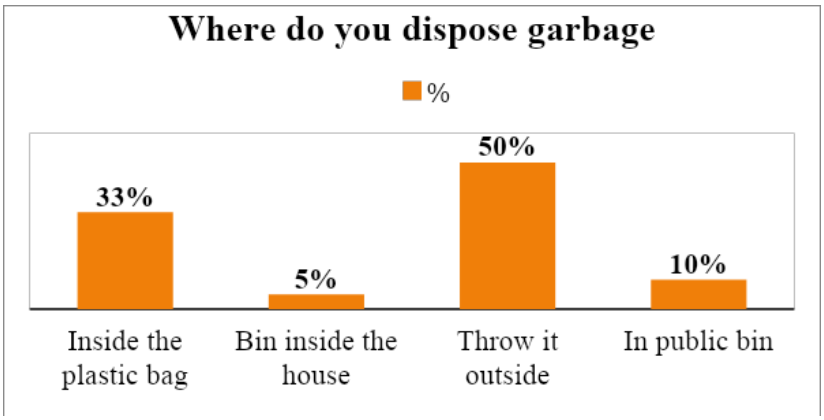

Figure 4.16: Place to dispose wastes/garbage

Source: Surveys, 2023

The study households who used plastic bags and bins inside the house were also asked where to empty their plastic bag and bin. About 41% of them responded that they empty their waste disposal in front of the camp, without using a garbage container. This indicates that the majority of people in the camp dispose of their waste without using the garbage collection bins. According to FGD, the majority of people throw garbage in front of their houses because there were not enough garbage bins in the settlement. In the summer, there is a river called Lega Dima, into which they throw away their garbage.

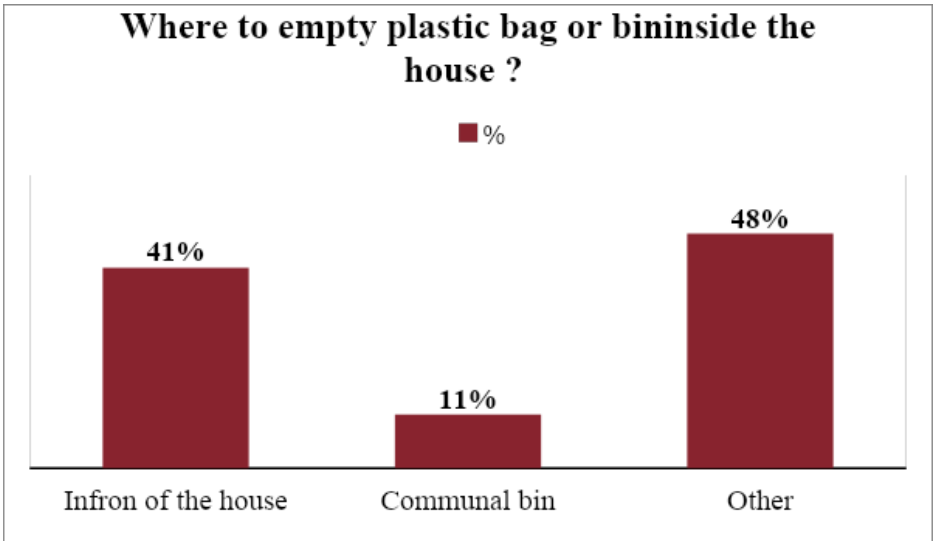

Figure 4.17: Place to empty plastic bag or bin

Source: Surveys, 2023

During data collection, the researcher also observed that the majority of people disposed of their trash in front of their homes, which is in line with the survey and FGD results. This could be the reason for most children experiencing diarrhea cases.

Figure 4.18: Waste disposal in settlement areas

Source: Picture taken by researcher, 2023

The finding revealed that 52% of people have open defecation (Table 4.11). The result is in line with qualitative study conducted in Plateau camp in Nigeria by Adedeji (2021). The study revealed that although toilets exist for defecation, little access to water has posed a serious challenge for flushing of the toilets, leaving many to opt for open defecation. The findings also revealed that about 37% of the respondents throw their garbage in front of houses. However this finding was greater than the study conducted in Ghana by (Osumanu et al., 2019). They revealed that 49.8% of households had no form of toilet facility and were either using communal/public toilets or practicing open defecation and less than the study conducted in Far-North Cameroon by (Nounkeu et al., 2022) which indicated that 86% of people reported practicing open defecation. According to FGDs, the main reason for improper waste disposal ws lack of containers and lack of waste disposal collectors in the camp. So most people dispose of their trash in front of their homes, including children. Furthermore, when the communal and shared toilet is full, it overflows, causing coughing and other diseases. The average appropriate practice on WASH is 33.6%. This finding is less than the study in the Tigray region 49.2% by Abera et al., 2020 and in Addis Ababa 63.4% by Gashaw, 2020.

Table 4.11: Household Practice regarding WASH

No.	Practice	Percentage
1	Use a different source of water for and washing purpose	21.2
2	Sometimes not enough water for the family	52.6
3	< 5 children with diarrhea in the family during last 15 days	33.3
4	Seen people practicing open defecation	52
5	Go to clinic & give ORS if someone has diarrhea	23.3
6	<5 children who defecate on a potty	39.4
7	Dispose excreta in the toilet	64.6
8	Take shower inside toilet or home	3.5
9	Take shower less than once per week	69
10	Garbage disposed in the plastic bag	43.4
11	Empty bin in the front of the house and communal bin	36.8
	Average appropriate practice of WASH	**33.6**

Source: Surveys, 2023

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The purpose of this study was to investigate food security and water, sanitation and hygiene KAP of internally displaced households settled in Sululta sub city, Oromia. The study revealed that there is a low level of food security among IDPs settled in Sululta sub city. The findings showed that only 8% of households were food secure, while the rest were mildly food insecure (20%), moderately food insecure (16%), and severely food insecure (56%), respectively highlighting a stark disparity in access to adequate food resources.

In terms of household dietary diversity, the result showed that the study participants had limited income sources and job opportunities. The majority of them were depending on only one or two food groups, implying poor dietary diversity. This dependence is indicative of poor dietary diversity and is primarily attributed to constrained income sources and scarce job opportunities within the community. The dire economic conditions have forced households to resort to cheap and low-quality food options as a coping mechanism during periods of food scarcity.

In terms of water, sanitation, and hygiene (WASH) knowledge, attitudes, and practices (KAP), the study unveiled a concerning lack of awareness, with an average knowledge level of 24%. Attitudes and practices fared slightly better, at 30% and 34% respectively, yet these figures are far from satisfactory. It is particularly alarming that only 28% of households are aware of the critical times for handwashing, a fundamental practice in preventing disease transmission.

The water supply infrastructure, represented by communal standpipes, is inadequate, with frequent water shortages undermining the community's ability to maintain basic hygiene standards. Furthermore, the prevalent garbage disposal practices, where nearly all households dispose of waste in front of their dwellings, reflect a disregard for environmental health, which could exacerbate the already precarious WASH conditions.

5.2. Recommendations

In response to the challenges of food security and WASH status identified among IDP households in Sululta Sub city, a multifaceted approach is recommended. Enhanced food assistance programs

are essential, providing not only immediate aid but also promoting long-term sustainability through community gardens and nutrition education campaigns that emphasize dietary diversity. Economic empowerment initiatives, particularly for the predominant number of female heads of households, are crucial; these should include skills training and microfinance opportunities to foster income diversification and improve food security.

A dual strategy to elevate WASH knowledge and infrastructure is also imperative, involving comprehensive education programs to foster positive attitudes and practices, alongside investments in sanitation facilities and drainage systems. The installation of handwashing stations, combined with ORS preparation training, will further enhance hygiene practices and reduce health risks. Engaging the community in the design and implementation of these interventions will ensure cultural appropriateness and sustainability, while policy advocacy will support the rights and needs of IDPs, ensuring access to essential services. Lastly, a robust monitoring and evaluation system is vital to assess the impact of these interventions, allowing for ongoing refinement to effectively address the food security levels, dietary diversity, and WASH practices among the IDP households.

REFERENCES

Abiyu T. (2021). Food Poverty Analysis and Coping Mechanism of Internally Displaced Persons in Awbare Town of Somali Region, Eastern Ethiopia. MSc Thesis, Addis Ababa University

ACF international. (2015). Knowledge, Attitude and Practices (KAP) survey report Sheikhan IDP camp: Water, Sanitation and Hygiene Promotion (WASH) https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/assessments/kap_survey_sheikhancamp_acf_oct2015.pdf

Adam Ahmed Soliman Sabbil A, Ahmed. Maha A. Sheriff. Badreldin M. Ahmed Abdulrahman. 2016. The Household Food Security of Internally Displaced Persons (IDPs): An Applied Study on Abushock IDPs Camp, North Darfur StateSudan. Asian Journal of Social Science Studies Vol. 1, No. doi:10.20849/ajsss.v1i2.36

Adedeji, Bethel Oluwatosin, Yusuf, Olanrewaju, & Samson, Teyei Gang, (2021); An Assessment of the State of Water Sanitation and Hygiene (Wash) In Heipang Internally Displaced Persons (Idp) Camp, Plateau State, Nigeria; Hmlyn J Human Cul Stud, 2(4) 1-6. DOI: 10.47310/Hjhcs.2021.v02i04.001

African Union. (2010). Convention for the protection and assistance of internally displaced persons in Africa: Kampala convention. Int J Refugee Law;22:119–35.

Agbadi, P., Darkwah, E. and Kenney, P. (2019).A multilevel analysis of Regressors of access to improved drinking water and sanitation facilities in Ghana.Journal of Environment and Public Health. Volume 2019 | Article ID 3983869 doi:10.1155/2019/3983869

Akbar, A.; Darma, R.; Fahmid, I.M.; Irawan, A. Determinants of Household Food Security during the COVID-19 Pandemic in Indonesia. Sustainability 2023, 15, 4131. https://doi.org/10.3390/su15054131

Akhtar, Dr. Md Inaam, Research Design (February 1, 2016). Available at SSRN: https://ssrn.com/abstract=2862445 or http://dx.doi.org/10.2139/ssrn.2862445

Akukwe T.I. (2020). Household food security and its determinants in agrarian communities of southeastern Nigeria. Agro-Science, 19 (1), 54-60. DOI: https://dx.doi.org/10.4314/as.v19i1.9

Alemneh Birhanu. 2022. Challenges and Coping Mechanisms of Internally Displaced People Resettled in Adama and Sebeta Towns of Ethiopia. East African Journal of Social Sciences and Humanities Volume 7 (1) 85-96.

Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, Anita Sing. Household Food Security in the United States. https://www.ers.usda.gov/webdocs/publications/104656/err-309_summary.pdf?v=9300.6

Belayneh Genoro Alemayehu, Legesse Arega , Haile, Adene Tesfaye. 2022. A cross-sectional study design to assess the determinants of the nutritional status of children aged 6 to 59 months who returned to Gedeo after being internally displaced in the Guji-Gedeo conflict, in Gedeb district, SNNPR, Ethiopia: Bayesian Binary Logistic Regression Approach.https://doi.org/10.21203/rs.3.rs-1528953/v1

Benyam Masresha, 2020. Thriving to Survive: Resettlement of Internally Displaced Persons in Sululta Town of Oromia Regional State, Ethiopia Addis Ababa, Ethiopia

Bougma, S., Hama-Ba, F., Garanet, F. and Savadogo, A. 2022.Nutritional Status of Children under Five Years of Age among Internally Displaced Populations and Non-displaced in

Burkina Faso. Journal of Food and Nutrition Research, 10(7): 449-458. doi: 10.12691/jfnr-10-7-2

Boah, M., Azupogo, F., Amporfro, D. A., & Abada, L.A. (2019).The epidemiology of undernutrition and its determinants in children under five years in Ghana. PLoS ONE, 14(7), e0219665.https://doi.org/10.1371/journal.pone.0219665

Brady PJ, Askelson NM, Ashida S, Nothwehr F, Janssen B, Frisvold D. 2021. The Relationship between Political, Economic, Social, and Cultural Vulnerability and Food Insecurity among Adults Aged 50 Years and Older. Nutrients.Oct 29;13(11):3896. doi: 10.3390/nu13113896. PMID: 34836150; PMCID: PMC8618552.

Carrillo, A.C.2009. Internal displacement in Colombia: humanitarian, economic and social consequences in urban settings and current challenges. 91(875) doi:10.1017/S1816383109990427

Coates, J. Swindale, A. and Bilinsky ,P. (2007). Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide (v. 3). Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development.

Creswell, J. W., & Plano Clark, V. (2011). Designing and conducting mixed methods research. Thousand Oaks, CA: SAGE.

Drammeh W, Hamid N. A, Rohana A. J. 2019. Determinants of Household Food Insecurity and Its Association with Child Malnutrition in Sub-Saharan Africa: A Review of the Literature. Curr Res Nutr Food Sci; 7(3).doi : http://dx.doi.org/10.12944/CRNFSJ.7.3.02

Dereje Kussa.(2019). Assessment of the Psycho-Socio-Economic Problems and Coping Mechanisms of Internally Displaced People in Ethiopia, The case of Internally Displaced People in Burayu Settlement Camp.Thesis Submitted to Addis Ababa University. July,2019, Addis Ababa.

Endris Jafer, Gutema Imana, Zerihun Doda and Abebe Lemessa. (2022). Post conflict-induced displacement: Human security challenges of internally displaced persons in Oromia Special Zone Surrounding Finfinne, Ethiopia. Cogent Social Sciences (2022).

Ermias, Mulu.,& Bezatu Mengistie. (2017). Household food insecurity and its association with nutritional status of under five children in Sekela District, Western Ethiopia: a comparative cross-sectional study. BMC Nutr 3, 35.https://doi.org/10.1186/s40795-017-0149-z

Ethiopia DHS 2011, Central Statistical Agency, Addis Ababa, Ethiopia; September 2006:19-20.

FAO.2006. “Food Security.”2006 (2). Policy Brief (June).

FAO, IFAD, UNICEF, WFP and WHO. 2021. The State of Food Security and Nutrition in the World 2021.Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, FAO. https://doi.org/10.4060/cb4474en

FAO, IFAD, UNICEF, WFP and WHO. 2022. The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. https://doi.org/10.4060/cc0639en

Fewtrell L, Prüss-Üstün A, Bos R, Gore F, Bartram. 2007. Water, sanitation and hygiene: quantifying the health impact at national and local levels in countries with incomplete water supply and sanitation coverage. World Health Organization, Geneva, (WHO Environmental Burden of Disease Series No. 15)

Food Security Network Working Group (FSNWG). 2022. Drought Special Report July 2022. https://reliefweb.int/report/ ethiopia/fsnwg-drought-special-report-july-2022

Frelat R., Lopez-Rid aura S., Giller K. E.2016. Drivers of household food availability in sub-Saharan Africa based on big data from small farms. Proceedings of the National Academy of Sciences.; 113(2):458-463

FAO. 1996. Rome Declaration on World Food Security and World Food Summit Plan of Action. World Food Summit 13-17 November 1996. Rome.

FAO, WFP, IFAD. 2012.The State of Food Insecurity in the World 2012. Economic growth is necessary but not sufficient to accelerate reduction of hunger and malnutrition. Rome: FAO, 2012.

FAO, IFAD, UNICEF, WFP and WHO. 2020. The State of Food Security and Nutrition in the World 2020.Transforming food systems for affordable healthy diets. Rome, FAO. https://doi.org/10.4060/ca9692en

FAO, IFAD, UNICEF, WFP and WHO. 2022. The State of Food Security and Nutrition in the World 2022.Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. https://doi.org/10.4060/cc0639en

FEWS NET. 2021. Ethiopia Food Security Outlook: Expanding conflict and prolonged drought expected to drive record-level and extreme need in 2022, October 2021

FEWS Food Security Projections Ethiopia December 2022: https://fews.net/east-africa/ethiopia

FSIN and Global Network Against Food Crises. 2021. Global Report on Food Crises 2021. Rome. http://https://www.fsinplatform.org/sites/default/files/resources/ files/GRFC 2021.pdf

Gichunge, C. Das, A. Mutiso, D. and Jepkemoi, G. (2022). "Factors Associated with Household Dietary Diversity among Internally Displaced Persons in Nakwamekwei Camp, Kenya." World Journal of Nutrition and Health, vol. 10, no. 1: 1-7. doi: 10.12691/jnh-10-1-1.

Gashaw, Alemayehu. (2020). 'Food security status, food safety and water sanitation and hygiene of households in Woreda ten of Arada sub-city, Addis Ababa,Ethiopia. Master's thesis.Addis Ababa university

Ghattas, H. (2014). Food security and nutrition in the context of the nutrition transition.TechnicalPaper.Beirut, American University of Beirut. (available at http://www.fao.org/economic/ess/essfs/voices/en/).

Girma Gezimu Gebre. (2012). Determinants of food security among households in Addis Ababa, Ethiopia. Interdisciplinary Description of Complex Systems 10(2), 159-173.

Girma Gezimu Gebre, Isoda, H., Amekawa, Y. et al. (2021). What Explains Gender Gaps in Household Food Security? Evidence from Maize Farm Households in Southern Ethiopia.Soc Indic Res 155, 281–314 (2021). https://doi.org/10.1007/s11205-020-02600-8

Girma Gezimu Gebre (2022) Intra-Household Decision-Making and their Effects on Women Dietary Diversity: Evidence from Ethiopia, Ecology of Food and Nutrition, 61:6, 705-727, DOI: 10.1080/03670244.2022.2135509

Governorate, H. (2012). Settlements of Internally Displaced Persons (IDP) – Yemen: May 2012, MoPHP, UNICEF & Partners

GRFC 2022. Food Security Information Network and Global Network Against Food Crises. 2022. Mid-Year Update. Rome.

Hassan Jahanihashemi, Mostafa Noroozi, Roza Zavoshy, Amir Afkhamrezaei, Shabnam Jalilolghadr, Neda Esmailzadehha, Malnutrition and birth related determinants among children in Qazvin, Iran, *European Journal of Public Health*, Volume 27, Issue 3, June 2017, Pages 559–562, https://doi.org/10.1093/eurpub/ckx043

Hatloy, A., Hallund, J., Diarra, M.M. & Oshaug, A. 2000. Food variety, socioeconomic status and nutritional status in urban and rural areas in Koutiala (Mali). Public Health Nutrition 3: 57-65

Hoddinott, J. & Yohannes, Y. 2002. Dietary diversity as a food security indicator. FANTA 2002, Washington DC. (available at http://www.aed.org/Health/upload/dietarydiversity.pdf.

Hou, M., Qing, P., & Min, S. (2021). Multiple indicators of household dietary diversity in rural China: Effects of income and dietary knowledge. Nutrition, 91, 111406. https://doi.org/10.1016/j.nut.2021.111406

Hutton, G. and C. Chase 2016. "The knowledge base for achieving the sustainable development goal targets on water supply, sanitation and hygiene." International Journal of Environmental Research and Public Health 13(6): 536.

Idonije, Aidelokhai D, Uma Kobo H. 2022. Assessment of Food Insecurity on Internally Displaced persons in Niger State and its Implications for the Niger State Government.Albukhary Social Business Journal. Vol. 3, Issue 1,

Ihab A., Rohana A., Manan W. W. 2015. Concept and Measurements of Household Food Insecurity and Its Impact on Malnutrition: A Review. International Medical Journal 22 (6):509-516.

Internal Displacement Monitoring Center. 2021. Internal Displacement Monitoring Center. (2021). Global report on internal displacement.https//www.internal-displacement.org/global-report/grid2021/ [Google Scholar]

IDMC 2022. Global food insecurity is on rise, so is internal displacement. What is the relationship?.https://www.internal-displacement.org/expert-opinion/global-food-insecurity-is-on-the-rise-so-is-internal-displacement-what-is-the

IOM 2021. Ethiopia National Displacement Report 8: Site Assessment Round 25 & Village Assessment Survey Round 8: March–April 2021. IOM; 2021.

International Organization for Migration.Accessed March 25, 2022. https://displacement.iom.int/reports/ethiopia-%E2%80%94-national-displacement-report-8-march-% E2%80%94-april-2021

Pejic, Jelena, The right to food in situations of armed conflict: the legal framework, in IRRC, December 2001, Vol. 83, No. 844, pp. 1097- 1109

Janepha K. Kumba. 2015. The Role of Household Characteristics in Determining Food Security in Kisii Central Sub-County, Kenya. Research on Humanities and Social Sciences www.iiste.org ISSN (Paper)2224-5766 ISSN (Online)2225-0484 (Online) Vol.5, No.7,

Jessica. Fanzo.(2015). Ethical issues for human nutrition in the context of global food security and sustainable development. Global Food Security 15–23

Kathryn A. O'Connell, Tesfaye Shiferaw Hailegebriel, Danielle Garfinkel, Jenna Durham, Bereket Yakob, Jemal Kassaw and Addisalem Titiyos Kebede. 2022. Meeting the Sexual and Reproductive Health Needs of Internally Displaced Persons in Ethiopia Somali Region. Global Health: Science and Practice October, 10(5):e2100818; https://doi.org/10.9745/GHSP-D-21-00818

Kiya Merga. (2022). food security status and coping mechanism of internally displaced household in Burayu town,MSc Thesis,Addis Ababa university

Kristen Cashin and Lesley Oot. 2018. Guide to Anthropometry: A Practical Tool for Program Planners, Managers, and Implementers. Washington, DC: Food and Nutrition Technical Assistance III Project (FANTA)/FHI 360.

Lafta, R., Al Saraf, H., Dhiaa, S. and Ahmed, Q. 2017. Nutritional Status Assessment of Internally Displaced Children in "Dream City"-Iraq.Journal of Food and Nutrition Sciences. 5 (3): 122-130. doi: 10.11648/j.jfns.20170503.19

Lamesa ,Kenate. 2017. Suitability analysis of solid waste disposal site using GIS techniques for Sululta town: Oromia special zone surrounding Finfinne , Ethiopia. MSc thesis, Addis Ababa University

Loopstra R. and Tarasuk, T. 2013. Severity of Household Food Insecurity Is Sensitive to Change in Household Income and Employment Status among Low-Income Families. . J. Nutr. 143: 1316–1323.

Macías, Y. and Glasauer, P. (2014). Guidelines for assessing nutrition-related Knowledge, Attitudes and Practices. Food and Agriculture Organization of the United Nations. Rome.

Marie-Rosette Nahimana et al. 2017. Knowledge, attitude and practice of hygiene and sanitation in a Burundian refugee camp: implications for control of a Salmonella typhi outbreak Pan African Medical Journal. 28:54 doi:10.11604/pamj.2017.28.54.12265

Maxwell, D.and Richard C. (2008). The Coping Strategies Index: A tool for rapid measurement of household food security and the impact of food aid programs in humanitarian emergencies. Field Methods Manual Second Edition, January 2008. Retrieved from https://www.springnutrition.org/publications/tool-summaries/coping-strategies-index-field-methods-manual-2ndedition

Mengistu K, Alemu K, Destaw B (2013) Prevalence of Malnutrition and Associated Factors Among Children Aged 6-59 Months at Hidabu Abote District, North Shewa, Oromia Regional State. J Nutr Disorders Ther T1: 001. doi:10.4172/2161-0509.T1-001

Mesfin Araya , Chotai J, Komproe IH, de Jong JTVM (2007). Effect of trauma on quality of life as mediated by mental distress and moderated by coping and social support among post conflict displaced Ethiopians. Quality of Life Research 16, 915- 927.

Mutisya, M., Ngware, M.W., Kabiru, C.W. et al. The effect of education on household food security in two informal urban settlements in Kenya: a longitudinal analysis. Food Sec. 8, 743–756 (2016). https://doi.org/10.1007/s12571-016-0589-3

Nounkeu, C. Tetab, I. Dharod, J. Foudjo, B. Ntentiee, F. Borisf, A. Georges, N. and Obenh, J. 2022. Limited water access is associated with food insecurity and diarrheal episodes among children suffering from moderate acute malnutrition in Far-North Cameroon. Journal of Water, Sanitation and Hygiene for Development Vol 12 No 1, 68 doi: 10.2166/washdev.2021.171

Nwankwo B, Mohammadnezhad M, Hagan VM et al (2022) Prevalence and determinants of undernutrition among under-five children in Nigeria: A systematic review. Global Journal of Health Science.14(11).

Office for Coordination of Humanitarian Affairs (OCHA).(2019). Comprehensive Food Security and Vulnerability Analysis (CFSVA) 2019. Ethiopia

OCHA. 2019. "Ethiopia Situational Report." Retrieved May 26, 2019 (www.unocha.org/ethiopia).

OCHA 2022.Ethiopia Humanitarian Response Plan. July 2022. https://www. humanitarianresponse.info/en/operations/ethiopia/document/ethiopiahumanitarian-response-plan-jul-2022-en

Office for Coordination of Humanitarian Affairs (OCHA). 2023.Ethiopia - Situation Report, 18 Jan 2023\

OCHA. 2022. Humanitarian needs overview Ethiopia. Humanitarian programme cycle. January2020.https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/ethiopia_2020_humanitarian_needs_overview.pdf

Olwedo, M.A., et al., Factors associated with malnutrition among children in internally displaced person's camps, northern Uganda. African health sciences, 8 (4). p. 244-252: 2008.

Omotayo, A. O., Omotoso, A. B., Daud, S. A., Omotayo, O. P., & Adeniyi, B. A. (2022). Rising Food Prices and Farming Households Food Insecurity during the COVID-19 Pandemic: Policy Implications from SouthWest Nigeria. *Agriculture*, *12*(3), 363. MDPI AG. Retrieved from http://dx.doi.org/10.3390/agriculture12030363

Osendarp, S., Verburg, G., Bhutta, Z., Black, R.E., de Pee, S., Fabrizio, C., Headey, D. et al. (2022). Act now before the Ukraine war plunges millions into malnutrition. Nature, 604(7907): 620–624. www.nature.com/articles/ d41586-022-01076-5

Osumanu, I. Kosoe, E. Ategeeng, F "Determinants of Open Defecation in the Wa Municipality of Ghana: Empirical Findings Highlighting Sociocultural and Economic Dynamics among Households", *Journal of Environmental and Public Health*, vol. 2019, Article ID 3075840, 10 pages, 2019. https://doi.org/10.1155/2019/3075840

Perez-Escamilla, R.; Bermudez, O.; Buccini, G.S.; Kumanyika, S.; Lutter, C.K.; Monsivais, P.; Victora, C. (2018). Nutrition disparities and the global burden of malnutrition.BMJ, 361.doi: https://doi.org/10.1136/bmj.k2252

Peter R, Kumar KA. (2014). Mothers' caregiving resources and practices for children under 5 years in the slums of Hyderabad, India: a cross-sectional study. WHO South East Asia J Public Health.3:3–4.

Prüss-Ustün A, Wolf J, Bartram J, et al.(2019). Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: an updated analysis with a focus on low- and middle-income countries. Int J Hyg Environ Health;222:765–77.doi:10.1016/j.ijheh.2019.05.004pmid:http://www.ncbi.nlm.nih.gov/pubmed/3108874

Ruel, M.T., Is dietary diversity an indicator of food security or dietary quality? A review of measurement issues and research needs. Food and nutrition bulletin, 24 (2). p. 231-232: 2003.

Sasson, A.(2012) Food security for Africa: an urgent global challenge. Agric & Food Secur 1, 2 https://doi.org/10.1186/2048-7010-1-2

Shrestha, A., Six, J., Dahal, D. et al. Association of nutrition, water, sanitation and hygiene practices with children's nutritional status, intestinal parasitic infections and diarrhea in rural Nepal: a cross-sectional study. BMC Public Health 20, 1241 (2020). https://doi.org/10.1186/s12889-020-09302-3

Singh, K.P., et al., Nutrition among men and household food security in an internally displaced persons camp in Kenya. Public Health Nutr, 19 (4). p. 723-731: 2015.

Singh, K.P., Bhoopathy, S.V., Worth, H., Seale, H., & Richmond R.L. (2017). A Qualitative Assessment of Food Security in an Internally Displaced Persons Camp in Kenya.African Journal of Food Agriculture Nutrition and Development 17(1).

Singh, D.R., et al., Food insecurity and dietary diversity among lactating mothers in the urban municipality in the mountains of Nepal. *PloS one*, 15 (1). p. e0227873: 2020.

Swindale, A. and Bilinsky, P. 2006. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide, Version 2. Food and Nutrition Technical Assistance III Project (FANTA), Washington, DC, USA.

Solomon Bogale. (2021). Determinants of food insecurity and coping strategies of internally displaced households residing in Gelan town, MSc Thesis, Addis Ababa university.

Taherdoost, H. (2021). Data Collection Methods and Tools for Research; A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects. International Journal of Academic Research in Management (IJARM), 10 (1), pp.10-38.ffhal-03741847f

Tambe, A. Akeh, M. Tendongfor, N. Dhlamini,T. Chipili, G and Mbhenyan, X. (2023). The predictors of food security and dietary diversity among internally displaced persons' children (6–59 months) in Bamenda health district, Cameroon. Conflict and Health 17:11 https://doi.org/10.1186/s13031-023-005112

Tesfay, B., Shiferaw, S., Hagos, S. *et al.* Urban food insecurity in the context of high food prices: a community based cross sectional study in Addis Ababa, Ethiopia. *BMC Public Health* 14, 680 (2014). https://doi.org/10.1186/1471-2458-14-680

Tesfaye Tola. (2019). State obligation for the protections of the rights of IDPs: In case of Oromo people displaced from Ethiopian Somali Region . Addis Ababa University

Todhunter, E.N. 1970. A Guide to Nutrition Terminology for Indexing and Retrieval. National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare, Bethesda, Md. 270 pp

UNICEF. 2019. "Humanitarian Action for Children." Retrieved May 26, 2019 (www.unicef.org/appeals/ethiopia)

UNHCR.UNHCR'S initiative on internal displacement 2020–2021. Geneva: UN Refugee Agency; 2020.

UNHCR & WHO. (2022). The Impact of Food Insecurity on the Health and Nutrition of Refugees and Internally Displaced People. Greater Horn of Africa.Joint UNHCR & WHO Report, October 2022

UNHCR. (2022). Water, sanitation and hygiene. (https://www.unhcr.org/what-we-do/protect-human-rights/public-health/water-sanitation-and-hygiene

UN Secretary-General's Plan: Water Action Decade 2018-2028. https://wateractiondecade.org/

USAID. (2019). Ethiopia Complex Emergency Fact Sheet #1 Fiscal Year (FY) 2020

World Bank. (2023). Ethiopia Forced Displacement Research and Policy Workshop Summary Report.

WFP. (2022). Regional Drought Response Plan for the Horn of Africa May–December 2022. July 2022.https://reliefweb.int/report/ethiopia/regionaldrought-response-plan horn-africa-may-december-2022

WFP. (2022a). Regional Food Security and Nutrition Update – Eastern Africa Region, Update #3 December 2022

WFP. (2022b). Northern Ethiopia Emergency Response – Situation Report #8, August-September 2022

WHO AND UNICEF. (2015). Improving nutrition outcomes with better sanitation, and hygiene practical solutions for policies and programmes.Switzerland.World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).

WHO and UNICEF. (2021). Progress on household drinking water, sanitation and hygiene 2000-2020: Five years into the SDGs]. Geneva: World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).

WHO, Crisis in Northern Ethiopia: As of November 2022, https://www.who.int/emergencies/situations/crisis-in-tigray-ethiopia.

Yeshaneh, A., Zebene, M., Gashu, M. et al.(2021). Complementary feeding practice and associated factors among internally displaced mothers of children aged 6–23 months in Amhara region, Northwest Ethiopia: a cross-sectional study. BMC Pediatr 21, 583.https://doi.org/10.1186/s12887-021-03050-y

Zemachu A, Mekonnen B, Girum G, et al. (2021). Bacteriological Quality of Drinking Water and Associated Factors at the Internally Displaced People Sites, Gedeo Zone, Southern Ethiopia: A Cross-sectional Study.Environmental Health Insights Volume 15: 1–6. DOI: 10.1177/11786302211026469

Zerihun Y, Mossa E , et al. 2019. Determinants of nutritional status among children under age 5 in Ethiopia: further analysis of the 2016 Ethiopia demographic and health survey.Globalization and Health 15:62 https://doi.org/10.1186/s12992-019-0505-7

APPENDICES

Annex 1. Water sanitation and hygiene knowledge

Knowledge Question		Frequency (%)
Water: What is safe water?	No germs	93 (41.15%)
	No turbidity	65 (28.76%)
	Good taste	74 (32.74%)
	No smell	56 (24.78%)
Average		**31.85%**
Reason for using different water sources for drinking and other uses?	Quantity of water	65 (28.76%)
	Quality of water	63 (27.87%)
	Everybody doing it	67 (29.64%)
Average		**28.7%**
Reasons for water not to be good	Bad taste (chlorine)	24 (10.62%)
	Bad taste (not chlorine)	34 (15.04%)
	Turbid	91 (40.26%)
	Bad smell	29 (12.83%)
Average		**19.6%**
What are the causes of diarrhea?	Bad water	68 (30.08%)
	Dirty hands	32 (14.15%)
	Too much chlorine	14 (6.19%)
	God will	42 (18.58%)
Average		**17.25**
Ways of preventing diarrhea	Drink safe water	98 (43.36%)
	Wash hand before and after eating	48 (21.01%)
	Covering food/washing fruit hygiene	14 (6.19%)
	Using latrine/safe disposal	10 (4.42%)
	Protecting from flies	13 (5.75%)

Average		**16.9**
Can explain how to prepare ORS		**21.7**
Critical time to wash hands	After going to toilet	89 (39.38%)
	Before eating	45 (19.91%)
	After eating	34 (15.04%)
	Before cooking	31 (13.72%)
	After take care of child	38 (16.81%)
	Before and praying	145 (64.15%)
Average		**28.1**
Knowledge Question		Frequency (%)
Water: What is safe water?	No germs	93 (41.15%)
	No turbidity	65 (28.76%)
	Good taste	74 (32.74%)
	No smell	56 (24.78%)
Average		**31.85%**
Reason for use different water sources for drinking and other uses?	Quantity of water	65 (28.76%)
	Quality of water	63 (27.87%)
	Everybody doing it	67 (29.64%)
Average		**28.7%**
Reasons for water not to be good	Bad taste (chlorine)	24 (10.62%)
	Bad taste (not chlorine)	34 (15.04%)
	Turbid	91 (40.26%)
	Bad smell	29 (12.83%)
Average		**19.6%**
What are the causes of diarrhea?	Bad water	68 (30.08%)
	Dirty hands	45 (19.91%)
	God will	42 (18.58%)
Average		**22.8**

Ways of preventing diarrhea	Drink safe water	98 (43.36%)
	Wash hand before eating	46 (20.35%)
	Wash hand after eating	49 (21.68%)
	Covering food/washing fruit hygiene	14 (6.19%)
	Using latrine/safe disposal	10 (4.42%)
	Protecting from flies	13 (5.75%)
Average		**16.9**
Can explain how to prepare ORS		**21.7**
Critical time to wash hands	After going to toilet	89 (39.38%)
	Before eating	45 (19.91%)
	After eating	34 (15.04%)
	Before cooking	31 (13.72%)
	After take care of child	38 (16.81%)
	Before and praying	145 (64.15%)
Average		**28.1**

Annex 2. Water sanitation and hygiene Attitude

Attitude question		Frequency (%)
How do you perceive the quality of water provided by the water network		129 (57.08%)
Do you think water can transmit diseases		133 (58.85%)
What do you do when someone from your family has diarrhea?	Buy drug from the shop	15 (6.64%)
	Go to clinic	83 (36.73%)
	Give ORS	55 (24.34%)
Are you satisfied with the privacy of the toilet on your plot		155 (68.58%)

Are you satisfied the safety of the toilet on your plot		86 (38.05%)
Is the latrine on your plot easy to clean		14 (6.19%)
Are you happy with the shower provided on our plot		10 (4.42%)
If not satisfied, why?	Not water pressure	4 (1.77%)
	Cabin design	8 (3.54%)
	Not enough privacy	211 (93.36%)
Do you think there are enough communal waste collectors in the camp		26 (11.50%)
How do you feel when you see someone littering out of the containers	Normal	67 (29.65%)
	It's bad habit	23 (10.18%)
	It will block the drainage system	21 (9.29%)
	There is not enough containers	171 (75.66%)
	It's lack of respect for community	17 (7.52%)
	People are arrogant	31 (13.72%)
Are you happy with the drainage system		48 (21.24%)
If not, what is the problem	Flooding during rainy season	110 (48.67%)
	Overflowing of cross pools	16(7.08%)
	Iron protection is not good	12 (5.31%)
	Drainage of water supply points	35 (15.49%)
	Drainage of gray water	146 (64.60%)
Will you agree to pay for the garbage collection		23(10.18%)

Attitude question		Frequency (%)
How do you perceive the quality of water provided by the water network		129 (57.08%)
Do you think water can transmit diseases		133 (58.85%)
What do you do when someone from your family has diarrhea?	Buy drug from the shop	15 (6.64%)
	Go to clinic	83 (36.73%)
	Give ORS	55 (24.34%)
Are you satisfied with the privacy of the toilet on your plot		155 (68.58%)
Are you satisfied the safety of the toilet on your plot		86 (38.05%)
Is the latrine on your plot easy to clean		59 (26.11%)
Are you happy with the shower provided on our plot		10 (4.42%)
If not satisfied, why?	Not water pressure	4 (1.77%)
	Cabin design	8 (3.54%)
	Not enough privacy	214 (94.69%)
Do you think there are enough communal waste collectors in the camp		26 (11.50%)
How do you feel when you see someone littering out of the containers	Normal	67 (29.65%)
	It's bad habit	23 (10.18%)
	It will block the drainage system	21 (9.29%)
	There is not enough containers	171 (75.66%)
	It's lack of respect for community	17 (7.52%)
	People are arrogant	31 (13.72%)

Are you happy with the drainage system		48 (21.24%)
If not, what is the problem	Flooding during rainy season	110 (48.67%)
	Overflowing of cross pools	16(7.08%)
	Iron protection is not good	12 (5.31%)
	Drainage of water supply points	35 (15.49%)
	Drainage of gray water	146 (64.60%)
Will you agree to pay for the garbage collection		23(10.18%)

Annex 3. Water sanitation and hygiene Practice

Practice question		Frequency (%)
Do you use a different source of water for and washing purpose		48 (21.24%)
Where do you take the water from for cooking	Communal tap stand	213 (94.25%)
	Household tap	42 (18.58%)
Where do you take water from for drinking	Communal tap stand	204 (90.27%)
	Household tap	52 (23.01%)
	Water bottle(shop)	10 (4.4%)
Is there sometimes not enough water for your family in the surrounding		119 (52.65%)
Containers for the storage of drinking water	Jerrycan	167 (73.89%)
	Bucket	14 (6.19%)
	Bottle	50 (22.12%)
Are containers clean and covered?	Some are clean	110 (4.16%)

	Not clean	65 (28.76%)
	Some are covered	80 (35.40%)
	All are not covered	81 (35.84%)
During these last 15 days, how many children under 5 have diarrhea in your family	No one	42 (18.58%)
	One child	113 (50.00%)
	Two children	71 (31.42%)
Have you observed people practicing open defection	Adult	147 (65.33%)
	Teenager	154 (34.51%)
	Children	126 (56.19%)
Where do <5 children go when they need to toilet	Potty	89 (39.38%)
	Floor	131 (57.96%)
	Toilet	7 (3.10%)
Where do you put the excreta after	Existing toilet	146 (64.60%)
	Buried into the plot	5 (2.21%)
	Throw it outside of neighbored	97 (42.92%)
Where do you take your shower?	Inside the house	186 (82.30%)
	Inside the private shower	8 (3.54%)
	Inside toilet	31 (13.72)
Frequency of taking shower	More than one per day	26 (11.50%)
	Once per day	53 (23.45%)

	Less than one on the week	156 (69.03%)
Frequency of solid waste taken away from camp		**0.00**
Where do you dispose you garbage?	In the plastic bag	98 (43.36%)
	Bin inside the house	12 (5.31%)
	Throw it outside	104 (46.01%)
	In public bin	5 (2.23%)
Where to empty plastic bag or bin found inside the house	In front of the house	45 (40.9%)
	Communal bin	12 (10.9%)
	Other	53 (48.1%)
Practice question		Frequency (%)
Do you use a different source of water for and washing purpose		48 (21.24%)
Where do you take the water from for cooking	Communal tap stand	213 (94.25%)
	Household tap	42 (18.58%)
Where do you take water from for drinking	Communal tap stand	204 (90.27%)
	Household tap	52 (23.01%)
	Water bottle(shop)	10 (4.4%)
Is there sometimes not enough water for your family in the surrounding		119 (52.65%)
Containers for the storage of drinking water	Jerrycan	167 (73.89%)
	Bucket	14 (6.19%)
	Bottle	50 (22.12%)

Are containers clean and covered?	Some are clean	110 (4.16%)
	Not clean	65 (28.76%)
	Some are covered	80 (35.40%)
	All are not covered	81 (35.84%)
During these last 15 days, how many children under 5 have diarrhea in your family	No one	42 (18.58%)
	One child	113 (50.00%)
	Two children	71 (31.42%)
Have you observed people practicing open defection	Adult	147 (65.33%)
	Teenager	154 (34.51%)
	Children	126 (56.19%)
Where do <5 children go when they need to toilet	Potty	89 (39.38%)
	Floor	131 (57.96%)
	Toilet	7 (3.10%)
Where do you put the excreta after	Existing toilet	146 (64.60%)
	Buried into the plot	5 (2.21%)
	Throw it outside of neighbored	97 (42.92%)
Where do you take your shower?	Inside the house	186 (82.30%)
	Inside the private shower	8 (3.54%)
	Inside toilet	31 (13.72)
Frequency of taking shower	More than one per day	26 (11.50%)

	Once per day	53 (23.45%)
	Less than one on the week	156 (69.03%)
Frequency of solid waste taken away from camp		**0.00**
Where do you dispose you garbage?	In the plastic bag	98 (43.36%)
	Bin inside the house	12 (5.31%)
	Throw it outside	114 (50.44%)
	In public bin	22 (9.73%)
Where do you put them?	In front of the house	92 (40.71%)
	Communal bin	82 (36.28%)
	Other	53 (23.45%)

Appendix 4: Information Sheet and Informed Consent Form

Researcher consent form

My name is Lensa Abi, and I am a masters student at Addis Ababa University. I am doing research on food security and water, sanitation and hygiene status of internally displaced peoples as a part of my study course. I am going to kindly invite you to be part of this research study. Before you decide to be part of this research you can talk to me if there is anything you are not comfortable with about the research. If there is any word that you don't understand while I am giving the information, please stop me and ask me, I will explain to you. If you do not wish to continue, you have the right to withdraw from the study, at any time.

Information and purpose: The aim of this study is to assess food Security and water, sanitation and hygiene status of internally displaced households settled in sululta town, Oromia, Ethiopia.

Benefits: This study helps people at risk especially internally displaced households and under five children and gives valuable information that helps to maintain the food security status and nutritional status of people during this time.

Participation: Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive as any member of this community will continue and nothing will change. If you choose not to participate in this research, you will not will not have any effect on study. However, your participation is important to fulfill the study purpose.

Confidentiality and Risk: All the information that is collected for this research will be kept confidential. It will be stored in a file using codes, without your name. And it will not be exposed to anyone. In addition, it is being used only for study purposes but no other purposes. Your participation in this research may not directly provide you a certain benefit as an individual. But it helps us in assessing food Security, child nutrition and water, sanitation and hygiene status. Moreover, there are no side effects and known risks related to this kind of research so far. The only discomfort you might feel will be giving us your precious time for the interview which is about 20 minutes.

Participants consent form

I agree to participate in this research study and understand that my participation is voluntary. I am aware that all records will be kept confidential in the secure possession of the researcher. I agree to be briefly informed and clearly understand the objectives and I understand that I may withdraw from the study at any time with no adverse repercussions.

Name of researcher _____signature_____

Name of interviewer _____signature_____

Appendix 5: Household Survey Questionnaires for quantitative study

Part 1: Socio-demographic characteristic of household

Background of the households			
No.	Question	Response	Code
1.	Sex of household head	Female	0
		Male	1
2.	Age of household head in years		
3.	Household size in number		
3.1.	Number of household members aged <14		
3.2.	Number of household members aged < 65		
4.	Education level of household	Cannot read and write	1
		Grade 1 – 4	2
		Grade 5 – 8	3
		Grade 9 – 12	4
		Higher education	5
5.	Occupation of the household	Unemployed	1
		Trader	2
		Self-employed	3
		Daily wage	4

		Government employed	5
		Others	6
6.	Marital status	Single	1
		Married	2
		Divorced	3
		Widowed	4
7.	Religion	Orthodox	1
		Muslim	2
		Protestant	3
		Other	4
8	Household income	<=1500	1
		1501-3000	2
		3001-4000	3
		>=4001	4

Part 2: Household food security status questionnaires

This part consists the Household Food Insecurity Access Scale (HFIAS), Household Dietary Diversity Score (HDDS) and Coping Strategy Index (CSI)			
Household Food Insecurity Access Scale			
No.	Questions	Response	Code
1	In the past four weeks, did you worry that your household would not have enough food because of a lack of money or other resources?	Yes	0
		No	1
1a	If Q#1 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
2	Were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	Yes	1
		No	0
2a	If Q# 2 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
3	Did you or any household member have to eat a limited variety of foods due to a lack of money or resources?	Yes	1
		No	0
3a		Rarely (1-2 times)	1

	If Q# 3 is yes, how often did this happen in the past 4 weeks?	Sometimes (3-10 times	2
		Often (more than 10 times)	3
4	Did you or any household member have to eat some foods that you did not want to eat because of a lack of money or resources to obtain other types of food?	Yes	1
		No	0
4a	If Q# 4 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
5	Did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	Yes	1
		No	0
5a	If Q# 5 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
6	Did you or any other household member have to eat fewer meals in a day because there was not enough food?	Yes	1
		No	0
6a	If Q# 6 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
7	Was there ever no food to eat of any kind in your household because of a lack of money or resources to get food?	Yes	1
		No	0

7a	If Q# 7 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
8	Did you or any household member go to sleep at night hungry because there was not enough food?	Yes	1
		No	0
8a	If Q# 8 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3
9	Did you or any household member go a whole day and night without eating anything because there was not enough food?	Yes	1
		No	0
9a	If Q# 9 is yes, how often did this happen in the past 4 weeks?	Rarely (1-2 times)	1
		Sometimes (3-10 times	2
		Often (more than 10 times)	3

Household dietary diversity score (HDDS)

In the past seven days, have you and your family members consumed the following food items?

1	Cereals sorghum, maize, rice, wheat, barley? (e.g., bread, injera, porridge, or other grain products)	Yes	1
		No	0
2	Pulses and legumes like beans, peas, lentils, or nuts??	Yes	1
		No	0

3	Vegetables like kale, carrots, sweet potatoes, tomatoes, onions, etc.?	Yes	1
		No	0
4	Fruits like mango, avocado, fruit juice, papaya?	Yes	1
		No	0
5	Roots and tubers like potatoes, inset, yams, cassava	Yes	1
		No	0
6	Meat beef, lamb, goat, camel, chicken?	Yes	1
		No	0
7	Eggs?	Yes	1
		No	0
8	Fish?	Yes	1
		No	0
9	Dairy products like yoghurt, cheese, milk, or other milk products?	Yes	1
		No	0
10	Any foods made with oil, fat, or butter?	Yes	1
		No	0
11	Sugar or honey or sugary foods such as chocolates, candies, cookies, and cakes?	Yes	1
		No	0
12	Any other foods, such as condiments, coffee, tea?	Yes	1
		No	0

Household coping strategy index **Coping strategy index (CSI)**		
	In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your household had to:	Frequency (0-7)
1	Rely on less preferred and less expensive foods?	
2	Borrow food, or rely on help from a friend or relative?	
3	Purchase food on credit?	
4	Gather wild food, hunt, or harvest immature crops?	
5	Consume seed stock held for next season?	
6	Send household members to eat elsewhere?	
7	Send household members to beg?	
8	Limit portion size at mealtimes?	
9	Restrict consumption by adults in order for small children to eat?	
10	Feed working members of HH at the expense of non-working members?	
11	Reduce the number of meals eaten in a day?	
12	Skip entire days without eating?	

Part 3: Knowledge, attitude and practices survey on WASH

This part consists of the knowledge, attitude and practice of internally displaced households regarding water, sanitation and hygiene.			
Knowledge regarding WASH			
No.	Question	Response	Code
1	What is safe water?	No germs	1
		No turbidity	2
		Good taste	3
		No smell	4
		Other	5
2	Why do you use different water sources for drinking and other uses?	Quantity of water	1
		Quality of water	2
		Tradition	3
		Personal belief	4
		Everybody is doing it	5
		Other	6
3	If the water is not good, what are the reasons?	Bad taste	1
		Turbid	3
		Bad smell	4
		Hot/Cold	5
		Open container	6

		Tank/container is dirty	7
		piped network is not functional	8
		Borehole is not good	9
4.	What are the causes of diarrhoea?	Bad weather	1
		Water is bad	2
		Too much chlorine	3
		Dirty hands	4
		Sun / temperature	5
		God's will	6
		Other…….	7
		I don't know	8
5.	What are the ways of preventing diarrhoea?	By drinking safe water	
		By washing hands before eating food	
		By washing hands after toilet	
		By covering food / washing fruits / food hygiene	
		By using latrine / safe disposal of excreta	
		By protecting food from flies / other vectors	
		Other	

6.	Could you explain how to prepare ORS? (Right answer is 1L of safe water, 4 to 6 spoons of sugar, 1 spoon of salt, additionally lemon and bicarbonate)	Yes	0
		No	1
7	When do you wash your hands?	After going to the toilets	1
		Before eating	2
		After eating	3
		Before cooking	4
		After take care of the children	5
		Before prayer	6
		After playing	6
		Other ….	7
		I don't know	8
8	Do you know how frequent solid waste is taken away from the camp?	Everyday	1
		Several times per week	2
		Less than once per week	3
		Once per week	4
		Don't know	5
		I don't know	6
		Several times per week	7
9.	How often do you have a shower?	More than one per day	1
		Once per day	2

		Less than once per week	3
		Other	4
		There is no answer	5
Attitude regarding WASH			
10.	How do you perceive the quality of water provided by the water network?	Not good	1
		I don't know	2
		Not good	3
11.	Do you think water can transmit diseases?	Yes	1
		No	2
		I don't know	3
12.	What do you do when someone from your family has diarrhoea?	Nothing	1
		Buy drugs from the shop	2
		Go to the clinic	3
		Give ORS / use home mixture of ORS	4
		Traditional medicine	5
		Others	6
13.	Are you satisfied with the privacy of the toilet on your plot?	Yes	1
		No	2
		There is no answer	3
14		Yes	1

	Are you satisfied with the safety of the toilet on your plot?	No	2
		There is no answer	3
15	Is the latrine on your plot easy to clean?	Yes	1
		No	2
		There is no answer	3
16.	Are you happy with the shower provided on your plot?	Yes	1
		No	0
17.	If not satisfied, why? :	Not water pressure	1
		Cabin design	2
		Not enough privacy	3
		Other….	4
		There is no answer	5
18.	Do you think there are enough communal waste collectors in the camp?	Yes	1
		No	0
19.	How do you feel when you see someone littering out of the containers?	It is normal	1
		It is a bad habit	2
		It will block the drainage system	3
		There is not enough container	4
		It is a lack of respect for the community	5
		It is because people are ignorant	6

		Other…	7
		I don't know	8
20.	Are you happy with the drainage system?	Yes	1
		No	0
21.	If not, what is the problem?	Flooding during rainy season	1
		Flooding during dry season	2
		Overflowing of cesspools	3
		Channel is deep and dangerous	4
		Iron protection is not good	5
		Drainage of water supply points	6
		Drainage of gray water	7
		Other	8
		I don't know	9
22.	Will you agree to pay for the garbage collection?	Yes	1
		No	2
		It depends	3
		No answer	4
23.	If yes, how much ETB per month?	Amount in ETB_____	
Practice regarding WASH			
24.		Yes	1

	Do you use a different source of water for drinking and washing purposes?	No	0
25.	Where do you take the water from, for cooking, washing, etc. (not for drinking)?	Directly from the water trucks	1
		From the tank in front of my house	2
		From the communal tap-stand	3
		From my household tap	4
		Water bottle (shop)	5
		Water bottle (distribution)	6
		There is no answer	7
		Other	8
26.	Where do you collect drinking water from?	Directly from the water tank	1
		From communal tank	2
		From the communal tap-stand	3
		From household tap	4
		Water bottle (shop)	5
		Water bottle (distribution)	6
		There is no answer	7
		Other	8
27.	Is there sometimes not enough water for your family in the surrounding area?	Yes	1
		No	2
		No answer	3

28.	Do you use containers for the storage of drinking water inside your house?	Yes	1
		No	0
29.	If yes, which containers do you use? ***(Ask to see the containers***	Jerrycan total volume	1
		Bucket total Volume	2
		Bowl total Volume	3
		Bottle total Volume	4
		Other	5
30.	Are the container clean and covered ***(Observe)***	All containers are clean	1
		Some containers are clean	2
		Containers are not clean	3
		All containers are covered	4
		Some containers are covered	5
		All containers are not covered	6
31.	Is there a tank for the plot? ***(observe)***	Yes	1
		No	0
32.	If yes: Do you clean the tank?	Yes	1
		No	0
33.	During these last 15 days, how many children under 5 have diarrhoea in your family?	No one	
		1 child	
		2 children	

		More than 2 children	
		There is no answer	
34.	Have you observed people practicing Open Defecation?	Yes	1
		No	2
		I don't know	3
35.	If yes, which category of the population have you observed practicing open defecation:	Adult	1
		Teenager	2
		Children	3
36.	Where do your young children (<5) go when they need to go to the toilet? ***(You can tick more than one. Please tell the proposition)***	On a potty ***(Ask to see it)***	1
		On the floor	2
		In the toilet	3
		Other……	4
		There is no answer	5
37.	If it is on a potty or on the floor, where do you put the excreta after? ***(You can tick more than one. Please DO NOT tell the proposition)***	Existing toilets	1
		Existing shower	2
		Buried into the plot	3
		Garbage container	4
		I throw it outside of the neighbourhood	5
		Other	6
		There is no answer	7

38.	Where do you take your showers?	Inside the house	1
		Inside the private showers	2
		Inside the toilet	3
		Other: …….	4
		There is no answer	5
		Inside the house	6
39.	Where do you dispose of your garbage? ***(You can tick more than one. Please do not tell the proposition)***	In a plastic bag in the house	1
		In a bin inside the house	2
		Throw it outside	3
		In public bins	4
		Other:	5
		There is no answer	6
40.	If you use a plastic bag or bin inside the house, where do you put them?	In front of the house	1
		In the communal waste collectors	2
		Communal bin in the neighborhood	3
		Other	4

Appendix 6: Key Informant Interview (KII)

1. **Demographic information**
   a) Sex of the respondent: _____
   b) Age: _____
   c) Responsibility/current role: _____

2. **Livelihood and Household food security status**
   - What do you think about living in the settlement? What difficulties have you encountered since you arrived here?
   - What is the best thing about living in a settlement, or what is the best thing you have ever experienced?
   - What jobs do you have to take care of your family?
   - Are internally displaced peoples living here benefitted from any external aid (government, social safety nets, NGOs, etc.)? What kind?
   - How is the food insecurity situation in your area?
   - What do internally displaced peoples living here do when they don't have enough food and don't have the money to buy food?

3. **Water, sanitation and hygiene condition**
   - Where does the community dispose of solid waste generated by households?
   - How would you assess the status of the current public water and sanitation system in your community? Are there deficits and if so, how do they affect the health of your community?
   - Where does the community access latrines?
   - What is the housing condition in this community?

Appendix 7: Observation

- Evidence of faeces in the shower cabin
- Washing facility (availability of soap and water)
- Toilet facility
- Hand washing facilities situation