ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR FOOD SECURITY STUDIES

NUTRITIONAL STATUS OF YOUNG GIRLS AND BOYS WITH VISUAL, PHYSICAL AND HEARING DISABILITIES AGED BETWEEN 5 TO 18 YEARS IN ADDIS KETEMA SUB CITY, ADDIS ABABA, ETHIOPIA

BY

Hamsale Fufa

OCTOBER, 2020
ADDIS ABABA

ADDIS ABABA UNIVERSITY
COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR FOOD SECURITY STUDIES

NUTRITIONAL STATUS OF YOUNG GIRLS AND BOYS WITH VISUAL AND PHYSICAL AND HEARING DISABILITIES AGED BETWEEN 5 TO 18 YEARS IN ADDIS KETEMA SUB CITY ADDIS ABABA ETHIOPIA

BY

HAMSALE FUFA

ADVISER:

ABABE HAILE (PhD)

MSC THESIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES, COLLEGE OF DEVELOPMENT STUDIES, ADDIS ABABA UNIVERSITY

OCTOBER, 2020
ADDIS ABABA

ADDIS ABABA UNIVERSITY
DECLARATION

This thesis is my original work and has not been presented for a degree of master in any other University and that all the sources and materials used for the thesis have been properly acknowledged.

Declared By: Hamsale Fufa

Signature: _____

Date: _____

Place: Addis Ababa University College of Development Studies, Center for Food Security Studies

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge as an advisor.

Dr. Abebe Haile	_____	_ 23/10/2020 _____
(Advisor)	Signature	Date

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

This is to certify that the thesis prepared by Hamsale Fufa Ergabos entitled *Nutritional Status of Young Girls And Boys With Visual And Physical And Hearing Disabilities Aged Between 5 To 18 Years, In Addis Ketema Sub City, Addis Ababa, Ethiopia* and submitted in partial fulfillment of the requirements for the Degree of Master of Science in Food Security and Development Studies complies with the regulations of Addis Ababa University and meets the accepted standards with respect to originality and quality.

Signed by the examining committee:

External Examiner: Awoke Kebede Signature _____ Date 25/02/2021

Internal Examiner: Mogessie Ashenafi Signature _____ 24/02/2021

Advisor: _____ Signature _____ Date_____

Name of Chairman Mogessie Ashenafi Signature _____ 24/02/2021

_____

Chairperson of the Center or Graduate Program Coordinator

ACKNOWLEDGMENTS

Above all, I would like to thank almighty God for giving the life and perseverance for fulfilling my dream. I would also like to express my sincere gratitude for my thesis adviser Dr. Abebe Haile (Ph.D) for continued support throughout this study. His guidance helped me in all time of the research and writing this thesis

Besides to my adviser, I would like to thank all food security staff especially the lecturers who supported and nurtured me throughout the three years of study.

I am thankful to health extension workers, supervisors and study participants in Addis ketema sub city who spend their time in collecting thesis data and answering my questions

I am heartily thankful to my fellow friends in food security study of 2020 graduates for going all the way of difficult times and the laughter we had throughout the study years.

Last but not least, I would like to thank my family and my husband, Eskeyas Abebe, for the love and support throughout the study.

Hamsale Fufa
October, 2020

Table of contents

Abbreviations and Acronyms

BMI:	Body Mass Index
CRC:	Convention on the Rights of the Child
CSA:	Central Statistical Agency
CWD:	Children With Disabilities
DPO:	Organizations of Persons with Disabilities
EMDHS:	Ethiopian Mini Demographic and Health Survey
FANTA:	Food and Nutrition Technical Assistance
FAO:	Food and Agriculture Organization of the United Nations
FGDs:	Focus Group Discussions
HDDS:	Household Dietary Diversity Score
HFIAS:	Household Food Insecurity Access Scale
IFAD:	International Fund for Agricultural Development
ILO:	International Labor organization
KII:	Key informant Interview
MAM:	Moderate Acute Malnutrition
MUAC:	Mid Upper Arm Circumference
MOH:	Ministry of Health
MOLSA:	Ministry of Labor and Social Affairs
NGOs:	Non-Governmental Organizations
PSNP:	Productive Safety Net Program
PWD:	Person with Disabilities
SAM:	Severe Acute Malnutrition
SNNPR:	South Nations Nationalities Region
UN:	United Nations
UNICEF:	United Nations Children's Fund
WFP:	World Food Program
WHO:	World Health Organization

List of Tables

List of Figures

Abstract

In developing countries, people with disabilities face enormous challenges. They often experience stigma and discrimination, which makes them particularly vulnerable to hunger and malnutrition. This prevalence of malnutrition is not different in Ethiopia as a developing country. People with disabilities are largely invisible within mainstream nutrition programming. The purpose of this paper is to assess the food insecurity and nutritional Status of five to eighteen years young girls and boys with physical, visual and hearing disabilities in Addis Ketema sub city of Addis Ababa. A cross sectional survey of the nutritional status of 200 children with disabilities was undertaken using anthropometric measurements of Body Mass Index (BMI) and Mid Upper Arm Circumference (MUAC) measurements. Primary data was also collected via interviews using standard food insecurity measuring tool (HFIAS). MUAC measurement among 200 study participants showed that 50 (25%) were severely malnourished, 100 (50%) were grouped as moderately malnourished, and 50 (25%) were normal. BMI showed 23(11.5%) were severe energy deficient, 5(2.5%) were in the category of moderate energy deficient, 80(40%) were in mild energy deficiency, 83(41.5%) were found have normal nutritional status and 9(4.5%) were overweight. Food security status determination indicated that out of 200 households, 98(49%) were food secure, 34(17%) were mildly food insecure, 41(20.5%) were moderately food insecure and 27(13.5%) were severely food insecure. Type of disability, age of the children and education of parents were found to be factors affecting nutritional status of children with disabilities in Addis ketema sub city. Food and nutrition security interventions need to focus on children at age above 5 years and polices and interventions has to be disability specific.

Key words: Disability, Malnutrition, Children Nutritional status, MUAC, BMI,

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

Food insecurity and malnutrition is a global problem. In a study done in 2017, the number of undernourished people was estimated to have reached 821 million – around one person out of every nine in the world (FAO, 2018). The food and nutrition insecurity is severe in Africa, due to several economical, social and clinical reasons. The same report indicated that the prevalence of undernourishment was rising in Africa. The latest data shows that the deterioration has slowed, but there remain 256 million hungry people in Africa today (FAO, 2018). Although many African countries are making progress towards reducing malnutrition, progress is too slow and insignificant

Food insecurity and malnutrition, as like many African countries, is even severe in Ethiopia, Ethiopia faces high levels of food insecurity, ranking as one of the hungriest countries in the world, with an estimated 5.2 million people needing food assistance in 2010which made the country rank104 in the world in Global Hunger Index 2017 (IFPRI, 2017). There is closer links and stronger working relationships between nutrition and disability with important synergies and mutual benefits, according (Kuper et al., 2014), Undernutrition and disability are inherently linked, with the former both a cause and a consequence of the latter, and people with disabilities are at increased risk of being malnourished (Kuper et al., 2014) and on the same sense, malnutrition is taken as one major cause for disability. Malnutrition is the major cause of illness and death among under-five children in Ethiopia. According to the 2014 Ethiopian Mini Demographic and Health Survey (EMDHS, include year of publication) report, 42%, 26.7%, and 9% of under-five children were stunted, underweight, and wasted, respectively. This figure may be linked to prevailing childhood disability and much more children with disable children may constitute this number.

The study conducted in Ethiopia, Hawassa by Fiseha and Degefa (2017) show that children with disability are exposed to malnutrition and severe food insecurity than their counterparts without disabilities. The same research showed that people with disabilities and their families have lively hoods which do not have sufficient resources to secure their household food and nutrition.

"People with Disabilities (PWDs) cope with food shortage by limiting portion of size at meal, eating less preferred and cheap foods and begging on the streets" (Fiseha and Degefa , 2017). More relevant study was also done last year by Mussie, 2019 with his paper on Nutritional Status of Children with Disabilities in Gulele Sub-City, Addis Ababa. The same research revealed that nutritional statuses of children with disabilities are with moderate and severe acute malnutrition. The paper also speculated the important factors for the possible causes of malnutrition like anatomic difficulties (difficulty of feeding), lower nutrient intake, and behavioral problems.

1.2. Statement of the Problem

Food insecurity and malnutrition is the global agenda as the 2018 Global Nutrition Report reveals, malnutrition is a universal issue holding back development with unacceptable human consequences in every country of the world. the global burden of malnutrition is unacceptably high and now affects every country in the world (WHO, 2018). This problem is especially the access of food security dimension is a challenge for persons with disabilities. Access to sufficient nutritious food is often an issue of concern to families having a member with disabilities because of poverty and unequal distribution of resources within the household. Access to nutritious food for women with disabilities and their children is consistently overlooked in both the nutrition and disability sectors, placing those women and children at increased risk (UNICEF, 2015).

In developing countries, people with disabilities face enormous challenges. They often experience stigma and discrimination, which makes them particularly vulnerable to hunger and malnutrition (FAO, 2019). This prevalence of malnutrition is not different in Ethiopia as a developing country. People with disabilities are largely invisible within mainstream nutrition programming. This makes it impossible to tell the extent to which such programming is reaching people with disabilities, and suggests significant knowledge gaps in terms of practical programming for disability inclusion.

The two researches done in this regard also revealed that food insecurity and malnutrition are worse on people with disabilities. The assessment of nutritional status and food security was done at Hawassa of South Nations Nationalities Region (SNNPR) and Gulele of Addis Ababa, and both of the researches indicated that there is a lower food security and nutritional status of PWDs. More over the researches were done on all disability types and prescribe the same

solutions for nutritional and food security problems which in reality could not be functional and helpful for programmers and policy makers.

In our country, there are Particular gaps in research on nutritional outcomes for people with different types of impairments and a lack of disaggregated data based on disability type and age. This makes it difficult to plan and incorporate disabled children in nutritional improvement programs and what has been done is to include all types of disabled children in the same category and with other nutritional programs of nondisabled ones. This paper is, therefore, designed to assess the food insecurity status of families with disable children and nutritional status of children with physical, visual and hearing disabilities in Addis ketema sub city.

1.3. Objective of the study

1.3.1. General objective

The general objective of this thesis paper was to assess nutritional status of five to 18 years children with physical, visual and hearing disabilities and food insecurity of households with children with disabilities in Addis Ketema sub city of Addis Ababa, Ethiopia, 2020.

1.3.2. Specific objective

More specifically this study was to;

- Assess nutritional status of to five to 18 years children with physical, visual and hearing disabilities in Addis Ketema sub city of Addis Ababa,
- Assess food insecurity of to five to 18 years children with physical, visual and hearing disabilities in Addis Ketema sub city of Addis Ababa and
- Identify determinant factors of nutritional status of five to 18 years children with physical, visual and hearing disabilities in Addis Ketema sub city of Addis Ababa.

1.4. Research Questions

The research question was

- How is the nutritional status of the children with physical, visual and hearing disabilities and food insecurity of the households in which children with disabilities live in Addis ketema sub city of Addis Ababa?

1.5. Significance of the Study

Many times, it is common to see regular nutrition and food security interventions do not address children with disabilities as the interventions are not inclusive of disability. This is emanated from inadequate data and research on the nutritional status and the food insecurity level of persons with different disabilities. As such, there is significant knowledge gap in terms of practical programming for disability inclusion. There is no one sector office which deal with these two to three issues like Nutrition, food security for children with disabilities to initiate and support these invisible groups. Hence this study will fill the gap in the nutritional need knowledge gap and improve the understanding and also improves disability specific and disability inclusive nutrition programming in urban setting.

1.6. Scope and Limitation of the study

1.6.1. Scope of the study

This study was done to assess the food insecurity level of families with disabilities and the nutritional status of children with physical, visual and hearing disabilities from five years to 18 years. These types of disabilities are selected because children with such disabilities can give the information directly without significant assistant.

The age five is selected, many times the presence and type of disability will not be identified below this age and age range of 18 is selected, many nutritional interventions focus on this age gap and it is thought that the recommendation from this study will be used in the future interventions.

This research was only focus on food insecurity and nutritional status assessment of girls and boys with visual and physical and hearing disabilities from age group between five-18 years in five woredas of Addis ketema sub city of Addis Ababa by using Mid Upper Arm Circumference (MUAC), Body Mass Index (BMI) and Household Food Insecurity Access Scale (HIFAS).

1.6.2. Limitations of the Study

This study was limited to assess the nutritional status of physical, visual and physical disabilities. Types of disabilities like intellectual disabilities, were not considered in this study as it was

difficult to use MUAC and BMI for nutritional assessment. The study heavily depended on CSA, 2007 because it is the only legal study to refer. Data collection during the COVID-19 pandemic limited the movement of the data collectors and it was only possible to collect data from five woredas of the Addis ketema sub city. This study considers MUAC measurement was more reliable than BMI measurement due to that fact that the study selectively assessed physical disable children and there is a chance that the measurements of weight and length may not be accurate due to the inconvenient of the situation of disability.

1.7. Ethical considerations

In this study, ethical considerations were taken in to great account. Written permission papers from Addis Ababa university food security and development program was taken and submitted to DPOs, sub city and woreda labor and social affair office in Addis Ketema sub city. A written consent was signed by parents (mothers/caregivers) of children with disabilities for answering the questions.

1.8. Organization of the Paper

This paper was organized in five chapters. The introduction having the background of the study, the problem statement, the questions of the research, the objective, the significance and scope and limitation of the paper. Chapter two of this paper focused on the review of literature on disability and nutrition and food security where related literature Journals, fact papers, studies on nutrition of children with disabilities are included. Chapter three was composed of the study area, study design, study population, sources of population, data sources, sampling techniques, sample size determination, tools and techniques of data collection, data analysis techniques, and ethical considerations. The fourth chapter dealt with results and discussions, and the fifth chapter focuses on conclusions and recommendations.

2. CHAPTER TWO

RELATED LITERATURE REVIEW

Theoretical literature Review

2.1.Fundamentals of disability

In the last many years people gave variety of definitions for disability, the very relevant definition is given by the United Nations Convention on the Rights of Persons with Disabilities (CRPD) Persons/people with disabilities are: '…those who have long term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.' (Article 1, CRPD). Ethiopia used the definition of disability "a person who is unable to carry out or limited in carrying out activities that others can do due to congenital or long-term physical/mental disabilities" (CSA,2007)

The term is used to refer to individual functioning, including physical impairment, sensory impairment, cognitive impairment, intellectual impairment mental illness, and various types of chronic disease. The classification of disability varies among writers. The major disability types are physical /mobility, visual, hearing, intellectual/ cognitive disabilities. Physical disability which refers to the various impairments on upper limbs, lower limbs and the general organ coordination of the body (Disabled world, 2019). Visual disability is the condition where there is a partial or a complete loss of vision and where there is visual impartment on the part of the eye. Hearing disability, it is where there is a loss of partial or complete hearing. The term deaf is used for persons with hearing impartment, where there is a sign language for communicating. Cognitive/ intellectual disability, this is where there is thinking, remembering and communication impartment (WHO, 2010)

Disability is complex, dynamic and multidimensional issue, the meaning and the understanding have been changed over recent decades (WHO, 2011). There is significant number of persons with disabilities around the world with even higher number in developing countries like Ethiopia people with disabilities make up approximately 1 billion, or 15 per cent, of the global population

(WHO, WB 2011). World Bank and WHO in 2011, estimated that there were 15 million persons with disabilities in Ethiopia, representing 17.6% of the total population at the time.

2.2.Models of disability

Models of understanding disability are tools for defining impairment and, they are useful frameworks to gain an understanding of disability issues (Retief, and Letšosa, 2018)

Models of disability provide a reference for society as programs and services, laws, regulations and structures are developed, which affect the lives of people living with a disability. The primary and common models of disability are the, charity model, medical model, social model and human right model (Disability in public health, 2018).

Charity model depicts people with disabilities are objects of charity and pity. The charity model is an older and outdated model of disability (Mobility International USA, 2018)

Medical model describes disability as a consequence of a health condition, disease or caused by a trauma that can disrupt the functioning of a person in a physiological or cognitive way. This model is a conceptualization of disability as a condition a person has and focuses on the prevention, treatment or curing of the disabling condition (Disability in public health, 2018). Functional model is similar to the medical model in that it conceptualizes disability as an impairment or deficit. Disability is caused by physical, medical or cognitive deficits. The disability itself limits a person's functioning or the ability to perform functional activities. (Disability in public health, 2018).

Social Model focuses many on the environmental and social barriers facing people with disabilities instead of concentrating on impairments and deficits of the person with a disability. "*These models focus on environmental and attitudinal barriers that prevent people with disabilities from having equal opportunities in their societies*" (Mobility International USA, 2018) The social model differentiates between impairment and disability. While the first relates to a condition of the body or the mind, the second is the result of the way environment and society respond to that impairment. Exclusion of disabled persons from society is politically analyzed as the result of barriers and discrimination (Degener, 2014).

The human rights model, recognizes that: disability is a natural part of human diversity that must be respected and supported in all its forms, people with disability have the same rights as everyone else in society and impairment must not be used as an excuse to deny or restrict people's rights (Degener, 2014).The human rights model exists because of an important international document: The United Nations Convention on the Rights of Persons with Disabilities. This document was finalized in 2006 and is one of nine international human rights instruments that have been developed by the United Nations (Degener, 2014)

2.3.Disability and Poverty

Disability is highly related to poverty (Pinilla-Roncancio, 2015). The economic impact of ownership of land or housing and low levels of education of disabled community leads to poorer life conditions. The negative economic consequences of disability affect individuals and their families (Pinilla-Roncancio, 2015).

There is a strong association between disability and poverty. Poor people are at greater risk of becoming disabled through lack of adequate housing, food (nutrition) clean water, basic sanitation and safe working environments (ILO, 2014). Low income, so call it poverty, is associated with poor nutrition at all stages of life, from lower rates of breast-feeding to higher intakes of saturated fatty acids, this intern will be cause and consequence of disability (Pinilla-Roncancio,2015).

In poor countries disability and consequent premature death is far more likely to be caused by health conditions that would not have arisen had adequate health services been available or there had been better nutrition or a more stable economy. Disability in this category, including disability resulting from hostilities, may thus be fairly described as 'avoidable (Mayhew, 2001).

2.4.Disability and Nutrition

Eighty per cent of the one billion people living with disability the world over can be found in Majority (or low- and middle-income) World regions such as sub-Saharan Africa (WHO & WB 2011). Similarly, the majority of the 794.6 million people worldwide who are estimated to be undernourished also live in these areas (FAO, WFP& International Fund for Agricultural

Development, 2015). Therefore, it is a truism that people living with disabilities in vulnerable contexts may be predisposed to hunger and malnutrition.

Disability and nutrition are linked one being the cause of the other.

> *Undernutrition and disability are inherently linked, with the former both a cause and a consequence of the latter, and people with disabilities at increased risk of being malnourished and on the same sense, malnutrition is taken as one major cause for disability* (Kuper et al., 2014)

Countries with high levels of malnutrition and nutrient deficiency often report higher rates of disability and developmental delays (WHO, 2012) (The term malnutrition covers both undernutrition and overnutrition. The term undernutrition includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient.

If one has a closer look at the vulnerability of children with disabilities, they were particularly vulnerable to malnutrition, even within this area of food insecurity and widespread malnutrition (Kuper,et al., 2015)

Malnutrition is the major cause of illness and death among under-five children in Ethiopia. According to the 2014 Ethiopian Mini Demographic and Health Survey report, 42%, 26.7%, and 9% of under-five children were stunted, underweight, and wasted, respectively. This figure may be linked to prevailing childhood disability and much more disable children may constitute this number.

2.5. Disability in Ethiopia

In Ethiopia, the prevalence of diversified pre-, and post-natal disability factors (the health of prospective mothers, difficulties related to delivery, childhood infection disease, lack of proper child management, traditional harmful practice, under nutrition, malnutrition, civil strife and periodic episodes of drought and famine) and the absence of early primary and secondary preventive service in the country at large has brought a phenomenal increase in the incidence of disability. The problem still remains as a challenge to the country (Tirussew et al,2005).

In Ethiopia major causes of impairment are disease, poverty, wars, drought, famine, harmful traditional practices, household, work place and traffic accidents. Poverty is highly prevalent

among persons with disabilities, it is estimated that 95% of all persons with disabilities in the country are living in poverty. Many of these people live in rural areas, where basic services are limited and often inaccessible to persons with disabilities and their families. As a result, most persons with disabilities do not have access to services and lack the opportunities to earn a level of income to facilitate independent living (Tirussew et al,2005).

There are no reliable, up-to-date national statistics available on disability in Ethiopia. The most recent national census in 2007 found only 805,492 persons with disabilities in Ethiopia, merely 1.09% of the total population of 86 million. It is criticized that the census data to be skewed by under-reporting, due to the way the census questions were formulated,

The World Report on Disability, published jointly by the World Bank and WHO in 2011, estimated that there were 15 million persons with disabilities in Ethiopia, representing 17.6% of the total population at the time.

According to the Ministry of Labour and Social Affairs, 95% of persons with disabilities in the country live in poverty - the vast of majority in rural areas, where basic services are limited and the chances of accessing rehabilitative or support services are remote. A survey conducted by the African Child Policy Forum in 2011 found that only 29% of children with disabilities were registered at birth. The survey also found that (often preventable) illness and complications during birth were the main causes of disability amongst children.

2.6. Nutrition, Disability and Related Rights in Ethiopia

Nutrition and disability are major current agendas because both are key human rights issues. The right to food, an important determinant of nutritional status, is articulated in the Universal Declaration of Human Rights (Article 25) and the General Comment on the Right to Food, which specifically mentions the rights of people with disabilities to have physical access to adequate food(Ethiopia ratified this right in 2010. Ethiopia used this right on the development programs like Productive Safety Net Program (PSNP) which is implemented since 2005.

The Ethiopian government implemented PSNP since 2005 to address both relief and development, with harmonized donor support through this PSNP approach. Through this enhanced developmental approach, the PSNP provides a safety net for households that are both

chronically food insecure and poor, and often affected by shocks (IFPRI, 2014). With an objective to assure food consumption, and simultaneously to protect and develop assets along with services, PSNP operates across widespread geographies and rural communities to determine eligibility to receive payments based on specific criteria. Such payments are made to households that can contribute to public works (labor); or, if labor is limited or impossible, unconditional support provided for elderly, disabled, pregnant women (IFPRI,2014). By providing the direct support, without labor contribution the persons with disabilities not only receive food and money they will not graduate and exempted unlike other PSNP beneficiaries.

Though there are no clear data to show the nutritional impact of PSNP to disabled community members from the direct benefit, it is undeniable that it has contribution to the availability of food for them.

The other right related link is with Growth and Transformation Plan (GTP) 2010-2015 plan which , establishes disability as a cross cutting sector of development where focus is given to preventing disability and to providing education and training, rehabilitation and equal access and opportunities to persons with disabilities, by this means persons with disabilities will get access to be part of nutritional programs where they can be nutritionally secured and prevent further disability due important nutrition shortage

Empirical Literature Review

Disability and nutrition or food security in general is not a common agenda, not with much focus we do not find data supported researches but there are few researches and thesis papers done on different parts of the country.

A thesis paper by Fiseha and Degefa on food security status of people with disabilities in Hawassa Town, studied on physical, vision, and speech and/or hearing type of disabilities. The result of this study was disabilities made them somehow powerless in decision making which was so important in having resource and made important decision on the food they prefer and take as much of the targets were dependent on family members for any resource they need. In addition to the above the result of the study also indicated that majority of the sample respondents were chronically food insecure.

An individual with physical type of disabilities accounted for the largest proportion of those who are illiterate as well as unemployed and also was more vulnerable to food insecurity than their counterparts with other types of disabilities. "PWDs cope with food shortage by limiting portion of size at meal, eating less preferred and cheap foods and begging on the streets" (Fiseha&Degefa, 2017).More relevant study was also done last year by Mussie Sewnet, 2019 with his paper on Nutritional Status of Children with Disabilities Aged from Six Months to 17 Years in Gulele Sub-City, Addis Ababa. This was a relevant paper in the similarity and more done in Addis Ababa with the urban setting and more unstable living condition of the target group. That study shows that nutritional status of children with disability are with moderate and severe acute malnutrition with the standard measurements for malnutrition used in Gulele Sub-City of Addis Ababa. The paper also speculated the important factors for the possible causes of malnutrition.

2.7.Household Food Insecurity Access Scale (HFIAS)

Household food insecurity access scale (HFIAS) is one of the food security measuring tools and used for Measurement of Food Access (FANTA, 2007). HFIAS is used to assess the prevalence of household food insecurity (access component) and to detect changes in the food insecurity situation of a population over time. These indicators provide summary information on the prevalence of households experiencing one or more behaviors in each of the three domains reflected in the HFIAS - anxiety and uncertainty, insufficient quality, and insufficient food intake and its physical consequences.

The frequency scores range from 0 to 3, while 0 is the score for non-occurrence, 1 for rarely (once or twice in the past four weeks), 2 for sometimes (three to ten times in the past four weeks), and 3 for often (more than ten times in the past month). A total score of 27 represents the most food-insecure household whereas a lower score represents a more food-secure household

The HFIAS consists of two types of related questions. The first question type is called an occurrence question. There are nine occurrence questions that ask whether a specific condition associated with the experience of food insecurity ever occurred during the previous four weeks (30 days). Each severity question is followed by a frequency-of-occurrence question, which asks how often a reported condition occurred during the previous four weeks (Ballard et el.,2011).

Each occurrence question consists of the stem (timeframe for recall), the body of the question (refers to a specific behavior or attitude), and two response options (0 = no, 1 = yes). There is also a 'skip code' next to each "no" response option. This code instructs the enumerator to skip the related frequency-of-occurrence follow-up question whenever the respondent answers "no" to an occurrence question. Each HFIAS frequency-of-occurrence question asks the respondent how often the condition reported in the previous occurrence question happened in the previous four weeks (Ballard et el.,2011)

This measurement indicates the scale that the household food access, the individual members food access may not be directly reflected on the result of HIFAS. (FANTA, 2007).

2.8.Anthropometric Measurements

Anthropometric measurements are a series of quantitative measurements of the muscle, bone, and adipose tissue used to assess the composition of the body. The core elements of anthropometry are height, weight and body mass index (BMI) (Casadei and Kiel, 2020). These measurements are important in measuring the nutritional status of children and give indications include stunting, wasting, and being underweight. Stunting is when children have a low height-for-age, wasting is a low weight-for-height, and underweight is a low weight-for-age. Mid-upper arm circumference (MUAC) is a viable measurement in children or pregnant women as a marker of nutritional status, it can be measured by MUAC tape or a cm/inch scale. With measuring MUAC tape, there are three colors; green zone means the child is properly nourished; the yellow zone means that the child has moderate acute malnutrition; and the red zone means that the child has severe acute malnutrition. BMI is another commonly employed index of nutritional status and used as a gauge of malnutrition in children and adults, scale of kilograms and meters for height is used (Casadei and Kiel, 2020)

2.9.Conceptual frame work

Education of mothers / caregivers, income of a family, number of children in the household coupled with poor sanitation affects the availability and accessibility of nutritious food and further causes nutrition deficiency and infection. Some basic nutrients such as folic acid, calcium are few causes of disability of children.

On the other hand, low education of mothers/ caregivers, low and inadequate food intake, infections, un safe hygiene practices, pregnancy condition of a mother may cause different impartments, when this coupled with low economic status will create different disabilities. In this regard, this study, is therefore, devoted investigating the nutritional status and its determinate factors of children with visual, physical and hearing disabilities in the age range between 5and 18 years. This particular framework supports decision makers in understanding the factors influencing nutritional vulnerability and malnutrition in children with disabilities and therefore addresses both underlying and direct factors that influence nutrition of these children.

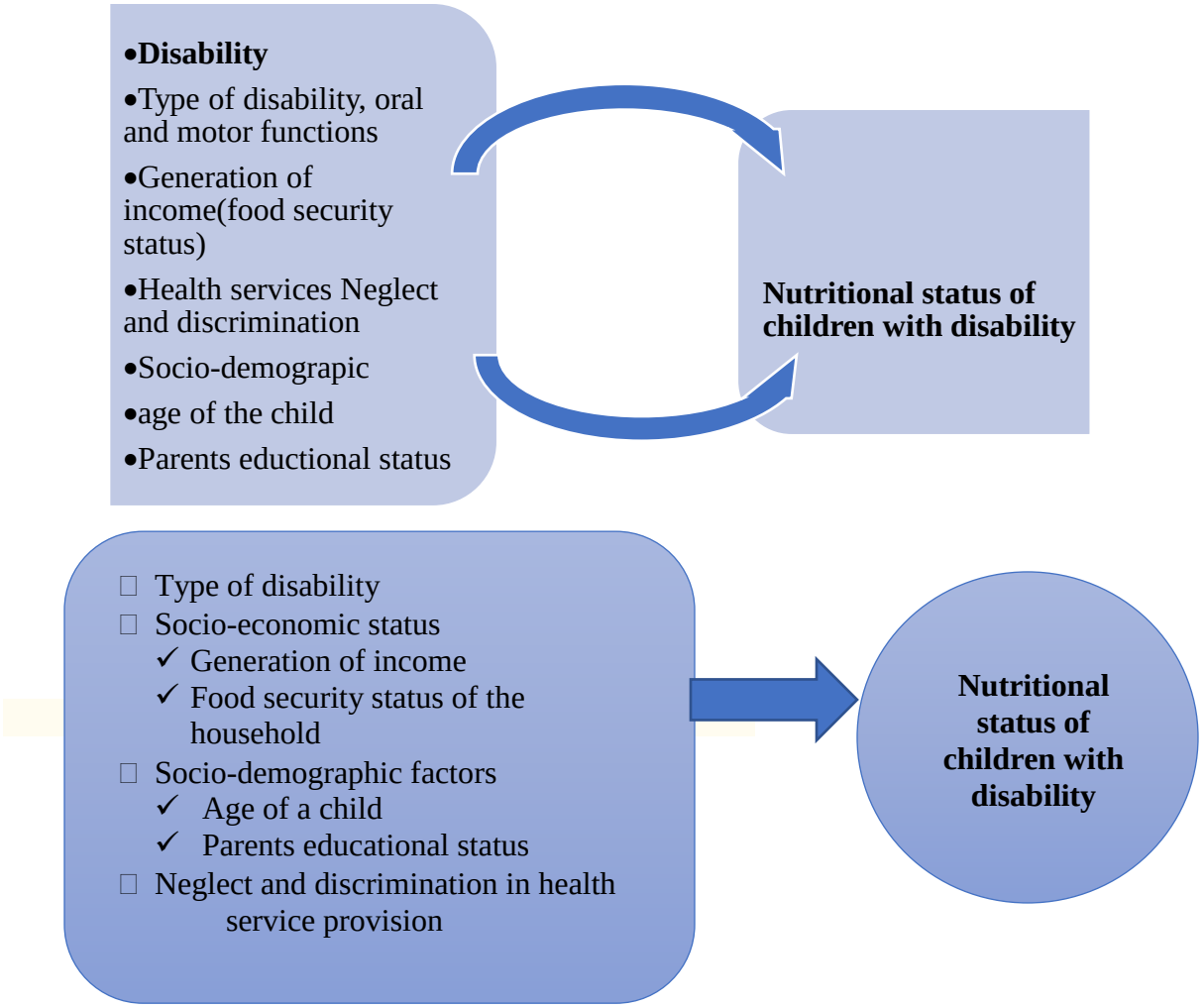

Figure 1.1 Conceptual framework developed by the investigator based on literature review

3. CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1.**Description of study area**

Addis Abeba, capital and largest city of Ethiopia by population, with a total population of 3,384,569 according to the 2007 census and projected to be 4,591,983 in 2019. It is located on a well-watered plateau surrounded by hills and mountains, in the geographic center of the country. Since the late 19th century, it has been the capital of the Ethiopia.

It also hosts the headquarters of the United Nations Economic Commission for Africa (ECA), as well as various other continental and international organizations. Addis Ababa is therefore often referred to as "the political capital of Africa" for its historical, diplomatic and political significance for the continent.

The city is divided into 10 boroughs, called sub cities: Arada Sub City, AkakiKaliti Sub City, Addis Ketema Sub City, Bole Sub City, Gullele Sub City, Kirkos Sub City, KolfeKeranio Sub City, Lideta Sub City, Yeka city and Nefas Silk sub city.

Addis Ketema sub city is one of the ancient places of Addis Ababa located in the northwestern area of the city, not far from its center. It borders with the districts of Gullele in the north, Arada in the east, Lideta in the south and KolfeKeranio in the west. Addis Mercato, Africa's largest open-air marketplace, is in Addis Ketema.

The sub city is also located at the north of kirkos and east of Addis ketema and Lidta sub cities. This sub city is selected for this study because of the presence of DPOs in this sub city and my work experience with these associations this will make easer the data problem. Addis ketema sub city has laid in 7.41 sq.km. with a Population: 271,644. Male: 132,825. Female: 138,819. (CSA,2007). The total persons with disabilities as of 2007 was 3, 564 with Male- 1,961 female- 1, 603. The Ethiopian Central Statistics Agency population projection document prepared in 2013 indicated that the Ethiopian population was projected to 94,352,139 in 2017 (CSA, 2013). Similarly, the population of Addis Ababa was estimated 3,435,028.

According to Addis ketema sub city labor and social affairs office (data collected in person 2019), currently there are a total of 540 with male 371 and female 169 person with different disabilities in the sub city. The sub city has 10 weredas with different governmental offices functioning in it.

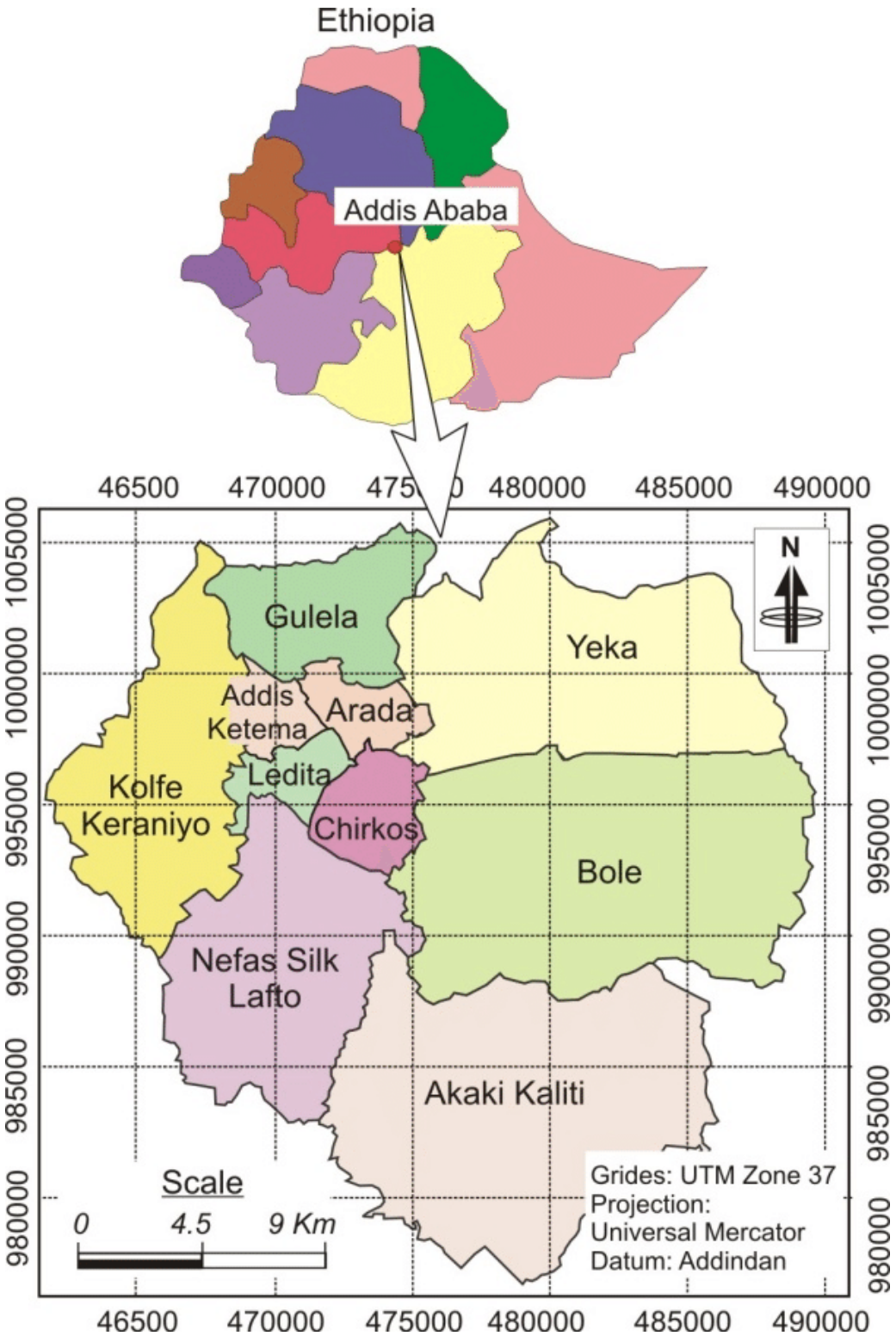

Figure 3.1. Map of Addis Ababa with administrative sub-city designations

Source: .researchgate.net/figure/Map-of-Addis-AbabA

3.2.**Research Design**

The study has used cross-sectional study design as it is functional based on existing differences to assess nutritional status and the food insecurity status among the study population (Persons with Disabilities) (Kirshenblatt-Gimblett, 2006). This method was selected because it involves capturing the best of both quantitative and qualitative aspects of the problem under investigation. The cross-sectional study has helped to collect and analyze the data which has been captured by both methods of qualitative and quantitative methods. The study helped deploy multiple ways to gather and analyze data to understand the nutrition status of persons with disabilities of age 5-18 years and the food security situation of their households.

3.3.**Population**

3.3.1. Study population

The study was conducted at Addis Ketema sub city of Addis Ababa, the sub city has 10 woredas, but the research was done on five wordas; woreda 7,6,5,4, and 3. These woredas was selected due to the possibility of data collection during lockdown of the sub city, only in these woredas was possible to collect data as the enumerators go home to home. The study has included children with physical (any physical impairment), visual and hearing disabilities from 5-18 years.

According to Ethiopian census 2007, the total number of children with disabilities from 5-19 years in Addis Ketem sub city was 80,528.00, but this number includes all the disability types and all sub city wordeas. hence what is done was to do censes on specific three disability types in selected wordas trusting that it would reflect the sub city nutritional study.

3.3.2. Source of population

The source of this study was children with physical, visual and hearing disabilities of Addis ketema sub city five woredas who have from 5-18 years of age and those children from in the specified age range.

3.4. Eligibility criteria

3.4.1. Inclusion criteria

This study included only children with physical, upper and lower limbs and spinal cord impartments, visual, who lost complete vision and those with complete hearing impartments from the age of 5- 18 years. the study included those children with the above-mentioned disabilities from 5 woredas out of 10 wordeas.

3.4.2. Exclusion criteria

This study did not included children with partial visual and hearing disabilities and children with intellectual, and other disabilities. Those children with disabilities who are not in the range 5-18 years were also excluded from the data and those who are not in woreda 3-7 of Addis ketema sub city.

3.5. Data Sources

In attempt to assess the food insecurity and nutritional status of children with disabilities in Addis Ketema sub city, this study used both primary and secondary data sources. Primary data was collected from family members of children with disabilities and children with disabilities themselves and by using food insecurity measuring tool and anthropometric measurements like Body Mass Index(BMI) (weight, height) and Mid Upper Arm Circumference (MUAC) measurements.

In addition, health extension workers, health insurance officers who were working in the sub city were used as a source of primary data furthermore, primary information was gathered from Addis Guzo rehabilitation center and Ethiopia National Association of the Deaf (ENAD). However, secondary data were collected from Addis Ababa social and labor office, Central Statistics Agency(website), Addis ketema Sub-City Health Offices

3.6. Sampling Technique and Sample Size Determination

In this study, purposive sampling technique was used to select the Addis ktema sub city as a study area and the five woredas, Woredas, 3, 4, 5 ,6 and 7. The five woredas were selected among ten woredas of the sub city based on being residential areas than the rest of the woredas

which are mainly of market places. The sample households were targeted based on censes method, based on the information from the sub city social and labor affairs and urban health extension workers. However, it was not possible to have access to lists of the target groups with details of their address. As a result, the researcher decided to collect data and gather all people with physical, visual and hearing disabilities in Addis ketema sub city to have a complete list of the population under investigation. All study population have been registered with their names and details of their address in the woreda social and labor affairs office in Addis Ketema sub city, there are 97 persons with physical, visual, and hearing disability within the age group of the research target.

As the population is only 97, total population sampling techniques will be applied. Total population sampling is a type of purposive sampling technique that involves examining the entire population that have specific characteristics. Total population sampling is selected for this study because the total population that has specific characteristics is very small and the population shares different unique characteristics (Laerd Dissertation, 2012 (unpublished)) ranging from demographic differences to differences in types of disabilities like visual, hearing, physical, cognitive, among others. Therefore, the entire population consisting children with physical, visual and hearing disabilities were studied under this research.

3.7.**Tools and Techniques of data collection**

This study used both qualitative and quantitative data collection methods to collect the data about nutritional status of children with disability and food insecurity level of their households. Quantitative data was collected by using standard MUAC and weight and height (BMI) measurements for assessing nutritional status. Other standard measuring tool household food insecurity scale was used to measure household food insecurity of families of children with disability. Qualitative data was also collected from experts from Addis Guzo rehabilitation center and Ethiopian Deaf association which resides in the study sub city. The researcher conducted details of secondary data published and unpublished sources to understand the subject matter in depth.

3.7.1. Questionnaire surveys

Questionnaire was used to collect quantitative and qualitative data about the socio economic and

demographic situation of target children with disabilities. It was constructed from open ended and closed-ended questions. The questioners formulated by reviewing related literatures and similar researches done on the area and it was checked for clarity. Questionnaire was used to collect data from CWD socioeconomic and nutritional status by using clear and short questions formulated for this research and MUAC and BMI standard questions. Questionnaire was also administered to families of persons with disabilities to collect data about Household Food Insecurity by using standard questionnaire. Enumerators were well trained as they are health extension workers who have worked several years in the sub city and are familiarized with the tools and regularly followed up to ensure quality of the data.

3.7.1.1 Anthropometric measurement

Anthropometry is the study of the measurement of the human body in terms of the dimensions of bone, muscle, and adipose (fat) tissue. These measurements are related with age, sex, height, weight and other important parameters of nutrition study (Thornton and Villamor, 2016). Selected anthropometric measuring tools have been used to collect Mid-upper arm circumference (MUAC) and Body Mass Index (BMI) according to the WHO standard 2010.

MUAC as a measuring tool was used by measuring circumference of the left upper arm, measured at the mid-point between the tip of the shoulder and the tip of the elbow. The data collectors took MUSC measurements using commonly used meters with centimeter descriptions, the results were rounded off the nearest decimal point. The readings were then copied to the space provided on the questioner.

Table 3.1. MUAC Cutoffs for Children and Adolescents

Age Groups	**Nutritional Status**		
	SAM	MAM	Normal
5–9 years	< 13.5 cm	≥ 13.5 to < 14.5 cm	≥ 14.5 cm
10–14 years	< 16.0 cm	≥ 16.0 to < 18.0 cm	≥ 18.0 cm
15-18 years	< 18.5 cm	≥ 18.5 to < 21.0cm	≥ 21.0cm

Source: Adopted from (FANTA Module 3, 2018)

Body mass Index (BMI)is another commonly employed index of nutritional status and used as a measurement of malnutrition in children and adults. It is a simple calculation using a person's height and weight. The formula is BMI = kg/m^2 where kg is a person's weight in kilograms and m^2 is their height in meter squared. Weight, enumerators used weight scales divided by grams, after reading the values in grams they converted to kilograms and placed it on the data table.The children were advised to remove extra closings to avoid wrong weight reading. Hight, children's height was measured with scaled meters brought for this purpose, after the children were placed in proper positions (standing or laying, depending their disability) it was registered in the data table for further calculation by the researcher.

$$\text{BMI} = \frac{\text{weight in Kilograms}}{\text{Meter square}}, \ kg/m^2$$

Table 3.2. BMI cut off values

BMI(Kg/m2)	Nutritional status
18.5-24.9	Normal
17-18.49	Mild chronic energy efficiency
16-16.9	Moderate chronic energy deficiency
less than 16.0	Severe chronic energy deficiency

Source: taken from (WHO, 2007)

3.7.2. Key informant interviews (KII)

Primary data was also collected by using key informant interviews in addition to the anthropometric measurements and questionnaire survey. KII was conducted to gather expert-based data from individuals who have good understanding of the nutritional status of persons with disabilities. The interviews were conducted from the two therapy experts working in Addis Guzo physiotherapy and rehabilitation center and from the director of National Deaf Association following the key informant procedure.

3.8.**Secondary data review**

Secondary data was reviewed to enrich the researcher's understanding on the subject under investigation. A desk review of books, journal articles, reports, working papers, guidelines and

internet sources were consulted. Ethiopian Center for Disability (ECDD), livelihood program documents, WHO fact and working papers and International Labor Organization (ILO) reviews and reports were also reviewed to enrich the understanding and concepts in the matter understudy.

3.9. Techniques of data analysis

Collected quantitative data was registered in Microsoft xl data based on the names of variables and values taken from the research targets used to collect data. Accordingly, all the variable values were inserted in one xl sheet. The data was cleaned for any wrong insertion or mismatched variable and values. The data cleaned and coded was then transported to stata 14 software for further analysis. Data was analyzed and described using Stata software for the nutritional status of children with disabilities and the food security situation of their households.

Descriptive statistic, measures of central tendency (mean, median and mode), measure of dispersion (variance and standard deviation), and frequency and percentage, was used to explain the socio-economic and demographic situation of CWD and their households. The values of MUAC, BMI and HFIAS computed with standard cut of points and the nutritional status is ordered based on age and weight pre height measurements, this study used stata ordered logit regression method.

The HFIAS score is a continuous measure of the degree of food insecurity (access) in the household in the past four weeks (30 days). First, a HFIAS score variable is calculated for each household by summing the codes for each frequency-of-occurrence question. The nine 1-9 questions of the HFIAS have nine frequency questions, the data will be coded from 1-3 representing from no to often 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.). The maximum score for a household is 27 (the household response to all nine frequency-of-occurrence questions was “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, and subsequently coded as 0. The higher the score, the more food insecurity (access) the household experienced. The lower the score, the less food insecurity (access) a household

experienced. For all variable correlations and nutritional status descriptions Stata 14.2, regression method was used.

3.10. Data quality management

The research data was collected by health extension workers and their supervisors who have ample experiences on MUAC and weight and Height (BMI) nutritional status measures. Accordingly, the enumerators explained the aim of the data collection and revived their consent. The data was cleaned and analyzed using stata version 14.2 software.

4. CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter of the research presents data analysis, results, and discussions of data obtained from the study participants and information generated from anthropometric measurements and key informants.

4.1. **Demographics of Study Participants**

The study participants' demographic characteristics such as sex, age, disability type and educational status is presented in Table 4.1.

Among 200 study participants of children with disabilities, 112 (56%) were Males and 88(44%) were females. The study further showed that 41(20.5%) are in the age category 5 to 9 years,65(32.5%) is from age 10 to 14years, and 94(47%) are in the age category 15 to 18 years.

Out of 200 sampled children with disability, children with physical disabilities were 73(36.5%), visual disabilities were 43(21.5%); hearing disabilities were 43(21.5%) and those with multiple disabilities were 40(20%) and with other disability types were 1(0.5%).

Regarding the school attendance, the study showed that 32(16%) are in kindergarten, 22(11%) in grade 1-3, 46(23%) in grades 4-8, 46(23%) in school grade 9-12 and 54(27 %) dropped out from different grades.

Table 4.1. Socio demographic data of CWD in Addis Ketema sub city, Addis Ababa, Ethiopia, 2020

Age Category of Children	Sex		
	Male	Female	Total
under 9 Yrs	18	23	41
10 to 14	39	26	65
15 to 18	55	39	94
Total	112	88	200

Type of disability of CWD

Type of disability for Children	Freq.	Percent
Physical Impairment	73	36.50
Hearing Impairment	43	21.50
Visual Impairment	43	21.50
Multiple Impairment	40	20.00
Other	1	0.50
Total	200	100

School attendance of children with disabilities

Education status of the Child	Freq.	Percent
Kindergarten (KG)	32	16.00
Grade 1-3	22	11.00
Grade 4-8	46	23.00
Grade 9-12	46	23.00
Drop outs	54	27.00
Total	200	100.00

4.2.**Households Socio-Demographic and Economic Characteristics**

The study presents summary data on parents/ care givers socio-economic and demographic characters such as sex, age, educational status and income in table 4.2.

From 200 study participants, (parents and care givers, 162 (81%) were females and 38(19%) were males. The study further showed age category of parents/ care givers, 16(8%) were under 19 years, 7(3.5%) were from 20 to 29 years, 40(20%) were between 30 to 39 years, 95(47.5%) were between 40-49 years and 42(21%) were above 50 years. The majority of participants were in the age category 40-45 years.

In terms of educational status of the parents/caregivers of the children with disability, the study shows 35(17.5%) have no formal education, 33 (16.5%) attended elementary school, 42(20.5%) attended secondary school, 13(6.5%) have attended TVET, 36(18%) have got diploma level and 42(21%) were Bachelors degree holders and above.

Regarding household monthly income of the research participants, 2(1%) earn an average monthly income of birr (ETB) 2000 birr, 24(12%) earn between 2001-3000, 17(8.5 %) 3001 to 4000 , 132(66%) earn 4001-5000 and over 5000 birr. Majority of the parents (66%) earn monthly average income of 4000-5000; with the minimum monthly income of ETB 300 and maximum 25,000.

Regarding external supports to children with disability/ties, 43(21.5) did get financial support, the participants did not want to exactly tell how much support they have got

Table 4.2. Parents /care givers sex and age category in Addis Ketema sub city of Addis Ababa, Ethiopia,2020

Parents /care givers sex and age category

Sex of the household head	Freq.	Percent
Male	38	19.00
Female	162	81.00
Total	200	100.00

Age category of study participants (mothers/caregivers of the CWD)

Age of the Household Head	**Freq.**	**Percent**
Below 19 yrs	16	8.00
20-29 yrs	7	3.50
30-39 yrs	40	20.00
40-49 yrs	95	47.50
Above 50 yrs	42	21.00
Total	200	100.00

Household gross monthly income (Birr) of parents/ care givers

Income range	**Freq.**	**Percent**
Income less than 1000	2	1.00

Income 1001-2000	25	12.50
Income 2001-3000	24	12.00
Income 3001-4000	17	8.50
Income 4001-5000	132	66.00
Total	200	100.00

4.3. **Nutritional Status of Children with (Physical, Visual, Hearing and Multiple) Disabilities (MUAC and BMI)**

This section presents the nutritional status of children with physical, visual, hearing and multiple disabilities with MUAC and BMI. Mid-upper arm circumference (MUAC) indicates the children nutritional status with age categories and it is measured with centimeters. As indicated in Table 4.3 50(25%) were severely malnourished, 100 (50%) moderately malnourished, and 50 (25%) were normal. These measured values reasonably indicate that the significant proportions of the children with disabilities were grouped at moderate level of malnutrition. However, there is equal proportion of 25% children showed severe malnutrition and normal nutritional status. A study conducted in Addis ketema sub-city shows the severity of the malnutrition decreases as the age of the child increases by MUAC measurement, this aligns with many empirical data that as the child grows older the feeding and food request habit increases and as a result the nutritional status shows progress.

Table 4.3. Mid-upper arm circumference (MUAC) measurement of children with disability, Addis ketema sub-city, Addis Ababa, Ethiopia 2020

MUAC for ages from 5 to 18 years old						
Category/Status		Frequency		Present		
Severe		50		25.00		
Moderate		100		50.00		
Normal		50		25.00		
Total		200		100.00		

4.4. Body Mass Index Measurement of Children with Disability, Addis Ketema Sub-City, Addis Ababa,2020

In this study BMI is used to measure the nutritional assessment of children with physical, visual, hearing and multiple disabilities, which is measured in kilograms pre meter square. Among 200 research participants of children with disabilities, 23(11.5%) were severe energy deficient, 5(2.5%) moderately energy deficient, 80(40%) were in mild energy deficiency, 83(41.5%) were found to be normal nutritional status and 9(4.5%) were overweight (see table 4.4). Unlike the MUAC measurement, the BMI indicated that significant number of children were under the category of mild and moderate energy deficiency(81.5%). Unlike the MUAC measurement, BMI also shows better percentile of children in normal status of malnutrition.

Table 4.4. Body Mass Index (BMI)measurement of children with disability, Addis Ketema sub city, Addis Ababa, Ethiopia.

Body Mass Index Measurement	Male	Female	Total	Present
Severe energy defcy	14	9	23	11.5
Moderate energy defcy	3	2	5	2.5
Mild energy defcy	40	40	80	40
Normal	52	31	83	41.5
Overweight	3	6	9	4.5
Total	112	88	200	100

MUAC and BMI measures for ages from 5 to 18 years old study participant children

Nutrition Category	MUAC	BMI
Severe	50	23
Moderate	100	5
Mild	0	80
Normal	50	83
Overweight	0	9
Total	200	200

MUAC* Mid-upper arm circumference; BMI*Body mass index

4.5.**Household Food Insecurity Accessibility Scale**

In this study, households' access to food for 30 days was measured with the standard nine questions**.** The findings indicated that 98(49%) of the participants were food secure, 34(17%) were mildly food insecure, 41(20.5%) were moderately food insecure and 27(13.5%) severely food insecure. Even though, significant number of households (66%) fall in mild and food secure status, there are still 13.5% households who are in severe food insecurity status.

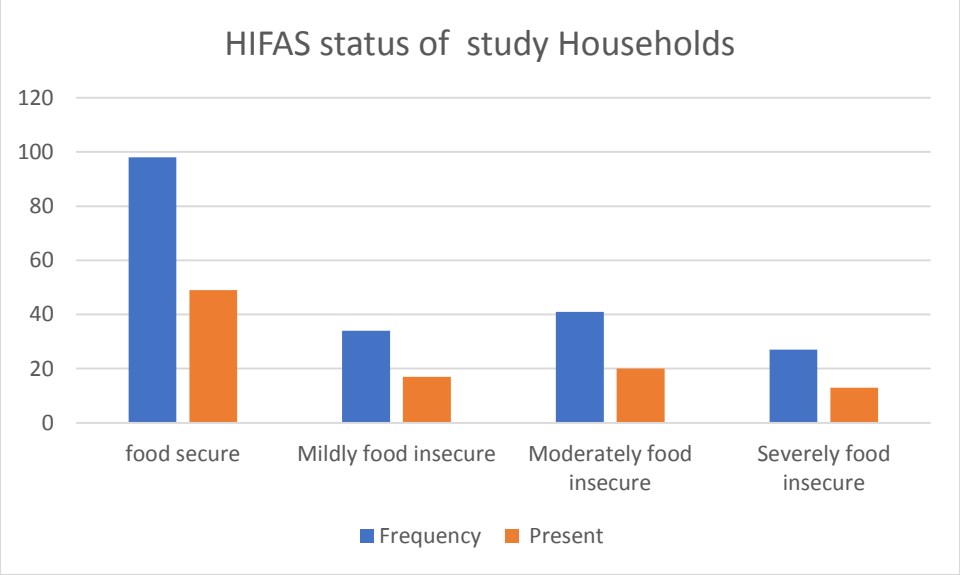

Table 4.5. Household food Insecurity Accessibility scale (HFIAS)of households with children with disabilities in Addis Ketem sub city, Addis Ababa, Ethiopia. 2020

4.6. Children disability types and nutritional status of the children

The study showed that there is a relation between type of disability with the nutritional status. In all age categories of MUAC measure those with physical disabilities tend to show severe malnutrition in more number and percentile than the rest of disability types. This high number is also followed by children with multiple disabilities. (The detail ordered logit regression result is annexed at VI number 1-3)

The results of the regression indicate that the type of disability affects the nutritional status of children. Further, children with certain type of physical disabilities do have a difficulty in taking food due to their neurologic condition. This specific neurologic problem is called cerebral palsy and it causes swallowing difficulty. In this condition, parents/ care givers are forced to feed liquids and anything which can be easily swallowed regardless of the nutritional value.

4.7. Children Age and Nutritional Status

The MUAC nutritional measure shows, number of children with age range 15-18 years tend to show less severe malnutrition than those children with age between 5-9 years based on the total numbers in each category. This result to the contrary to the data of DHS 2016, the finding in that study shows nutritional insecurity effect increases with age, as the age gets older the tendency to get stunted gets increasing.(The detail Ordered logit regression result is annexed at VI number 4)

4.8. Nutritional Status Children (MUAC) Regression with Independent Variables Related to Parents

To determine the relevance of the independent variables like parent's education, household income, number of disable children in the household, external financial support on the nutritional status of sampled children ordered logit regression (logit model) of stata14.2 was used. The analysis was done in three age categories (5-9 years, 10-14 years and 15-18 years).

The ordered logit regression model was not significant for MUAC against the independent variables all related to the parents' conditions like education of parents, income, number of disable children. MUAC(5-9years) against the above independent variables showed probability prob>chi2=0.1562 which is greater than the accepted value of <0.05. MUAC (10-14 years) for this age category also showed the model is insignificant with probability of 0.6461 and MUAC

(15-18 years) the probability is 0.6512. From the above finding it can be deduced that the nutritional status of children with disabilities are not influenced much by parents' conditions.

4.9. Nutritional Status Children (MUAC) Regression with Independent Variables Related to Children and Parents

The mixture of independent variables; type of disability, age of children, education of parents, income of the household, number of children with disabilities and external financial support was analyzed with nutrition status of children with MUAC measuring tool. The logit regression output resulted from nutritional status with MUAC in age categories 5-9 and 15-18 years indicated that the model was not significant with the probability, prob>chi2=0.915(with R^2=13%) and 0.709(with R^2=6%) respectively.

The correlation between the nutritional status of 10-14 years with mixed nutritional status with type of disability, age of children, education of parents, income of the household, number of children with disabilities and external financial support was found to be significant and with fitted model. The probability, prob>chi2=0.0052 is less than 0.05 and R^2=13%. In this correlation only variable age children determines the nutritional status of children from 10-14 years. The correlation =0.7267 meaning that the probability of the child to be nutritious increases with age(the data is presented with ordered logit and the result is annexed in VI number 9—11).

4.10. Nutritional Status of Children (BMI) with Mixed Independent Variables

The logit regression model was significant with prob>chi2=0.000 significant level. Three independent variables; type of disability, age of the child and education of parents are found to determine the nutritional status of children with disabilities in all age categories. Accordingly, nutritional status of sampled children tends to show from low to high (severe to normal) as the type of disability goes from physical to multiple disabilities. The nutritional status of children is then affected by the type of disability the child has. The empirical evidences (Muse,2019) also confirm that certain types of disabilities are barriers for food intake and exposed to nutritional waste and hence the nutritional status tend to be low. Similarly, the nutritional status of a child tends to show positive change as the age of the child increase, this contradicts with the empirical evidences depicted by DHS,2016. In the DHS report it is reported that the nutritional status of children tends to be worsen as the age increases. Education of parents do have positive impact on

the nutritional status of a child on disability, this do indicate that as parents/ care givers get knowledge and skill about food, nutrition and other unmentioned variables, the chance of the child to be nutritious, and the food system in the household depend on knowledge.

Independent variables, household income, number of children with disabilities, and external financial support are not determinant factors for children with disabilities in Addis Ketema sub city.

4.11. Household Food Insecurity Access Scale on Ordered Logit

The logit regression HFIAS as a dependent variable with all the independent variables related to children and parents/ care givers was done. The model was significant Prob>chi2=0.000, R^2=29%. The variables parents' education and income are found to be significant with P>IZI=0.29 and 0.000 values. The parent's education has negative correlation with the food insecurity of the households with sample children and hence, as parents' education level increases, the level of food insecurity decreases (Coef. =-1962781). Education of parents contributes for the food security of the household. Income of the household has negative relation with the household food insecurity of the households (Coef. =-0.006556). When the income of the household increases the household food security increases (logit regression result is annexed at VI number 8).

4.12. Summary of discussions

In the study, 200 children with physical, visual and hearing disabilities were taken as a sample to measure MUAC and weight and height (MBI). In addition to the above mentioned children 200 parents/ care givers of those sampled children were selected for assessing the food insecurity of households.

Participant children were 200 (112 (56%) male and 88(45%) females), with majority of the participants were male children with disabilities. The sample also showed that 73(36.5%) of sample children were with verity types of physical disabilities The educational level of children with disabilities ranges from kindergarten grade 12 where the minim grade is 0 and maximum is grade 12, significant number sampled children with disabilities were dropouts due to several reasons54(27%).

The data also indicated that 38 19%) male and 162(81%) female parents/ care givers were interviewed, from that majority of parents/ care givers are in the age range between 40 to 49 years with 95(47.5%). The largest educational attainment was bachelor's degree and above 42(21%) and the lowest was no education with 35(17.5%)

The nutritional status was assessed by MUAC and BMI where 50 (25%) were categorized under normal range of malnourishment and 100(50%) were in moderate and 50(25%) were under severe Malnourishment. The BMI measures also indicated that 83 (41.5%) were at normal nutritional status and 23(11.5%) were under severe energy deficiency.

The assessment was also done for household food insecurity access scale (HIFAS), which indicted the access of food in the household in the last 30 days and indicated that 98(49%) were food secure and 27(13%) were in the category of severe food insecurity.

The study indicated the nutritional status of children with physical, visual, hearing disabilities was affected by type of disability, age of the child, educational of the parent/ care giver. Accordingly, the dependent variable has got strong correlation with four independent variables (the do file is annexed)

5. CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The major objective of the study was to assess the nutritional status of children with physical and visual, hearing disabilities from 5 to 18 years old in Addis Ketema sub city of Addis Ababa. Based on the findings of this study the following conclusion was delivered.

There are significant number of children with disabilities with severe malnutrition. The severity varies with age and type of disability the child has.

Nutritional status based on BMI also indicated that participants children with disabilities 23(11.5%) were severe energy deficient, 5(2.5%) were in the category of moderate energy deficient, 80(40%) were in mild energy deficiency, 83(41.5%) were found to be normal nutritional status and 9(4.5%) were overweight.

Households with children with disabilities face food insecurity in different levels 27(13%) were severely food insecure and 98(49%) households were food secure. Nearly half the sampled households were food secure which is contrary to 25% normal nutritional status of children. From the two results it can be deduced that nutritional security may not have direct linear relation with food security of the household. Hence, regardless of the food security status of the household the individual members may be malnourished at different stages has been written in several books and articles.

The nutritional status of children with physical, visual and hearing disabilities in five woredas of Addis ketema sub city were affected by type of disability of the child, age of the child and education level of the parents/ caregivers.

According to the logit regression output result the income of the household, number of children in the household, and external financial support do not affect the nutritional status of children in Addis ketema sub city. It may then argued that the nutritional status of the child cannot be determined by the amount of money his/ her family may have but the proper nutritional (balance diet knowledge) and close follow-up may have impact on the nutritional status of children with disabilities.

5.2. **Recommendation**

Based on the study findings from MUAC and BMI anthropometric measures) of nutritional status of children with physical, visual and hearing disabilities in Addis ketema sub city, the following recommendations were given

- There are significant number of children with severe nutritional deficiency in the age range of 5 to 18 years in the study sub city. And hence,the support and training given for mothers and care givers has to address not only children under five but also children above five years of age
- As along run solution, nutritional awareness training for parents / caregivers need to be given to help them make balance diet and able to feed their children from locally available food items.
- Significant number of children with disabilities in the study area are not attending school, they could not get proper food, nutrition and hygienic education hence local authorities has to work more harder to return these special need children back to school.
- From the data gathering process and key informant interview, it was found out that the barriers and needs of children with different disabilities are different and hence the policy interventions and programs designed to include children with disabilities need to be disability specific based on the underlying barriers
- Children with physical disabilities (certain types) tend to have difficulties in food intake and hence rehabilitation centers and health institutions need to support on the mechanisms to overcome with the feeding difficulties
- As been seen from the output of the regression analysis, educational status of parents age of the child and type of disability have significant impact on the status of children nutrition, hence special training awareness has to be avail for parents to get sufficient information about the nutritional needs of their children with disabilities regardless of the income.
- The household food insecurity of the households is affected by parents education and monthly income of the household and hence interventions has to set for increasing income of parents and care givers.

- Through the study disability disaggregated data of children with disabilities was challenge. The government institutions who are responsible for statical data of the community has to have proper, accepted data collection tool to avail accurate data of persons with disabilities in general and children in particular.
- During the study data collection, it was observed that some parents/ care givers hide children with disabilities at home. There was strong support and trial to provide one to one counseling with parents and care givers, but this has to be systematized and monitored so that all health extension workers could do the same for equity of children with disabilities who stayed at home

Reference

Ballard, Terri; Coates, Jennifer; Swindale, Anne; and Deitchler, Megan(2011). Household

Hunger Scale: Indicator Definition and Measurement Guide. Washington, DC: Food and Nutrition Technical Assistance II Project, FHI 360.

Casadei K & Kiel, J.2020. Anthropometric Measurement, Treasure Island (FL): StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books (Accessed on 6/7/2020).

Coates J., Swindale A., Bilinsky P. 2007.Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide V3 Food and Nutrition Technical Assistance Project (FANTA) Washington, DC.

Degener, T. 2014. A Human Rights Model of Disability: Routledge Handbook of Disability Law and Human Rights. **Error! Hyperlink reference not valid.**. (Accessed on 09/01/ 2020).

Disabled World. 2019. Definition of disability types and models of disabilities: Abstract paper. https://www.disabled-world.com/disability/types/. (Accessed on 10/ 01/2020).

Drum, C., Krahn, G., &Bersani, Jr., H. 2009. Disability and Public Health. Models and Approaches to Disability, 27-44. American Public Health Association: Washington, DC.

FANTA III. 2006. Household dietary diversity score (HDDS) for measurement of household food access: Indicator Guide, Version 2, Washington DC.

FANTA.2018. MODULE 3 Children and Adolescents 5–19 Years of Age: guide to anthropometry:

a practical tool for program planners, managers, and implementers. https://www.fantaproject.org. (Accessed on 21/10/2020).

FAO, IFAD, UNICEF, WFP and WHO. 2019. The State of Food Security and Nutrition in the World 2019. Rome.

FAW,2018. Building climate resilience for food security and nutrition, Rome

Fiseha Endale &DegefaTolossa. 2017. Food Security Status of People with Disabilities in Selassie Kebele, Hawassa Town: Ethiopian Journal of the Social Sciences and Humanities. vol. 13(1). https://www.ajol.info/index.php/ejossah/article/view/164472. (Accessed on 10/1/2020).

Food and Agriculture Organization, World Food Programme& International Fund for Agricultural Development 2015, The state of food insecurity in the world. Meeting the 2015 international hunger targets: Taking stock of uneven progress, FAO, Rome, Italy.

Groce N., Challenger, E., Kerac, M., Leonard.2013. Stronger Together: Nutrition-Disability Links and Synergies: Cheshire Disability and Inclusive Development Centre, University College London, UK.

Groce N., Loeb M., & Murray, B.2014. The Disabled Beggar: working paper; International LabourOffice(ILO), Gender, Equality and Diversity Branch , Geneva.

Groce, N.E., Kerac, M., Farkas, A., Schultink, W. & Bieler, R.B., 2013, 'Inclusive nutrition for children and adults with disabilities', The Lancet GlobalHealth 1(4): 180-181.

International Food Policy Research Institute (IFPRI) (2017) global hunger index. https://www.ifpri.org/publication/2017-global-hunger-index-inequalities-hunge. (Accessed on 26,5/ 2020).

International Food Policy Research Institute (IFPRI). 2014. Ethiopia PSNP peer reviewed report: USA: 2033 K Street, NW • Washington, DC.

K. Thornton, E. Villamor, 2016in Encyclopedia of Food and Health, University of Michigan School of Public Health, Ann Arbor, MI, USA

Kerac M, Postels DG, Mallewa M, Alusine Jalloh A, Voskuijl WP, Groce N, et al.2014. The interaction of malnutrition and neurologic disability in Africa,Rockville Pike, Bethesda MD, USA.

Kirshenblatt-Gimblett, Barbara. 2006. Part 1, What Is Research Design? The Context of Design. Performance Studies Methods Course syllabus. New York University, Spring.

Kuper H, Nyapera V, Evans J, Munyendo D, Zuurmond M, Frison S, et al.2015. Malnutrition and Childhood Disability in Turkana: a Case-Control Study. PLoS ONE 10(12), Kenya.

Laerd dissertation. 2012. Total population sampling: Online research support. http://.com/total-population-sampling.php (Accessed on 21/2/2020).

Mayhew L.2001. Disability – Global Trends and International Perspectives: Fact paper Presented to the Staple Inn Actuarial Society, Staple Inn Hall.

Mussie Sewnet. 2019.Nutritional Status Of Children With Disabilities Aged From Six Months To 17 Years In Gulele Sub-City,Addis Ababa: unpublished.

Mobility International USA:2018 https://www.miusa.org/resource/tipsheet/disabilitymodel(Accessed on 11/28/2020)

Neima Endris, Henok Asefa, &Lamessa Dube. 2017.. Prevalence of Malnutrition and Associated Factors among Children in Rural Ethiopia, BioMed Research International, vol. 2017, Article ID 6587853. https://doi.org/10.1155/2017/6587853. (Accessed on 21/2/2020).

Pinilla-Roncancio M.2015. Disability and poverty: two related conditions: A review of the literature. Rev. Fac. http://dx.doi. org/10.15446/revfacmed.v63n3sup.50132. (Accessed on 10/1/2020).

Sida. 2014. Disability rights in Ethiopia
https://www.sida.se/globalassets/sida/eng/partners/human-rights-ethiopia.pdf. (Accessed on 10/01/2020).

Tirussew Teferra, (2005). Disability in Ethiopia: Issues, Insight and Implication. Addis Ababa university press, Addis Ababa. https://www.worldcat.org/title/disability-in-ethiopia(Accessed on10/1/2020)

UNDHR. 1948. https://www.un.org/en/universal-declaration-human-rights/. (Accessed on 21/2/2020).

Web-Based GIS Approach for Tourism Development in Addis Ababa City, Ethiopia – Scientific Figure on ResearchGate. (Accessed on 21/10/ 2020.

WHO & World Bank .2011. World Report on Disability. Geneva.

WHO .2000. The World Health Report 2000. Health Systems – improving performance. World Health Organization, Geneva, Switzerland.

World Health Organization & World Bank, 2011, World report on disability 2011, viewed 05 October 2014. http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf. (Accessed on 21/2/2020).

Yeo R. & Moore K.2003. Including disabled people in poverty reduction work: "nothing about us, without us". World Development, Vol. 31(3). http://doi.org/fd9tfj. (Accessed on 10/1/2020)

Appendixes

Annex - I– Consent form

A questionnaire used to assess the nutritional status of children with disabilities in Addis Ketema Sub City, Addis Ababa, Ethiopia.

My name is _____, I am in the research team of Addis Ababa University, center for food security studies in collaboration with e Sub-City health office. I am interviewing children with disabilities or family member or care givers of children with disabilities aged from five years to eighteen years old. I would like asking you a few questions in order to assess the nutritional status of children with disabilities living in the Sub-City. You don't have to answer any question that you don't want to answer and you may end this interview at any time you want to, however, your honest answer to these questions helps us to assess the nutritional status of children with disabilities and the food security status of family having children with disabilities to the better understanding of the underlining causes and how to improve their nutritional and food security status in the future.

All information given by you will be strictly confidential. Your name will not be recorded in this form and will never be used in connection with any information you tell us. I greatly appreciate your cooperation in responding to this study. Would you be willing to participate? (If yes, proceed. If no, thank and stop here).

Please sign here to affirm your consent.

Code: _____

Name: _____ Sign: _____ Date: _____

Annex - II. Questioner for children with disabilities for nutritional Assessment

The questions will be asked directly to the child or with the support of the family member.

Part I. Socio-demographic characteristics of respondents of children with visual, physical and hearing disabilities from the age 5-18

1. Sex of the respondent
   A. Male
   B. Female
2. Age of respondent (in years)
   A. 5-8
   B. 9-11
   C. 12-15
   D.16-18
3. Are you attendingschool?(yes, No)
   if yes,
   A.KG
   B. grade1-3
   C. grade 4-8
   D. grade9-12
   E. drop out
4. What type ofdisability you have?
   A. Physical impartment
   B. Hearing impairment
   C. Visual impairment
   D. Multiple
   E. other
5. do you/ respondent have any siblings
   A. yes, one
   B. yes, two-four
   C. yes, Five and above
   D. No, I am the only child at home

Part II. **Anthropometric measurements of a child with disabilities**

6. Age of the child
   A. Male
   B. Female
7. Height of the child (Cm)
   A. ----------
8. BMI
   A. ----------
9. MUAC
   A. ----------
10. Weight (Kg)
    A. ----------

Annex III. Questionnaire for parents (mothers/caregivers) or any member in the household of children with disabilities

Part I. socio demographic questions for parents (mothers/caregivers) or any member in the household of children with disabilities

1. Sex of the respondent
    A. Male
    B. Female
2. Age of the respondent (in years)
    A. below 19
    B.20-29
    C.30-39
    D. 40-49
    E. above 50
3. Have you attended school?
    A. Yes
    B. No
4. If the answer yes, which education have you attended
    A. Elementary level
    B. Secondary/high school
    C. TVET
    D. Diploma
    E. Degree
    F. Masters & above
5. Marital status
    A. single
    B. Married
    C. Divorced
    D. widow

6.How many family members are living in the household?

A.----------

7. How much money do you(household in general) earn on monthly bases (gross)?

A.----------

8.How many of the member/s is/are in the household living with disability

A. one

B. two- four family member

9. Do the household have financial support for the child with disability? From any organization

A. yes

B. No

Part II.Household Food Insecurity Access Scale (HFIAS), is used to measure the food security, access, of the household with children with disablity.

The HFIAS occurrence questions relate to three different domains of food insecurity (access); Anxiety and uncertainty about the household food supply, Insufficient Quality (includes variety and preferences of the type of food) and Insufficient food intake and its physical consequences

The questionnaire should be asked in its entirety in the order they are listed, making use of the embedded skip rules (see table below) to avoid asking frequency-of-occurrence questions when they are not applicable. The enumerator should avoid picking and choosing only certain questions. It is recommended that the questions are asked to the woman who is responsible for preparing the meals within the household.

The questions will capture the history the household for the last 30 days, the answerer will reflect the food insecurity of the household in the past 30 days.

No.	**Question**	**Response options(**	**Code (0,1,2 or 3)**
1	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q2) 1=Yes	….|___|
1A	How oft did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
2	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0 = No (skip to Q3)) 1=Yes	….|___|
2A	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
3	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0 = No (skip to Q4)) 1=Yes	….|___|
3A	How often did this happen?	1 = Rarely (once or twice in the past four week 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
4	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because ofa lack of resources to obtain other types of food?	0 = No (skip to Q5)) 1=Yes	….|___|
4A	How often did this happen?	1 = Rarely (once or twice in the past	….|___|

		four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
5	In the past four weeks, didyou or any householdmemberhave to eat smaller meals than you feltyou needed because therewas not enough food?	0 = No (skip to Q2)/ 1=Yes	….|___|
5A	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
6	In the past four weeks, didyou or any other householdmemberhave to eat fewermeals in a day becausethere was not enough food?	0 = No (skip to Q2) 1=Yes	….|___|
6A	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
7	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q2) 1=Yes	….|___|
7A	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
8	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (skip to Q2) 1=Yes	….|___|
8A	How often did this happen?	1 = Rarely (once or twice in the past	….|___|

		four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
9	In the past four weeks, didyou or any householdmember go a whole dayand night without eatinganything because there was not enough food?	0 = No (the question is finished) 1=Yes	….|___|
9A	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|

Annex IV. Key Informant Interview Guide for DPO representatives and rehabilitation center facilitators working with children with disabilities

Interview date: _____ Time: _____

Part-I: Socio-demographic information

1. Name of the Association/ rehabilitation center
2. your position in the organization
3. Sex of the informant

   0. Female
   1. Male

4. Level of education: _____

Part -II: Interview questions

5. Did you notice malnutrition and/or food insecurity among those children with disabilities you are working with inArada Sub-City?

   1. Yes
   2. No

(If 'Yes', continue to the next question, if 'No', stop the interview with thanks).

6. Do you notice any feeding difficulty on the children with disabilities that you are working with?

   ---

7. If you observe and food security or nutritional status problem, what do you think the cause is

   ---

   ---

8. What is your and your organization effort to improve the food insecurity or the nutrition problem?

---

9. If you have any suggestion, please, you are welcome.

Thank you for your cooperation.

Annex V. Stata regression, Do file

```
Import excel "C:\Users\Mission\Downloads\Hamsale - Thesis\thesis data - CWD V2.xlsx",
sheet("CWD") firstrow
drop AL description AN AO AP AQ AR AS AT AU AV AW AX AY
label define sex_ch 1 "Male" 2 "Female"
label values sex_chsex_ch
label define sex_par 1 "Male" 2 "Female"
label values sex_parsex_par
label define schooling_ch 1 "KG" 2 "grade 1-3" 3 "grade 4-8" 4 "grade 9-12" 5 "drop-out"
label values schooling_chschooling_ch
label define tdst 1 "Physical impairment" 2 "Hearing Impairment" 3 "Visual Impairment" 4 "Multiple
Impairment" 5 "Other"
label values tdsttdst
label define age_par 1 "Below 19 yrs" 2 "20-29 Yrs" 3 "30-39 Yrs" 4 "40-49 Yrs" 5 "Above 50 Yrs"
label values age_parage_par
label define havschoo 1 "Yes" 2 "No"
label values havschoohavschoo
label variable havschoo "Have you attended school?"
label define educ_par 1 "Elementary" 2 "Secondary" 3 "TVET" 4 "Diploma" 5 "Bachelor" 6 " Masters
and above"
label values educ_pareduc_par
label variable havschoo "Education level of the household head"
label define marital 1 "Single" 2 "Married" 3 "Divorced" 4 "Widow"
label values marital marital
label variable marital "Marital Status of the Household Head"
label define nsebl 0 "None" 1 "One" 2 "Two to Four" 3 "Five and above"
label values nseblnsebl
label define dosbling 1 "Yes" 0 "No"
label values dosblingdosbling
label variable sex_ch "Sex of the Child"
label variable age_ch "Age of the Child"
label variable tdst "Type of disabaility for Children"
label variable dosbling "Do you have Sibilings"
label variable nsebl "# of Siblings"
label variable BMI "Body Mass Index"
label variable MUAC "Mid-upper Arm Circumfrance in cm"
label variable sex_par "Sex of the Household Head"
label variable age_par "Age of the Household Head"
label variable schooling_ch "Education Status of he Child"
label variable fmlym "How many family members are living in the household?"
label variable incom "Income of the Household"
label define numfdis 1 "Only one CWD" 2 "Two-Four CWD"
label values numfdisnofdis
label variable numfdis "# of Children with Disability in the HH"
label define finsupp 1 "Yes" 2 "No"
label values finsuppfinsupp
label variable finsupp "Financial Support for the CWD"
gen hfias=1 if(x1a==0|x1a==1) & x2==0 & x3==0 & x4==0 & x5==0 & x6==0 & x7==0 & x8==0 &
x9==0
```

```
replace hfias=2 if(x1a==2|x1a==3|x2a==1|x2a==2|x2a==3|x3a==1|x4a==1) & x5==0 & x6==0 & x7==0
& x8==0 & x9==0
replace hfias=3 if(x3a==2|x3a==3|x4a==2|x4a==3|x5a==1|x5a==2|x6a==1|x6a==2) & x7==0 & x8==0 &
x9==0
replace hfias=4 if (x5a==3|x6a==3)|(x7a==1|x7a==2|x7a==3|x8a==1|x8a==2|x8a==3|x9a==1|x9a==2|
x9a==3)
label define hfias 1 "food secure" 2 "Mildly food insecure" 3 "Moderately food insecure" 4 "Severely
food insecure"
label values hfiashfias
gen bmi=1 if(BMI<=16)
replace bmi=2 if(BMI>16 & BMI<=16.9)
replace bmi=3 if(BMI>16.9 & BMI<=18.49)
replace bmi=4 if(BMI>18.48 & BMI<=24.9)
replace bmi=5 if(BMI>24.9 & BMI<=29.9)
label define bmi 1 "Severe energy defcy" 2 "Moderate energy defcy" 3 "Mild energy defcy" 4 "Normal" 5
"Overweight"
label values bmibmi
gen muac_under9=.
replace muac_under9=1 if(MUAC<=13.5 &age_ch<=9)
replace muac_under9=2 if(MUAC>13.5 & MUAC<=14.5 &age_ch<=9)
replace muac_under9=3 if(MUAC>14.5 &age_ch<=9)
label define muac_under9 1 "SAM" 2 "MAM" 3 "Normal"
label values muac_under9 muac_under9
gen muac_10to14=.
replace muac_10to14=1 if(MUAC<=16 &age_ch>=10 &age_ch<=14)
replace muac_10to14=2 if(MUAC>16 & MUAC<=18.5 &age_ch>=10 &age_ch<=14)
replace muac_10to14=3 if(MUAC>18.5 &age_ch>=10 &age_ch<=14)
label define muac_10to14 1 "SAM" 2 "MAM" 3 "Normal"
label values muac_10to14 muac_10to14
gen muac_15to18=.
replace muac_15to18=1 if(MUAC<=18.5 &age_ch>=15 &age_ch<=18)
replace muac_15to18=2 if(MUAC>18.5 & MUAC<=21 &age_ch>=15 &age_ch<=18)
replace muac_15to18=3 if(MUAC>21 &age_ch>=15 &age_ch<=18)
label define muac_15to18 1 "SAM" 2 "MAM" 3 "Normal"
label values muac_15to18 muac_15to18

gen incom_range=1 if(incom<=1000)
replace incom_range=2 if(incom>1000 &incom<=2000)
replace incom_range=3 if(incom>2000 &incom<=3000)
replace incom_range=4 if(incom>3000 &incom<=4000)
replace incom_range=5 if(incom>4000 &incom<=5000)
replace incom_range=5 if(incom>5000)
label define incom_range 1 "Income less than 1000" 2 "Income 1001-2000" 3 "Income 2001-3000" 4
"Income 3001-4000" 5 "Income 4001-5000" 6 "Income above 5001"
label values incom_rangeincom_range

gen age_categ=1 if(age_ch>=5 &age_ch<=9)
replace age_categ=2 if(age_ch>=10 &age_ch<=14)
replace age_categ=3 if(age_ch>=15 &age_ch<=18)
label define age_categ 1 "Age less than 9 Yrs" 2 "Age between 10 to 14 Yrs" 3 "Age between 15 to 18"
label values age_categage_categ
```

```
tab age_categ
tab age_categ
tab age_categtdst
tab tdst muac_under9
tab tdst muac_10to14
tab tdst muac_15to18
tab muac_under9
tab muac_10to14
tab muac_15to18
tab bmitdst
tab sex_ch muac_under9
tab sex_ch muac_10to14
tab sex_ch muac_15to18
tab bmisex_ch
tab bmiage_ch
tab bmiage_categ
tab bmi muac_under9
tab bmi muac_10to14
tab bmi muac_15to18
ologit muac_under9 educ_parincomnumfdisfinsupp
ologit muac_10to14 educ_parincomnumfdisfinsupp
ologit muac_15to18 educ_parincomnumfdisfinsupp
ologit muac_15to18 educ_parincomnumfdisfinsupp,r
ologit muac_under9 tdstage_cheduc_parincomnumfdisfinsupp
ologit muac_10to14 tdstage_cheduc_parincomnumfdisfinsupp
ologit muac_15to18 tdstage_cheduc_parincomnumfdisfinsupp
tab hfias
```

Annex VI. Stata 14.2 analysis tables

Ordered logit regression result

1. Type of disability and nutrition status of age 5-9 yrs

Type of disability for Children	muac_under9 SAM	MAM	Normal	Total
Physical impairment	6	5	4	15
Hearing Impairment	0	6	2	8
Visual Impairment	2	4	0	6
Multiple Impairment	4	7	1	12
Total	12	22	7	41

2. Type of disability and nutrition status of age 10-14 yrs

Type of disability for Children	muac_10to14 SAM	MAM	Normal	Total
Physical impairment	10	8	4	22
Hearing Impairment	6	7	3	16
Visual Impairment	4	10	4	18
Multiple Impairment	1	4	4	9
Total	21	29	15	65

3. Type of disability and nutrition status of age 15-18 yrs

Type of disability for Children	muac_15to18 SAM	MAM	Normal	Total
Physical impairment	5	16	15	36
Hearing Impairment	5	7	7	19
Visual Impairment	2	14	3	19
Multiple Impairment	5	11	3	19
Other	0	1	0	1
Total	17	49	28	94

4. MUAC measures based on age and sex category of children

Sex of the Child	muac_under9 SAM	MAM	Normal	Total

```
      Male |          4          9          5 |         18
    Female |          8         13          2 |         23
-----------+---------------------------------+----------
     Total |         12         22          7 |         41
```

```
. tab sex_ch muac_10to14

Sex of the |           muac_10to14
     Child |       SAM        MAM     Normal |     Total
-----------+---------------------------------+----------
      Male |        11         17         11 |         39
    Female |        10         12          4 |         26
-----------+---------------------------------+----------
     Total |        21         29         15 |         65
```

```
. tab sex_ch muac_15to18

Sex of the |           muac_15to18
     Child |       SAM        MAM     Normal |     Total
-----------+---------------------------------+----------
      Male |        14         27         14 |         55
    Female |         3         22         14 |         39
-----------+---------------------------------+----------
     Total |        17         49         28 |         94
```

5. Body Mass Index (BMI) result of children with disability

```
                    |           Type of disability for Children
bmi | Physical   Hearing I  VisualIm  Multiple       Other |     Total
---------------------+-------------------------------------------------------+-------
---
  Severe energy defcy |         7          3          5          8          0 |
23
Moderate energy defcy |         3          1          0          1          0 |
5
    Mild energy defcy |        25         21         21         13          0 |
80
               Normal |        30         17         17         18          1 |
83
           Overweight |         8          1          0          0          0 |
9
---------------------+-------------------------------------------------------+-------
---
                Total |        73         43         43         40          1 |
     200
```

6. BMI measures based on age and sex category of children with disability

bmi	Sex of the Child: Male	Female	Total
Severe energy defcy	14	9	23
Moderate energy defcy	3	2	5
Mild energy defcy	40	40	80
Normal	52	31	83
Overweight	3	6	9
Total	112	88	200

bmi	Age category of children: < 9yrs	10-14 yrs	15-18 yrs	Total
Severe energy defcy	17	6	0	23
Moderate energy defcy	0	5	0	5
Mild energy defcy	17	26	37	80
Normal	5	28	50	83
Overweight	2	0	7	9
Total	41	65	94	200

7. MUAC and BMI measures for ages from 6 months to 17 years old

bmi	muac_under9: SAM	MAM	Normal	Total
Severe energy defcy	5	11	1	17
Mild energy defcy	7	10	0	17
Normal	0	1	4	5
Overweight	0	0	2	2
Total	12	22	7	41

```
. tab bmi muac_10to14
```

bmi	muac_10to14: SAM	MAM	Normal	Total
Severe energy defcy	1	5	0	6
Moderate energy defcy	5	0	0	5

```
    Mild energy defcy |        12         12          2 |        26
               Normal |         3         12         13 |        28
----------------------+---------------------------------+----------
                Total |        21         29         15 |        65


. tab bmi muac_15to18

                      |          muac_15to18
bmi |       SAM        MAM     Normal |     Total
----------------------+---------------------------------+----------
    Mild energy defcy |        16         21          0 |        37
               Normal |         1         28         21 |        50
          Overweight |         0          0          7 |         7
----------------------+---------------------------------+----------
                Total |        17         49         28 |        94
```

8. HFIAS

```
. tab hfias

hfias |      Freq.     Percent
------------------------+-----------------------
          food secure |         98       49.00
    Mildly food insecure |         34       17.00
Moderately food insecure |         41       20.50
  Severely food insecure |         27       13.50
------------------------+-----------------------
                 Total |        200      100.00
```

9. Nutritional assessment result verses/with parent's education, income, number of disable children in the household, external financial support

Ordered logit of children nutritional status (MUAC disaggregated by age below 9 yrs) against independent variables related to the family

```
. ologit muac_under9 educ_parincomnumfdisfinsupp

Iteration 0:   log likelihood =  -40.81327
Iteration 1:   log likelihood = -37.611425
Iteration 2:   log likelihood = -37.518783
Iteration 3:   log likelihood = -37.498064
Iteration 4:   log likelihood = -37.494035
Iteration 5:   log likelihood = -37.493356
```

```
Iteration 6:   log likelihood = -37.493197
Iteration 7:   log likelihood = -37.493161
Iteration 8:   log likelihood = -37.493153
Iteration 9:   log likelihood = -37.493152

Ordered logistic regression                     Number of obs     =
41
                                                LR chi2(4)        =
6.64
                                                Prob > chi2       =
0.1562
Log likelihood = -37.493152                     Pseudo R2         =
0.0813

------------------------------------------------------------------------
--------
 muac_under9 |      Coef.   Std. Err.      z    P>|z|     [95% Conf.
Interval]
-------------+----------------------------------------------------------
--------
educ_par|  -.0439144   .1965645    -0.22   0.823    -.4291737
.3413449
incom |   .0000708   .0000663     1.07   0.285     -.000059
.0002007
numfdis|  -17.65017   2459.913    -0.01   0.994    -4838.991
4803.69
finsupp|  -.1675947   .8246893    -0.20   0.839    -1.783956
1.448767
-------------+----------------------------------------------------------
--------
       /cut1 |   -18.5521   2459.913                      -4839.894
4802.789
       /cut2 |  -15.88374   2459.913                      -4837.225
4805.458
```

10. Ordered logit of children nutritional status (MUAC disaggregated by age below 10-14 yrs) against independent variables related to the family

```
. ologit muac_10to14 educ_parincomnumfdisfinsupp

Iteration 0:   log likelihood = -69.127869
Iteration 1:   log likelihood = -67.890432
Iteration 2:   log likelihood = -67.881892
Iteration 3:   log likelihood = -67.881891
```

```
Ordered logistic regression                     Number of obs     =
65
                                                LR chi2(4)        =
2.49
                                                Prob > chi2       =
0.6461
Log likelihood = -67.881891                     Pseudo R2         =
0.0180

------------------------------------------------------------------------------
 muac_10to14 |      Coef.   Std. Err.      z    P>|z|     [95% Conf.
Interval]
-------------+----------------------------------------------------------------
educ_par|  -.0725182   .1398071    -0.52   0.604    -.3465351    .2014988
incom |    .000075   .0000607     1.24   0.217     -.000044     .000194
numfdis|  -.8124258   .9795656    -0.83   0.407    -2.732339    1.107487
finsupp|  -.4969746   .5146908    -0.97   0.334     -1.50575    .5118009
-------------+----------------------------------------------------------------
       /cut1 |  -2.151457   1.304691                      -4.708604
.4056905
       /cut2 |  -.1497569   1.278187                      -2.654957
2.355443
------------------------------------------------------------------------------
```

11. Ordered logit of children nutritional status (MUAC disaggregated by age below 15-18 yrs) against independent variables related to the family

```
. ologit muac_15to18 educ_parincomnumfdisfinsupp

Iteration 0:   log likelihood = -94.904162
Iteration 1:   log likelihood = -93.677963
Iteration 2:   log likelihood = -93.672462
Iteration 3:   log likelihood = -93.672461

Ordered logistic regression                     Number of obs     =
94
                                                LR chi2(4)        =
2.46
                                                Prob > chi2       =
0.6512
Log likelihood = -93.672461                     Pseudo R2         =
0.0130

------------------------------------------------------------------------------
--------
```

```
 muac_15to18 |      Coef.   Std. Err.      z    P>|z|     [95% Conf.
Interval]
-------------+----------------------------------------------------------
--------
educ_par |   .1020287   .1198441     0.85   0.395    -.1328615
.3369188
incom|  -.0000376   .0000463    -0.81   0.417    -.0001283    .0000532
numfdis|  -1.084162   .9318236    -1.16   0.245    -2.910503
.7421784
finsupp |   .5087394   .4703078     1.08   0.279    -.4130469
1.430526
-------------+----------------------------------------------------------
--------
       /cut1 |  -1.782601   1.104188                      -3.946769
.3815681
       /cut2 |    .636459    1.08704                       -1.4941
2.767018
------------------------------------------------------------------------
--------
```

12. Nutritional status of children regression with independent variables related to children and parents (mixed independent variables)

```
. ologit muac_under9 tdstage_cheduc_parincomnumfdisfinsupp

Iteration 0:   log likelihood =  -40.81327
Iteration 1:   log likelihood = -35.576303
Iteration 2:   log likelihood = -35.399581
Iteration 3:   log likelihood = -35.367763
Iteration 4:   log likelihood =  -35.36413
Iteration 5:   log likelihood = -35.363601
Iteration 6:   log likelihood = -35.363508
Iteration 7:   log likelihood = -35.363487
Iteration 8:   log likelihood = -35.363482
Iteration 9:   log likelihood = -35.363481

Ordered logistic regression                     Number of obs     =
41
                                                LR chi2(6)        =
10.90
                                                Prob > chi2       =
0.0915
```

```
Log likelihood = -35.363481                     Pseudo R2         =
0.1335

------------------------------------------------------------------------
--------
 muac_under9 |      Coef.   Std. Err.      z    P>|z|     [95% Conf.
Interval]
-------------+----------------------------------------------------------
--------
tdst|  -.4176094   .3102731    -1.35   0.178    -1.025733    .1905146
age_ch |   .4391061   .2803816     1.57   0.117    -.1104318
.988644
educ_par|  -.2337611   .2302262    -1.02   0.310    -.6849962
.2174741
incom |   .0001562   .0000807     1.94   0.053    -1.99e-06
.0003144
numfdis|  -17.21143   2069.915    -0.01   0.993     -4074.17
4039.747
finsupp |   .1236562   .8704214     0.14   0.887    -1.582338
1.829651
-------------+----------------------------------------------------------
--------
       /cut1 |  -15.59303   2069.917                      -4072.556
4041.37
       /cut2 |  -12.68056   2069.917                      -4069.643
4044.282
------------------------------------------------------------------------
--------
Note: 2 observations completely determined.  Standard errors
questionable.

. ologit muac_10to14 tdstage_cheduc_parincomnumfdisfinsupp

Iteration 0:   log likelihood = -69.127869
Iteration 1:   log likelihood = -60.100408
Iteration 2:   log likelihood = -59.906168
Iteration 3:   log likelihood =  -59.90587
Iteration 4:   log likelihood =  -59.90587

Ordered logistic regression                     Number of obs     =
65
                                                LR chi2(6)        =
18.44
                                                Prob > chi2       =
0.0052
```

```
Log likelihood =  -59.90587                     Pseudo R2         =
0.1334

------------------------------------------------------------------------
--------
 muac_10to14 |      Coef.   Std. Err.      z    P>|z|     [95% Conf.
Interval]
-------------+----------------------------------------------------------
--------
tdst |   .1322517   .2564045     0.52   0.606    -.3702918    .6347952
age_ch |   .7267304   .2213631     3.28   0.001     .2928667
1.160594
educ_par|  -.0862098   .1473481    -0.59   0.558    -.3750068
.2025871
incom |   .0000764   .0000651     1.17   0.240    -.0000511
.0002039
numfdis |   -.217377   1.064286    -0.20   0.838     -2.30334
1.868586
finsupp|  -.8233701   .5555131    -1.48   0.138    -1.912156
.2654155
-------------+----------------------------------------------------------
--------
       /cut1 |   7.086732   2.858449                      1.484274
12.68919
       /cut2 |   9.500672   2.984907                      3.650362
15.35098
------------------------------------------------------------------------
--------

. ologit muac_15to18 tdstage_cheduc_parincomnumfdisfinsupp

Iteration 0:   log likelihood = -94.904162
Iteration 1:   log likelihood = -89.193401
Iteration 2:   log likelihood = -89.092395
Iteration 3:   log likelihood = -89.092179
Iteration 4:   log likelihood = -89.092179

Ordered logistic regression                     Number of obs     =
94
                                                LR chi2(6)        =
11.62
                                                Prob > chi2       =
0.0709
Log likelihood = -89.092179                     Pseudo R2         =
0.0612
```

```
------------------------------------------------------------------------------
 muac_15to18 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
tdst|  -.3491986   .1799862    -1.94   0.052     -.701965    .0035678
age_ch |   .3606593   .1953798     1.85   0.065    -.0222781    .7435968
educ_par |   .1129967   .1229512     0.92   0.358    -.1279831    .3539766
incom|  -.0000501   .0000469    -1.07   0.286     -.000142    .0000419
numfdis|  -.8719314   .8998198    -0.97   0.333    -2.635546     .891683
finsupp |   .9539547   .5021119     1.90   0.057    -.0301665    1.938076
-------------+----------------------------------------------------------------
       /cut1 |   4.286371   3.692269                     -2.950344    11.52309
       /cut2 |   6.901489    3.74246                     -.4335986    14.23658
------------------------------------------------------------------------------
```

አባሪ 1 የቃለመጠይቅየስምምነትደብዳቤ

አዲስ አበባ ዩኒቨርሲቲ የልማት ጥናት ኮሌጅ የምግብ ዋስትና ጥናት ማእከል

ይህ መጠይቅ በጉለሌ ክ/ከተማ የሚገኙ ዕድሜያቸው ከአምስት እስከ 18 ዓመት የሆኑ የአካል ጉዳት ያለባቸውን ህጻናት የስነ-ምግብ ችግርና መንስኤዎችን ለመለየትና ለመለካት የተዘጋጀ ነው፡፡እኔ_ሐምሳለ ፉፋ እባላለሁ፡፡ የመጣሁት የአዲስ አበባ ዩኒቨርስቲ፣ የሀገር ልማት ጥናት ኮሌጅ፣የምግብ ዋስትና ጥናት ማእከል ከአዲስ ከተማ ክ/ከተማ ጤና ጽ/ቤት ጋር በመተባበር ጥናት ለማከናወን ነው፡፡

በዚህ ጥናት ዕድሜያቸው ከአምስት እስከ 18 ዓመት የሆኑ የአካል ጉዳት የእይታ እንዲሁም የመስማት ጉዳት ያለባቸውን ህጻናት ላይ የሚከሰት የምግብ እጥረት ምን ያህል ጉዳት እያደረሰ እንደሆነና መንስኤውን ለመረዳት አስበናል፡፡ይህንንም መረጃ ለማግኘት ደግሞ ቤት ለቤት በመዘዋወር ቃለ መጠይቅ በማድረግ ላይ እንገኛለን፡፡በአካል ጉዳተኛ ልጆች የስነምግብ ሁኔታ አስመልክቶ ጥቂት ጊዜያት የሚወስዱ የምንጠይቅዎት ጥያቄ ስላለን እንዲተባበሩን ይሁን፡፡የሚሰጡን ትክክለኛ ምላሽ የአካል ጉዳት ያለባቸውን ህጻናት የስነ-ምግብ ችግርና መንስኤዎችን ለመለየት፣ለመለካትና ለወደፊትም ችግሩን ተረድቶ መፍትሄ ለማፈላለግ ከፍተኛ አስተዋፅዖ አለው፡፡

የሚሰጡት መረጃ ሚስጥራዊነቱ የተጠበቀ ነው፤የሚሰጡኝ መረጃ በግለሰብ ደረጃ እንዲሁም ከጥናት ቡድኑ ውጪ ማንም አያውቀውም፡፡ በዚህ ቅፅ ውስጥ ስምዎ አይጠቀስም፣ከሚሰጡን መረጃ ጋር ተያይዞ ስምዎ አይነሳም፡፡ ለጥናቱ ተባባሪ በመሆንዎ ላቅ ያለ ምስጋና አቀርባለሁ፡፡በጥያቄዎቹ ደስተኛ ካልሆኑ በየትኛውም ሰዓት መረጃውን መስጠት ማቆም ይችላሉ፡፡እንግዲህ አሁን ለቃለ መጠይቁ ፈቃደኛነዎት? (ፈቃደኛ ከሆኑ መጠይቁን ቀጥል/ይ፣ ካልሆኑ ግን አመሰግነህ/ሽ ተለያዩ)

መለያ ቁጥር፡ _____

ስም፡_____ ፊርማ: _____ቀን፡ _____

አባሪ 2 ለአካል ጉዳተኛ ህፃናት የቤተሰብ ሁኔታ መጠይቅ
የአካል ጉዳት ላለባቸው ህጻናት/ ወላጆች በቀጥታ ለመጠየቅ የተዘጋጀ መጠይቅ

I. ክፍል አንድ፡ የመጠይቁ ተሳታፊዎች ማህበራዊና ሥነ-ሕዝብ ሁኔታ መረጃ

1. ፆታ፡
   1) ወንድ
   2) ሴት
2. እድሜ (በዓመት)፡
   1) 5-8
   2) 9-11
   3) 12-15
   4) 16-18
3. መደበኛ ትምህርት ተምረው/ ተከታትለው ያውቃሉ? መላሽዎ አዎ ከሆነ የትምህርት ደረጃዎን ይግለፁ፡፡
   1. መዋለህጻናት
   2. 1-3 ክፍል
   3. 4-8 ክፍል
   4. 9-12 ክፍል
   5. ትምህርትያቋረጠ
4. የአካል ጉዳትዎት ምን ዓይነት ነው?
   1) የመስማት
   2) ለማየት
   3) የአካላዊ (የእጅ፣ የእግር፣ የህብለሰረሰር፤ወይም የሌላ አካል)
   4) ተደራራቢ ጉዳት
   5) ሌላ (እባክዎትን ይጥቀሱ……)
5. ወንድም/ እህትአለዎት?
   1. አዎ፤አንድ
   2. አዎ፣ከሁለት-አራት
   3. አዎ፣አምስትናክባበላይ

4. የለኝም፣ የቤቱብቸኛልጅነኝ

II. ክፍል ሁለት፡ የአካል ጉዳት ያለባቸው ሕፃናት የስነ-ምግብ (አንትሮፖሜትሪክ) ልኬትመጠይቅ

6. የሕፃኑፆታ

1 = ወንድ

2 = ሴት

7. የሕፃኑ እድሜ ……

8. የሕፃኑ ቁመት /እርዝመት (ሴ.ሜ)…….

9. ክብደት (ኪ..ግ)……..

10. ሚክ (የክንድ ላይ ልኬት) ……..

11. ቢ..ኤም.አይ (የቁመትና ክብደት አማካኝ ልኬት) ……..

አባሪ 3 የአካል ጉዳት ላለባቸው ህጻናት ቤተሰቦች የተዘጋጀ መጠይቅ

የአካል ጉዳት ላለባቸው ህጻናት ቤተሰቦች (ወላጆች ወይም አሳዳጊዎች) በቀጥታ ለመጠየቅ የተዘጋጀ መጠይቅ፤፤

I. **የመጠይቁ ተሳታፊዎች ማህበራዊና ሥነ-ሕዝብ ሁኔታ መረጃ**

12. ፆታ፡

1. ወንድ
2. ሴት

13. እድሜ

1. ከ19 በታች
2. 20-29
3. 30-39
4. 40-49
5. ከ50 በላይ

14. ትምህርት ተምረዋል

1. **አዎ**
2. **አይ**

15. መልስዎ አዎ ከሆነ የትምህርትዎ ሁኔታ

1. **አንደኛ ደረጃ**
2. **ሁለተኛደረጃ**
3. **ሙያእናቴክኒክ (ቲቪቲ)**
4. **ዲፕሎማ**
5. **ዲግሪ**
6. **ማስተርስእናበላይ**

16. የጋብቻሁኔታ

1. **ያላገባ**
2. **ያገባ**
3. **የፈታ**
4. **በሞትየተለየ**

17. የቤተሰብብዛት፡ ----------

18. የቤተሰቡወርሀዊገቢስንትነዉ----------

19. የአካልጉዳትያለባቸዉልጆችብዛት

1. **አንድ**
2. **ሁለትእናከዚያበላይ**

20. የአካል ጉዳት ያለባቸዉን ልጆች ለመርዳት ለቤተሰባችሁ የገንዘብ እርዳታ የሚያደርግላችሁ ድርጅት አለ

1. **አዎ**
2. **የለም**

II. የቤተሰብ የምግብ እጥረት ደረጃዎችን ለመለካት የተዘጋጀ መጠይቅ

HFIAS ተመርኩዘው የሚዘጋጁ ጠያቂዎች ከሶስት ዋነኛ የምግብ እጥረት አደጋዎች ዘርፍ ጋር ይዛመዳሉ፣፣የምግብ አቅርቦትን በተመለከተ ሊደርስ የሚችል ስጋትና ጥርጣሬ; ምግብን በአይነትና በምርጫ ያለማቅረብ ችግር እንዲሁም በአቅርቦት ማነስ ምክንያት በዓይንት የተወሰነ ወይም አማራጭ ሳይኖር ምግብ በመታጣቱ ምክንያት የማይፈልጉትን ምግብ ለመመገብ መገደድን ይለካል

መጠይቁ በተቀመጠለት ቅደም ተከተል መሰረት መጠየቅ አለበት፣፣መረጃ ሰብሳቢው አንዱን ጥያቄ ትቶ ሌላውን በመምረጥ ጥያቄ መጠየቅ አይኖረበትም፣፣ተጠያቂዎች በቤት ውስጥ በምግብ ዝግጅት ላይ የሚሳተፉ ሴቶች ቢሆኑ ይመረጣል፣፣

No.	Question	Response options	Code (0፣ 1፣2፣3)
1	ባለፈው ወር ለቤተሰብዎ በቂ ምግብ ይኖር ይሆን ወይ ብለው ሰግተውነበር?	0 = /አይ (ወደጥያቄ 2 ይሂዱ) 1=አዎ	….|___|
1A	ይህ በየስንት ግዜ ያጋጥማል?	1 =አልፎ አልፎ (አንዴወይምሁለትጊዜበወርውስጥ) 2 አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙ ጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
2	ባለፈዉ ወር ቤተሰብዎ የምርጫቸዉን ወይም የፈለጉትን ምግብ መብላት አልቻሉም ነበር?	0 = /አይ (ወደጥያቄ 3 ይሂዱ) 1=አዎ	….|___|
2A	ይህ በየስንት ግዜ ያጋጥማል	1 = አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙ ጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
3	ባለፈዉ ወር, ቤተሰብዎ በዓይንት የተወሰነ ወይም አማራጭ ሳይኖሮት ይመገቡ ነበር?	0 = አይ (ወደጥያቄ 4 ይሂዱ) 1=/አዎ	….|___|

3A	ይህ በየስንት ግዜው ያጋጥማል?	1 = አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙ ጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
4	ባለፈዉ ወር, ሌላ ዓይነት ምግብ በመታጣቱ ምክንያት ቤተሰብዎ የማይፈልጉትን ምግብ ለመመገብ ተገድደው ነበር?	0 =አይ (ወደጥያቄ 5 ይሂዱ) 1=አዎ	….|___|
4A	How often did this happen?/ ይህ በየስንት ግዜ ያጋጥማል?	1 =አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙ ጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
5	ባለፈዉወር, በቂምግብባለመኖሩምክንያትቤተሰብዎበመጠንያ ነስወይምየተወሰነምግብመመገብተገደውነበር?	0 = (ወደ ጥያቄ 6 ይሂዱ) 1=አዎ	….|___|
5A	ይህየሆነውበየስንትጊዜነው?	1 = አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙ ጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
6	ባለፈዉወር, ቤተሰብዎ ከሌሎች ቀኖች በቁጥር ያነሰ ጊዜ ለመመገብ ተገደው ነበር?	0 = አይ (ወደ ጥያቄ 7 ይሂዱ) 1=አዎ	….|___|
6A	ይህ በየስንት ግዜ ያጋጥማል?	1= አልፎ አልፎ አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር	….|___|

		ውስጥ) 3 = ብዙጊዜ (ከአስርጊዜበላይበወርውስጥ)	
7	ባለፈው ወር ውስጥ በቤትዎ ውስጥ በጭራሽ ምግብ ያልነበረበት ወቅት ነበር?	0 =አይ (ወደጥያቄ 8 ይሂዱ) 1=አዎ	….|___|
7A	ይህ በየስንት ግዜ ያጋጥማል?	1 =አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙጊዜ (ከአስርጊዜበላይበወርውስጥ)	….|___|
8	ባለፈዉ ወር, ቤተሰብዎ ምግብ ሳይበሉ እንደተራቡ ወደመኝታ የሄዱበት ጊዜ ነበረ?	0 = አይ (ወደጥያቄ 9 ይሂዱ) 1=አዎ	….|___|
8A	ይህ በየስንት ግዜ ያጋጥማል?	1 =አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|
9	ባለፈዉወር, ምግብባለመኖሩምክንያትቤተሰብዎምንምምግብ ሳይበሉመሉቀንእናሌሊትያሳለፉበትጊዜነበር?	0 =አይ (የመጨረሻ ጥያቄ) 1=አዎ	….|___|
9A	ይህበየስንትግዜያጋጥማል?	1 =አልፎ አልፎ (አንዴ ወይም ሁለት ጊዜ በወር ውስጥ) 2 = አንዳንድ ጊዜ (ከሶስት እስከ አስር ጊዜ በወር ውስጥ) 3 = ብዙጊዜ (ከአስር ጊዜ በላይ በወር ውስጥ)	….|___|

URKUND

Document Information

Analyzed document	Hamsale Fufa thesis Oct 2020.docx (D82630929)
Submitted	10/24/2020 8:27:00 PM
Submitted by	
Submitter email	mesalemamo@gmail.com
Similarity	3%
Analysis address	mesay.mulugeta1.aauni@analysis.urkund.com