FEEDING PRACTICES AND ITS ASSOCIATION WITH NUTRITIONAL STATUS OF CHILDREN 6-23 MONTHS IN RURAL KEBELES OF NADA DISTRICT, JIMMA ZONE SOUTHWEST ETHIOPIA

THESIS SUBMITTED TO INSTITUTE OF HEALTH, FACULTY OF PUBLIC HEALTH, DEPARTMENT OF POPULATION AND FAMILY HEALTH, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE (MSc) IN HUMAN NUTRITION

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ABSTRACT

Background: Poor Infant and Young Child Feeding practices are a major cause of child malnutrition. More than one third of child mortality in developing countries could be prevented by appropriate complementary feeding practices. Transition period from exclusive breastfeeding to two years is critical for optimal growth and development. There is limited information on child feeding practices and their association with nutritional status.

Objectives: The main objective of the study is to assess feeding practices and its association with nutritional status of children.

Method: A community based cross sectional study was conducted in rural Kebeles of Nada District during March, 2017 among children aged between 6 and 23 months. Simple random sampling method was employed to enroll the eligible and data on socio-demographic and anthropometric measurements were collected using structured questionnaire. Data entry and analysis was done using Epi data version 3.1 and SPSS 20.0 statistical software, respectively. WHO anthro software was used to convert length and weight measurements into LAZ, WLZ and WAZ. Multivariable logistic regression with p value <0.05 identify independent predictors of each under nutrition

Results: The prevalence of wasting, stunting and underweight among infants and young children were 3.6 % (95 % CI: 2.4-4.8), 39.7 % (95 % CI: 22.9-39.9) and 16.4 % (95 % CI: 9.5-18.5) respectively. House hold food in security AOR=2.2 (1.033, 4.668), low socio-economic status AOR=2.5(1.284, 3.919), poor maternal schooling AOR=2.1(1.012, 3.297) were significantly associated with stunting. Similarly less minimum dietary diversity AOR=2.33 (1.302, 4.151), house hold food security, age of child AOR=2.109(2.440, 4.844) and time of complementary

initiation AOR=2.129(1.278, 2.861) were significantly associated with underweight and household food secured OR=0.204(0.57, 0.729) and diarrheal disease AOR=5.6(1.748, 19.668) were significant predictor of wasting.

Conclusion: Under nutrition is a public health problem among infants and young children in nada district. Low socio-economic status, poor maternal schooling were identified to be significant predictors of stunting and Low dietary diversity scores, inappropriate age of complementary feeding initiation were predictors of underweight. Diarrheal disease was found to be the most attributable factors of wasting in the district.

Recommendation: Intervention should focus on improving house hold food security, support income generation, nutrition education. Should put effort to increase female education in order to improve the appropriate feeding practices. Prevention and control of diarrheal diseases. Encouraging and strengthening appropriate complementary feeding with breast feeding child after six months of ages. Health workers/health extension workers should encourage mothers to introduce complementary foods when their children are 6 months old. Community management of malnutrition should be strengthened by the health sectors

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LIST OF ABREVATIONS AND ACRONYMS

DDS-Dietary Diversity Score

EDHS-Ethiopian Demographic Health Survey

IYCF-Infant Young Child Feeding

LAZ-Length for Age Z score

MDG-Millennium Development Goal

MMF-Minimum Meal Frequency

NCHS -National Center for Health Statistics

SAM-Severe Acute Mal Nutrition

SD-Standard Deviation

SES-Socio Economic Status

SUN- Scale up Nutrition

WAZ-Weight for Age Z score

WHO-World Health Organization

WLZ- Weight for Length Z score

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1. INTRODUCTION

1.1BACKGROUND

Globally, childhood under nutrition is one of the most important public health challenges. When considering all causes of under-5years of mortality worldwide, it is estimated that 35% of these deaths are attributable to malnutrition [1].

Poor Infant and Young Child Feeding practices are a major cause of child malnutrition. It is estimated that more than one third of child mortality in developing countries could be prevented by appropriate complementary feeding practices [2].Sub-Saharan Africa and South Asia are home to three fourths of the world's stunted children. Underweight prevalence is highest in South Asia, which has a rate of 33 per cent, followed by sub-Saharan Africa, at 21 percent. The highest wasting prevalence is in South Asia, where approximately one in six children (16%) is moderately or severely wasted. In sub-Saharan Africa, nearly 1 in 10 children under the age of 5 (9 per cent) were wasted in 2011[3]. Nationally, according to Mini EDHS 2016, the prevalence of stunting, wasting, under weight and in Ethiopia was 38 %, 10%, 24 % respectively.

Appropriate child feeding practices are defined within narrow age ranges and these key feeding practices, within a continuum of child feeding, are used as an indicator of nutritional care practices[4]. In 2011, UNICEF highlighted that breastfeeding is a preventive intervention and the most important element in reducing child mortality [5].In contrast, poor breastfeeding and complementary feeding, together with high rates of morbidity and mortality from infectious diseases, are the main reasons for undernourishment in the first two years of life . The main problems in developing countries including Ethiopia were related to age appropriate feeding practices among children. Appropriate and adequate feeding is a pre-requisite to good nutritional status in any given time of human life because consumption of nutritionally inadequate diet leads

to malnutrition [6]. Proper nutrition in the early years of life is usually determined by feeding practice, which includes the methods and frequency of feeding, degree of stimulation and interaction with parents[7].

Malnutrition remains one of the most common causes of morbidity and mortality among children throughout the world. It has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five. Over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life [8]

Underweight and stunting rates among young children are the highest in sub-Saharan Africa. About two in five children (38%) are underweight, 10.5% of the children are wasted (2.2% are severely wasted) and 46.5%of the children are stunted that half of them are severely stunted[9].

1.2 STATEMENT OF PROBLEM

Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Improving infant and young child feeding practices in children 0–23 months of age is therefore critical to improved nutrition, health and development of children [10]

Sub-optimal breastfeeding practices are estimated to be responsible for more than a million child deaths and 44 million disability-adjusted life years (DALYs), which account for 10 % of DALYs in children younger than 5 years [11].In children over 2 years of age, the effects of these long-term factors of stunting will not be reversible [12]. About one third of deaths in children under 5 years of age are due to underlying under nutrition, which includes stunting, severe wasting, deficiencies of vitamin A and zinc, and suboptimum breastfeeding . There are different predictors of child nutritional outcomes like economic and contextual factors. But infant nutritional status (stunting, wasting and underweight) can be associated with an immediate cause such as infant feeding practice [13]

An analysis of 19 Demographic and Health Surveys (DHS) indicated that prevalence of severe wasting was higher at younger ages and declined by 24 months while stunting prevalence peaks around 24 months and plateaus at a high level thereafter. Thus, it is necessary to examine the role of IYCF practices in relation to all three indicators. The pattern of association between the WHO IYCF indicators and child anthropometry varied widely across different country data set[13].

WHO recommends the introduction of complementary foods at six months of age, as breast milk alone is not enough to meet the nutritional requirements of 6-23 months of age children. After 6 months of age and with only optimum breastfeeding, children will become malnourished if they do not achieve appropriate dietary diversity and meal frequency [14]. Thus, the transition period

from exclusive breastfeeding to two years is critical for optimal growth and development of children who need appropriate, safe, adequate amounts of complementary food [15], whereas suboptimal infant feeding results in under nutrition. Out of the 10.9 million under-five year deaths that occur worldwide annually, malnutrition is, directly or indirectly, responsible for 60.0% of them. Over 3.4 million children less than five die each year due to inappropriate feeding practices[16].

In many developing countries, inadequate complementary feeding of 6-23 months old children is a major problem. Only 50% of children receive the minimum number of meals, less than one-third achieve minimum dietary diversity, and only 21% meet the criteria for the minimum acceptable diet [17]. In a study conducted in northern Ethiopia, only 10.8% of children achieved adequate dietary diversity and only 44.7% received the minimum meal frequency [18].

According to Alive and Thrive Ethiopia and the Ethiopian Demographic and Health Survey (EDHS) 2011, the extent of achievement of the minimum dietary diversity in the country was 4.8% and the proportion of children who received the minimum acceptable diet was 4.1% [19]. For understanding the importance of Infant and Young Child feeding on the nutritional status of children less than two years of age, WHO established and validated a set of core indicators [20]. A particular challenge related to age appropriate complementary feeding is ensuring acceptable diet quality through an appropriately diverse diet [21]. Thus, the aim of this study is to assess feeding practices and its association with nutritional status of children 6-23 months at nada rural kebeles

2. LITERATURE REVIEW

Under nutrition is one of the most serious but least addressed health problems in the world. The human and economic costs are enormous, falling hardest on the very poor and on women and children. Globally, it is estimated that, directly or indirectly, for at least 35% of deaths in children less than five years of age. Over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life[22].

In developing countries nearly one-third of children are underweight or stunted. Under nutrition interacts with repeated bouts of infectious disease, causing an estimated 3.5 million preventable maternal and child deaths annually and its economic costs in terms of lost national productivity and economic growth are huge [23].

Study done in Vietnam revealed that the prevalence of underweight, stunting and wasting in Nghean was found to be 31.8%, 44.3% and 11.9%, respectively (23). This Studyindicated that the highest risk of stunting was among children aged 12-23 months and children in the youngest age group, 6-11months had a significantly lower risk of being stunting than children in the older age groups [24]. Other study in Vietnam also shows that the risk of malnutrition increases with age and a higher prevalence of malnutrition were observed in boys than girls [25].

Study conducted in Bangladesh showed household size, number of children in the household and sources of drinking water, appeared to have no significant effect on nutritional status of the children but toilet facilities showed to have a net significant ($p<0.001$) effect after controlling for other socio-economic and family related factors [26].

In East Africa 48% of children under five are affected by stunting [27]. In Ethiopia It is estimated that malnutrition contributes to an estimated 270,000 deaths of under-five children

each year (36). Many nutritional studies have demonstrated that malnutrition in Ethiopia is serious and 38% of children were stunted, 10% wasted and 25% underweight with wide regional variations (14).The most frequently suggested causes of malnutrition are: poverty, low parental education, lack of sanitation, low food intake, diarrhea and other infections, poor feeding practices, family size, short birth intervals, maternal time availability, child rearing practices and seasonality. There are also economic, social, and cultural causes of malnutrition which underscore the close link between malnutrition [28]

Study done in Nairobi, designated that mothers' marital status are independently associated to child stunting [29]. Mothers that have almost primary level of education have 43% of their children stunted compared to 37% for mothers with at least secondary level of education [30].

Studies shows that the mothers educational level is associated with more efficient management of limited household resources, greater utilization of available health care services, better health promoting behaviors, lower fertility and more child centered caring practices, all of which are associated with better child health and nutrition[31].

The Ethiopian national baseline of survey 2010 also shows noticeable difference between urban children (25%) and rural children (41%) in stunting. Children in rural areas are one and a half times more likely to be stunted (46%) than those in urban areas (32%) [32].Female children are more likely to be stunted as compared to male but the association is significant only in case of moderate stunting .Male children were 1.5 times more likely to be stunted as female children and they were more likely to be either stunted and/or underweight than girls[7].

Children who were breastfed for less than six months were 1.6 times more likely to be stunted than those breastfed long. Apparently, an inverse association is observed between duration of

breastfeeding and long-term nutritional status, with longer (more than 6 months) of breastfeeding without starting complementary food associated with increased incidence of stunting [33].

The study on the association between dietary factors and stunting showed that deprivation of colostrum, duration of breastfeeding, prelacteal feeds, age of introduction of complementary feeding, frequency of feeding, mode of feeding and first food given at time of complementary feeding were significantly associated with stunting [32].

Study conduct in SNNPR, shows widely practiced breastfeeding, on-demand feeding, good frequency of breastfeeding, and both breasts feeding contributes towards child growth and healthy development. Exclusive breastfeeding is not yet widely practiced[34]. Age of the child at complementary foods were started had a highly significant negative association with long-term nutritional status. There was a significantly higher percentage of stunting observed among children who started complementary food after 12 months of age as compared to the other groups[35]

A study showed that stunting was higher among children who were bottle fed. The percentage of stunted children complemented with milk and mashed potato was 34.1% and 34.6%, respectively. A significantly higher proportion of children were fed less than 3 times a day [7]

The study conducted among 25 ethnic groups in central, eastern and southern parts of Ethiopia shows that faulty traditional beliefs on feeding such as, children couldn't digest meat, choke on thick porridges and food items that are white in color, clean vegetables, colostrum and fruits are prohibited to be consumed by pregnant/lactating women and children[35]

SIGNIFICANT OF STUDY

There was no study that documented the association between child feeding practices and its association with nutritional status. The significance of this study is to fill this gap information and give feedbacks to the community, kebele leaders, district Administrators and policy makers in order to take action towards the poor nutritional status of the children based on the results that obtained. This study will be also a base for other researchers for further study. It will form a basis for training mothers and caregivers on the importance of adhering to feeding recommendations. It will also be useful to the Ministry of Health and organizations concerned with infant and young child feeding in determining the type of interventions to design in order to improve child health.

CONCEPTUAL FRAME WORK

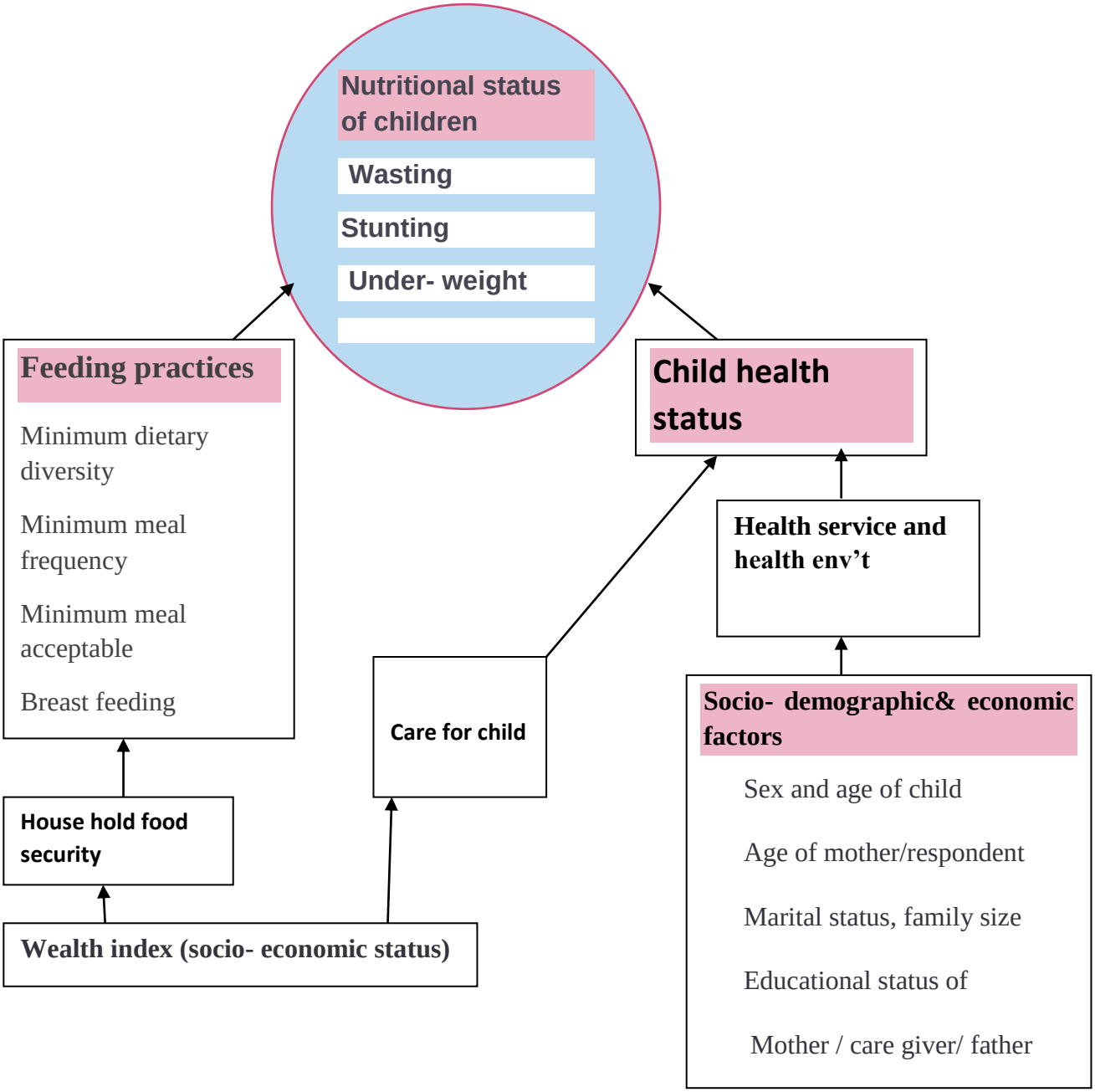


Fig 1.1 conceptual frame work of feeding practice and its association with nutritional status of children 6-23 months nada district Adapted and modified from Vida, (2008)

3. OBJECTIVES

3.1 GENERAL OBJECTIVES

- To assess feeding practices and its association with nutritional status of children 6-23 months in rural kebeles of Nada District.

3.2 SPECIFIC OBJECTIVES

- To assess nutritional status (stunting, wasting and underweight) of children 6-23 months in rural kebeles of Nada District, in 2017
- To identify the association between feeding practices and nutritional status of children after adjusting for co variates in Nada District, in 2017

4. METHODS AND MATERIALS

4.1 STUDY AREA AND PERIOD

The study was conducted in rural kebeles of Omo Nada District. Nada District is one of the woredas of Jimmazone. The 2007E.C national census reported total population for this woreda was 198,618 living in four urban and 23 rural kebeles. It is located in South west part of the country at a distance of 300Kilometer from Addis Ababa and 50 km from Jimma.It is bordered in the south by Omobeyam, west by Dedo, in the northwest by Kersa, in the north by TiroAfeta, in the northeast by Sokoru. Nada is the administrative center of the woreda; other towns in Omo Nada include Asendabo.The altitude of this woreda ranges from 1000 to 3340 meters above sea level. A survey of the land in this woreda showed that 56.8% is arable or cultivable (36.3% was under annual crops), 25.2% pasture, 6.3% forest, and the remaining 11.7% is considered swampy, degraded or otherwise unusable. Teff and wheat are important crops. Themajority (95.44%) of the inhabitants was Muslim, while 2.93% of the population Orthodox and 1.49% were Protestant. The study was conducted in rural kebeles the District from March to April, 2017.

4.2 STUDY DESIGN

A community based cross-sectional study design was employed.

4.3 SOURCE POPULATION

The source population was all households having children aged 6-23 months in the rural kebeles of Nada District during the study period.

4.4 STUDY POPULATION

All sampled households who have children 6-23 months in rural Kebeles Nada District during the study period

4, 5 INCLUSION CRITERIA

Mothers/guardian who have children age 6-23 month who lived in the kebeles at least for 6 months.

4.6 EXCLUSION CRITERIA

Mothers/care givers with children 6-23 months who were sick or terminally ill, refused.

4.6 SAMPLE SIZE DETERMINATION

The sample size was calculated based on a single population proportion formula. The prevalence of underweight, stunting and wasting were 26.9%, 40% and 11.6%, respectively, among children 0-23 month[36]. Ninty five percent confidence level, 5%margin of error and 1.5% design effect were considered. A 5 % non-response rate was added to get the final sample size. The largest sample size was taken from the three indicators of under nutrition. The final sample size was calculated based on the prevalence of stunting.

With a 95%confidence levelz $(1- \alpha/2) = 1.96$

p= estimated prevalence

d= accepted/standard error or precision= 0.05

Nr=Non-response yielding the required

n = z2 p (1-p)/d2)

Where Z = level of confidence (1.96)2

nf = final sample size

Calculation of sample size for wasting n1= (1.96)2 * 0.116 (1-0.116) / (0.05)2=158

Calculation of sample size for underweight n2= (1.96)2 * 0.27 (1-0.27) / (0.05)2=302

Calculation of sample size for stunting n3 = (1.96)2 * 0.4 (1-0.4) / (0.05)2=369

The largest (n3) sample size was taken for final sample size Calculation (stunting)

Since study population Less than 10000 correction formula was used

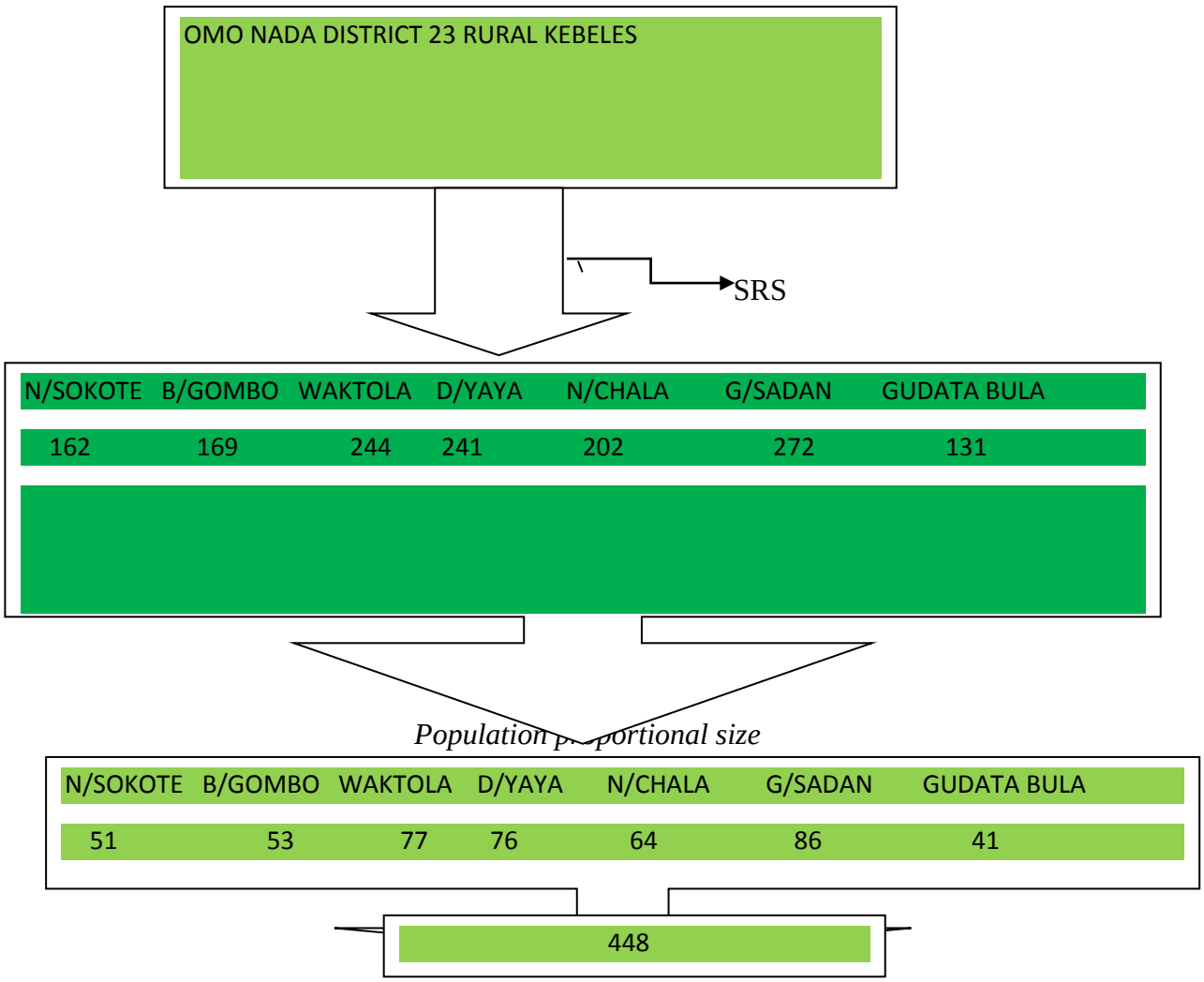
nc = n/1+(n/N)=369/1+(369/1421)=369/1.3=284

1.5% design effect and 5% non-response rate was added

nf = 284*1.5(Def) + (426 * 5%(Nr) = 448

4.7 SAMPLING PROCEDURE

There are seven kebeles in the study area. All households with infants and young children aged between 6–23 months are obtained from registered health extension workers or family folder and included in the study. The sample size was allocated to the selected kebeles proportional to the number of children 6-23 months at kebeles. Kebeles were randomly selected from rural kebeles of Nada District. Simple random sampling was employed to select households within each kebele.



1.2 Schematic Presentation of Sampling Procedure

4.9 DATA COLLECTION PROCEDURES

A structured questionnaire adapted from the Ethiopian Demographic and Health Survey (EDHS) was used to collect socio-demographic and other relevant child and mother related information. Besides to the EDHS questionnaire, other additional questions on the questionnaire for this study based on the study objective. Feeding practices was assessed using 24-hours dietary recall method. Ten data collectors and two supervisors were trained on data collection techniques for two days including practical work. Data collectors interviewed each mother individually using the local language version of the questionnaire.

4.8 MEASUREMENTS

Anthropometric measurements (weight and length) were taken for all children. Standard anthropometric measurement procedures were used as outlined in the measurement guide prepared by the Food and Nutrition Technical Assistance (FANTA) project (15). Meal frequency and dietary diversity was assessed by 24 hours recall. Minimum meal frequency was considered to be is fulfilled if food is received 2 to 3 times per day at 6 to 8 months of age, 3–4 times per day at age 9–11 months and 3–4 times at age 12 to 24 months, with additional nutritious snacks offered 1–2 times per day between meals in the last 24 hours. Minimum dietary diversity was considered to be fulfilled if a child had received foods from 4 or more food groups from the seven WHO food groups in the last 24 hours Bottle feeding practices were measured using a 24-hour recall as recommended by WHO(6).

4.8.1 HOUSEHOLD FOOD SECURITY MEASUREMENT

Household food insecurity was measured using the Household Food Insecurity Access Scale (HFIAS) that was developed by the Food and Nutrition Technical Assistance (FANTA) project (2007) .For Household Food Insecurity Access Scale (HFIAS) measurement, each of the questions was asked with a recall period of four weeks (30 days). The respondent was first asked

an occurrence question-that is, whether the condition in the question happened at all in the past four weeks (yes or no). If the respondent answers “yes” to an occurrence question, a frequency-of-occurrence question was asked to determine whether the condition happened rarely (once or twice), sometimes (three to ten times) or often (more than ten times) in the past four weeks

4.8.2 RECUMBENT LENGTH

Length board was used for measuring children who were less than 24months of age. Before taking the length, the board was positioned on a hard flat surface. With the the help of the mother, the child was gently laid on the board with the crown of the head against the fixed head board facing directly up so that the child’s line of sight was perpendicular to the measuring board. The research assistant held the child to ensure that child was placed with crown touching the headboard, the child’s shoulders and hips at the right angles to the long axis of the body. The measurement was read and recorded to the nearest 0.1 centimeter.

4.8.4 WEIGHT

Weight of a child was measured and recorded to the nearest 0.1kg using a Salter scale (Model 235 6S –England) with a capacity of measuring up to 25kg. The scale was adjusted to read zero before starting the measurements. The child was slipped into a weighing sling and hung on the scale. The weight was recorded as soon as the pointer on the scale is stabilized

4.10 STUDY VARIABLES

4.10.1 DEPENDENT VARIABLE

Nutritional status (Stunting, wasting and underweight)

4.10.2 INDEPENDENT VARIABLES

The independent variable included socio-demographic and socio-economic: sex and age of child, age of mother/respondent, marital status, family size, source of income, educational status of mother/care giver ,educational status of father, occupation of mother ,household food in security, head of house hold,immunization,socio economic status (wealth index), feeding practices (complementary feeding and breast feeding) minimum dietary diversity, minimum meal frequency, minimum meal acceptable& health status of child: diarrhea, pneumonia and fever

4.11 OPERATIONAL DEFINITION AND STANDARD DEFINITION TERMS

Nutritional status:- For this study it will include under nutrition; **underweight** (weight-for-age below-2 Standard deviation (SD) of the WHO Child Growth Standards), **stunting** (length-for-age below -2 SD of the WHO Child Growth Standards), **wasting** (weight-for-length below -2SD of the WHO Child Growth Standards) among children 6-23 months of age.

Complementary feeding:-period during which other solid of semi solid are provided along with breast **milk (5).Minimum dietary diversity**: Proportion of children 6–23 months of age who receive foods fromfour or more food groups during the previous day. The seven food groups ‘use for this indicator are: grains, roots and tubers; legumes and nuts; dairy products (milk, yoghurt and cheese); flesh meats (meat, fish, poultry and liver/organ meats); eggs; vitamin A-rich fruits and vegetables;

Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid or soft foods the minimum number of times or more (two times for breastfed infants 6–8 months; three times for breastfed children 9–23 months; and four times for non-breastfed children 6–23 months) in the previous day including a snack (5).

Minimum acceptable diet: The proportion of children 6–23 months of age, who received Minimum dietary diversity and attained the minimum meal frequency during the previous day.

Wealth index: it was developed based on the ownership of fixed assets including farm land, domestic animals radio/tape, television, table/chair, refrigerator, sofa, watch, motorcycle, mobile/telephone and others using factors analyses. The wealth index was then rank divided into tertiles

Food insecurity: is a state or a condition in which people experienced limited or uncertain physical and economic access to safe, sufficient, and nutritious food to meet their dietary needs or food preferences for a productive, healthy and active life.

food security, on the other hand, is achieved when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (26)

4.13 DATA QUALITY MANAGEMENT

Questionnaire was prepared in English and translated to Afan Oromo language for field work purpose and back to English for checking language consistency. A pre-test survey was conducted on 5% of the total sample size in other rural areas which have similar characteristics. Before the actual survey, solutions to the errors and problems identified during the pre-test survey were integrated into the final version of questionnaire. Weighing scales was calibrated with known weight object regularly. The scales an indicator was checked against zero reading after weighing every child. On daily basis collected information were reviewed and possible errors returned to data collectors for correction

4.12 DATA PROCESSING AND ANALYSIS

Data were checked for completeness and consistency. Anthropometric data were standardized using WHO Anthro. The data analysis was performed using SPSS version 20. Descriptive statistics (frequency and cross tab) were calculated for variables. The nutritional status, indices weight-for-length (WLZ), length-for-age (LAZ) and weight-for-age (WAZ) were compared with reference data from World Health Organization standards Children below-2 standard deviations (−2SD) of the WHO median for WLZ, LAZ, and WAZ were considered wasted, stunted or underweight respectively. Using significant variables at p value 0.05 from the bivariate logistic regression models, a multivariable logistic regression models fitted to identify the independent predictors of nutritional status (measured as wasting, underweight and stunting).The strength of association was measured by odds ratios with 95 % confidence intervals. Variables with $p < 0.05$ in the multivariable logistic regression model were considered as associated factors. Model fitness was checked using Hosmer lemeshow. Multicollinearity was checked using Pseudo regression

ETHICAL CONSIDERATION

Ethical clearance was obtained from JimmaUniversity,Omo Nada Woreda health office, kebele leader and then verbal consent was obtained from the mothers (caregivers) of the child under study and confidentiality of the information given by the respondent was maintained. Participants were asked to participate voluntarily and were also free to withdraw from the study at any time. Participants were assured of anonymity and confidentiality throughout the study. The informed consent was sought from study participants prior to their participation in the study and the aim of the study was well explained to them. In order to ensure confidentiality and anonymity, no participant name was recorded; instead each participant was identified by code number during the interview.

DISSEMINATION PLAN

The final report of this study will be submitted to Jimma University Institute of Health, Faculty of Public Health, Department of Population and Family Health, Jimma Zonal Health Department, OmoNada Woreda Health Office. Effort will be made to disseminate through publication and presentation in scientific conferences.

5. RESULTS

From the total sample size (444) allocated proportionally to each selected village Bisogombo=53, Gorosadan= 85, Gudatabula= 40, Nada chala= 63, Nada sokote=51 and Waktola=77, Doyoyaya=75 with their mother's or caretakers were participated in this study with a response rate of 99.1 %.

5.1 Socio- demographic and Socio-economic Characteristics of mother/care giver and child

Majority of the respondents were Oromo by ethnicity (82.5%) &89% were Muslim by religion. The majority of mothers were married (94.4%). Regarding the Educational level of mother's/ care givers were 45.3% (201)were unable to read and write, 36.3%(161) read and write, 11.3% (50) elementary school completed and 5.6% (25) secondary School completed and 1.6% (7) college and above. Sex of the participant child was 53.4% (237) female and 46.6% (207) male. Age of child was 33.6% (149) in the age group of 6 to 8 months, 20.9 % (93) in the age group of 9 to 11 months and 45.5 % (202) in the age group of 12 to 24 months. Half of mother 224 (50.5%) were used cup to fed her child and 114(25.7%) were used bottle feeding

Over half mother's/respondents were 56.3% (250) house wife, 12.5% (56) were daily laborer and 27.5% (122) own farm. On the economic status of study participant 107 (24.1%) were poor(low) ,188 (42.3%)medium and 149(33.6%) were rich. Occupations of the heads of the households were farming122 (27.5%), government employee 6 (1.4%) and merchants 56(12.6%). From the total household participated in the study 324 (73%) were reported owning land used for agriculture, 12 (27%) did not. About 122 (27.5%) of the households used piped water as source of drinking water, 62 (14%) were using river as source of drinking water. Main staple food in house hold were maize288 (64.9%) and teff 80 (18%) (Table 5.1)

Socio demographic and socio economic characteristics of mother/care giver Nada district Oromia Region, from March to April, 2017

Variables		Frequency	Percent (%)
Educational level of mother	can't read and write	201	45.3
	read and write	161	36.3
	elementary school	50	11.3
	secondary school	25	5.6
	college/university	7	1.6
Marital status	Married	420	94.4
	Divorced	6	1.4
	Widow	8	1.8
	separated	10	2.3
Ethnic group	Oromo	363	82.5
	Dawuro	31	6.2
	Amara	27	6.1
	Hadiya	18	4.1
	Other(yem)	5	1.1
Religion group	Muslim	348	89
	Orthodox	66	6.5
	protestant	4	3.1
	Other(catholic)	2	0.5

Table 5.1Socio demographic characteristics and Child feeding practice of child at Nada District Oromia Region, From March to April, 2017

Food in security	yes	393	88.5
	no	51	11.5
Wealth	Poor	107	24.1
	Medium	188	42.3
	Rich	149	33.6
sex of child	M	205	46.6
	F	235	53.4
age of child in month	6-8	149	33.6
	9-11	93	20.9
	12-24	202	45.5
What do you use to feed child	bottle	114	25.7
	Cup	224	50.5
	spoon	104	23.4
	Other	2	.5
Does child ever immunized	YES	345	77.7
	NO	99	22.3
Primary feeder of child when mother and guardian not present	mother	115	25.9
	Sister	281	63.3
	grand mother	34	7.7
Complementary starting time	At 6 month	198	44.6
	Before 6 month	246	55.4

According to the result of the study among the age group of 6-23 months16.4%, 39.7% & 3.6% of children underweight, stunted and wasted. With the mean WAZ, LAZ and WLZ score-0.78,-1.38&-0.12 respectively. It was observed that 0.2 % was severely wasted (< -3 SD), 3.4 % moderately wasted (-3 to -2 SD) 93.3 % normal (-1 to +1 SD) and 1.4 % overweight. 9 % severely stunted (< -3 SD), 30.7 moderately stunted (-3 to -2 SD), 60.3% normal (-1 to +1 SD). 2.9 % severely underweight (<-3 SD), 13.5 % moderately underweight (-3to -2 SD) and 83.6 % normal (-1 to +1 SD (table 5.2)

Table 5. 2: Prevalence of under nutrition of children 6 to 24 months

Indices of Nutritional status (n=444)		frequency	Percent
Wasting	Severely wasted (<-3 SD)	1	0.2
	Wasting(<-2SD)	15	3.4
	Normal(-1SD to 1 SD)	268	93.3
Stunting	Severely stunted (<-3 SD)	40	9
	Stunting(% < -2SD)	136	30.7
	Normal(-1SD± 1 SD)	268	60.3
Underweight	Severely underweight (<-3 SD	13	2.9
	Under weight(% < -2SD)	60	13.5
	Normal (-1SDto 1 SD)	371	83.6

Associated Factors of under nutrition

Factors associated with wasting

The associated factors of wasting in the bivariate analysis were identified by using Pearson's Chi-square with P-value < 0.25 in order to include important variables in the multivariate analysis. Dietary diversity, minimum meal frequency, family size, diarrhea, age of child, food in security, mother's educational status, mother's occupation, child vaccination status& sex of participant child. All these variables were analyzed in the multivariate logistic regression analysis and from eight independent variables; two variables were significant with p-value < 0.05. Therefore, the final predictors of child wasting in this study, food in security, diarrhea. (table5.3)

Children whose households were food secured were 80% times less likely to be wasting than children whose house hold food in secured. (AOR=0.204 ;(0.57, 0.729).Children whose had diarrhea were nearly 6 times more likely to be wasted than children whose did not have diarrhea (AOR=5.863 ;(1.748, 19.668). Unlike stunting, younger children were more likely to be wasted than older children. This might be due to the increased susceptibility of younger children to illness/infection such as diarrheal disease

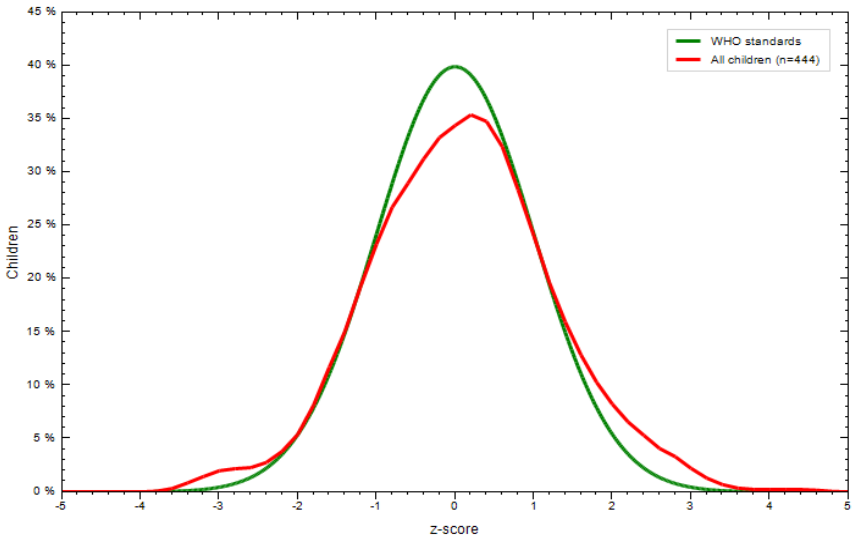


Fig.5.2 WLZ scores compared to WHO growth standards in Nada district, Oromia region, 2017

Table 5.3: Multi variable logistic regression model predicting the likely hood of child wasting

Model/Variables		Frequency	Percent %	AOR	95% C.I.for AOR	P
Food secured	Yes	5	9.8	0.204	(0.57,0.729)	0.014**
	No	9	6	1		
Child had diarrhea	yes	6	9	5.86	(1.748,19.668)	0.004**
	No	8	1.8	1		

** P-value < 0.05 in the multivariate analysis

Factors associated with stunting

On multivariable logistic regression model, variables were; mother's educational level, mother's occupation, father's educational level, mother's age, commonly consumed cereal products in the study area, wealth index, complementary food starting time, child age and family size. All these variables were analyzed in the multivariate logistic regression analysis and from the nine independent variables 5 variables were statistically significant with p-value <0.05. Therefore, the final predictors of child stunting in this study were: wealth index, food in security, mother's/care giver's educational level, complementary starting time. Children age 6-23 months whose families were in low Socioeconomic status were 2.5 times more likely to be stunted than children whose families had high socioeconomic status (AOR=2.511;CI;(1.284,3.919).Children whose mothers were uneducated were 2 times more likely to be stunting than children whose mothers were educated. (AOR=2.061; CI;(1.012, 3.297).Children whose households were food in secured were 2.2 times more likely to be stunted than children whose house hold food secured(AOR=2.2;CI;(1.033,4.668) (Table 5.4).

Table 5.4: Multi variable logistic regression model predicting the likely hood of child stunting

Variable /model	Frequency	Percent %	AOR	95%CI for AOR	P
Educational status of mother					
Secondary and above	10	66.7	1		<0.0001
Illiterate	34	2.1	2.061	(1.012,3.297)	0.001**
Elementary	98	3.6	2.138	(1.029,2.656)	0.013**
House hold wealth index					
High	56	37.6	1		0.075
Low	23	21.5	2.511	(1.284,3.919)	0.025**
Middle	63	33.5	0.858	(0.535,1.377)	0.526
Occupational status of mother					
House wife	22	15.5	1		0.208
Gov't employee	1	16.7	0.060	(0.004,1.910)	0.053
Marchant	5	3.5	2.788	0.0001	0.999
Daily laborer	114	80.3	0.734	(0.399,1.350)	0.319
Food security status					
In secure	10	2.3	2.196	(1.033, 4.668)	0.041**
Secure	132	29.7	1		
Time of Complementary initiation					
At 6 month	53	11.9	1		
Before 6 month	89	20	2.629	(1.096, 4.941)	0.023**

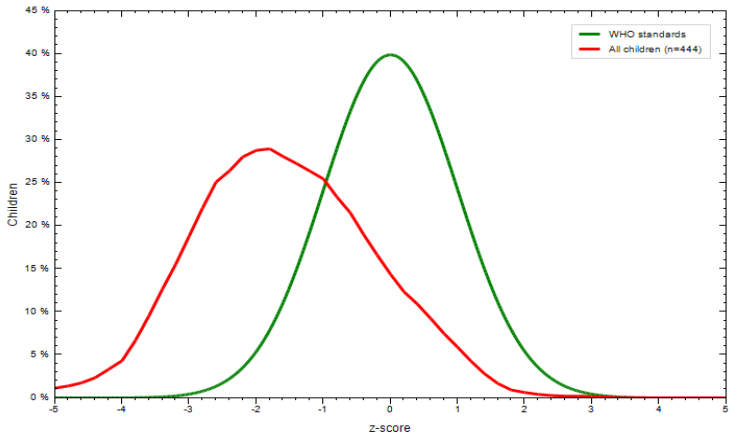


Fig.5.3 LAZ scores compared to WHO growth standards in Nada district, Oromia region, 2017

Factors associated with underweight

On multivariable regression model, all variables including: mother's educational level, sex of child, age of child and mother, commonly consumed cereal, dietary diversity, food security, time of initiation of complementary feeding and mother's occupation, were entered into the model. Only age of child, mother's educational level, dietary diversity, food insecurity were independent predictors of underweight (Table 5.5).Children aged 11-24 months were 2 times more likely to be underweight compared to children age 6-11 months (AOR=2.109; (2.440, 4.844) Children whose households were food secured were 63% times less likely to be under weight than children whose house hold food in secured. (AOR=; 0.366 ;(0.177, 0.758)) (Table 5.5). Timely imitation of complementary feeding (AOR=2.129; 1.278, 2.861) and minimum dietary diversity (AOR=2.417 ;(1.338, 4.367), were significantly predictor of underweight (Table 5.5)

5.5 Associated factors of child underweight on the multivariable logistic regression analysis

Model /variables	Frequency	Percent%	AOR	95% C.I.f AOR	P
Dietary diversity score					
Minimum dietary diversity score	24	5.4		1	
Not Minimum dietary diversity score	45	10.1	2.325	(1.302,4.151)	0.004**
Child age					
6-11 months	16	3.6	2.109	(2.440,4.844)	0.003**
12-24 months	53	11.9		1	
Food security status					
Food secured	14	3.2	0.412	(0.204,0.832)	0.013**
Food in secured	55	12.4		1	
Complementary starting time					
Started before 6 moths	47	10.6	2.129	(1.278,2.861)	0.013**
At 6 times	22	5		1	

** P-value < 0.05 in the multivariate analysis

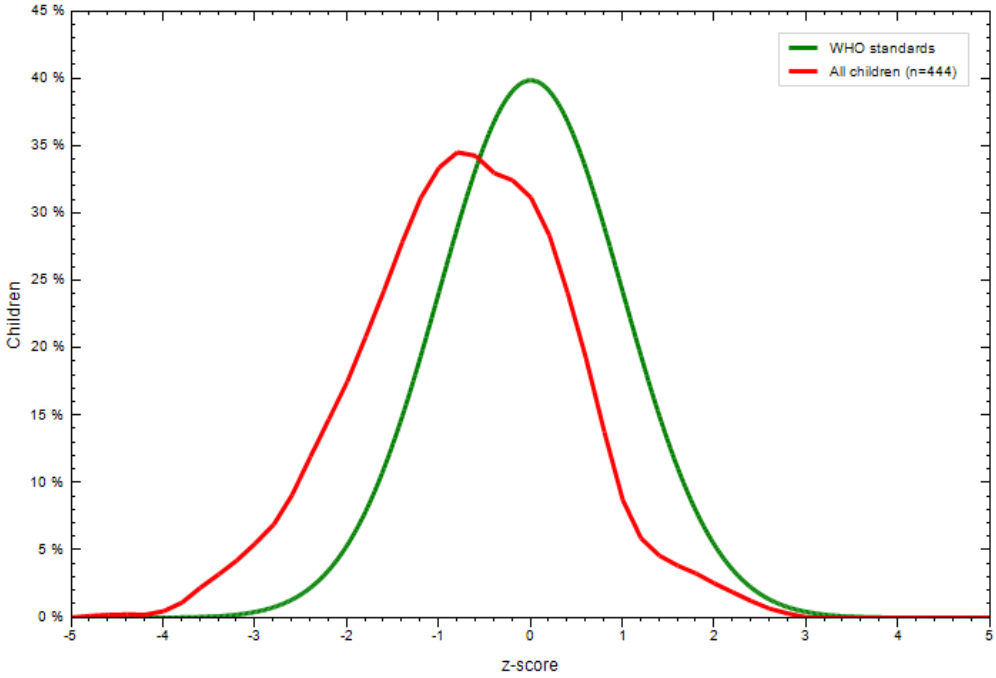


Fig.5.4 WAZ scores compared to WHO growth standards in Nada district, Oromia region, 2017

6. DISCUSSION

In Ethiopia as well as to the study area and other developing countries, malnutrition among children is a major health problem . The findings of this study showed that the prevalence of stunting, underweight and wasting among children age 6 to 23 months were 39.7%, 16.4% and 3.6%, respectively. The prevalence of stunted children were high in this study as compared to the findings from EDHS 2016.This could be explained by the differences in study setting as the EDHS findings included urban population while this study was based on rural population alone.

In general, the prevalence of stunting increases as the age of a child increases, with the highest prevalence of malnutrition found in children age 16-23 months (49%) and lowest in children under age six months (9.4%). (14). This Study indicated that the highest risk of underweight was among children aged 12-23 months and children in the youngest age group, 6-11months had a significantly lower risk of being stunting than children in the older age groups.

In this study children from households' low level of socio-economic status had increased odds of being stunted compared to those found in high socioeconomic status households. The finding from this study is similar to the finding reported by other studies. A study done to southern region of Ethiopia also identified low socioeconomic status of household as risk factors for Child under nutrition (23)other study done in Ethiopia, EDHS 2016 showed higher proportion of children in the lowest household wealth quintile were stunted (38%) than children in the highest wealth quintile (30%).

The present finding shows 16.4% of children age 6-23 months were affected by underweight. This finding was lower than the regional (22.6%) and national figure (34.5%) of EDHS 2016. This might be due to difference in sample size and wide area coverage& age categories.

The study showed that children from 12-23 months were less likely to be affected by underweight than children age 6-11 months. Similarly children aged 12 to 35 months of age showed the highest percentage of underweight with levels between 6.5% and 8.2% [4]. This might be explained by the fact that food for weaning are typically introduced to children in the older age group, thus increasing their exposure to infections and susceptibility to illness. This tendency, coupled with inappropriate or inadequate feeding practices, may contribute to faltering nutritional status among children in these age groups.

The present finding shows that 3.6% of children age 6-23 months was affected by wasting. This finding was lower than the regional (9.9%) and national figure (10%). This might be due to the increased susceptibility of younger children to illness/infection such as diarrheal disease. In this study child from mothers/caregivers who had low education level had significantly higher odds to be stunted compared to their counterparts. This finding consistent with findings from other studies conducted by Christiansen and Alderman which showed the effect of maternal education, is more important than paternal education

In this study children with households' food insecurity were significantly associated with stunting and underweight. Children from food insecure household had higher odds of being stunted. Based on these findings, it can be inferred that children's nutritional status in Nada rural kebeles is significantly associated with both household socioeconomic status and food security. The result of the present study is similar with that of study carried out in Tigray region of Ethiopia that shows there was statistically significant difference in stunting between food secure and food insecure households in which children from food insecure households had about 48% at higher odds to be stunted when compared to the children of food secure households(39)Moreover, similar findings were reported from a cross-sectional study conducted

on less than 5 years children from Bangladesh and Vietnam where the odds of being stunted were significantly higher for children food-insecure households in Bangladesh and Vietnam(33)

STRENGTH AND LIMITATIONS

Strength: The sampling procedure and community based study can be considered as strength for my study.

Limitations: Cross sectional nature of study which may not be strong enough to identify relationship between the risks of outcome. It was difficult to entertain the seasonal variations. There might be potential recall bias among respondents answering questions relating to events happening in the past. Maternal nutritional status is not addressed in this study

7. CONCLUSION AND RECOMMENDATION

7.1 CONCLUSIONS

The findings of this study showed that the prevalence of stunting, underweight and wasting among children age 6 to 23 months were 39.7%, 16.4% and 3.6%,respectively. The study finding showed that maternal educational status, house hold food in security and complementary feeding practices were significant predictor of stunting and underweight; house food in security and diarrheal disease were significant predictor of wasting.

7.2 RECOMMENDATIONS

Improve multi-sectorial interventions to address multifaceted causes of malnutrition. Intervention should focus on improving house hold food security, support income generation, nutrition education. Should put effort to increase female education in order to improve the appropriate feeding practices. Prevention and control of diarrheal diseases. Encouraging and strengthening appropriate complementary feeding with breast feeding child after six months of ages. Health workers/health extension workers should encourage mothers to introduce complementary foods when their children are 6 months old. Community management of malnutrition should be strengthened by the health sectors

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ANNEXES

QUESTIONNAIRES

Jimma University Institute of Health, Faculty of Public Health, Department of Human Nutrition. Questionnaire on Feeding Practices and Its Association with Nutritional Status of Children 6-24 Months in Rural Kebeles of Nada District, Jimma Zone Southwest Ethiopia

Good morning, good afternoon. My name is _____. I am working as data collector in study conducted by the collaboration of Jimma University Institute of Health, Faculty of Public Health, Department of Human Nutrition and by TolesaGobu (Master of Human nutrition in Jimma University) to assess on Feeding Practices and Its Association with Nutritional Status of Children 6-24 Months in selected rural Kebeles of Nada District.

Your name will not be written on this form and you do not have to answer any questions that you do not want to answer and you may end this interview at any time you want. However, your honest answer to this question is very important for the purpose of the study. You would very much appreciate your participation in this study by genuinely responding to the interviews.

Would you willing to participate? 1. Yes 2. No

001. Questionnaire identification number _____

002. Region Oromia

003. Woredaomo nada

004. Kebele _____

005. House hold number/code _____

006. Date of data collection: - _____/_____/_____

SECTION: **I** SOCIO-DEMOGRAPHIC AND ECONOMIC INFORMATION OF PARENTS

Number	Questions	Response
101	Age of mother	_____years
102	What is your marital status?	1. Single 2 .Married 3.Divorced 4.Widow 5.Separated
103	What is your religion?	1.Muslim 2.Orthodox 3.protestant 4.others (specify)___
104	Educational status of the mother	1.Can't read and write(no formal education) 2. Read and write 3. Elementary school 4. Secondary school 5. College/University
105	Educational status of the father	1.Can't read and write(no formal education) 2. Read and write 3. Elementary school 4. Secondary school 5. College/University
106	What is your ethnicity?	1.Oromo 2.Dawuro 3.Amara 4.Hadiya

		5.Other(specify)
107	Head of the house hold	1.Father 2.Mother 3.Relative 4. other(specify)
108	What is Occupation of mother (more than one answer is possible)	1.Governmental employee 2.Non-governmental employee 3.merchant 4.student 5.farmer 6.daily laborer 7.house wife 8.Other specify
109	What is your main source of income?	1.Salaried job 2.Own business 3.farmer 4.any other (specify)_____
110	Do you have livestock, herd or farm animal?	1. Yes 2. No If No skip to Q.112
111	If yes, how many? - Milk cow? -Oxen and bulls? - Goat? - Sheep? - Chicken? - Horse, donkey mule?	_____ number _____ " _____ " _____ " _____ " _____ " _____ total

112	Do you have access to farmland	1. Yes 2. No
113	How many agricultural lands do you have?	1. Do not have 2. _____(local unit) (facasa or Hectors) 3.Do not know/not sure
114	Do you have access to a home gardening	1. yes 2. No
115	What do you think your family income & resources for serving family members?	1.not adequate 2.adequate to some extent 3.highly adequate 4.I don't know 5.no response 6.Others specify(_____)
116	How many family members in the house hold?	_____

SECTION: **II** SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE CHILD AND ENVIRONMENTALCONDITIONS

Number	Questions	Response
200.	Sex of child	1.male 2.female
201.	Age of child	_____months

202.	Number of children less than 2 years in the family	_____
203.	Has the child had diarrhea in the last two weeks?	1.Yes 2.No 3.Do not know
204.	What is your main source of drinking water?	1. River 2. Un protected spring. 3. Protected spring. 4. Private well 5. Public tap 96. Other (specify)
205.	Do you treat water in any way to make it safer?	1. Yes 2. No
206.	Do you have use latrine?	1. Yes 2. No
207.	How do you dispose garbage (waste products)?	1. Open field disposal. 2. In a pit 3. Common pit 4. Composting 5. Burning 96. Other (specify)
208.	Has the child been ill with fever at any time in the last two weeks?	1.Yes 2.No 3.Don't know
209.	What do you use to feed child?	1.Bottle 2.Cup 3.Spoon 4.Other (specify
210.	Does the child ever been immunized?	1.Yes

		2.No
211.	What Vaccines received (see card, if no card available ask them to recall) (more than one answer is possible)	1.BCG only (see Scar) 2.DPT (No of dose____) 3.Measles 4.Completed 5.No card found 6.up to date

SECTION: **III** SOURCE OF INFORMATION ON FEEDING PRACTICE OF THE CHILD

Number	Questions	Response
301	Did you receive any information about /complementary feeding?	1.yes 2.No
302	If yes, where was the source of the information/counseling	1.Health facility 2.TBA 3.Family 4.Friend 5.Relatives 6.Media 7.Others (specify)_____
303	Who is the primary feeder of when you mother/guardian are not present?	1.father 2.Older children 3.other relatives 4.others (specify)
304	Who is usually taking care of the baby feeding?	1. Mother 2. Sister

		3. Grand mother 4. House maid 96. Other (specify)
305	During the illness, has the child feeding Practice changed?	1.Yes 2.No
306	How could the practice changed?	1. preventing from breast 2. preventing from giving food 3. Providing additional food 4. Other (specify)
307	Does the child still breast feed?	1. Yes 2. No
308	When did you start Complementary feeding to the child?	_____months
309	What are the reasons for starting complementary feeding before 6 months?	1.Un satisfactory growth 2.Breast milk is insufficient 3.Poor quality breast milk 4.Common usage 5.Others (specify)_____
310	Does the child consumed any food from this food group the last 24 house hold?	1.grains, 2. roots and tubers legumes and nuts 3.dairy products (milk, yogurt, cheese) 4.flesh foods (meat, fish, poultry and liver/organ meats 5.Eggs

		6.vitamin-A rich fruits and vegetables 7.other fruits and vegetables
311	How many times did you feed the child for the last 24 hours?	1.one times 2.two times 3.three times 4.four times 5.more than four times
312	What is the main source of food in Your family?	1.purchased 2.Own production 3.Food aid/donation 4.Shared production 5.Animal source 6.Others specify_____
313	What is the main staple food in your house hold?	1.Maize 2.Wheat 3.Rice 4.Teff 5.Sorghum 6.Honey 7.Animal product 8.Others specify_____

IV.HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS) MEASUREMENT TOOL

401	Over the past four weeks did you worry that your House hold would not have enough food?	1. Yes 0. No(skip to Q.402) 8. Don't know
401a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times (sometimes) 3. More than ten times (often) 9. Refuse to respond
402	Over 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?	1. Yes 0. No(skip to Q.403) 8. Don't know
402a	How often did this occur?	1. Once or twice (rarely) 2. Three to10times (sometimes) 3. More than ten times (often) 9. Refuse to respond
403	Over the past four weeks did you or any household Members have to eat a limited variety of foods due to a lack of resources?	1. Yes 0. No(skip to Q.404) 8. Don't know
403a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times (sometimes) 3. More than ten times (often) 9. Refuse to respond
404	Over the past four weeks did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to	1. Yes 0. No(skip to Q.405) 8. Don't know

	Obtain other types of food?	
404a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times (sometimes) 3. More than ten times (often) 9. Refuse to respond
405	Over the past four weeks did you or any house hold member have to eat a smaller meal than you felt you needed because there was not enough food?	1. Yes 0. No(skip to Q.406) 8. Don't know
405a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times(sometimes) 3. More than ten times (often) 9. Refuse to respond
406	Over the past four weeks did you or any house hold member have to eat fewer meals in a day because there was not enough food?	1. Yes 0. No(skip to Q.407) 8. Don't know
406a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times(sometimes) 3. More than ten times (often) 9. Refuse to respond
407	Over 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?	1. Yes 0. No(skip to Q.408) 8. Don't know
407a	How often did this occur?	1. Once or twice (rarely)

		2. Three to 10 times(sometimes) 3. More than ten times (often) 9. Refuse to respond
408	Over the past four weeks did you or any house hold member go to sleep at night hungry because there was not enough food?	1. Yes 0. No(skip to Q.409) 8. Don't know
408a	How often did this occur?	1. Once or twice (rarely) 2. Three to 10 times(sometimes) 3. More than ten times (often) 9. Refuse to respond
409	Over the past four weeks did you or any household member go a whole day and night without eating anything because there was not enough food?	1. Yes 0. No(questionnaire is finished) 8. Don't know

V. QUESTION ON HOUSE HOLD SOCIO ECONOMIC INDICTORS

S no	Questions	Response
501	Do you have a home/house?	0.No 1.Yes
502	Do you have a bank account?	0.No 1.Yes
503	Do you have a Chair, table?	0.No 1.Yes
504	Do you have a refrigerator?	0.No 1.Yes
505	Do you have a mobile?	0.No 1.Yes
506	Do you have a TV?	0.No 1.Yes
507	Do you have a radio?	0.No 1.Yes
508	Do you have a Sofa?	0.No 1.Yes

509	Do you have a Car?	0.No 1.Yes
510	Do you have a Motorcycle?	0.No 1.Yes
511	Do you have a Cycle?	0.No 1.Yes
512	Do you have a Cart?	0.No 1.Yes
513	Do you have a livestock/house hold animals?	0.No 1.Yes
514	Do you have a farmland?	0.No 1.Yes
515	Do you have Availability of electric?	0.No 1.Yes
516	Do you have Energy for cooking?	0.No 1.Yes
517	Do you have Iron corrugated roof?	0.No 1.Yes
518	Do you have a Cement type of floor?	0.No 1.Yes
519	Do you have a number of room?	0.No 1.Yes

SECTION VI ANTHROPOMETRIC MEASUREMENT AND EDEMA ASSESSMENT PART

Number	Anthropometrical measurement edema assessment	Remark
601.	Child's weight in_____kg	
602.	Child's length in_____cm	
603.	Child's MUAC in_____cm	
604.	Bilateral pitting edema present or no(yes or no) 1. YES 0. NO	

THANK YOU FOR YOUR PARTICIPATION!!!

DUUKA DEEMTUU

GAAFANNOO

Yuunivarsiitii Jimmaa Dhaabbata Fayyaatti, Faakaalitii fayyaa hawaasaa, Muummee Sirna Nyaata Namaa

Gaafannoo Sakatta'iinsa Shaakala nyaataa fi Hariiroo inni sadarkaa guddina daa'imman ji'a 6-23tii waliin Qabu kan Gandoota Baadiyyaa Aanaa Oomoo Naaddaa, Godina Jimmaa, Kibba dhiha Itiyoophiyaa

Akkam bultan?Akkam ooltan?.

Maqaan koo_____ jedhama. Ani kanaan hojjechaa jiru raga qoranno Yuuniversitii Jimmaa, Muummee Hawaasaa fi fayyaa maatii fi Obboo Tolasaa Gobbuu (barataa digirii lammaffaa Sirna Nyaata Namaa) wajjin dha.

Maqaan keessan guca kana irratti hin barreeffamu, akkasumas ragaa naaf kennitan waliin qabsiifame itti hin fayyadmnu. Gaaffiin isin deebisuu hin barbaadne yoo jiraate dhiisuun mirga keessan ta'e yeroo barbaaddanis gaaffii fi deebii keessan dhaabuu ni dandeessu. Haa ta'u malee, gaaffilee hundaaf deebii sirrii ta'e kennuun kaayyoo qorannoo kanaaf baayyee barbaachisadha.

Hirmaachuuf fedha qabduu? 1. Eeyyee 2. Lakki

001. Lakkoofsa addaa gaaffii _____

002. Naannoo, Oromiyaa

003. Aanaa; Oomoo Naaddaa

004. Ganda _____

005. Lakk. Abbaa warraa/ Koodii _____

006. Guyyaa Ragaan funaaname _____/_____/_____

KUTAA I.ODEEFFANNOO HAALA DIINAGDEE FI HAWAASUMMAA MAATII

Lakk	Gaaffilee	Deebii
101	Umurii haadhaa	_____Waggaadhaan
102	Haala gaa'elaa	1. kan hin fuune/hin heerumne 2 .Kan fuudhe/ Kan heerumte 3.Kan wal hiikan 4.Kan abbaan warraa irraa du'e 5.Kan adda bahe
103	Haala Amantaa	1. Muslima 2. Oortodoksii 3. Pirotestaantii 4. Kan biraa (ibsi)
104	Haala barnoota haadhaa	1.Dubbisuu fi barreessuu kan hin dandeenye 2. Dubbisuu fi barreessuu kan dandeessu 3. Barnoota sadarkaa 1ffaa 4. Barnoota sadarkaa 2ffaa 5. Kolleejjii/Yuunivrsiitii
105	Haala barnoota abbaa	1.Dubbisuu fi barreessuu kan hin dandeenye 2. Dubbisuu fi barreessuu kan dandeessu 3. Barnoota sadarkaa 1ffaa 4. Barnoota sadarkaa 2ffaa 5. Kolleejjii/Yuunivrsiitii
106	Saba	1.Oromoo 2.Dawuroo

		3.Amaara 4.Hadiyyaa 5. Kan biro(Ibsi)
107	Gaggeessaa maatii	1.Abbaa 2.Haadha 3.Fira 4. Kan biro(Ibsi)
108	Hojiin Haadhaa maali? (Deebii Tokkoo ol jiraachuu ni mala)	1.Hojjettuu mootummaa 2. Hojjettuu miti- mootummaa 3.Daldaltuu 4.Barattuu 5.Qotee Bultuu 6.Hojjettuu guyyaa 7. Haadha manaa 8. Kan biro(Ibsi)
109	Maddi galii inni guddaan maali?	1.Miindaa 2.Hojii dhuunfaa ofii 3.Qonna 4. Kan biro(Ibsi)
110	Beeyladoota manaa qabduu?	1. Eeyyee 2. Lakki , Yoo lakki jette gaaffii 112tti darbi
111	Eeyyee, yoo ta'e hangam? - sa'a aannanii ? -sangaa Qonnaa? - Re'ee? - Hoolaa?	_____ lakkoofsaan _____ " _____ " _____ " _____ "

	- Lukkuu? - Farda, Harree, Gaangee?	_____ " Walii gala _____
112	Lafa qonnaa qabduu?	1. Eeyyee 2.Lakkii
113	Lafa qonnaa hangam qabdu?	1. Hin qabbu 2. _____Facaasaan ykn hektaaraan 3.Hin beekamu
114	Boroo manaatti oomisha ni oomishtuu?	1Eeyyee 2. Lakkii
115	Galiin keessan fi qabeeenyi keessan maatii tajaajiluu gahuu irratti maal jetta?	1.Gahaaa miti 2.Hanga tokko gahaadha 3.Baay'ee gahaadha 4.Hin beekamu 5.Deebiin hin jiru 6. Kan biro(Ibsi)(_____)
116	Baayinni maatii keessaniimeeqa?	_____

KUTAA II.IBSA HAALA HAWWAASUMMAA DAA'IMAA FI NAANNOO ISAANII

Lakk	Gaaffilee	Deebii
200.	Saala daa'imaa	1.Dhiira 2.Dhalaa
201.	Umurii daa'imaa	Ji'a_____
202.	Daa'imman waggaa 2 gadii mana keessa jiran meeqa?	_____
203.	Daa'imni/daa'imman kun torbee lamaan darbe keessa gara kaasaa qabamee/qabamanii turee/turanii?	1.Eeyyee 2.Lakkii 3.Hin beeku
204.	Bishaan dhugaatii eessaa argattu?	1. Laga 2. Burqaa hin eegamne. 3. Burqaa eegame/kununsame. 4. Boollaa bishaanii kan dhuunfaa 5. Boonoo hawaasaa 96. Kan biro(Ibsi)_____
205.	Bishaan dhugaaatiif oolu mana keessatti ni qulqulleessituu?	1.Eeyyee 2.Lakkii
206.	Mana fincaaniitti ni fayyadamtuu?	1. Eeyyee 2. Lakkii
207.	Balfa bifa/haala kamiin gattu	1. Dirree gubbaatti. 2. Boollatti 3. Boolla woliiniitti 4. Kompoostiitti jijjiirra 5. Ni gubna

		96. Kan biro(Ibsi)_____
208.	Torbee lamaan darbee keessa daa'imni qaama gubaan qabamee beeka?	1.Eeyyee 2.Lakkii 3.Hin beeku
209.	Daa'ima sooruuf meesha maal fayyadamtaa?	1.Xuuxxoo 2.Siinii/kubbaayyaa 3.Maankiyaa/fallaana 4. Kan biro(Ibsi)____
210.	Daa'imni talaallii fudhatee beekaa?	1.Eeyyee 2.Lakkii
211.	Talaalli gosa kam fudhate?kaardii ilaali,yoo kaardiin hin jirre akka sitti himan gaafadhu)	1.Kan daranyoo sombaa (godaannisa ilaali) 2.Talaallii farra dhibee shanii,lakk.doozii____) 3.Kan gifiraa 4.Xumureera 5.Kaardiin hin jiru 6.Talaallii irra jira

KUTAA III.ODEEFFANNOO HAALA SOORATA DAA'IMAA

Lakk	Gaaffilee	Deebii
301	Nyaata Dabalataa irratti odeeffannoo argatte qabdaa?	1.Eeyyee 2.Lakki
302	Eeyyee yoo ta'e, maddi odeeffannoo kee eesssa?	1.Dhaabbata fayyaa 2.Deesistoota aadaa 3. Maatii 4.Hiriyaa 5.Firoota 6.sab-quunnamtii/Miidiyaa 7.Kan biro(Ibsi)
303	Haati ykn guddistuun yoo bira hin jiraanne yeroo baayyee eenyutu daa'ima nyaachisa?	1.Abbaa 2.Daa'ima hangafaa 3.Firoottan biroo 4. . Kan biroo (Ibsi_____)
304	Yeroo baayyee daa'ima kee eenyutu nyaachisa?	1. Haadha 2. Obboleettii 3. Akkahoo 4. Hojjettuu manaa 96. Kan biro(Ibsi)____
305	Daa'imni kee yeroo dhukkubsatu haala nyaata isaa ni jijjiirtaa?	1.Eeyyee 2.Lakki
306	Eeyyee yoo ta'e bifa kamiin jijjiirama?	1. Harma dhorkachuu 2. Nyaata dhorkachuu 3. Dabalataan nyaata kennuufii

		4. Kan biro(Ibsi_____)
307	Daa'imni kee amma illee harma ni hodhaa?	1. Eeyyee 2. Lakki
308	Nyaata Dabalataa Kennuufii yoom jalqabde?	Ji'a _____ tti
309	Sababni daa'imni nyaata dabalataa ji'a 6 dura jalqabdeef maali?	1.guddina gahaa ta'e waan hin qabneef 2.Aannan harmaa gahaa waan hin taaneef 3. Qabiyyeen aannan harmaa gaarii waan hin taaneef 4.Waan baratamaa waan ta'eef 5.Kan biroo (ibsi)_____
310	Sa'a 24 darbe keessatti, daa'imni kee nyaata armaan gadii kana soorateeraa/tti?	1.Nyaata gosoota miidhaan callaa 2. Gosoota nyaata hiddaa,jirmaa fi midhaan zayitaa 3. Bu'aalee aannanii 4. gosoota foonii (foon, qurxummii, lukkuu, tiruu fi kkf) 5. Buphaa/Killee/hanqaaquu 6. Nyaatota Vit-A tiin gahoo ta'an fuduraalee fi kuduraalee. 7.Fuduraa fi kuduraalee biroo
311	Sa'aatii 24 darbe keessatti yeroo meeqa nyaachiste?	1Yeroo tokko 2.yeroo lama 3.Yeroo sadii 4.yeroo afur 5.Yeroo afurii ol

312	Akka maatii keessaniitti maddi nyaata keessanii maali?	1.Kan bitame 2.kan ofiif oomishame 3.Gargaarsa nyaataarraa kan argame 4.Oomisha woliinii irraa 5.Madda beeyladootaa 6.Kan biro ibsi._____
313	Gosti midhaan yeroo baayyee mana keessaniitti nyaatamu maali?	1.Boqqolloo 2.Qamadii 3.Ruuzii 4.Xaafii 5. Mishingaa 6. Damma 7.Madda Beeyladootaa 8. Kan biro ibsi._____

KUTAA IV: **GAAFANNOO WABII NYAATA FI SAFARTUU QABIYYEE**

401	Turban arfan darban keessatti mana keessan nyaanni gahaan hin jiru jettanii yaadoftanii beektuu?	1Eeyyee 0. Miti 8.Hin beeku
401a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban

		keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
402	Torban arfan darban keessatti isin ykn miseensa maati keessan dhabuu irra kan ka'e dhiyaana keessan/nyaata otoo hin nyaatin irra ciwuun sin muudattee beeka?	1.Eeyyee 0. Miti 8. Deebiin kennuu didee callisuu
402a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
403	Torban arfun darban keessatti isin ykn miseensa maati keessan dhabuu irra kan ka'e nyaata akaaku/gosa murtaa'e qofa soorachuu isin muudateera?	1.Eeyyee 0.Miti 8.hin beeku
403a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
404	Torban arfun darban keessatti isin ykn miseensa maati	1Eeyyee

	keessan dhabuu irra kan ka'e nyaata ati jaalattu (feetu) soorachu dhabuun si qunameebeeka?	0.Miti 8. Hinbeeku
404a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
405	Torban arfun darban keessatti isin ykn miseensa maati keessan mana keessatti dhabuu nyaata irra kan ka'e dhiyaanaratti nyaata baay'inni isa xiqaa kan ta'e soorachuun isin muudateera?	1.Eeyyee 0.Miti 8.Hin beeku
405a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
406	Torban arfun darban keessatti isin ykn miseensa maati keessan mana keessatti dhabumma nyaata irra kan ka'e dhiyaana oto hin nyaatin irra darbuun isin muudateera?	1.Eeyyee 0.Miti 8.hin beeku
406a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban

		keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
407	Torban arfun darbankeessatti dhaburraa kan ka'e nyaati cirumaa/sirumaa mana keessa dhibuun isin muudateera?	1.Eeyyee 0.Miti 8.Hin beeku
407a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)
408	Torban arfun darban keessatti isin ykn miseensa maati keessan dhabumma nyaata irra kan ka'e oto hin nyaatin rafuun ni jira?	1.Eeyyee 0.Miti 8.Hin beeku
408a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli)

		9.deebii hin kennine(callisuu)
409	Torban arfun darban keessatti isin ykn miseensa maati keessan dhabumma nyaata irra kan ka'e oto hin nyaatin oolanii buluun ni jira?	1.Eeyyee 0.Miti 8. Hinbeekuu
409a	Wanti kun hangam uumame/ta'e?	1.Baayyee xinnoo(torban arfan darban keessayeroo tokko ykn lama) 2.Darbee darbee(torban arfan darban keessayeroo sadii haga kudhanii) 3.Yeroo baayyee(torban arfan darban keessayeroo kudhanii fi isaa oli) 9.deebii hin kennine(callisuu)

KUTAAV.MANA KEESSAN KEESSA MEESHAALEEN ARMAAN GADITTI TARREEFFAMANII FI WANTOOTA QABEENYA AGARSIISAN KAN ARMAAN GADII QABDUU?

Lakk.	Gaaffilee	Deebii
501	Mana jireenyaaqabduu?	0.Lakki 1.Eeyyeen
502	Baankii akkawuntiiqabduu?	0.Lakki 1.Eeyyeen
503	Teessooakkacheerii fi minjaalaa jiraa?	0.Lakki 1.Eeyyeen
504	Firiigiinjiraa?	0.Lakki 1.Eeyyeen
505	Mobaayiiliiqabdu?	0.Lakki 1.Eeyyeen
506	Televishiniiqabdu?	0.Lakki 1.Eeyyeen
507	Reediyooqabduu?	0.Lakki 1.Eeyyeen
508	Soofaaqabdu?	0.Lakki 1.Eeyyeen
509	Konkolaataaqabduu?	0.Lakki 1.Eeyyeen
510	Motorsaayikiliin/doqdoqqee/ jira?	0.Lakki 1.Eeyyeen
511	Saayikiliiqabdu?	0.Lakki 1.Eeyyeen
512	Gaariinjira?	0.Lakki 1.Eeyyeen
513	Horii manaaqabduu?	0.Lakki 1.Eeyyeen
514	Lafaqonnaaqabduu?	0.Lakki 1.Eeyyeen
515	Ibsaanjiraa?	0.Lakki 1.Eeyyeen
516	Midijjaa Elektirikiiqabduu?	0.Lakki 1.Eeyyeen
517	Ijoon mana keessanii ayiraniiirraahojjatamee?	0.Lakki 1.Eeyyeen
518	Keessoon mana keessaniilaftiisaasimintoo dha?	0.Lakki 1.Eeyyeen
519	Mani keessankutaameeqaqaba?	0.Lakki 1.Eeyyeen

KUTAA VI SAKATTA’IINSA MAADAALLII QAAMAA FI DHIITOO QAAMAA/MIILAA

Lakk	Madaallii qaamaa fi sakatta’insa dhiitoo miilaa	Yaada
601.	Ulfaatina mucaa Kg_____	
602.	Dheerinaqaamaa mucaa cm_____	
603.	Madaaliin 'MUAC' kan mucaa cm _____	
604.	Dhiitooqaamaa/miilaajiraa? 1. Eeyyeen 0. Lakkii	

HIRMAANNAA KEESSANIIF GALATOOMAA!!!