CHILD DEVELOPMENT DELAY AND ITS ASSOCIATED FACTORS AMONG CHILDREN AGED BETWEEN 12-59 MONTHS IN ABESHGIE DISTRICT, GURAGHE ZONE, SNNPR ETHIOPIA

MPH RESEARCH THESIS

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WOLKITE UNIVERSITY,

WOLKITE, ETHIOPIA

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ATHESIS REPORT SUBMITTED TO THE DEPARTMENT OF, PUBLIC HEALTH

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Approval sheet

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This is to certify that the thesis entiteled “Child Development Delay and Factors Associated Among Children’s Aged 12-59 Month In Abeshgie District SNNPR, Ethiopia, May, 2021” submitted in partial fulfillment of the requirements for the degree of Master’s with specialization in Public Health Nutrition, the Graduate program of the School of Public Health, and has been carried out by Zinash Fikre Id.No 002/12 under our supervision. Therefore we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the deparment.

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We, the undersigned, members of the board examiners of the final opend defense by Zinash Fikre have read and evaluated his/her thesis entiteled “Child Development Delay and Factors Associated Among Children’s Aged 12-59 Month In Abeshgie District SNNPR, Ethiopia, May, 2021”, and examined the candidate.This is, therefore to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree Masters of Public Health Nutrition.

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Acronyms

AOR	Adjusted Odds Ratio
ASQ	Age Stage Questioner
CI	Confidence Interval
COR	Crude Odds Ratio
DD	Developmental Delay
DDS	Dietary Diversity score
UNICEF	United Nations children's Fund
WHO	World Health Organization

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Abstract

Background: Globally, 250 million (43%) of under-five children's in low and middle income countries are at risk of not reaching their full development potential. There is limited available information regarding with the magnitude of development delay among children's aged 12-59 month in national level at large and study area in specific.

Methods: Community-based cross-sectional study was conducted at six randomly selected kebeles of Abeshgie district from May 7 to 25, 2021 by using multistage sampling technique. Data were collected by interview with a pretested structured questionnaire and anthropometric measurement. Data were coded and entered to Epi-data version-3.1, nutritional data were entered on anthro software, and principal component analysis was conducted for wealth index and analysis done using SPSS version 21. The descriptive statistics is presented in tables, crosstabs, pie-chart and graph. Analytic analyses schemes including bivariable and multivariable binary logistic regression done to identify factors associated with developmental delay.

Result: A study was conducted among 507 mothers of children aged 12-59 month in Abeshgie district with 97.6% response rate. Magnitude of child development delay was 29.4 [CI 95 %(25.6, 33.5)]. Mother working outside home [AOR=2.9; 95% CI (1.8, 4.8)], delivered preterm [AOR=3. 2; 95% CI (1.4, 7)], early initiation of complementary feeding [AOR=2.5; 95% CI (1.37, 4.6)] stunting [AOR= 3.0; 95% CI (1.9,4.7)] underweight [AOR= 2.3; 95% CI (1.1, 4.7)] and low dietary diversity score [AOR= 3.1; 95% CI (1.3,7.5)] were significantly associated with child delayed development.

Conclusion: Child development delay was associated with maternal occupation, being preterm, early initiation of complementary feeding, stunting, underweight and low diet diversification.

Key words: Developmental delay, prevalence, associated factors

1 Introduction

1.1 Background

Child Development refers to a change in child's physical growth, social, emotional, thinking behavior, and communication skills that occur in a child from birth to the beginning of adulthood. All of these areas of development are linked, and each depends on and influences the other. Majority of developmental process takes place within the first few years of life that makes early childhood a window for both great risk of vulnerability to disruption and great potential for the impact of positive developmental outcomes, long-term health outcomes, future opportunities, school attainment and even earning potential. Development is described into five different domains: gross motor, fine motor, speech and language, cognitive and socio-emotional skills which are age specific tasks that most children can do at certain age. (1–4)

Child developmental delay refers to a child who has not gained the developmental skills expected of his or her age compared to others of the same age. Delay may occur in the areas of communication, motor function, problem solving and cognitive skills**.**

Yet today, millions of young children are not reaching their full potential because inadequate nutrition, a lack of early stimulation, learning, and nurturing care, and exposure to stress adversely affect their development. (5) Nurturing care is essential in early childhood which promotes health, nutrition, security, safety, responsive caregiving and opportunities for early learning. Nurturing care has contribution through out life with healthy pregnancy, safe child birth, healthy growth and development, school readiness, school achievement,thriving adolescent and healthy aging.(6)

As adeveloping country the causes of poor child development in Ethiopia are either preventable or treatable. There are threats to children's development during pregnancy and birth, as well as when they are new-borns, infants and toddlers. When adversity in pregnancy leads to low birthweight or preterm birth, this raises the risk of developmental difficulties and chronic diseases in adulthood. Other factors that threaten early childhood development include inadequate maternal nutrition, HIV infection, poor mental health in caregivers, sub-optimal breastfeeding, malnutrition, illnesses, injuries, limited stimulation, neglect, maltreatment, disabilities, and violence.(7)(8)

1.2 Statement of the problem

Nearly 250 million children (43%) younger than 5 years in low-income and middle-income countries are at risk of not reaching their developmental potential.(9) According to astudy conducted in 63 low- and middle-income countries 25% of children's were suspected for developmental delay(10).

In Ethiopia despite the achievement in economic growth and child survival in the country, there are about 2 million childrens living under extreme poverty which impedes their overall growth and full developmental potential. It is estimated that 59% of children Under-5 years of age being at the risk of suboptimal development (11)

In Ethiopia context information on developmenl delay and factors that determine on childrens between 12-59 months are scarce at national level that makes the burden hidden. Since Ethiopia is a developing country where child development is affected by multiple different factors if study was conducted magnitude of child developmental delay might substantially be high. There are only two studies conducted in different part of Ethiopia.One of the study conducted was urban and the current study includes rural dwellers so prevalence estimated to be higher than prior studies and this study also includes two factors that were not touched by the previous studies.

Children's with developmental delay have higher risk for permanent developmental disabilities; which imposes costs on the whole community. Children with developmental disability requires variable degree of life long support and are less likely to receive education, to be employed as adults, to start their own families and participate in community events, and more likely to live in poverty. When people with disabilities are employed, they are more likely to work in the informal sector, so receive a less reliable income.(12) People with intellectual disabilities have a higher prevalence of health problems than the general public, and their health needs are often unrecognised and unmet are also more likely to develop secondary health conditions.(13) Families of disabled childrens face a range of effects; stress, negative reactions from extended family members, high caregiver financial and employment burden.(14,15)Impact of disability extends beyond the economic cost. If people with disabilities are absent from public discourse, the community cannot benefit from their ideas.People with disabilities are more likely to be the victims of violence, especially sexual violence against women and girls, more likely to be injured or killed during natural disasters.(16)

Poverty, lack of early stimulation, lack of sensitive and responsive child care, safety/security Poor diet, infrequent meals, unhealthy environment, poor health services, premature birth, malnutrition and genetic conditions like Down syndrome are among the factors that adversely affects the development of millions of young children.(17,18) Despite the need, early childhood programmes remain severely underfunded.(19)

In Ethiopia there is no national child policy. Federal ministry of health in Ethiopia has developed and implemented a national nutrition program, guidelines and different supportive materials for successful implementation of nutrition intervention using the life course approach.The nutrition program also highlighted the integrated early childhood care and development (ECCD) stimulation program with the existing community- and facility-based child nutrition program to promote development and utilization of locally available early childhood developmental materials, including ECCD capacity-building approaches to the nutrition capacity-building efforts. Generally, the nutrition intervention program set by the MOH respond for adequate nutrition interventions which it maximizes normal development and maturation of young children (11)

Thus this study is designed to fill the gaps identified by assessing development delay and factors associated among children 12-59 month age in Abeshgie district, with the view that useful baseline data will be generated.

1.3 Significance of the study

This study will provide evidence based information on child development delay and associated factors among mothers/caregivers of 12-59 months children.

Identifying the risk factors could be useful to health authorities in planning for the prevention and elimination of modifiable factors associated with child development.

Determining the prevalence of DD will pave the way for stakeholders to address the problem early, which will have social and economic benefits through reducing long-term developmental delay.

It also helps as baseline information for monitoring, follow-up and evaluation of programs as well as to advocate for greater political and financial commitment and for proper allocation of resources.

It also helps the decision-makers design, implement, and evaluate screening and intervention program.

1.4 Justification of the study

From my experience at under five outpatient department I observed childrens who do not perform in accordance with their age that should be supported with evidence.

Some studies conducted in Ethiopia were focused on child developmental disabilities giving less attention to childdevelopmental delay.

There are only two studies in Ethiopia focusing on child developmental delay which lacks some variables like multiple pregnancies and unintended pregnancy.

In the study area the prevalence and factors associated with child developmental delay is not established. So, it is difficult to plan and implement preventive measures against child developmental delay in this community as more realistic and evidence-based data regarding the magnitude and extent of the problem have been lacking. Therefore, this study was aimed to fill this gap.

In general evidences on child developmental delay at national level and study area in specific are scarce so there is a need for additional data to assess its magnitude and associated factors among childrens aged 12-59 month in the study area.

2 Literature review

2.1 Prevalence of child developmental delay

According to the study conducted in different areas on child development delay and its predictors; the prevalence of developmental delay range from 6.5% in turkey and 61.1% in rural Pakistan. Another study conducted in rural china on factors influencing developmental delay among 6-35 month age children in rural china shows suspected developmental delay was 35.7% and across sectional study in India on risk of developmental delay shows 16.2% of children's are delayed.(20–23) Other study conducted on factors associated with risk for developmental delay shows 40% of preschool children's in Madagascar are at risk of developmental delay(5)**.** On the birth cohort study conducted in South Africa on risk and protective factor for child development reveals the prevalence of developmental delay was 55.2%(24). Other study in Nigeria which assesses the relationship between nutritional status and child development in under five children shows the prevalence of developmental delay was 35.4%**.** According to study conducted in Rwanda on developmental out comes of preterm and low birth weight toddlers and term peers shows the prevalence of developmental delay was 52.6%.According to across sectional study conducted in Burdwan district, west Bengal shows prevalence of child developmental delay was 7.9(25–27). A community based cross sectional study conducted in Wolaita, Ethiopia on child development and nutritional status among 12–59 months of age the developmental delay was 19% of children's are at risk of developmental delay.(28)

2.2 Factors associated with developmental delay

2.2.1 Socio demographic characteristics

A Study conducted in Madagascar on Factors associated with risk of developmental delay in preschool children shows as children's of adolescent mother (age <20) are 4.08 times more likely [AOR= 4.08; 95%CI (1.40, 11)] to be delayed developmentally. A study conducted in rural china shows caregiver education and Wealth Index has an inverse relation to development delay (total effect on child developmental status =0.23).(5) (22) Other study from west Bengal on global developmental delay and socio demographic characteristics shows maternal no formal education and working outside are associated with child development delay (AOR=1.446) and (AOR=1.146) respectively compared to maternal literacy and homemaker.(20,(29)

Studies conducted in south Africa and Wolaita, Ethiopia shows maternal education was found to be protective against developmental delay [AOR = 0.40; 95% CI (0.17–0.94)] and (AOR= 0.62) respectively.(24,28) Other study in India on Severe acute malnourished children's shows having working mothers is 17 times likely to be developmentally delayed. [AOR= 17.54; 95%CI (3.02–102)].(30)

A study conducted on birth cohort in south Africa shows being male has higher odds of developmental delay compared to female [AOR = 1.35; 95% CI (0.95–1.91)]. Also study conducted in west Bengal on developmental delay among children's below two years shows being male is 3.3 times likely to develop developmental delay compared to females (AOR=3.3) but another study conducted in west Burdwan district shows being female had risk of developmental delay (AOR=1.275).(24,27)

2.2.2 Obstetric and health service related factors

A study conducted in west Bengal on developmental delay among children's below two years shows not deliver at institution has higher odds of developing developmental delay(AOR=16) compared to children's who are delivered at institution(27).

According to a study conducted in west Australia among twin children's aged below two shows multiparty is associated with late language emergence compared to singletons [AOR: 7.6; 95% CI (1.6, 37.5)] A study in Santiago shows multiple pregnancy is associated with developmental delay (AOR= 1.35).(31,32)

2.2.3 Child nutrition status, health and feeding practice

According to a study conducted in Rwanda on developmental out comes of preterm or low birth weight toddlers shows being not preterm and /low birth weight and stunted has odds of child development delay [AOR=2.05; 95% CI (1.37,3.07)] compared to not preterm and/ low birth weight and not stunted. Also this study reveals being preterm and/low birth and not stunted has an association with developmental delay [AOR=1.68; 95% CI (0.75, 3.78)] compared to not preterm and/ low birth weight and not stunted. Other study in Santiago shows infants born preterm had increasing risk of developmental delay [AOR=2.58; 95% CI (1.66, 4.02)] respectively compared to full term. Also cross sectional study conducted in rural India shows child's who are delivered post term had higher odds of developmental delay [AOR=5.99;

95% CI (1.13,31)].Also other study in Saudi Arabia shows preterm children's are 2.4 times odds of being delayed [AOR = 2.4; 95% CI (0.722–86.5)respectively compared to terms respectively.(23)

Also study in India on SAM children's shows low birth weight children's are 18 times likely to be delayed in development. [AOR= 18; 95%CI (2.08–156.56)].(30) Other study in Bengal shows children's born low birth weight had an association with developmental delay (AOR= 8.3) compared to normal weight children(27).

According to a study conducted in Saudi Arabia shows children's whose birth space is < 3 years is significantly associated with developmental delay p value (0.001)(33). Other study in Wolaita reveals that as birth order increase by 1 the risk of child development delay increase by 1.2 [AOR=1.2). Children's who are not immunized fully had two times more likely to be developmentally delayed compared to immunized (AOR=2.64)).(28)

According to a birth cohort study in south Africa shows stunted children's are 1.7 times likely to be delayed [AOR = 1.77; 95% CI (1.18–2.65)](24). A cross-sectional study conducted in Wolaita shows stunting had significant association [AOR=2.2; 95% CI(1.3,3.5)].(28) also other study conducted in Indonesia among children's 6-59 month shows stunting [AOR)= 3.45; 95% CI(1.76,6.76)] but a study conducted in Madagascar by using secondary data shows stunting has no association with childhood developmental delay[AOR=0.92; 95% CI (0.48,1.78)] (18,31). Other study conducted in Nigeria shows stunted and underweight children's are 2 and 3 times more likely to be delayed developmentally [AOR=2.36] and [AOR=3.25] also study in India shows underweight children's are 6 times likely to be delayed [AOR=6.09; 95% CI (1.08,34).(25)(30)

Cross sectional study conducted in Saudi Arabia shows children's who start complementary feeding before turning six month is associated with childhood developmental delay[AOR=3.378; 95% CI (10.1,84.7) (33). Other cross sectional study conducted on assessment of risk factors for developmental delay in rural India reveals children's who start complementary feeding after 12 month were 2 times more likely to develop delay [AOR=2.84 95% CI (1.28,6.3)] than children's who start between 6-12 month. Also study in Wolaita shows children's who start complementary feeding early and late has higher odds of developing delay compared to children's who start complementary at six month

[AOR=3.73; 95% CI (1.5,8.8)] (23)(28). According to the study conducted in rural areas Pakistan showed that those not exclusively breast feed children's are 3.07 times higher for global developmental delay [AOR=3.07; 95% CI (1.24,7.56)](21).

Cross sectional study in Wolaita, Ethiopia shows children's with <4 dietary diversity score have 2times likely of developing delay [AOR = 2.1, 95% CI (1.3, 3.4)] compared to children's with dietary diversity score >4. Study conducted in rural china on relationships between dietary diversity and early childhood developmental outcomes in rural China Consumption of four or more food groups in the previous day was associated with a 39% lower probability of developing suspected developmental delays [AOR = 0.61, 95% CI (0.43, 0.86)] (28)(36)

So far few studies were conducted in Ethiopia on child development delay and the factors that associate, to the investigators knowledge; there is no specific study in the area on developmental delay among children 12-59 month Thus, this study seeks to fill the dearth of knowledge on Child development delay and identifying factors that associated with it; with the view that baseline data will be generated thus result might be used as a source for other researchers and by policy makers and program managers in different parts of the country.

2.3 Conceptual framework

The following conceptual framework shows the possible relationship between the dependent and independent variables that is developed after the review of different literatures. I.e. Socio-demographic variables like age, sex, occupation, wealth index and child factors can be a risk for developmental delay.

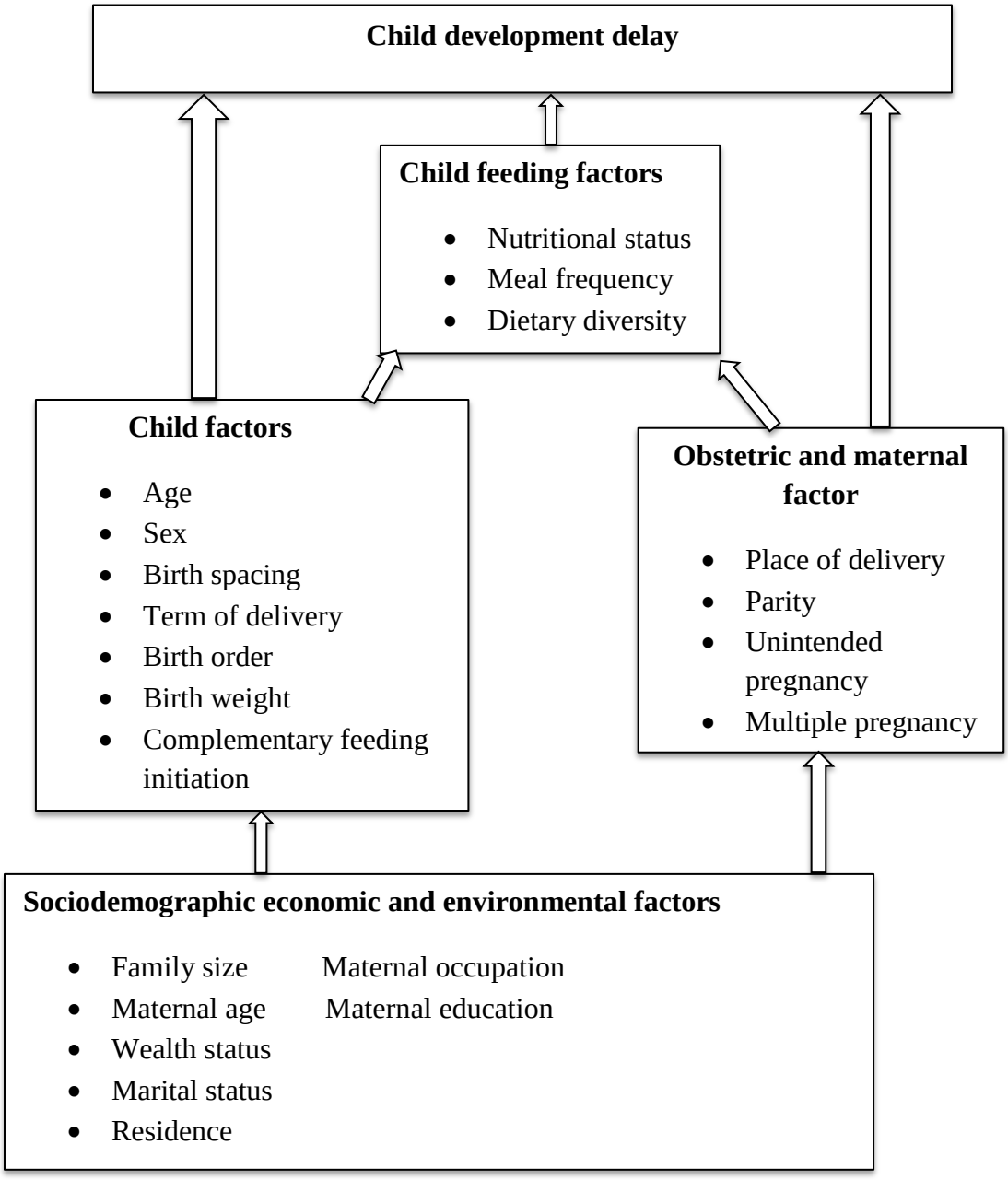

Figure 2. 1: Conceptual frame work for child development delay and factors associated among children's 12-59 month of age in Abeshgie district 2021G.C.

3 Objectives

3.1 General objective

To assess the magnitude and factors associated of child development delay among children's aged 12-59 month in Abeshgie district, Guraghe zone, SNNPR 2021 G.C.

3.2 Specific objectives

- ✓ To determine magnitude of child developmental delay among 12-59 month of age in Abeshgie district, Guraghe zone, SNNPR 2021 G.C.
- ✓ To identify factors associated with child development delay among 12-59 month of age in Abeshgie district, Guraghe zone, SNNPR 2021 G.C.

4 Methods and material

4.1 Study area and period

This study was conducted in Abeshgie district which is 155 Km far away from Addis Ababa. In the district there are twenty nine kebeles (twenty six rural and three urban).The total population of Abeshgie district is 84,896 there are 4160 households in the district; numbers of estimated children between 12-59 month ages in the district are 10,535(obtained from report) of them 9169 reside in rural kebeles. The study was conducted on May, 2021G.C.

4.2 Study design

A community based cross sectional study design was employed.

4.3 Population

4.3.1 Source population

Source populations were all children's aged 12-59 month in Abeshgie district.

4.3.2 Study population

The study populations were children's aged 12-59 month in randomly selected kebeles of Abeshgie district.

4.3.3 Study subjects

Randomly selected Children's aged 12-59 month

4.4 Eligibility criteria

4.4.1 Inclusion criteria

- All children aged 12-59 months in the study area during data collection were included in the study.

4.4.2 Exclusion criteria

- Child with blindness
- Child with hearing impairement

4.5 Sample size determination

4.5.1 Sample size determination for the first objective

The minimum required sample size for the first objective in this study was obtained by using a single population proportion formula at 95% CI by assuming a margin of error 5 % =0.05 by considering the prevalence of developmental delay 19% in Wolaita sodo zone.(28)

n= (Z 1-α/2) 2 p (1-p) d2

With the following assumption:

n = sample size,

Z 1-α/2= significance level at α =0.05

d= margin of error (5%)

P= 19% the prevalence of developmental delay in Wolaita sodo (28).

Accordingly the sample size was:

n= $(1.96)^2(0.19)\ (0.81)/\ (0.05)^2$ = 236.488~ 236

By multiplying the sample size with 2 design effect

The sample size become 472

By adding 10% for the possible non-respondents the total sample size becomes 519

472+ 47.2 = 519.2 ~ 519

5.2.2 Sample size determination for the second objective

For second objective, double population proportion formula was used to determine sample size by using Epi-info version7 software at 95% CI with 5% margin of error, 80% power and 1:1 ratio of exposed to non-exposed outcomes.

Table 4. 1**:** Sample size determination for factors associated with developmental delay for children's aged 12-59 months in Abeshgie district 2021G.C.

Factors	Proportion of developmental delay	Sample size	Sample size using design effect and non-	AOR&CI	References

	Exposed	Unexposed		response rate 10%		
Mothers education	Illiterate 66.4%	> primary 46.9%	222	366	2.23 95% CI:0.27 (0.12, 0.64)	(37)
Dietary diversity score	DDS< 4 28.2%	DDS> 4 12.7	236	385	2.1 95% (1.8-4.1)	(28)
Wasting	Moderate 90%	Normal 52.1%	54	90	5.79 95% CI 0.98-34.39).	(26)

Among the calculated sample size above the largest sample size was taken (519).

4.6 Sampling procedure

The study area, Abeshgie district has a total of 29 Kebeles and a multistage sampling technique was used to select the study participants. Kebeles are stratified based on residences. Then one kebele from urban and five kebele from rural were selected by using simple random sampling method.

The samples were distributed proportionally based on probability proportional to size (PPS) allocation technique.

Population proportion: Nj=ni/n*N

Participants in each kebeles were selected by using a systematic sampling technique after calculating the sampling interval (K) for each kebeles.

K =N/n.

The sample frame was the list of households with children 12 –59 months of age. List of households with children's was obtained from family folder. In house-holds with two children less than five years of age, one was selected randomly by lottery method. Revisit of three times was made in a case where eligible respondents were not available by the time of data collection and who were not available after revisit were considered as non-respondent.

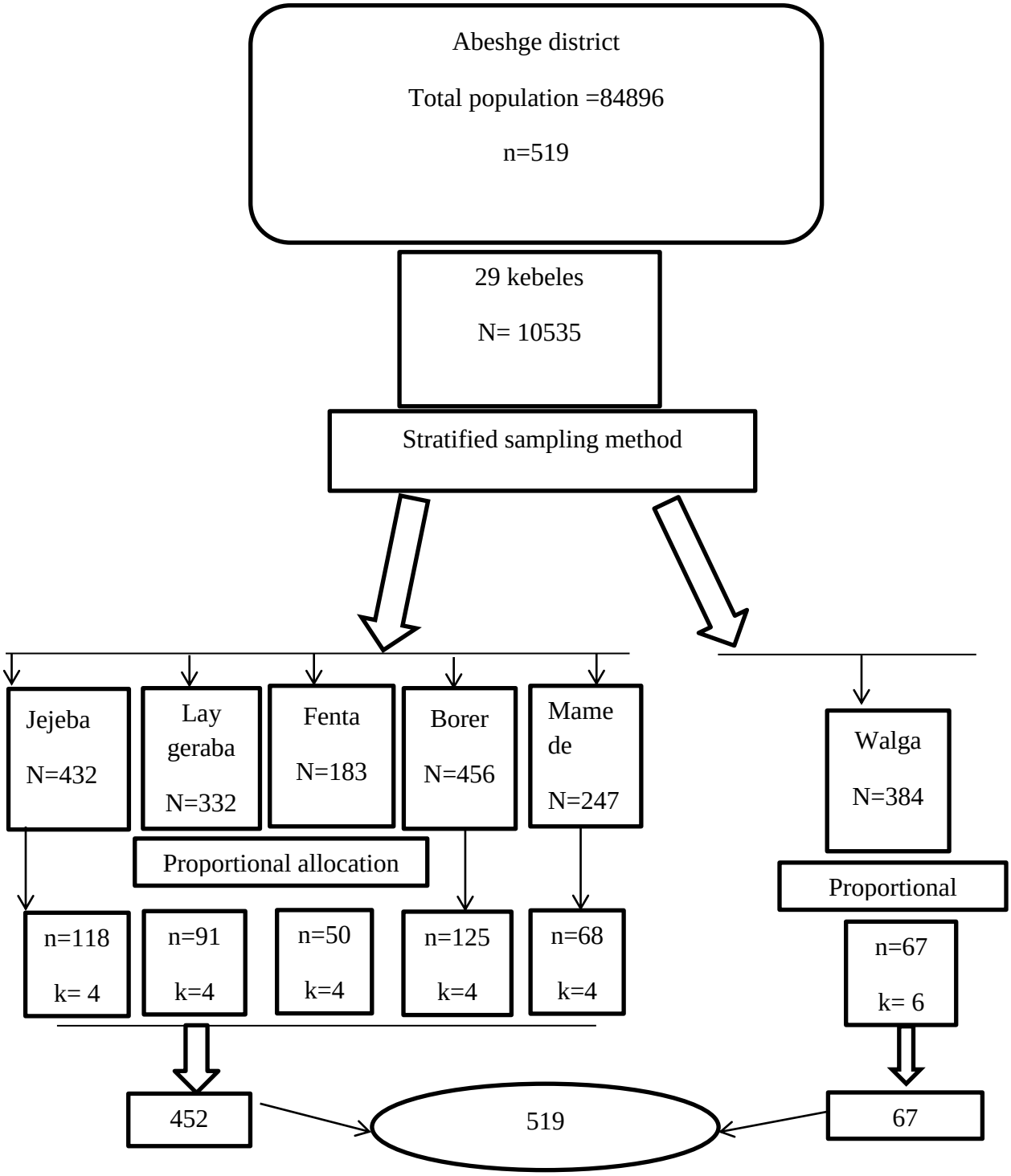

Figure 4. 1: Sampling procedure to assess child development delay and factors associated among children's aged 12-59 months in Abeshgie district, SNNPR Ethiopia 2021 G.C.

4.7 Data collection methods

4.7.1 Data collection instrument

A structured interviewer-administered questionnaire was used for socio-demographic, household economic status variables, maternal variables, child health related factors, nutritional variables, and food accesses at household variables to collect data from participants. It was constructed by adapting and modifying from Ethiopia Demographic and Health Survey (EDHS) 2019 and previous research done on a similar topic. First, the English version of the questionnaire was prepared. Then it was translated to the native language Amharic and was back translate to the English language. Child development assessment was done using the third edition of age and stage questionnaire (ASQ-3) of mental development. The ASQ-3 has five subscales: communication, gross motor, fine motor, problem solving, and personal-social. Some questions are specific for certain age groups, while other items are used for a wider age range and are repeated in different age categories. Age and stage questionnaire was answered as "yes" scored as 10, "sometimes" scored as 5, and "not at all" scored 0. Each child was asked 30 questions and assessed out of 300 score: six question and out of 60 score for each development milestone. Each domain is classified into three (high risk for developmental delay, needs monitoring and well development) for each age category based on ASQ-3. Finally, child development was categorized as developmental delay and well development.(38) The ASQ-3 has validity of 0.83-0.88, reliability of 0.90-0.94, sensitivity of 0.83 and Specificity 0.39%-0.95.(39–42) This tool was used in study conducted in Wolayita sodo. Children dietary diversity and meal frequency was assessed with 7 food groups by using WHO/IYCF indicator assessment tool with some modification to fit with the context based on the last 24-h recall method.(43)

4.7.2 Data collection procedure and data collectors

Data were collected from caregivers or mothers of the children bysix BSc holder nurses who could communicate well with the local language.Face to face interview was made for socidemographic factors and child factors but most part of the developmental questions are answered after achild perfoms or fails for the activity asked for Anthropometric data was collected following the WHO standards with close supervision by four public health officers. A portable stadiometer was used to measure older children (above two years) and calibrated length board was used for younger children (less than two years).Older children were measured at

standing position, while younger children less than two years were measured recumbent position. Children's height and weight were measured without shoes, hats, and hair ornaments. During height measurement childrens head, shoulders, buttocks, and heels were attached with the vertical surface of the stadiometer. The height measurement was recorded to the nearest 0.1 cm. Weight of each child was measured with bare foot and light clothing and recorded to the nearest 0.1 kg. Underweight, wasting, and stunting was computed using age, weight and height measurement.

4.8 Variable

4.8.1 Dependent variable

Child development delay

4.8.2 Independent variables

Sociodemographic characteristics: Maternal Age**,** Residence, Religion, Marital status, Educational status of the mother, Occupation of mother**,** Wealth index and Family size.

Obstetric and maternal health related

Parity, Place of delivery, multiple pregnancy and planned pregnancy

Child related

Child sex, Birth space, Birth order, Birth weight, Gestational age, Complementary feeding, Meal frequency, Dietary diversity score, wasting, stunting and underweight.

4.9 Operational definitions

Developmental delay: is defined as a child whose ASQ-3 score fell below the cut-off points for their age in any one of the ASQ-3 domains: communication, gross motor, fine motor, problem solving and personal social.

Table 4. 2: cut-off points of each child development milestone for different age catagories to classify achild as delayed and normal development

Age in month	Area	Developmental delay	Needs monitoring	Normal development
12 month	Communication	< 16	16-30	>30
	Gross motor	< 21	21-35	>35

	Fine motor	< 34	34-42	>42
	Problem solving	< 27	27-38	>38
	Personal social	< 22	22-34	>34
13 month 0 day – 14 month 30 days	Communication	< 17	17-31	>31
	Gross motor	< 26	26-39	>39
	Fine motor	< 23	23-35	>35
	Problem solving	< 23	23-34	>34
	Personal social	< 23	23-35	>35
15 month 0 day – 16 month 30 days	Communication	< 17	17-30	>30
	Gross motor	< 38	38-47	>47
	Fine motor	< 32	32-42	>42
	Problem solving	< 31	31-41	>41
	Personal social	< 26	26-37	>37
17 month 0 day – 18 month 30 days	Communication	< 13	13-30	>30
	Gross motor	< 37	37-41	>41
	Fine motor	< 34	34-43	>43
	Problem solving	< 26	26-36	>36
	Personal social	< 27	27-32	>32
19 month 0 day – 20 month 30 days	Communication	< 21	21-34	>34
	Gross motor	< 40	40-47	>47
	Fine motor	< 36	36-44	>44
	Problem solving	<29	29-38	>38
	Personal social	< 33	33-42	>42
21 month 0 day – 22 month 30 days	Communication	< 13	13-30	>30
	Gross motor	< 28	28-39	>39
	Fine motor	< 30	30-39	>39
	Problem solving	< 29	29-39	>39
	Personal social	< 30	30-40	>40
23 month 0 days – 25	Communication	< 25	25-37	>37
	Gross motor	< 38	38-46	>46

month 15 days	Fine motor	< 35	35-44	>44
	Problem solving	< 30	30-44	>44
	Personal social	< 32	32-41	>41
25 month 16 days – 28 month 15 days	Communication	< 24	24-37	>37
	Gross motor	< 28	28-39	>39
	Fine motor	< 18	18-31	>31
	Problem solving	< 28	28-38	>38
	Personal social	< =25	26-36	>36
28 month 16 days – 31 month 15 days	Communication	<= 33	33-43	>43
	Gross motor	< =36	37-46	>46
	Fine motor	< =19	20-33	>33
	Problem solving	< =27	28-37	>37
	Personal social	<= 32	32-42	>42
31 month 16 days – 34 month 15 days	Communication	< =25	26-36	>36
	Gross motor	< 35	35-44	>44
	Fine motor	< 12	12-23	>23
	Problem solving	< 27	28-43	>43
	Personal social	< =29	30-40	>40
34 month 16 days – 38 month 30 days	Communica3tion	< =31	32-42	>42
	Gross motor	< =37	38-46	>46
	Fine motor	< 18	19-32	>32
	Problem solving	< =30	31-41	>41
	Personal social	< =35	36-44	>45
39 month 0 day – 44 months 30 days	Communication	< 27	27-38	>38
	Gross motor	< =36	37-45	>45
	Fine motor	< 20	20-34	>34
	Problem solving	< =28	29-40	>40
	Personal social	<= 31	32-42	>42
45 month 0 day – 50 month 30	Communication	< 31	31-42	>42
	Gross motor	< =32	33-43	>43

days	Fine motor	< 16	16-31	>31
	Problem solving	< =31	32-42	>42
	Personal social	< 27	27-37	>37
51 month 0 day – 56 months 30 days	Communication	< 32	32-43	>43
	Gross motor	< =35	36-44	>44
	Fine motor	< 17	17-32	>32
	Problem solving	< 28	29-39	>39
	Personal social	< =32	33-43	>43
57 month 0 day -59 month 0 day	Communication	< 33	34-43	>43
	Gross motor	< 31	31-41	>41
	Fine motor	< 27	27-39	>39
	Problem solving	< 30	30-41	>41
	Personal social	< 39	39-47	>47

(38).

Stunting: is defined as HFA Z score is below -2SD of the median

Wasting: defines as WFH Z score below-2 SD of the median

Underweight: defined as low weight for age z-score -2 SD of the median (44).

Minimum dietary diversity: the proportion of children 12-59 months who receive foods from 4or more food groups in the previous day. The seven food groups used for tabulation of this indicator are: grains, roots, and tubers; legumes and nuts; dairy products (milk, yogurt, and cheese); flesh foods (meat, fish, poultry, and liver/organ meats); eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables(45).

4.10 Data quality control

To maintain consistency the questionnaire was translated to native Ethiopian language Amharic and then was back-translate to the English language. To assure high quality of the data, Training was given for data collectors and supervisors for two days and a regular supervision with practical session for height and weight measurements was done. Technical error of measurement (TEM) was computed during training. To assess the appropriateness of wording, clarity of the questions and respondent reaction to the questions pre-test was conducted on 5% of the total

sample size in nearby kebele (mechle & tereko) which have similar basic socio-economic characteristics as the study kebeles, and necessary correction were made. During the data collection time, close supervision and monitoring was carried out by supervisors and the principal investigator to ensure the quality of the data. Finally regular check-up for completeness and consistency of the data was made daily, by the supervisor and investigator for its completeness.

4.11 Data processing and analysis

The data was checked for completeness, Pre-coded data was entered to Epi data version 3.1 statistical software then data was exported to SPSS version 21 for analysis. Descriptive analysis such as frequency, percent, mean and standard deviation is computed and the result is presented using text, crosstabs tables and figures. Frequency distribution and percentages is computed to describe socio demographic and other characteristics of respondents and presented in tables. Child development was measured at their age catagorey as per the recommendation of ASQ-3. Each domain was classified into three (high risk for development, needs monitoring and well development) for each age category based on ASQ-3. The different age groups are computed to each mile stone as delay and normaldevelopment and the five milestones were computed as one variable. Finally, child development was categorized as developmental delay and well development developmental delay based on recommendation. Principal component analysis was done using household assets possession to construct wealth index, as a proxy measure of household socio-economic status. Assumptions of principal component analysis were checked. Accordingly, households were categorized in to five wealth quintile for further analysis. To convert nutritional data indices into Z-scores the WHO Anthro version 3.2.2 software was used, Children whose height-for-age, weight-for-height, and weight-for-age < -2 SD from the median of the reference population was considered as stunted, wasted, and underweight respectively. To identify factors associated with child developmental delay, the absence of multi-co-linearity was checked by using the covariate correlation matrix; all variables have VIF<10 and tolerance>0.1. Binary logistic regression analysis was carried out at two levels, first bivariable logistic regression was performed to each independent variable with child development delay and those variables with a p-value < 0.25 were included in the final model (multivariable analysis) to control for all possible confounders. The strength of association was measured using the adjusted

odds ratio, and 95% confidence intervals. Statistical significance is declared at P-value <0.05. A good fitness of the regression model was observed from Hosmer Lemeshow test (p=0.82) in backward regression analysis.

4.12 Ethical considerations

Institutional ethical clearance was obtained from Wolkite University College of medicine and Health science, Public health department, Institutional Review Board. Support letter was submitted to concerned bodies. Data givers were informed about the purpose of the study. To protect and respect the privacy, wellbeing of patients and maintain confidentiality the data was coded by avoiding personal identifier and data was kept in a safe place. While conducting the study children's who are screened with developmental delay and malnutrition; mothers were informed and advised what measures to take and was be linked to nearby health service respectively. To prevent COVID 19 transmission data collectors use mask and sanitizer.

4.14 Dissemination plan

The study result will be presented to Wolkite University in open thesis defense.

For all concerned bodies copy will be given: Guraghe zone health department and Abeshge health district and for other responsible organization working on child health at the localities.

Effort will be made to present the result in locally held seminars, workshops, conferences, and meetings. For publication purposes, the abstract of this thesis will be submitted to national or international peer-reviewed publishers

The final result will be published in reputable journals.

5 Results

5.1 Socio-demographic characteristics

This study was conducted among 507 mothers who have children aged 12-59 month in Abeshgie district during the data collection period with a response rate of 97.6%. The mean age of the respondents is 31.2 years (± 5.2) and 47(9.15%) are between age 15 to 24 years. Majority of the respondents 241(47.53%), 482(95.07%), 448(88.4%) and 386(76.13%), were Muslim religion followers, married, from rural area and do not attend government formal education respectively. About 364 (71.79%) of mothers were housewife 306(60.36%) and 134(16.96%) have family size >5 and living in poor economic status respectively. (Table 5.1)

Table 5.1: Socio-demographic characteristics of the study participants at Abeshgie (N=507); May 2021

Variable	**Category**	**Residence**		**Total**
		Urban Frequency (%)	Rural Frequency (%)	**Frequency (%)**
Age of mother	Young(15-24)	6(10.17)	41(9.15)	47(9.27)
	Middle(25-34)	45(76.27)	281(62.72)	326(64.30)
	Late(>=35)	8(13.56)	126(28.13)	134(26.43)
Religion	Orthodox	33(55.93)	182(40.62)	215(42.41)
	Muslim	24(40.68)	217(48.44)	241(47.53)
	Other	2(3.39)	49(10.94)	51(10.06)
Marital status	Single	2(3.39)	5(1.12)	7(1.38)
	Married	53(89.83)	429(95.76)	482(95.07
	Widowed	3(5.09)	9(2,00)	12(2.37)
	Divorced	1(1.69)	5(1.12)	6(1.18)
Educational status	No-formal education	39(66.1)	347(77.46)	386(76.13
	Formal education	20(33.89)	101(22.54)	121(23.87)
Occupational	Homeworker	29(49.15)	335(74.78)	364(71.79)

status	Outside worker	30(50.85)	113(25.22)	143(28.21)
Family size	<=5	25 (42.37)	176(39.29)	201(39.64
	>5	34 (57.63)	272(60.71)	306(60.36
	Lowest	1(1.69)	85(18.97)	86(16.96)
	Second	20(33.90)	134(29.91)	154(30.37)
Wealth status	Middle	7(11.86)	99(22.10)	106(20.91)
	Fourth	14(23.74)	70(15.63)	84(16.57)
	highest	17(28.81)	60(13.39)	77(15.19)

A total 279 (55.02%) children were females with a mean age of 32.08 months (SD 12.2 month). More than half (62.7) of the children, were toddlers aged 1-3 years. About 95% of children's were delivered at health institution while 64.49% of children's were delivered at term.

A total 98.22% of children's were born with normal birth weight. Regarding child feeding 223(43.98%) started complementary feeding at six month. Out of the total children, 59.17% are fourth and fifth child for their mother. Almost all children's 97.83% eat less than five times a day. (460)90.7% of children's do not meet the minimum dietary diversity. (Table 5.2)

Table5.2: Child Socio-demographic, feeding practice and nutritional status at Abeshgie (N=507); May 2021

Variable	**Category**	**Residence**		**Total**
		UrbanFrequency (%)	Rural Frequency (%)	**Frequency (%)**
Sex of child	Female	29 (49.15)	250 (55.80)	279 (55.03)
	Male	30 (50.85)	198 (44.20)	228 (44.97)
Place of delivery	Health institution	55 (93.22)	427 (95.32)	482 (95.06)
	Home	4 (6.78)	21 (4.68)	25 (4.94)
Age of child	Toddler	33 (55.93)	285 (63.62)	318 (62.72)
	Preschool	26 (44.07)	163 (36.38)	189 (37.28)
Planned	Yes	18 (30.51)	150 (33.48)	168 (33.14)

pregnancy	No	41(69.49)	298 (66.52)	339 (66.86)
Multiple	Yes	6 (10.17)	24 (5.36)	30 (5.92)
pregnancy	No	53 (89.83)	424 (94.64)	477 (94.08)
Parity	<5	41(69.49)	343 (76.56)	384 (75.74)
	>=5	18(30.51)	105 (23.44)	123 (24.26)
Gestational age	<37weeks	8(13.56)	37 (8.26)	45 (8.88)
	37-42 weeks	44(74.58)	283 (63.17)	327 (64.50)
	>42 weeks	7(11.86)	128 (28.57)	135 (26.62)
Birth Order	First	1 (1.69)	8 (1.79)	9 (1.77)
	Second	14 (23.73)	85 (18.97)	99 (19.53)
	third and forth	27 (45.77)	273 (60.94)	300 (59.17)
	>=five	17 (28.81)	82 (18.30)	99 (19.53)
Birth interval	>2 years	35 (59.32)	180 (40.18)	215 (42.41)
	<=2 years	24 (40.68)	268 (59.82)	292(57.59)
Birth weight	>=2500gram	56(94.92)	442 (98.66)	498 (98.22)
	<2500gram	3(5.08)	6 (1.34)	9 (1.78)
Initiation of	<6month	9 (15.25)	72 (16.07)	81 (15.98)
complementary	at6month	32 (54.24)	191 (42.64)	223 (43.98)
feeding	>6month	18 (30.51)	185 (41.29)	203 (40.04)
Meal frequency	>=5	3(5.08)	8 (1.79)	11 (2.17)
	<5	56(94.92)	440 (98.21)	496 (97.83)
Dietary	>=4 food	2(3.39)	45 (10.04)	47 (9.27)
diversity	groups			
	<4 food groups	57(96.61)	403 (89.96)	460 (90.73)
Stunting	Yes	18 (30.51)	163 (36.38)	181 (35.70)
	No	41(69.49)	285 (63.62)	326 (64.30)
Underweight	Yes	5(8.47)	36 (8.04)	41 (8.09)
	No	54(91.53)	412 (91.96)	466 (91.91)
Wasting	Yes	8(13.56)	34 (7.59)	42 (8.28)
	No	51(86.44)	414 (92.41)	465 (91.72)

Malnutrition among children

Total of 181(35.70) are stunted, 8.08 and 8.28 are underweight and wasted respectively.

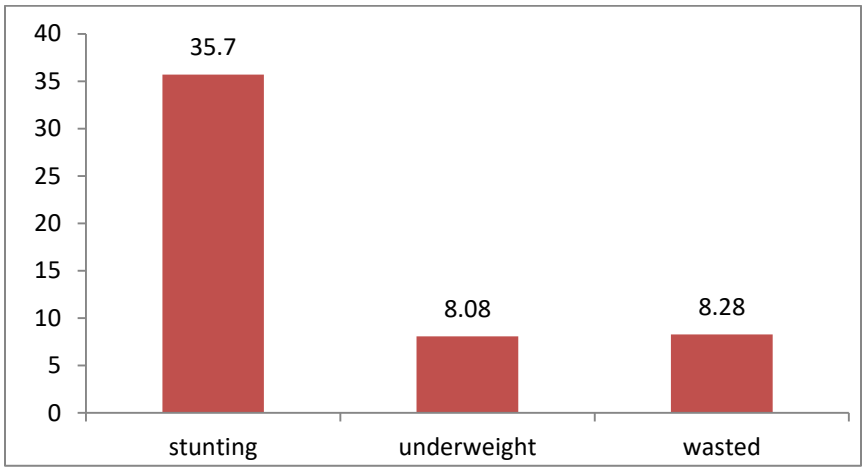

Figure 5. 1: Prevalence of childhood malnutrition among Abeshgie childrens May, 2021.

Prevalence of Childhood developmental delay

The childhood developmental delay was assessed using the age specific questioner ASQ 3.the developmental score was calculated based on specific question in each milestone. The mean ASQ-3 score was 150 (± 23.35), with minimum score of 45 and maximum 270. The mean ASQ-3 score for each domain range from 25.64 -35.11, with standard deviation from 5.26 -8.04, and a range from zero to 60 for fine motor and personal social milestone and five to 60 for the rest milestones. This study revealed that high risk of developmental problem in children were 29.4% with 95% CI (25.6%, 33.5%) and it is expressed as communication 16.8%, gross motor 17.2%, fine motor 10.1%, personal social 13.4%, and problem solving 10.8%. **(Table 5.3)**

Table5. 3: Mean score, SD and Prevalence of developmental delay in each milestone on thesis entitled "child development and associated factors among children's aged 12-59 month" May, 2021

Domains	Mean(all participants)	SD	Prevalence (CI)
Communication	27.9(20.3,23,0)	7.1	16.8%(13.6,20.4)

Gross motor	35.1	7.0	17.2%((13.8,20.5)
Fine motor	25.6	8.0	10.1%(7.5,12.6)
Problem solving	29.9	5.2	13.4%(10.7,16.6)
Personal social	31.3	6.8	10.8%(8.1.13.6)

About 149(29.4%) of children's were delayed developmentally.

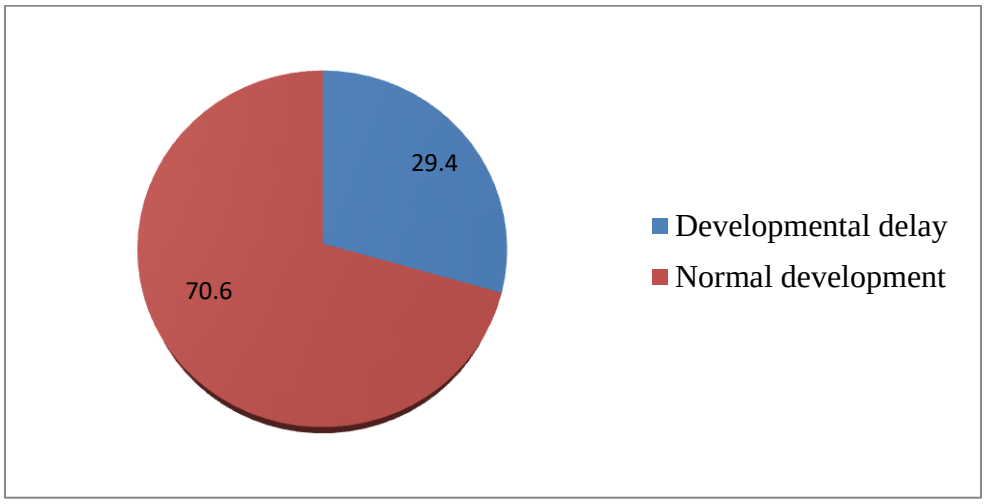

Figure 5. 2: Developmental status in Abeshgie district among children's aged 12-59 May, 2021

Factors associated with childhood developmental delay

Binary logistic regression model was used to identify factors associated with childhood development delay and those covariates with P-value of <0.25 in bi-variable logistic regression were candidates for multivariable logistic regression to identify factors independently associated with developmental delay.

In bivariate analysis: maternal education, maternal age, maternal occupation, gestational age, time of initiation of complementary feeding, multiple pregnancy, child age, stunting, underweight, parity, birth interval, dietary diversity, and wealth status were associated with child developmental delay.

Children's whose mothers work outside were 2.6 times more likely to developmental delay as compared to those children's whose mothers are house wife. [COR=2.6; 95% CI (1.56, 5.48)]. The odds of children who were delivered preterm were 6 times more likely to be delayed compared to children's who were delivered at term. [COR=6.0; 95% CI (3.0, 11.8)].Children's who started complementary feeding before six month were nearly 3 times more likely to have developmental delay compared to children's who start at six month. [COR=2.9; 95% CI (1.7, 5.0)].The odds of developmental delay for stunted and underweight children's were 3 times [COR=3.2; 95%CI (2.1, 4.7)] and [COR=3.0; 95%CI (1.6, 5.9)] more risky to have a developmental delay compared to normal children's. Children who get minimum dietary diversity score less than four were 3 times more likely to be developmentally delayed with [COR=3.3; 95% CI (0.94, 4.7)] compared to children who take more than food groups.(Table 5.4)

Table 5. 4**:** Univariable logistic regression analysis of factors associated with child development delay; SNNPR Guraghe zone Ethiopia May, 2021

Explanatory variable	**Category**	**Developmental delay**		**COR(95%CI)**	**P-value**
		Yes	No		
Education	No formal education	28	93	1.00	
	Formal education	121	265	0.66(0.89,3.05)	0.10
Occupation	Home maker	85	279	1.00	
	Outside home	64	79	2.66(1.56,5.48)	0.00
Place of delivery	Health institution	137	345	1.00	
	Home	12	13	2.3(1.71,3.747)	0.20
Gestation	37-42 week	88	239	1.00	0.00
	<37 week	31	14	6.0(3.0,11.8)	0.00
	>42 week	30	105	0.77(0.62,1.92)	0.29
Complementary feeding	At 6month	51	172	1.00	0.00
	< 6month	38	43	2.98(1.7,5.0)	0.00
	>6month	60	143	1.41(0.917,2.18)	0.11

Multiple pregnancy	Yes	15	15	1.00	
	No	134	343	0.39	0.16
Stunting	Stunted	82	99	3.2(2.1,4.7)	0.00
	Not stunted	67	259	1.00	
Underweight	Underweight	22	19	3.09(1.60,5.9)	0.05
	Not underweight	127	339	1.00	
Parity	<5	141	357	1.00	
	>=5	8	1	1.4(0.9,2.1)	0.22
Birth interval	>=2 years	58	157	1.00	
	<2 years	91	201	1.5(0.9,2.4)	0.09
Dietary diversity	>=4	8	39	1.00	
	<4	141	319	3.3(0.9,4.7)	0.01
Maternal age	Young	24	23	4.5(2.2,9.3)	0.16
	Middle	100	226	1.9(1.7,3.1)	0.12
	Late	25	109	1.00	
Child age	Toddler	87	231	0.771(0.5,1.1)	0.19
	Preschool	62	127	1.00	
Wealth status	Lowest	20	66	1.00	
	Second	35	119	1.4(0.3,1.2)	0.17
	Middle	45	61	1.2(0.3,1.1)	0.10
	Fourth	23	61	1.5(0.8,2.8)	0.16
	Fifth	26	51	0.7(0.3,1.5)	0.44

In multivariable analysis backward logistic regression method was used then maternal out side working, preterm birth, early initiation of complementary feeding, stunting, underweight and low dietary diversity score were significantly associated with developmental delay at P-value < 0.05 level of significance and 95% confidence interval. Multicollinearity was checked; variables VIF and tolerance were < 10 and >0.1 Moreover, Hosmer and Lemeshow goodness of fit test was used to check for model fitness (it was 0.82)

Children's whose mothers work outside were 3 times more likely to developmental delay as compared to children's whose mothers are house wife. [AOR=3.0; 95% CI (1.8, 4.8)]. The odds of children delivered preterm were 3 times more likely to be delayed compared to children's who were delivered at term. [AOR=3.2 95% CI (1.4,7.0)].Children's who start complementary feeding before six month were nearly 2 times more likely to have developmental delay compared to children's who start at six month. [AOR=2.5; 95% CI (1.3, 4.6)].The odds of developmental delay for stunted and underweight children's were 3 times and 2 [AOR=3.0; 95%CI (1.9, 4.7)] and [AOR=2.3; 95%CI (1.1, 4.7)] more likely to developmental delay respectively compared to normal children's. Children who don't get minimum dietary diversity were 3 times more likely to be developmentally delayed with [AOR=3; 95% CI (1.3, 7.5)] compared to children who take more than four food groups. (Table 5.5)

Table 5. 5: Multivariable logistic regression analysis of factors associated with developmental delay among childrens aged 12-59 month; SNNPR Guraghe zone Ethiopia May, 2021

Explanatory variable	**Category**	**Developmental delay**		**AOR(95%CI)**	**P-value**
		Yes	No		
Occupation	Home maker	85	279	1.00	
	Outside home	64	79	2.9(1.8,4.8)	0.00*
Gestation	37-42 week	31	14	1.00	
	<37 week	87	240	3.2(1.4,7.0)	0.00*
	>42 week	31	104	0.85(0.56,1.6)	0.85
Complementary feeding	At 6month	39	42	1.00	.
	< 6month	50	173	2.5(1.37,4.6)	0.03*
	>6month	60	143	1.21(0.71,1.87)	0.745
Stunting	Yes	82	99	3.0 (1.9,4.7)	.000*
	No	67	259	1.00	
Underweight	Yes	22	19	2.3(1.1,4.7)	0.025*
	No	127	339	1.00	
Dietary diversity	>=4	8	39	1.00	
	<4	141	319	3.1(1.3,7.5)	0.011*

AOR= Adjusted Odds Ratio, * p-value <0.05, ** p-value <0.01 Hosmer and lemshow test value was 0.82

6 Discussion

This study found the prevalence of developmental delay in the study population was29.4% with 95% CI (25.6%, 33.5%) which was in line with study conducted in rural china (35.7%) (22) and Nigeria (35.4%) (25) The similar findings with china arise from the similar study design and tool used for screening child development. The similarity in prevalence of this study and the Nigeria study may be a reflection of a developmental quotient pattern among children in developing countries or it may be a reflection of one of the drawbacks of using assessment tools initially tested within Western cultural contexts, with which children in developing countries may not be completely conversant.

The prevalence of developmental delay was higher compared to the national estimate of Ethiopia (59%) (11) from study conducted in Wolaita sodo (19%) (28), Turkey (6.5%) (20), India (16.2%) (23), Burdwan district west Bengal (7.9) (27).The discrepancy from Turkey, India and west Bengal a rise from the socioeconomic status and better child health care system.

But the finding was lower compared to the lancet 2016 report for the world which was 43 percent of children under 5 years of age living in low- and middle-income countries are at risk of suboptimal development.(9) Pakistan (61.1%) (21),Madagascar (40%) (5),South Africa (55.2%) (24) and Rwanda (52.6%).(24) Ghana (44.6%) (46) The difference from the lancet is attributed due to inclusion of awide population of the globe. The higher prevalence In Pakistan is due to the inclusion of only rural dwellers which overestimates the prevalence. The difference from study conducted in Madagascar attributed to participants involved were malnourished children which overestimates the prevalence. In Ghana study participants included were rural children's who attened welfare clinic with different ill complain which increases prevalence of delay in contrast this study is community based. Reason for this variation may be attributed to several factors including study method used and the different socioeconomic class of participants, sample size difference, setting and number of developmental domains assessed.

In this study working of mother's outside home is positively associates with childhood developmental delay which was supported by other studies done in west Bengal (27) and India.(23) The reason for the increment of childhood delay in outside workers is due to mothers who are employeed early may deprive children of care, time and attention; it may impede the development of secure infant to mother bonding as well as the opportunity of extended breastfeeding, all of which are associated with a number of cognitive benefits.(47,48)

In the current study preterm childrens have higher risk of developmental delay compared to term which was supported by study in Rwanda(26), Santiago (32),India (23) and Saudi Arabia (33).
The possible increament of child developmental delay in preterm is due to corticosteroids given for lung maturity at neonatal intensive care unit results cell death and decreased cell growth, which increased risk for having impaired growth of the cerebellum. (49) Being Preterm also increases the risk of hypoxic-ischemic events often leads to severe developmental or cognitive delays, or motor impairements.(50,51)
The brains of preterm babies are smaller than normal because of reduced dendritic growth, reduced myelination, and the production of fewer glia (supporting cells in the brain which continue to form after birth and are responsible for producing myelin).
The volume for cerebral cortex of premature babies is reduced which is responsible for reading language, emotion and behavior. Also the Volume of both grey and white are reduced; grey matter consists of the cell bodies of the brain's nerve cells, where signal processing and thinking happen. (52)
The current study shows stunted children's had higher odds of developmental delay. This finding is supported with studies in South Africa(24), Wolaita(28), Indonesia(35), Rwanda(26), Nigeria(25) Also The current Study reveals that underweight childrens had increased risk of developmental delay the evidence is supported by studies in Nigeria(25) and India(30).This is because malnutrition results in tissue damage, growth retardation, disorderly differentiation, reduction in synapses and synaptic neurotransmitters, delayed myelination and reduced overall development of dendritic arborization of the developing brain.(53) Inadequate brain growth explains children who were malnourished as fetuses and infants suffer often lasting behavioral and cognitive deficits, including slower language and fine motor development.(54)

This study also shows childrens who start complementary feeding has increased odds of child developmental delay the evidence was supported by finding from Saudi Arabia (33), rural India(23),Wolaita(28), Ethiopia(28),rural Pakistan(21).Babies who start complementary feeding early have higher rates of iron deficiency anaemia because feeding other than breast milk causes early satiety and decrease frequency of breast feeding so decrease the amount of iron obtained from breast milk where iron is highly absorbed. One of the complementary foods introduced for babies is cow milk which leads to anemia because it has less iron, causes occult blood loss from the intestines and makes it harder for the body to absorb iron. Knowing that iron is a key nutrient that contributes to fetal and neonatal brain development is associated with critical cellular processes in the immature brain, including the maintenance of neural cell energy status, myelination, and monoamine neurotransmitter homeostasis brain development.(55) Iron deficiency decreases cytochrome oxidase activity in the brain, especially in the hippocampus and prefrontal regions). It could lead to the disorders of brain development such as motor development and cognitive memory.(56)

The current study also shows low dietary diversification has effect on child development this evidence is supported by study in Wolaita (28), and China.(36) Different foods and food groups are good sources for various macro- and micronutrients so a diverse diet best ensures nutrient adequacy.(57) The increment of risk for developmental delay due to low diversification is that, Low dietary diversity causes nutrient deficiency like protein, energy, fats, iron, zinc, copper, iodine, selenium, vitamin A, choline, and folate. This vitamin and minerals have arole on formation of different cell types such as neurons, oligodendrocyte, Neuron Astrocyte and Neuron Oligodendrocyte. For example deficiency of copper is affects for brain-specific enzymes that control neurotransmitters, such as dopamine, and neuropeptides. Dopamine plays an important role in numerous functions, including motivation, reward, learning, movement, memory, and more. (58,59) Lack of zinc has been implicated in impaired DNA, RNA, and protein synthesis during brain development. (60)

7 Limitation

- ✓ Recall bias (remembering for child birth weight, initiation of complementary feeding and gestational age)
- ✓ Mental development is measured at one time, but one time measurement might lead to increased & decreased prevalence; better if it measured repeatedly than one time.

8 Conclusion

A higher burden of developmental delay is found among children in the study area. It is significantly predicted by; maternal occupation, gestational age, early initiation of complementary feeding, stunting, underweight and low dietary diversity confirming previous studies conducted in different areas of the world. Our finding highlighted there is a need for multi-intervention programmes addressing dietary diversity and infant feeding to improve child growth as well as development.

9 Recommendation

The alarmingly high rates of developmental delay and stunting among children's in this area warrants attention to nutritional and developmental needs of the children. The following recommendations are here being put forward for early timely prevention and intervention for child developmental delay.

Policy makers

- ✓ Development of the National Child Policy and its implementation has become a national agenda
- ✓ Country-level strategies that prioritize prevention of premature birth should be continued.
- ✓ Further strengthen nutrition programmes aimed at reducing the burden of under-nutrition such as food fortification, food diversification and school feeding programmes, as well as the well-established optimal infant and young child feeding
- ✓ The present study also shows the maternal occupation strongly linked with delayed development of the child, thus means of working near home for mothers should.
- ✓ Since stunting and underweight were both independently associated with developmental delay, a special focus of resources on developmental interventions to support children with malnutrition, and children born preterm who are more likely to be malnourished, should focused.

- ✓ Ethiopia should continue to focus on nutritional interventions to decrease developmental delay.

Health workers

- ✓ HW should continue an enhanced ENA counseling for mother and caregivers for a better optimal child feeding and nutritional status.

To researchers

- ✓ To overcome with the limitation in this study design; better if researchers conduct by using other study design (Prospective cohort studies).

References

1. Black, M. M., Walker, S. P., Fernald, C. H., Anderson, C. T., DiGirolamo, A. M., Lu, C., McCoy DC. Advancing Early Childhood Development: from Science to Scale 1. Vol. 47, J Autism Dev Disord. 2017. p. 549–62.

2. Centers for disease control. Early brain development and health [Internet]. Centers for Disease Control and Prevention. 2021. Available from: https://www.cdc.gov/ncbddd/childdevelopment/early-brain-development.html

3. Kid Sense. What is Child Development - Kid Sense Child Development [Internet]. Kid Sense. 2017. Available from: https://childdevelopment.com.au/areas-of-concern/what-is-child-development/

4. Science.Engineering.Medicine TNA of. Child Development and Early Learning: A Foundation for Professional Knowledge and Competencies. Natl Acad Sci Eng Med [Internet]. 2015;20. Available from: https://www.nap.edu/resource/19401/ProfKnowCompFINAL.pdf

5. Rabemananjona, Miller A, Garachitorena A and RF et. al. Factors associated with risk of developmental delay in preschool children in a setting with high rates of malnutrition_ a cross-sectional analysis of data from the IHOPE study, Madagascar _ BMC Pediatrics _ Full Text. 2020.

6. Tamburlini G. Nurturing care for early child development. Vol. 37, Medico e Bambino. 2018. 489 p.

7. Black MM, Walker SP, Fernald LCH, Andersen CT, DiGirolamo AM, Lu C, et al. Early childhood development coming of age: science through the life course. Vol. 389, The Lancet. 2017. p. 77–90.

8. Campbell F, Conti G, Heckman JJ, Moon SH, Pinto R, Pungello E, et al. Early childhood investments substantially boost adult health. Vol. 343, Science. 2014. p. 1478–85.

9. World Bank. Early Childhood Development Overview [Internet]. 2017. Available from: https://www.worldbank.org/en/topic/earlychildhooddevelopment

10. Gil JDC, Ewerling F, Ferreira LZ, Barros AJD. Early childhood suspected developmental delay in 63 low-and middle-income countries: Large within-and between-country inequalities documented using national health surveys. Vol. 10, Journal of Global Health. 2020.

11. Directorate M and CH, Ministry of Health E, Addis Ababa E. Status of Implementation for Early Childhood Development Interventions in Ethiopia Findings of the Situational Analysis Maternal and Child Health Directorate Ministry of Health , Ethiopia. 2019;1–44.

12. United Nations Economic and Social Commission for Asia and the Pacific. Disability at a Glance 2015: Strengthening Employment Prospects for Persons with Disabilities in Asia and the Pacific [Internet]. United Nation. 2015. 173 p. Available from: http://www.unescap.org/sites/default/files/SDD Disability Glance 2015_Final.pdf

13. Van Schrojenstein Lantman-de Valk HMJ, Walsh PN. Managing health problems in people with intellectual disabilities. Bmj. 2008;337(7683):1408–12.

14. Dyson L. Unanticipated effects of children with learning disabilities on their families. Vol. 33, Learning Disability Quarterly. 2010. p. 43–55.

15. Saunders BS, Mick Tilford J, Fussell JJ, Schulz EG, Casey PH, Kuo DZ. Financial and employment impact of intellectual disability on families of children with autism. Vol. 33, Families, Systems and Health. 2015. p. 36–45.

16. United Nation childrens Fund. Combatting the Costs of Exclusion for Children with Disabilities and their Families. 2021; Available from: https://www.unicef.org/reports/combatting-costs-exclusion

17. Raising Children Network(RCN). Developmental delay in children | Raising Children Network [Internet]. 2019. Available from: https://raisingchildren.net.au/guides/a-z-health-reference/developmental-delay

18. Ministry of Finance and UNICEF Ethiopia. National Situation Analysis of Children and Women in Ethiopia. Unicef [Internet]. 2019;138. Available from: https://www.google.com/search?client=safari&rls=en&sxsrf=ALeKk00qlkSvVy-

wY67LfZjY9qe9rRHqvw%3A1604915456749&ei=ABGpX6KxLeDP1fAP0K67iAg&q=National+Situation+Analysis+of+Children+and+Women+in+Ethiopia&oq=National+Situation+Analysis+of+Children+and+Women+in+

19. Atari S, Ballotta M, Banda M, Begin F, Bränning A, Buckanoff M, et al. Early Childhood Development | UNICEF [Internet]. 2017. Available from: http://www.unicef.org/earlychildhood/

20. Demirci A, Kartal M. The prevalence of developmental delay among children aged 3-60months in Izmir, Turkey. Vol. 42, Child: Care, Health and Development. 2016. p. 213–9.

21. Saleem J, Zakar R, Mehar G, Bukhari J, Fatima A, Fischer F. Developmental Delay and Its Predictors Among Under-Five Uncomplicated Severe Acute Malnourished Children: a Cross-Sectional Study in Rural Areas of Pakistan [Internet]. 2020. Available from: https://doi.org/10.21203/rs.3.rs-57484/v1

22. Zhang J, Guo S, Li Y, Wei Q, Zhang C, Wang X, et al. Factors influencing developmental delay among young children in poor rural China: A latent variable approach. Vol. 8, BMJ Open. 2018.

23. Sharma N, Masood J, Singh SN, Ahmad N, Mishra P, Singh S, et al. Assessment of risk factors for developmental delays among children in a rural community of North India: A cross-sectional study. Vol. 8, Journal of Education and Health Promotion. 2019.

24. Kirsten Ann D, Cathherine J W, Barnett W, JAM R, Hoffman N. Risk and protective factors for child development: An observational South African birth cohort. [Internet]. Vol. 16, PLoS medicine. 2019. p. e1002920. Available from: https://pubmed.ncbi.nlm.nih.gov/31560687/

25. Jimoh AO, Anyiam JO, Yakubu AM. Relationship between child development and nutritional status of under-five nigerian children. South African J Clin Nutr. 2018;31(3):50–4.

26. Abimana K., Betancourt T, Magge C M. Developmental outcomes of preterm and low

birth weight toddlers and term peers in Rwanda [Internet]. Vol. 85, Annals of Global Health. 2019. p. 147. Available from: https://agh.ubiquitypress.com/articles/10.5334/aogh.2629/galley/2815/download/

27. Bhattacharya T, Ray S, Das DK. Developmental delay among children below two years of age: a cross-sectional study in a community development block of Burdwan district, West Bengal. Vol. 4, International Journal Of Community Medicine And Public Health. 2017. p. 1762.

28. Workie SB, Mekonen T, Mekonen TC, Fekadu W. Child development and nutritional status in 12 – 59 months of age in resource limited setting of Ethiopia. 2020;1–9.

29. Chakraborty D saumik, Sharmistha DB, Das DDK, Dasgupta DS. Developmental Delays and Its Predictors Among Infants- a Cross Sectional Study in Rural Areas of Siliguri Subdivision, Darjeeling District, West Bengal. Int J Med Biomed Stud. 2019;3(4).

30. Khandelwal N, Mandliya J, Nigam K, Patil V, Mathur A, Pathak A. Determinants of motor, language, cognitive, and global developmental delay in children with complicated severe acute malnutrition at the time of discharge: An observational study from Central India. Vol. 15, PLoS ONE. 2020.

31. Taylor CL, Rice ML, Christensen D, Blair E, Zubrick SR. Prenatal and perinatal risks for late language emergence in a population-level sample of twins at age 2. Vol. 18, BMC Pediatrics. 2018.

32. Schonhaut L, Armijo I, Pérez M. Gestational age and developmental risk in moderately and late preterm and early term infants. Pediatrics. 2015;135(4):e835–41.

33. Shatla M, Goweda R. Prevalence and Factors Associated with Developmental Delays among Preschool Children in Saudi Arabia. J High Inst Public Heal. 2020;0(0):10–7.

34. Workie SB, Mekonen T, Mekonen TC, Fekadu W. Child development and nutritional status in 12-59 months of age in resource limited setting of Ethiopia. Vol. 39, Journal of Health, Population and Nutrition. 2020.

35. Haryda G. Sudarto R. August 2020. (PDF) STUNTING AND DEVELOPMENTAL

DELAYS AMONG CHILDREN AGED 6–59 MO. 2020.

36. Zhao C, Guan H, Shi H, Zhang J, Huang X, Wang X. Relationships between dietary diversity and early childhood developmental outcomes in rural China. Vol. 17, Maternal and Child Nutrition. 2021.

37. Wu. X, Cheng G, Tang C, Xie Q, He S, Li R, et al. The effect of parenting quality on child development at 36–48 months in China's urban area: Evidence from a birth cohort study. Vol. 17, International Journal of Environmental Research and Public Health. 2020. p. 1–11.

38. Squires J, Twombly E, Bricker D, Potter L. ASQ-3 User's Guide. 2009;3–6. Available from: www.agesandstages.com

39. D L, Verhoeven A. Birth weight and neurodevelopmental outcome of children at 2 years of age after planned vaginal delivery for breech presentation at term. Vol. 196, American Journal of Obstetrics and Gynecology. 2007.

40. Kerstjens JM, Bos AF, ten Vergert EMJ, de Meer G, Butcher PR, Reijneveld SA. Support for the global feasibility of the Ages and Stages Questionnaire as developmental screener. Vol. 85, Early Human Development. 2009. p. 443–7.

41. Piek JP, Dawson L, Smith LM, Gasson N. The role of early fine and gross motor development on later motor and cognitive ability. Vol. 27, Human Movement Science. 2008. p. 668–81.

42. Lamsal R, Dutton DJ, Zwicker JD. Using the ages and stages questionnaire in the general population as a measure for identifying children not at risk of a neurodevelopmental disorder. Vol. 18, BMC Pediatrics. 2018.

43. WHO, UNICEF. Indicators for assessing infant and young child feeding practices. World Heal Organ United Nations Child Fund [Internet]. 2021;WHA55 A55/:19. Available from: http://apps.who.int/iris/bitstream/handle/10665/44306/9789241599290_eng.pdf?sequence=1%0Ahttp://whqlibdoc.who.int/publications/2008/9789241596664_eng.pdf%5Cnhttp://www.unicef.org/programme/breastfeeding/innocenti.htm%5Cnhttp://innocenti15.net/decla

ration.

44. W.H.O./U.N.I.C.E.F. WHO child growth standards and the identification of severe acute malnutrition in infants and children: A joint statement by the World Health Organization and. 2011; Available from: http://www.who.int/nutrition/publications/severemalnutrition/9789241598163_eng.pdf

45. World health organization and United Nations childrens fund. Global Nutrition monitoring framework. Operational guidance for tracking progress in meeting targets for 2025 [Internet]. World Health Organization. 2017. 77 p. Available from: http://apps.who.int/iris/bitstream/handle/10665/259904/9789241513609-eng.pdf;jsessionid=82B08433379C3E3E69B3F8D4F2690C34?sequence=1%0Awww.who.int/nutrition

46. Bello AI, Quartey JNA, Appiah LA. Screening for developmental delay among children attending a rural community welfare clinic in Ghana. Vol. 13, BMC Pediatrics. 2013.

47. Kumar L. Impact of Working Mothers on their Children's Development 2019 [Internet]. Available from: https://www.researchgate.net/publication/331702132_Impact_of_Working_Mothers_on_their_Children%27s_Development#fullTextFileContent

48. Huerta M del C, Adema W, Baxter J, Corak M, Deding M, Gray MC, et al. Early maternal employment and child development in five OECD countries. OECD Soc Employ Migr. 2011;(118):53.

49. Juliana B. Pre-Term Babies' Exposure to Steroids Associated with Impaired Brai n Growth _ UC San Francisco 2011.

50. Luciana M. Cognitive development in children born preterm: Implications for theories of brain plasticity following early injury. Vol. 15, Development and Psychopathology. 2003. p. 1017–47.

51. Center A baby and child law. Diagnosing Oxygen Deprivation Injury in Preterm Babies _ Hypoximic Ischemic Encephalopathy Research 2016.

52. Stanford R. Portions of brain are smaller in children born prematurely August, 2004.

53. Bhoomile S, Chandramouli A. Cognitive development in children with chronic protein energy malnutrition. Vol. 4, Behavioral and Brain Functions. 2008.

54. National Center for Infants T and F. How does nutrition affect the developing brain? [Internet]. 2016. Available from: https://www.zerotothree.org/resources/1372-how-does-nutrition-affect-the-developing-brain

55. Bianco LE, Wiesinger J, Earley CJ, Jones BC, Beard JL. Iron deficiency alters dopamine uptake and response to L-DOPA injection in Sprague-Dawley rats. Vol. 106, Journal of Neurochemistry. 2008. p. 205–15.

56. Wang Y, Wu Y, Li T, Wang X, Zhu C. Iron metabolism and brain development in premature infants. Vol. 10, Frontiers in Physiology. 2019.

57. Moore S. Why is dietary diversity important? | Food and Nutrition Technical Assistance III Project (FANTA) [Internet]. 2016. Available from: https://www.fantaproject.org/node/1199

58. Rihel J. Copper on the brain. Vol. 14, Nature Chemical Biology. 2018. p. 638–9.

59. Ardito, R. B. & Rabellino D. Blog Therapy [Internet]. GoodTherapy. 2011. Available from: https://www.goodtherapy.org/blog/psychpedia/definition-of-therapeutic-relationship

60. Braverman. Zinc, the brain and behavior - PubMed 1986 [Internet]. Available from: https://pubmed.ncbi.nlm.nih.gov/7082716/

Annexes

Annex 1: Information sheet and informed voluntary consent form for head of kebele

My name is _____. I am working as a data collector for the study being conducted in this Institution by Zinash Fikre who is studying for her Master's degree at Wolkite University, College of Medicine and Health Sciences. I kindly request you to lend me your attention to explain you about the study and your institution being selected as the study setting.

The study Title: Child development delay and factors associated among 519 children's aged 12-59 months of children in Abeshgie, Guraghe Zone, SNNPR Ethiopia, 2021 G.C.

Purpose /Aim of the study: The findings of this study can be of paramount importance for the Abeshgie district health department, Guraghe zone or other NGOs to plan intervention programs based on the gap identified on Child development. Moreover, this study aims to write a thesis as a partial requirement for the fulfillment of the Master's Program in public health Nutrition.

Procedure and duration: I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. There are a few questions to answer where I will fill the questionnaire by interviewing you. The interview will take about 30 – 40minutes, so I kindly request you to spare me this time for the interview.

Risks and benefits: The risk of being participating in this study is very minimal, but only taking a few minutes from your time. There will not be any direct payment for participating in this study. But the findings from this research may reveal important information for the Abeshgie district health department and other researchers.

Confidentiality: The information you provide us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons or housing. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

Rights: Participation in this study is fully voluntary. You have the right to declare to participate or not in this study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits that you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact address: If there are any questions or inquiries at any time about the study or the procedures, please contact this address. If you want more information and check about this project, you can contact the following people

Principal Investigator Name and Address: Zinash Fikre Tel: Mobile phone, +251-10-51-98-22 /+251-22-58-89-68 or Email, zinashfikre 51@gmail.com

Declaration of informed voluntary consent:

I have read the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that participants have the right to withdraw from the study at any time or not to answer any question that they do not want. I am also informed that the Kebele has the right to stop this study from being conducted if any misdeeds and unethical procedures are observed during the data collection process in the kebele. Therefore, I declare my voluntary consent on behalf of _____ kebele management to allow this study to be conducted here in the kebele with my initials (signature).

Name and Signature of Head of the kebele:_____ _____ Date _____

Name and Signature of Data Collector: _____ _____ Date _____

Annex 2: Participant informed voluntary consent form

My name is ---------- I am working as a data collector for the study being conducted on child development delay, nutritional status 12-59 month of children Abeshgie district by Zinash Fikre who is studying her Master‟s degree at Wolkite University College of Medicine and Health sciences. I kindly request you to lend me your attention to explain to you about the study and being selected as the study participant.

The study Title: Child development delay and factors associated among childrens aged 12-59 months in Abeshgie, Guraghe zone SNNPR Ethiopia, 2021 G.C.

Purpose /Aim of the study: The findings of this study can be of paramount importance for the Abeshgie district administration health department or other NGOs to plan intervention programs based on the gap identified on Child developmental, nutritional staus. Moreover, this study aims to write a thesis as a partial requirement for the fulfillment of the Master‟s Program in public health Nutrition.

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Rights: Participation in this study is fully voluntary. You have the right to declare to participate or not in this study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits that you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact address: If there are any questions or inquiries at any time about the study or the procedures, please contact this address.

If you want more information and check about this project you can contact the following people Wolkite University, College of Medicine and Health Sciences

Principal Investigator: Name and Address: Zinash Fikre

Tel: Mobile phone, +251-22-58-89-68 or Email, zinashfikre51@gmail.com

Advisor's Name and Address: _____

Annex 3: Participant information and questionnaire

Wolkite University College of Medicine & Health Sciences Department of Public Health Nutrition This questionnaire is adapted from EDHS 2016 & similar researches that were done

previously but modified accordingly. It will be used to gather information regarding Child development delay and factors associated among children aged between 12-59 months in Abeshgie district, SNNPR Ethiopia, 2021.

Notice; this questionnaire will be filled by interview after taking voluntary consent of the participants.

Are you volunteer to participate in this study?

If yes; continue interview

If no; say thanks to the participant and stop your interview

Code of the questionnaire _____

Date of interview _____

Name of supervisor_____ signature_____ date_____/_____ /_____

Part one personal and socio demographic information's

S.no	Questions	Response
Background of the mother/caregiver		
Q 101	Age(complete years)	_____years
Q 102	Religion	1 Orthodox 2 Muslim 3 Protestant 4 Catholic 5 Other
Q 103	Marital status	1 Single 2 Married 3 Divorced 4 Widowed
Q 104	Educational status of mother	1 Cannot read and write 2 Can read and write 3 Primary 4 Secondary 5 Higher education and above

Q 105	Occupation of the mother	1 Housewife 2 Farmer 3 Employed 4 Non employed 5 Merchant
Q 106	Residence	1Rural 2 Urban
Q 107	Family size	____
	Part two child related	
Q 201	Age of the child	_____ (in month)
Q 202	Sex of the child	1Female 2 Male
Q 203	Gestational age at birth	1< 9 month 2 At 9 month 3 > 9month
Q 204	Weight of the child at birth	_____ kg /Gram
Q 205	Birth intervals of current child with his youngest or oldest child	1 one year 2 Two years 3 2-3 years 4 > 3years
Q 206	Birth order of the child	1 1st 2 2nd-3rd 3 4th and above
Q 207	Weight of the child	_____ in kilogram
Q 208	Height of the child	_____ in centimeter
	Part three obstetric and health service utilization	
Q 301	Where was the child born	1 Health institution 2 Home
Q 302	Does the pregnancy was intended?	1 Yes

		2 NO
Q 303	was your pregnancy single or twins	1 single 2 twins
Q 304	Parity	_____ in number

Part four Complementary feeding practice

S.no	Questions	Responses
Q 401	When did you introduce complementary food to your baby?	1.< 6 months 2. 6 months 3. >6 months
Q 402	How many times does your child eat last day	_____ in number

Q 403 Next, I would like to ask you about some liquid and solid foods that your child have had yesterday during the day or at night

Group	Food lists	No	Yes
Group 1: Grains, roots and tubers	Porridge, bread, rice, noodles or other foods made from grains		
	Potatoes, beet root, kocho, cassava		
Group 2: Legumes and nuts	Any foods made from beans, peas, lentils, nuts or seeds		
Group 3: Dairy products	Infant formula, such as [NIDOO ,ANCHOR ,ZEMZEM]		
	Milk, such as tinned, powdered or fresh animal milk		
	Yogurt		
	Cheese or other dairy products		
	Liver, kidney, heart or other organ meats		

Group 4: Flesh foods	Any meat, such as pork, lamb, goat, chicken		
	fish, shellfish or seafood		
Group 5: Eggs	Egg		
Group 6: Vitamin A fruits and vegetables	Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside		
	Any dark green vegetables [Gommen, Kosta]		
	Ripe mangoes (fresh or dried [not green]), ripe papayas (fresh or dried), musk melon		
Group7: Other fruits and vegetables	Any other fruits or vegetables		

Part Five developmental questions

On the following pages are questions about activities babies may do. Your baby may have done some activities described here, and there may be some your baby has not begun yet. Choose the answer whether the baby is doing the activity regularly, sometimes or not yet.

For the questions below answer as following:

1. Yes **2.Sometimes** **3.Not yet**

Communication	N.o	Questions	For child in month	Answer			Score
				1	2	3	
	A501	Does your baby make two similar sounds such as “ba ba”,”da da” and “na na”	12				
	A502	If you ask your baby to, even if you don’t show the activity yourself (such as “bye bye” clap your	12				

		hand) does he do?					
	A503	Does your baby follow one simple command, such as “come here”,” give it to me” or “put it back” without your using gesture?	12				
	A504	Does your baby say three words such as “mama”,” dada” and “baba”	12,14				
	A505	When you ask “where is the ball (hat, shoe, etc.)? does your baby look at the object (make sure the object is present mark “yes” if she knows one object).	12				
	A506	When your baby wants something does he tell you by pointing to it?	12,14,16 ,18				
	A507	Does your baby shake his head when he means “no” or “yes?”	14				
	A508	Does your baby point to, pat, or try to pick up pictures in a book?	14,16				
	A509	Does your baby say four or more words in addition to “MAMA” and “DADA”?	14,16				
	A510	When you ask her to, does your baby go in to another room to find an object? (ask “where is your ball?”, “Bring me your coat”)	14,16,18				
	A511	Does your child imitate a two-word sentence? E.g, when you say a two word phrase such as “Mama eat,” “Daddy play”?” does your child say both words back to you?(mark “yes” even if her words are difficult to understand.)	16,18,20 ,24				
	A512	Does your child say eight or more words in addition to “mama” and “dada”?	16,18,20				
	A513	Without your showing him, does your child point	18,20,24				

		to the correct picture when you say, “show me the kitty,” or ask, “Where is the dog?”					
	A514	Does your child say two or three words that represent different ideas together, such as “see dog,” “Mommy come home,” or “kitty gone”? (Don’t count word combination that expresses one idea, such as “bye- bye,” “all gone,” “all right,” and “what’s that?”)	18,20,22,24				
	A515	If you point to a picture of a ball (cup, hat, etc.) and ask your child, “What is this?” does your child correctly name at least one picture?	20,22,24,27,30				
	A516	Without your giving him clues by pointing or using gestures, can your child carry out at least three of these kinds of directions? “Find your coat.” “Kiss me” “Close the door.” “Bring your shoe” “Take my hand.” “Get your book.”	20,22,24,27,30				
	A517	When you ask your child to point to her nose, eyes, hair, feet, ears, and so forth, does she correctly point to at least seven body parts? (She can point to parts of herself or you. Mark “sometimes” if she correctly points to at least three different body parts.”	22,27,30,33,36				
	A518	Does your child say 15 or more words in addition to “Mama” and “Dada”?	22				
	A519	Does your child correctly use at least two words like “me,” “I,” “mine” and “you”?	22,24,27				
	A520	Does your child make sentences that are three or four words long?	27,30,33,36				

	A521	Without giving your child help by pointing or using gestures, ask him to “put the book on the table” and “put the shoe under the chair.” Does your child carry out both directions correctly?	27,30,33 ,36,42				
	A522	Looking a picture book, does your child tell you what is happening or what action is taking place in the picture (for example, “barking,” “running,” “eating,” or “crying,”)? You may ask, “what is the dog (or boy) doing?	30,33,36 ,42				
	A523	Show your child how a zipper on a coat moves up and down, and say, “see, this goes up and down.” Put the zipper to the middle and ask your child to move the zipper down. Return the zipper to the middle and ask your child to move the zipper up. Do this several times, placing the zipper in the middle before asking your child to move it up or down. Does your child consistently move the zipper up when you say “up” and down when you say “down”?	33,36,42				
	A524	When you ask, “what is your name?” does your child say his first name or nickname?	33				
	A525	When you ask, “what is your name?” does your child say both her first and last names?	36,42				
	A526	Without your giving help by pointing or repeating directions, does your child follow three directions that are unrelated to one another? Give all three directions before your child starts. For example, you may ask your child, “Clap your hands, walk to	42,48,54 ,59				

		the door, and sit down,"					
	A527	Does your child use all of the words in a sentence (for example, "a," "the," "am," "is," and "are") to make complete sentences, such as "I am going to bed," or "Is there a toy to play with?" or "Are you coming, too?"	42,48,54				
	A528	Does your child name at least three items from a common category? For example, if you say to your child, "tell me some things that you can eat," does your child answer with something like "injera, dabo kocho"? Or if you say, "Tell me the names of some animals, "does your child answer with something like "cow, dog, and elephant"?	48				
	A529	Does your child answer the following questions? (Mark "sometimes" if your child answers only one question.) "What do you do when you are hungry?" (Acceptable answers include "get food," "eat," "ask for something to eat") "What do you do when you are tried?" (Acceptable answers include "go to sleep," "goes to bed," "lie down," and "sit down.")	48,59				
	A530	Does your child tell you at least two things about common objects? For example, if you say to child, "Tell me about your ball," does she say something like, "its round. I throw it. It's big"?	48,54				
	A531	Does your child are endings of words, such as "-s," "-ed," and "-ing"? For example, does your child say things like, "I see two cats," "I am playing," or	48,54				

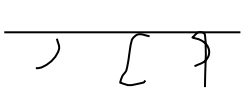
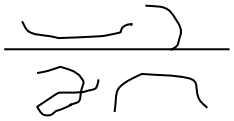
		"I kicked the ball"?					
	A532	Does your child use four- and five-word sentences? For example, does your child say, "I want the big ball"?	54,59				
	A533	When taking about something that already happened, does your child use words that end in "-ed," such as "walked," "jumped," or "played"? Ask your child questions, such as "How did you get to the church?" ("We walked.") "What did you do at your friend's house?" ("We played.")	54,59				
	A534	Does your child use comparison words, such as "heavier," "stronger," or "shorter"? Ask your child questions, such as "A car is big, but a bus is----- "(bigger); "A cat is heavy, but a man is ___" (heavier); " A TV is small, but a book is -------" (smaller). Please write an example:	59				
	A535	Does your child repeat the sentences shown below back to you, without any mistakes?(read the sentences one at a time. Mark "yes" if your child repeats both sentences without mistakes or "sometimes" if your child repeats one sentence without mistake • biruk hides his shoes for birtukan to find • Tesfaye read the book on chair	59				
Score							
Gross motor	B501	While holding on to furniture, does your baby bend down and pick up an object from a floor and then return to standing position?	12				
	B502	While holding on to furniture, does you baby lower	12				

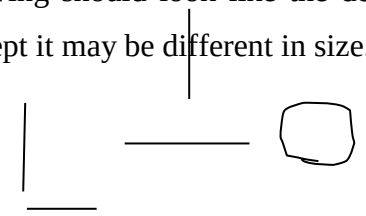
		herself with control (without falling or flopping down)					
	B503	Does your baby walk beside furniture while holding on with only one hand?	12				
	B504	If you hold both hands just to balance your baby, does she take several steps without tripping or falling? (if the baby already walks alone mark ”yes” for this item.)	12,14				
	B505	When you hold one hand just to balance your baby, does she take several steps forward? (If the baby already walks alone, mark “yes” for this item.)	12,14				
	B506	Does your baby stand up in the middle of the floor by himself several steps forward?	12,14,16				
	B507	Does your baby climb onto bed or chair?	14,16				
	B508	Does your baby bend over to pick up an object from the floor & standup again without any support?	14,16,18				
	B509	Does your baby move around by walking, rather than by crawling on his hands and knees?	14,16,18				
	B510	Does your child climb on an object such as a chair to reach something he wants?	16,18,20				
	B511	Does your child walk well and seldom fall?	16,18,20				
	B512	Does your child walk down stairs if you hold onto one of her hands? She may also hold onto the wall.	18,20,22 ,25				
	B513	When you show your child how to kick a large ball, does he try to kick the ball by moving his legs forward or by walking into it?	18,20,22 ,25				
	B514	Does your child run fairly well, stopping herself without bumping into things or falling?	20,22,25 27,30,33				
	B515	Does your child walk either up or down at least two	20,22,25				

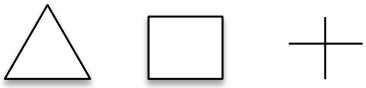
		steps by himself? He may also hold on wall.	,27,30				
	B516	Does your child jump with both feet leaving the floor at the same time?	22,25,27 ,30,33ः 36				
	B517	Without holding onto anything for support, does your child kick a ball by swinging his leg forward?	22,25,27 ,30,33,3 6				
	B518	Does your child walk upstairs, using only one foot on each stair? (The left foot is on one step, and the right foot is on the next.) She may hold onto the wall.	27,30,33 ,36,42				
	B519	Does your child stand on one foot for about 1 second without holding onto anything?	30,33,36 ,42				
	B520	While standing, does your child throw a ball overhand by raising his arm to shoulder height and throwing the ball forward? (Dropping the ball or throwing the ball underhand should be scored as "not yet."	33,36,42 ,48,54, 59				
	B521	Does your child jump forward with both feet leaving the floor at the same time?	36,42				
	B522	Does your child climb on to bed slide down without help?	42,48				
	B523	Does your child catch a large ball with both hands? (You should stand about 5 feet away and give your child two or three tries before you mark the answer.)	42,48,54 ,59				
	B524	Does your child hop up and down on either the right or left foot at least one time without losing her	48,54				

		balance or falling?					
	B525	Does your child jump from a standing position, starting with his feet together?	48,54				
	B526	Without holding onto anything, does your child stand on one foot for at least 5 seconds without losing her balance and putting her foot down?(give 2 to 3 before you mark the answer.)	48,54,59				
	B527	Does your child walk on his tiptoes for 15 feet (You may show him how to do this.)	54,59				
	B528	Does your child hop forward on one foot for a distance of 4-6 feet without putting down the other foot?(you may give her two tries on each foot. Mark "sometimes" if she can hop on one foot only.)	59				
	B529	Does your child skip using alternating feet? (You may show him how to do this.)	59				
Score							
Fine motor	C501	After one or two tries, does your baby pick up a piece of string with his first finger and thumb?	12				
	C502	Does your baby pick up a crumb or cheerio with the tips of her thumb and a finger? She may rest her arm or hand on the table while doing it?	12				
	C503	Does your baby put a small ball down, without dropping it, and then takes his hand off?	12				
	C504	Without resting her arm or hand on the table, does your baby pick up a crump or cheerio with the tips of her thumb and a finger?	12,14				
	C505	Does your baby throw a small ball with a forward arm motion? (If he simply drops the ball, mark "not	12,14,16 ,18				

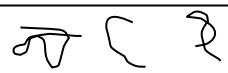
		yet" for this item.)					
	C506	Does your baby help turn the pages of a book?(you may lift a page for him to grasp.)	12,14,16				
	C507	Does your baby make a mark on the paper with the tip of a crayon (or pencil or pen) when trying to draw?	14,16,18 ,20				
	C508	Does your baby stack plate on top of each other by herself?	14,16,18				
	C509	Does your baby stack three plate on top of another one?(You could use, match boxes)	14,16,18 ,20				
	C510	Does your child turn the pages of a book by Himself? (He may turn more than one page at a time.)	16,18,20 ,22,24,2 7				
	C511	Does your child get a spoon in to her mouth right side up so that the food usually doesn't spill?	18,20,22 ,24,27				
	C512	Does your child stack six plates on top of each other by himself?	20,22				
	C513	Does your child use a turning motion with her hand while trying to turn doorknobs, on and off bottles?	20,22,24 ,27,30				
	C514	Does your child flip switch off and on?	22,24,27				
	C515	Can your child string small items such as macaroni, on to shoelace?	22,24,27 30,33,36				
	C516	Does your child stack seven plates on the top of each other by herself? (You could use match box.)	24,27				

	C517	After your child watches you draw a line from the top of the paper to the bottom with a pencil, crayon, or pen, ask him to make a line like yours. Do not let your child trace your line. Does your child copy you by drawing a single line in a vertical direction?  Yes No	27,30,33 ,36,42				
	C518	After your child watches you draw a line from a line from one side of the paper to the other side, ask her to make a line like yours. Do not let your child trace your line. Does your child copy you by drawing a single line in a horizontal direction?  Yes No	27,30,33 ,36				
	C519	After a child watches you draw a single circle like yours. Do not let him trace your circle. Does your child copy you by drawing a circle?  yes No	30,33,36 ,42				
	C520	Does your child turn page in a book, one page at a time?	30,33				
	C521	Does your child try to cut paper with child-safe scissors? He does not need to cut the paper but must get the blades to open and close while holding the paper with the other hand?	33,36,42				

	C522	When drawing, does your child hold a pencil, crayon or pen between her fingers and thumb like an adult does?	36,42				
	C523	Does your child put together match box? Does your child put it back together correctly?	42,48				
	C524	Using the shape at right to look at, does your child copy it onto a large piece of paper using a pencil, crayon, or pen, without tracing? (Your child's drawing should look like the design of the shape, except it may be different in size.)	42				
	C525	Using the shape at right to look at, does your child copy it onto a large piece of paper using a pencil, crayon, or pen, without tracing? (Your child's drawing should look like the design of the shape, except it may be different in size.) 	48,54				
	C526	Using scissors Does your child cut a paper in half on a straight line, making the blades go up and down?	48,54				
	C527	Does your child unbutton one or more buttons?	48,54				
	C528	Does your child draw picture of people that have at least three of the following features: head, eyes, nose, mouth, neck, hair, trunk, arms, hands, legs, or feet? At least three?	48				
	C529	Does your child color mostly within the lines in a coloring book or within the lines of a 2-inch circle that you draw? (Your child should not go outside	48,54				

		the lines on most of the picture.)					
	C530	Ask your child to trace on the line below with a pencil. Does your child trace on the line without going off the line more than two times? (Mark "sometimes" if your child goes off the line three times.)	54,59				
	C531	Ask your Child to draw a picture of a person on a blank sheet of paper. You may ask your Child, "Draw a picture of a girl or boy." If your Child draw a person with four parts mark as "yes" "sometimes." If with three parts mark as "sometimes" if with two or fewer parts mark "not yet."	54,59				
	C532	Draw a line across a piece of paper. Using scissors, does your child cut the paper in half on a more or less straight line, making the blades go up and down?	59				
	C533	Using the shapes below to look at, does your child copy the shapes in the space below without tracing? (Your child's drawing should look similar to the design of the shapes below, but they may be different in size. Mark "yes" if she copies all three shapes; mark "sometimes" if your child copies two shapes.) 	59				
	C534	Using the letters below to look at, does your child copy the letters without tracing? Cover up all of the	59				

		letters except the letters being copied. (Mark "yes" if your child copies four of the letters and you can read them. Mark "sometimes" if your child copies two or three letters and you can read the letters.) **V H T C D**					
	C535	Print your child's first name. Can your child copy the letters? The letters may be large, backward, or reversed. (Mark "sometimes" if your child copies about half of the letters.)	59				
Score							
Problem-solving	D501	When holding a small ball in each hand, does your baby clap the toys together?	12				
	D502	Does your baby poke at or try to get a crumb or cheerio that is inside a clear bottle?	12				
	D503	After watching you hide a small toy under a piece of paper or cloth, does your baby find it? (Be sure the toy is completely hidden.)	12				
	D504	If you put a small ball in to a bowl, does your baby copy you by putting in a ball, although she may not let go of it?(if she already lets go of the ball in to a bowl mark "1" for this item.)	12,14				
	D505	Does your baby drop two small balls, one after the other, in to a bowl? (You may show him how to do it.)	12,14				
	D506	After you scribble back and forth on paper with a crayon (or a pencil or pen), does your baby copy you by scribbling?(if she already scribbles on her own, mark "yes" for this item.)	12,14,16				
	D507	After you have shown your baby how, does he try to get a small ball that is slightly out of reach by using a spoon, stick, or similar tool?	14,16,18				

	D508	Can your baby drop a crumb or cheerio in to a small, clear bottle (such as baby bottle)?	14,16				
	D509	Does your baby drop several clothes, one after another, into a container like a bowl? (You may show her how to do it.)	14,16,18				
	D510	Without your showing him how, does your child scribble back and forth when you give him a crayon (or pencil or pen)	16,18,20 ,22				
	D511	After a crumb or cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump it out? (You may show her how.)	16,18				
	D512	After a crumb or cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump out the crumb or cheerio? (Do not show him how.)	18؛ 22 ؛ 24				
	D513	After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen) does your child copy you by drawing a single line on the paper in any direction? (Mark "not yet" if your child scribbles back and forth.)  Count as "yes"  Count as "not yet"	18,20,22 ,24				
	D514	If you do any of the following gestures, does your child copy at least one of them? Open & close your mouth Blink your eyes Pull on your ear lobe Pat your cheek	20				
	D515	If you give your child a bottle, spoon, or pencil upside down, does she turn it right side up so that she can use it properly?	20,22				

	D516	While your child watches, line up four objects like shoes or chair in arrow. Does your child copy or imitate you and line up at least two blocks side by side? (You can also use spools of thread, small boxes, or other toys.)	20,22,24 27				
	D517	If your child wants something he cannot reach, does he find a chair or box to stand on to reach it?	20,24,27 30,33,36 42				
	D518	Does your child pretend objects are something else? E.g, does your child hold a cup to his ear, pretending it Is a telephone? Does he put a box on his head, pretending it is a hat?	22,24,27				
	D519	Does your child put things away where they belong? e.g, plates into kitchen, glasses to plate?	24,27				
	D520	While your child watches, line up four objects like shoes or chair in arrow. Does your child copy or imitate you and line four blocks side by side? (You can also plate's shoes).	27,30,33 ,36				
	D521	When looking in the mirror, ask "where is-----?" (Use your child's name.) Does your child point to his image in the mirror?	30,33,36				
	D522	When you point to the figure and ask your child, "what is this?" does your child say a word that means a person or something similar? (Mark "yes" for responses like "boy," "man," "girl," "Daddy," and "monkey."	27,30,33 36,42				
	D523	When you say, "Say 'seven three,'" does your child repeat just the two numbers in the same order? Do not repeat the numbers. If necessary, try another	30,33,42				

		pair of numbers and say, “say ‘eight two.’ “Your child must repeat just one series of two numbers for you to answer “Yes” to this question.					
	D524	After your child draws a “picture,” even a simple scribble, does she tell you what she drew? (You may say, “tell me about your picture, “or ask, “What is this?”.)	30,33				
	D525	Show your child how to make bridge with match box. Does your child copy you by making like it?	36,42				
	D526	When you say, “Say ‘five eight three, “does your child repeat just the three numbers in the same order? Do not repeat the numbers. If necessary, try another series of numbers and say, “say ‘six nine two.’ “(Your child must repeat just one series of three numbers for you to answer “Yes”.)	36,42,48				
	D527	When asked, “which circle is the smallest?” does your child point to the smallest circle? (Ask this question without providing help by pointing, gesturing, or looking at the smallest circle.) 	42,48,54 ,59				
	D528	Does your child dress up and “play-act, “pretending to be someone or something else? For example, your child may dress up in different clothes and pretend to be a mommy, daddy, brother or sister, or an imaginary animal or figure.	42,48,54				
	D529	Without your giving help by pointing, does your child follow three different directions using the words “under,” “between,” and “middle”? For	48				

		example, ask your child to put the shoe “under the table.” Then ask her to put the ball “between the chairs” and the book “in the middle of the table.”					
	D530	When shown objects and asked, “what color is this?” does your child name five different colors, like red, blue, yellow, orange, black, white, or pink? (Mark “yes” only if your child answers the question correctly using five colors.)	48,54,59				
	D531	If you place five objects in front of your child, can he count them by saying, “one, two, three, four, five” in order?	48,54,59				
	D532	Does your child count to 15 without making mistakes? If so, mark “yes” if your child counts to 12 without making mistakes mark “sometimes.”	54,59				
	D533	Does your child know the names of numbers? (Mark “yes” if he identifies the three numbers below. Mark “sometimes” if he identifies two numbers.) **3 1 2**	54,59				
	D534	Does your child finish the following sentences using a word that is italisized? E.g “ A rock is hard, and a pillow is soft” When I throw the ball up, it comes..	59				
	D535	Does your child names at least two letters in her name? Point to the letters and ask “what letter is this?(point to the letters out of order.)	59				
Score							
Total score							
Personal-social	E501	When you hold out your hand and ask for his toy, does your baby offer it to you even if he doesn’t let	12,				

		go of it?(if he already lets go of the toy into your hand, mark “yes” for this item.)					
	E502	When you dress your baby does she push her arm throw a sleeve once her arm is started in the hole of the sleeve?	12,				
	E503	When you hold out your hand and ask for his toys, does your baby let go of it into your hand?	12				
	E504	When you dress your baby, does she lift her foot for her shoe, sock or short?	12,14				
	E505	Does your baby roll or throw a ball back to you so that you can return it to him?	12,14				
	E506	Does your baby play with a doll or stuffed animal by hugging it?	12,14,16 18,30				
	E507	Does your baby feed herself with a spoon, even though she may spill some food?	14,16ः 30,33				
	E508	While looking at himself in the mirror, does your child offer a toy to his own image?	16,18,20				
	E509	Does your baby help undress himself by taking off clothes like socks, hat, shoes or mittens?	14,16				
	E510	Does your child get your attention or try to show you something by pulling on your hand or clothes?	14,16,18 ,20				
	E511	Does your child come to you when she needs help, such as with opening abottle?	16,18				
	E512	Does your child drink from a cup or glass, putting it down again with little spilling?	18,20 22,24, 36				
	E513	Does your child copy the activities you do, such as wipe up a spill, sweep, or comb hair?	18,20,22 24				
	E514	When playing with either a stuffed animal or a doll does your child pretend to feed it, put it to bed, and	20,22,24 27				

		so forth?					
	E515	Does your child eat with fork?	20,22,24 27				
	E516	If you do any of the following gestures, does your child copy at least one of them? Open and cloth your mouth Blink your eyes Pull on your earlobes Pat your cheek	22,27,30				
	E517	Does your child push a furniture (table or chair), steering it around objects and backing out of corners if she cannot turn?	22,24,27 30,33,36				
	E518	Does your child call herself "I" or "me" more often than her own name? e.g "I do it,"	24,27				
	E519	Does your child put on a coat, jacket, or shirt by himself?	27,30,33 36,42				
	E520	After you put on loose-fitting trouser around her feet, does your child pull them completely up to her waist?	30,33				
	E521	When your child is looking in a mirror and you ask, "Who is in the mirror?" does he say either "me" or his own name?	30,33,36 42				
	E522	Using these exact words, ask your child, "Are you a girl or boy?" Does your child answer correctly?	33,36,42				
	E323	Does your child take turns by waiting while another child or adult takes a turn?	36,42				
	E524	Does your child serve himself, taking food from one container to another using utensil? For example, does your child use a large spoon to	42,48,54 59				

		scoop “wot” from a jar into a plate?					
	E525	Does your child wash his hands using soap and water without help?	42,48,54 59				
	E326	Does your child tell you at least four of the following? Please mark the items your child knows. • First name Boy or girl • Telephone number Last name • Age City she lives	48,54,59				
	E527	Does your child tell you the names of two or more playmates, not including brothers and sisters? (Ask this question without providing help by suggesting names of playmates of friends.)	48,54				
	E528	Does your child brush her teeth by stick tooth brush	48,54				
	E529	Does your child dress or undress himself without help (except for buttons, and zippers)?	48				
	E530	Does your child dress and undress herself, including buttoning medium size and zipping front zippers?	54,59				
	E531	Does your child use the toilet by her (sits on the toilet and wipes) mark “yes” even if she does this after you remind her?	59				
	E532	Does your child usually take turns and share with other children?	59				
Score							
Total score							

Asset type	Responses	Answer
Domestic Animal		

1	Cattle (ox ,cow calf)	1. Yes	0.No	
2	Sheep	1. Yes	0.No	
3	Hen	1. Yes	0.No	
	Durable assets			
4	Mobile phone	1. Yes	0.No	
5	Table	1. Yes	0.No	
6	Chair	1. Yes	0.No	
7	Bed	1. Yes	0.No	
8	Radio	1. Yes	0.No	
9	Hand battery	1. Yes	0.No	
10	Cooking wood	1. Yes	0.No	
11	Own living house	1. Yes	0.No	
12	Own agriculture land	1. Yes	0.No	
13	Separated room for cattle & person	1. Yes	0.No	
Housing charactersics				
14	Water source	Pipe	Non-pipe	
15	Types of floor	1.Cement/wood /ceramic	0. If not	
17	Type of roof	1.Concrete/iron sheet	0.If not	
18	Toilet facility	1. Ventilated improved pit latrine	0.If not	

Annex 4: የ መረጃ መስጫና ከቀበሌ ርዕሰ መስተዳድር ፍቃድ መጠየቂያ ቅፅ

የ 2ኛ ዓመት የማስትሬት ድግሪ ተመራቂ ተማሪ ነኝ፡፡ በአሁኑ ሰዓት በአበሽጌ ወረዳ ዙሪያ ከ 12 እስከ 59 ወር ልጅ ባላቸው እናቶች ላይ የልጆች እድገት መዘግየት እና ተዛማጅ ችግሮችን በማጥናት ላይ ነኝ፡፡

የጥናቱ ርዕስ፡ የልጆች እድገት መዘግየት እና ተዛማጅ ችግሮችን ፣ በአበሽጌ ወረዳ ዙሪያ ከ 12 እስከ 59 ወር ልጅ ባላቸው እናቶች ላይ ፣ ደቡብ ኢትዮጵያ ፣ 2013 ዓ.ም፡፡

የ ጥናቱ ዓላማ፡ - እድገታቸው የዘገዩ ልጆች እና እድገት መዘግየት ጋር የሚገናኙ ተዛማጅ ችግሮች

ተሳታፊዎች፡ - ከ 12-59 ወር በታች ልጆች ያሏቸውና በቋሚነት የሚኖሩ እማወራዎች

የጎንዮሽ ጉዳት፡ -በዚህ ጥናት መሳተፍ ምንም አይነት ጉዳት የለውም፡፡

ጥቅማጥቅም፡ -በዚህ ጥናት መሳተፍ ምንም አይነት ገንዘብ አያስገኝም፡፡ ነገር ግን በዚህ ጥናት መሳተፍ ስለ ልጆች እድገት እውቀት ያገኛሉ ወይም ያለዎትን እውቀት ያዳብራሉ፡፡ ስለዚህ የተወሰኑ ጥያቄዎችን ልጠይቅዎት እወዳለሁ፡፡ የእርስዎ በእውነት ላይ የተመሰረተ መልስ ለዚህ ጥናት መሳካት አስተዋፅኦ ያደርጋል፡፡ እርስዎ የሚሰጡት መረጃ ከአጥኚውና ቃለመጠይቅ አድራጊው በስተቀር በማንኛውም መልኩ ለሌላ 3ኛ ወገን ተላልፎ አይሰጥም፡፡ በሙሉ ፈቃደኝነት እንዲሳተፉ እየጠየቅሁ ፍቃደኛ ካልሆኑ ያለመሳተፍ ሙሉ መብት አለዎት፡፡

ማንኛውም ጥያቄ ካለዎት በሚከተለው አድራሻዬ ማግኘት ይችላሉ፡፡

የበጎ ፈቃድ ስምምነት መግለጫ

የ ተ ሳ ታ ፊ ው ን የ መ ረ ጃ ወ ረ ቀ ት አ ን ብ ቤ ያ ለ ሁ ፡ ፡ የ ም ር መ ራ ው ን ዓ ላ ማ ፣ የ አ ሰ ራ ር ሂ ደ ቱ ን ፣ አ ደ ጋ ዎ ቹ ን እ ና ጥ ቅ ሞ ቹ ን ፣ ም ስ ጢ ራ ዊ ጉ ዳ ዮ ች ን ፣ የ ተ ሳ ት ፎ መ ብ ቶ ች ን እ ና ለ ማ ን ኛ ው ም ጥ ያ ቄ ዎ ች የ እ ው ቂ ያ አ ድ ራ ሻ ን በ ግ ል ፅ ተ ረ ድ ቻ ለ ሁ ። ግ ል ጽ ባ ል ሆ ኑ ነ ገ ሮ ች ላ ይ ጥ ያ ቄ ዎ ች ን የ መ ጠ የ ቅ እ ድ ል ተ ሰ ጥ ቶ ኛ ል ፡ ፡ ተ ሳ ታ ፊ ዎ ች በ ማ ን ኛ ው ም ጊ ዜ ከ ጥ ና ቱ የ መ ው ጣ ት ወ ይ ም የ ማ ይ ፈ ል ጉ ት ን ማ ን ኛ ው ን ም ጥ ያ ቄ የ መ መ ለ ስ መ ብ ት እ ን ዳ ላ ቸ ው ተ ነ ግ ሮ ኛ ል ፡ ፡ በ ቀ በ ሌ ው ስ ጥ ባ ለ ው የ መ ረ ጃ አ ሰ ባ ሰ ብ ሂ ደ ት ው ስ ጥ ማ ን ኛ ው ም ዓ ይ ነ ት ሥ ነ -ም ግ ባ ር የ ጎ ደ ለ ው አ ካ ሄ ድ ከ ተ ስ ተ ዋ ለ ቀ በ ሌ ው ይ ህ ጥ ና ት እ ን ዳ ይ ካ ሄ ድ የ ማ ስ ቆ ም መ ብ ት እ ን ዳ ለ ው ተ ገ ን ዝ ብ ያ ለ ሁ ፡ ፡ ስ ለ ዚ ህ እ ኔ በ ” _____” የ ቀ በ ሌ አ ስ ተ ዳ ደ ር በ መ ወ ከ ል ይ ህ ጥ ና ት ከ ቀ በ ሌ (ፊ ር ማ) ጋ ር በ ቀ በ ሌ ው እ ን ዲ ካ ሄ ድ ለ ማ ስ ቻ ል ፈ ቃ ደ ኛ ነ ቴ ን በ ፈ ቃ ደ ኝ ነ ት ማ ቅ ረ ቤ ን አ ው ጃ ለ ሁ ፡ ፡

የ ቀ በ ሌ ው ር ዕ ሰ ስ ም እ ና ፊ ር ማ -_____ _____ ቀ ን _____

የ መ ረ ጃ አ ሰ ባ ሳ ቢ ዉ ስ ም እ ና ፊ ር ማ _____ _____ ቀ ን _____

Annex 5 የ ተ ሳ ታ ፊ ዎ ች መ ረ ጃ መ ስ ጫ

እ ን ደ ምን አ ደ ሩ /ዋ ሉ የ 2ኛ ዓ መ ት የ ማ ስ ት ሬ ት ድ ግ ሪ ተ መ ራ ቂ ተ ማ ሪ ነ ኝ ፡ ፡ የ 2ኛ ዓ መ ት የ ማ ስ ት ሬ ት ድ ግ ሪ ተ መ ራ ቂ ተ ማ ሪ ነ ኝ ፡ ፡ በ አ ሁ ኑ ሰ ዓ ት በ አ በ ሽ ጌ ወ ረ ዳ ዙ ሪ ያ ከ 12 እ ስ ከ 59 ወ ር ል ጅ ባ ላ ቸ ው እ ና ቶ ች ላ ይ የ ል ጆ ች እ ድ ገ ት መ ዘ ግ የ ት እ ና ተ ዛ ማ ጅ ች ግ ሮ ች ን በ ማ ጥ ና ት ላ ይ ነ ኝ ፡ ፡

የ ጥ ና ቱ ር ዕ ስ ፡ የ ል ጆ ች እ ድ ገ ት መ ዘ ግ የ ት እ ና ተ ዛ ማ ጅ ች ግ ሮ ች ን ፣ በ አ በ ሽ ጌ ወ ረ ዳ ዙ ሪ ያ ከ 12 እ ስ ከ 59 ወ ር ል ጅ ባ ላ ቸ ው እ ና ቶ ች ላ ይ ፣ ደ ቡ ብ ኢ ት ዮ ጵ ያ ፣ 2013 ዓ .ም ፡ ፡

የ ጥ ና ቱ ዓ ላ ማ ፡ -እ ድ ገ ታ አ ቸ ው የ ዘ ገ ዩ ል ጆ ች እ ና እ ድ ገ ት መ ዘ ግ የ ት ጋ ር የ ሚ ገ ና ኙ ተ ዛ ማ ጅ ች ግ ሮ ች

ተሳታፊዎች፡ - ከ 12-59 ወር በታች ልጆች ያሏቸውና በቋሚነት የሚኖሩ እማወራዎች

የጎንዮሽ ጉዳት፡ -በዚህ ጥናት መሳተፍ ምንም አይነት ጉዳት የለውም፡ ፡

ጥቅማጥቅም፡ -በዚህ ጥናት መሳተፍ ምንም አይነት ገንዘብ አያስገኝም፡ ፡ ነገር ግን በዚህ ጥናት መሳተፍ ስለ ልጆች እድገት እውቀት ያገኛሉ ወይም ያለዎትን እውቀት ያዳብራሉ፡ ፡ ስለዚህ የተወሰኑ ጥያቄዎችን ልጠይቅዎት እወዳለሁ፡ ፡ የእርስዎ በእውነት ላይ የተመሰረተ መልስ ለዚህ ጥናት መሳካት አስተዋፅኦ ያደርጋል፡ ፡ እርስዎ የሚሰጡት መረጃ ከአጥኚውና ቃለመጠይቅ አድራጊው በስተቀር በማንኛውም መልኩ ለሌላ 3ኛ ወገን ተላልፎ አይሰጥም፡ ፡ በሙሉ ፈቃደኝነት እንዲሳተፉ እየጠየቅሁ ያለመሳተፍ ሙሉ መብት አለዎት፡ ፡

ማንኛውም ጥያቄ ካለዎት በሚከተለው አድራሻዬ ማግኘት ይችላሉ፡ ፡

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የበጎ ፈቃድ ስምምነት መግለጫ

የተሳታፊውን የመረጃ ወረቀት አንብቤያለሁ ፡፡ የምርመራውን ዓላማ ፣ የአሰራር ሂደቱን ፣ አደጋዎቹን እና ጥቅሞቹን ፣ ምስጢራዊ ጉዳዮችን ፣ የተሳትፎ መብቶችን እና ለማንኛውም ጥያቄዎች የእውቂያ አድራሻን በግልፅ ተረድቻለሁ። ግልጽ ባልሆኑ ነገሮች ላይ ጥያቄዎችን የመጠየቅ እድል ተሰጥቶኛል ፡፡ ተሳታፊዎች በማንኛውም ጊዜ ከጥናቱ የመውጣት ወይም የማይፈልጉትን ማንኛውንም ጥያቄ የመመለስ መብት እንዳላቸው ተነግሮኛል ፡፡

Annex 6 የ ተ ሳ ታ ፊ ዎ ች ስ ም ም ነ ት መ ግ ለ ጫ ቅ ጽ እ ና መ ጠ ይ ቅ በ አ ማ ር ኛ

በ ወ ል ቂ ጤ ዩ ኒ ቨ ር ሲ ቲ ጤ ና ሳ ይ ን ስ ኮ ሌ ጅ ፐ ብ ሊ ክ ሄ ል ዝ ኒ ው ት ሪ ሽ ዲ ፓ ር ት መ ን ት የ ድ ህ ረ ም ረ ቃ ፕ ሮ ግ ራ ም እ ኔ ስ ሜ ከ ዙ ህ በ ታ ች የ ተ ገ ለ ፀ ው፤ የ ዚ ህ ጥ ና ት ዓ ላ ማ በ ደ ን ብ የ ተ ብ ራ ራ ል ኝ ሲ ሆ ን የ ጥ ና ቱ ን ም ዓ ላ ማ ተ ረ ድ ቻ ለ ሁ ፡ ፡ በ ዚ ህ ጥ ና ት ላ ይ መ ሳ ተ ፍ በ ሙ ሉ ፈ ቃ ደ ኝ ነ ት ላ ይ የ ተ መ ሰ ረ ተ መ ሆ ኑ ን በ ሚ ገ ባ የ ተ ረ ዳ ሁ ሲ ሆ ን በ ማ ን ኛ ው ም ጊ ዜ ከ ጥ ና ቱ ራ ሴ ን የ ማ ግ ለ ል መ ብ ት እ ን ዳ ለ ኝ አ ው ቄ አ ለ ሁ ፡ ፡ ስ ለ ሆ ነ ም የ ም ሰ ጠ ው መ ረ ጃ እ ስ ከ ተ ጠ በ ቀ ድ ረ ስ በ ዚ ህ ጥ ና ት ለ መ ሳ ተ ፍ ተ ስ ማ ም ቻ ለ ሁ ፡ ፡ በ ዙ ህ ጥ ና ት ለ መ ሳ ተ ፍ ስ ም ም ነ ቴ ን ስ ገ ል ፅ ለ ም ጠ የ ቀ ው ጥ ያ ቄ በ እ ው ነ ት ላ ይ የ ተ መ ሰ ረ ተ መ ል ስ ለ መ ስ ጠ ት የ ተ ስ ማ ማ ሁ መ ሆ ኔ ን አ ረ ጋ ግ ጣ ለ ሁ ፡ ፡

የ መ ረ ጃ ሰ ጪ ው ፊ ር ማ _____ ቀ ን _____

የ አ ጥ ኚ ው ፊ ር ማ _____ቀ ን _____

ይ ህ መ ጠ ይ ቅ የ ተ ዘ ጋ ጀ ው ከ 12 ወ ር -59 ወ ር ያ ሉ ህ ጻ ና ት ላ ይ የ እ ድ ገ ት መ ዘ ግ የ ት እ ና ተ ዛ ማ ጅ ች ግ ሮ ች ን በ ተ መ ለ ከ ተ መ ረ ጃ ለ ማ ሰ ባ ሰ ብ ነ ው ፡ ፡

ማ ስ ታ ወ ሻ ፡ ይ ህ መ ጠ ይ ቅ የ ተ ሳ ፊ ዎ ች ን ፍ ቃ ደ ኝ ነ ት ከ ታ ወ ቀ በ ኋ ላ በ ተ ጠ ያ ቂ ው በ ቃ ለ -ም ል ል ስ መ ሞ ላ ት ያ ለ በ ት ነ ው ፡ ፡

በ ዚ ህ ጥ ና ት ለ መ ሳ ተ ፍ ፍ ቃ ደ ኛ ነ ዎ ት

አ ዎ ፡ እ ባ ኮ ት ን መ ጠ ይ ቁ ን ይ ቀ ጥ ሉ

ፍ ቃ ደ ኛ አ ይ ደ ለ ሁ ም ፡ እ ባ ኮ ት ን ተ ሳ ታ ፊ ው ን በ ማ መ ስ ገ ን መ ጠ ይ ቁ ን ያ ቋ ር ጡ

ከ ዚ ህ በ ታ ች የ ቀ ረ ቡ ጥ ያ ቄ ዎ ች ን በ መ ጠ የ ቅ ለ ተ መ ለ ሱ ት መ ል ሶ ች በ ማ ከ በ ብ ወ ይ ም በ ባ ዶ ቦ ታ ዎ ች ላ ይ መ ል ስ በ መ ጻ ፍ ይ መ ል ሱ

የ መ ጠ ይ ቁ መ ለ ያ ቁ ጥ ር _____
መ ጠ ይ ቁ የ ተ ሰ ጠ በ ት ቀ ን _____

የ ተ ቆ ጣ ጣ ሪ ስ ም _____ ፊ ር ማ _____ ቀ ን _____/_____/_____

ክ ፍ ል አ ን ድ ፡ -ግ ላ ዊ እ ና ማ ህ በ ራ ዊ መ ረ ጃ ለ መ ውሰ ድ የ ተ ዘ ጋ ጁ ጥ ያ ቄ ዎ ች

ለ ጥ ያ ቄ ዎ ቹ አ ማ ራ ጭ መ ል ስ ሰ ጥ ተ ው ይ ለ ፉ

ተ.ቁ	ጥያቄ		
ቁ 101	የ እርሶ እድሜ ስንት ነው	_____ በዓመት	
ቁ 102	ሀይማኖትዎ ምንድነው	1 አርቶዶክስ ክርስቲያን 2 ሙስሊም 3 ፕሮቴስታንት 4 ካቶሊክ 5 ሌላ ካለ ይጥቀሱ	
ቁ 103	የ ጋብቻ ሁኔታዎ	1 ያላገባች/ያላገባ 2 ያገባች/ያገባ 3 ባሏ የ ሞተባት/ሚስቱ የ ሞተች በት 4 የ ፈታች 5 ተራርቃ የ ምትኖር	
ቁ 104	የ ትምህርት ደረጃዎ?	1. ማንበብና መፃ ፍ የ ማትችል /የ ማይችል 2. ማንበብና መፃ ፍ የ ምትችል / የ ሚችል 3. አንደኛ ደረጃ (1-8ኛ ክፍል) 4. ከዘጠነኛ እስከ አስራ ሁለተኛ ክፍል 5. ሰርተፍኬት/ዲፕሎማ 6. ዲግሪና ከዚያ በላይ	
ቁ 105	ሥራዎ ምንድን ነዉ?	1. የ ቤት እመቤት 2. የ መንግስት ሰራተኛ 3. የ ግል ድርጅት ሠራተኛ 4. ነጋዴ 5. የ ቀን ሰራተኛ 6. ሌላ (ይጠቀስ)	
ቁ 106	የ መኖሪያ ቦታ	1. ከተማ 2. ገጠር	
ቁ 107	የ ቤተሰብ ብዛት	_____	
ክፍል ሁለት፡ ልጅን የ ሚመለከቱ ጥያቄዎች			
ቁ 201	የ ህፃኑ/ኗ ዕድሜ	_____(በ ወር)	
ቁ 202	የ ህፃን ፆታ	1 ሴት 2 ወንድ	
ቁ 203	ልጅዎ በስንት ወር ተወለደ	1ከ ዘጠኝ ወር በታች 2 ዘጠኝ ወር 3 ከዘጠኝ ወር በላይ	
ቁ 204	ልጅዎ ሲወለድ ስንት ኪሎ	_____	

	ነ በ ር		
ቁ 205	በ ል ጆ ዎ እ ና በ ታ ላ ቁ ወ ይ ም በ ታ ና ሽ ል ጅ ዎ መ ሀ ከ ል ያ ለ ው እ ድ ሜ ል ዩ ነ ት	1. 1 አ መ ት 2. 2 አ መ ት 3. 2-3 አ መ ት 4. › 4	
ቁ 206	ስ ን ተ ኛ ል ጅ ዎ ነ ው ?	1. 1ኛ 2. 2-3ኛ 3. 4ኛ እ ና ከ ዛ በ ላ ይ	
ቁ 207	የ ል ጹ ክ ብ ደ ት	_____ በ ኪ ሎ ግ ራ ም	
ቁ 208	የ ል ጹ ቁ መ ት	_____ በ ሴ ን ቲ ሜ ት ር	
ክ ፍ ል ሶ ስ ት ፡ እ ር ግ ዝ ና እ ና ጤ ና አ ገ ል ግ ሎ ት አ ጠ ቃ ቀ ም ን በ ተ መ ለ ከ ተ			
ቁ 301	ል ጅ ዎ ን የ ት ነ ው የ ወ ለ ዱ ት	1 ጤ ና ተ ቋ ም 2 ቤ ት ው ስ ጥ	
ቁ 302	እ ር ግ ዝ ና ው የ ታ ቀ ደ ነ በ ር	1 አ ዎ 2 አ ይ ደ ለ ም	
ቁ 303	እ ር ግ ዝ ና ው መ ን ታ ነ በ ር	1አ ዎ 2 አ ይ ደ ለ ም	
ቁ 304	ስ ን ት ል ጅ ወ ል ደ ዋ ል	_____ በ ቁ ጥ ር	
ክ ፍ ል አ ራ ት ፡ የ እ ና ቶ ች ተ ጨ ማ ሪ ም ግ ብ ት ግ በ ራ ን በ ተ መ ለ ከ ተ			
ቁ 401	ተ ጨ ማ ሪ ም ግ ብ መ ቼ ነ በ ር ያ ስ ጀ መ ሩ ት	1‹ 6 ወ ር 2 6 ወ ር 3 ›6 ወ ር	
ቁ 402	በ ት ላ ን ት ና ው እ ለ ት ል ጅ ዎ ስ ን ት ጊ ዜ በ ላ	_____ በ ቁ ጥ ር	

ቁ 403 ከ ዚ ህ በ መ ቀ ጠ ል በ ት ላ ን ት ና ዉ እ ለ ት ቀ ን ና ም ሽ ት ል ጅ ዎ ን ጠ ጣ ር እ ና ለ ስ ለ ስ ያ ሉ ም ግ ቦ ች ን ስ ለ መ ስ ጠ ት ዎ እ ጠ ይ ቆ ታ ለ ሁ

የ ም ግ ብ ዝ ር ያ ዎ ች	የ ም ግ ብ ዝ ር ዝ ሮ ች	አ ዎ	አ ይ ደ ለ ም
ቡ ድ ን 1፡ የ እ ህ ል ም ግ ቦ ች ን ፣ ማ ን ኛ ው ም ስ ር ያ ላ ቸ ው ተ ክ ሎ ች	በ ቆ ሎ ፣ ሩ ዝ ፣ ማ ሽ ላ ፣ ገ ብ ስ ፣ ስ ን ዴ ፣ አ ጃ ፣ ጤ ፍ ና ከ መ ሳ ሰ ሉ ት እ ህ ል የ ተ ሰ ራ ዳ ቦ ፣ እ ን ጀ ራ ፣ ፓ ስ ታ ገ ን ፎ እ ና ወ ዘ ተ ቆ ጮ ፣ ድ ን ች ፣ ቦ ዬ ፣ ጎ ደ ሬ ፤ ቀ ይ ስ ር		
ቡ ድ ን 2፡ የ ብ ር ተ ክ ሎ ች ፣ የ ሣ ው ዛ ተ ክ ል	ከ አ ተ ር ፣ ባ ቄ ላ ፣ ሽ ም ብ ራ ፣ ም ስ ር ፣ አ ቾ ል ኒ የ ሚ ዘ ጋ ጁ ማ ና ቸ ው ን ም ም ግ ቦ ች		

ቡድን 3፡ የ ወተት ተዋጽኦ ምርቶች	የ ጨቅላ ህፃ ና ት ምግብ (ኒ ዶ ፣ አ ን ከ ር ….የ ጣሳ ወተት) ወተት ፣ የ ተ ና ጠ ፣ በ ፓ ውደ ር መል ክ ወ ይ ም ት ኩ ስ የ እ ን ስ ሳ ት ወ ተ ት እ ር ጎ አ ይ ብ ወ ይ ም ሌ ሎ ች የ እ ን ስ ሳ ት ተ ዋ ጽ ኦ ም ር ቶ ች		
ቡድን 4: ከ ስ ጋ የ ሚ ዘ ጋ ጁ ም ግ ቦ ች	ጉ በ ት ፣ ኩ ላ ሊ ት ፣ ል ብ ወ ይ ም የ ሌ ሎ ች የ ሰ ውነ ት ክ ፍ ል ስ ጋ ዎ ች ማ ን ኛ ው ም ስ ጋ ፣ የ ከ ብ ት ስ ጋ ፣ የ በ ግ ስ ጋ ፣ የ ፍ የ ል ፣ የ ዶ ሮ ት ኩ ስ ወ ይ ም የ ደ ረ ቀ አ ሳ		
ቡድን 5: እ ን ቁ ላ ል	እ ን ቁ ላ ል		
ቡድን 6: ቫ ይ ታ ሜ ን ኤ ፍ ራ ፍ ሬ ዎ ች እ ና ቅ ጠ ላ ቅ ጠ ሎ ች	ዱ ባ ፣ ካ ሮ ት ፣ ስ ኳ ር ድ ን ች ጎ መ ን ፡ ቆ ስ ጣ የ ደ ረ ሰ ማ ን ጎ ፣ የ ደ ረ ሰ ፓ ፓ ዬ ፣ አ ቦ ካ ዶ ፣ ሃ ባ ብ		
ቡድን 7: ሌ ሎ ች አ ት ክ ል ት ወ ይ ም ፍ ራ ፍ ሬ ዎ ች	ተ ማ ቲ ም ፣ ሽ ን ኩ ር ት ፣ ጎ መ ን ፣ ጥ ቅ ል ጎ መ ን ፣ ብ ር ቱ ካ ን ፣ ሙ ዝ		

ክ ፍ ል 5፡ የ ል ጆ ች ን እ ድ ገ ት የ ሚ መ ዝ ኑ ጥ ያ ቄ ዎ ች

ከ ዚ ህ በ መ ቀ ጠ ል የ ል ጅ ዎ ት ን እ ድ ገ ት ደ ረ ጃ ሚ መ ዝ ኑ ጥ ያ ቄ ዎ ች ን እ ጠ ይ ቆ ታ ለ ሁ

1 አ ዎ 10 2 አ ን ዳ ን ድ ጊ ዜ 5 3 አ ይ እ ስ ካ ሁ ን 0

	ቁ ጥ ር	ጥ ያ ቄ	የ ል ጅ እ ድ ሜ በ ወ ር	መ ል ስ			ው ጤ ት
				1	2	3	
የ ን ግ ግ ር	ሀ 501	ል ጅ ህ /ሽ ሁ ለ ት ተ መ ሳ ሳ ይ ድ ም ጾ ች ማ ለ ት ም ባ ባ ፡ ዳ ዳ ወ ይ ም ና ና ይ ላ ል /ት ላ ለ ች	12				
	ሀ 502	ል ጅ ህ /ሽ ሳ ታ ሳ ይ ው አ ጨ ብ ጭ ብ ወ ይ ን ም ቻ ው ቻ ው በ ል ብ ት ይ ው ይ ላ ል /ት ላ ለ ች	12				
	ሀ 503	ል ጅ ህ /ሽ የ ሰ ዉ ነ ት እ ን ቅ ስ ቃ ሴ ሳ ታ ሳ ይ ው ና ፣ ስ ጠ ኝ ፣ ወ ይ ም አ ስ ቀ ም ጠ ው ብ ት ይ ው ያ ደ ር ጋ ል /ታ ደ ር ጋ ለ ች	12				

	ሀ 504	ልጅህ/ሽ ሶስት ቃላቶችን ማለትም እማ፡ አባ ወይን ምአያ ይላል/ትላለች	12፣ 14				
	ሀ 505	ልጅህ/ሽ ካሱ፣ ጫማው/ኮፍያው የታለ ብለሽ ብትጠይቂው/ያት ወደ ጠየቅሽው እቃ ዞሮ ያያል	12				
	ሀ 506	ልጅህ/ሽ የሆነ ነገር ቢፈልግ ወደ እቃውእያመለከተ ይነግርሻል	12፣ 14፣ 16 ፣ 18				
	ሀ 507	ልጅህ/ሽ አው ወይም አይ ለማለት ጭንቅላቱን ያወዛውዛል	14				
	ሀ 508	ልጅህ/ሽ መጽሀፍ ላይ የሚያየውን ስእል ይመታል ይጠቁማል ወይም ለማንሳት ይሞክራል	14፣ 16				
	ሀ 509	ልጅህ/ሽ እማ አባ ከሚሉት ቃላት ውጪ ሌሎች አራትና ከዛ በላይ ቃላቶች ይናገራል	14፣ 16				
	ሀ 510	ልጅህ/ሽ ካሱ የታል፡ ልብስህን አምጣ ብትይው ለመፈለግ ወደ ሌላ ክፍል ይሄዳል	14፣ 16፣ 18				
	ሀ 511	ልጅህ/ሽ ሁለት ቃላቶች ብትናገሪ ፡- እማ ብይ ፡ አባ ተጫወት ብትይ እነዛን ቃላቶች አስመስሎ ለራስሽ ይናገራል (ለመረዳት ቢከብድ ራሱ **መልሱ 1)**	16፣ 18፣ 20 ፣ 24				
	ሀ 512	ልጅህ/ሽ እማ፡ አባ ከሚሉት ቃላት ሌላ ስምንትና ከዛ በላይ ቃላት ይናገራል	16፣ 18፣ 20				
	ሀ 513	ልጅህ/ሽ አንቺ ሳታሳይው ስዕል ላይ ድመቷ ወይም ዉሻዋ የታለች ብትይው በትክክል ያሳይሻል	18፣ 20፣ 24				
	ሀ 514	ልጅህ/ሽ ሁለት ወይም ሶስት የተለያየ ሀሳብ የሚገልፁ ሶስት ቃላትን በአንድላይ ይላል ለምሳሌ፡ ዉሻውን እይው፡ እናቴ ቤት ነይ፡ ድመቷ ሄደች (ሁለት ተደጋጋሚ ቃላቶች ተመሳሳይ ሀሳብ	18፣ 20፣ 22 ፣ 24				

		የሚገልፁ አይካተቱም ለምሳሌ ቻው ቻው፡					
	ሀ 515	ልጅህ/ሽ ስዕል ላይ (ኳስ፤ ኩባያ ኮፍያ እያሳየሽው ምንድነው ብትይው ቢያንስ የአንዱን ስእል ስም በትክክል ይነግርሻል	20፣ 22፣ 24 ፣ 27፣ 30				
	ሀ 516	ልጅህ/ሽ ምንም የሰውነት እንቅስቃሴ ወይም ምልክት ሳታሳይው ከነዚህ ውስጥ ቢያንስ ሶስቱን ታደርጋለች ጫማውን አምጪ እጄን ያዢው በሩን ዝጊው ልብስህን ፈልግ ሳመኝ አቅፈኝ	20፣ 22፣ 24 ፣ 27፣ 30				
	ሀ 517	ልጅህ/ሽ ከሰውነቷ ክፍል አይን፡ አፍንጫ፡ ጆሮ፡ ምላስ፡ ጥርስ አሳይኝ ብትያት ቢያንስ ሰባት የሰውነቷን ክፍል በትክክል ታሳያለች (የራሷን ወይም የአንቺን ልታሳይሽ ትችላለች) ሶስት የሰውነት ክፍል ካሳየች (መልሱ **2**)	22፣ 27፣ 30 33፣ 36				
	ሀ 518	ልጅህ/ሽ ከእማናከአባሌላ 15 ቃላትን ትናገራለች	22				
	ሀ 519	ልጅህ/ሽ በትክክል ቢያንስ ሁለት ቃላትን ለምሳሌ እኔ፡ አንቺ፡ የኔ ትናገራለች	22፣ 24፣ 27				
	ሀ 520	ልጅሽ ሶስትና አራት ቃላት ያለው አረፍተነገር ይመሰርታል	27,30,33,36				
	ሀ 521	ልጅሽ የሰውነት እንቅስቃሴ ሳታሳይው ወይም ሳትጠቁሚው ደብተሩን ጠረጴዛ ላይ አስቀምጪእና ጫማውን ወንበር ላይ አስቀምጪ ብትያት ሁለቱንም በትክክል ያደርጋል	27,30,33,36, 42				
	ሀ 522	ልጅሽ መጽሀፍ ላይ ያለ ሰዕል እያየ ምን እንደሆነ ይነግርሻል (ማልቀስ መብላት መሮጥ መጮህ) አንቺም ወደ ስዕል እየጠቆመሽ ምን እያደረገ ነው ብለሽ መጠየቅ ትችያለሽ	30,33,36,42				

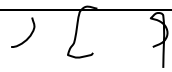
	ሀ 523	ልጅሽ የልብስ ዚፕ እንዴት ወደ ላይ ወደታች እንደሚል አሳይው ዚፑ መሀል ላይ አድርጊና ዚፑን ወደ ታች አድርግ በይው መልሰሽ ዚፑን መሀል አድርጊና ዚፑን ወደ ላይ አድርገው በይው ይህንን በተደጋጋሚ አድርጊ ወደታች ወይም ወደ ላይ አድርግ ከማለትሽ በፊት ዚፑን መሀል ላይ አድርጊው	33፣ 36፣ 42				
	ሀ 524	ልጅሽ ስምህ ማነው ብለሽ ብትጠይቂው ስሙን ወይም ቅጽል ስሙን ይነግርሻል	33				
	ሀ 525	ልጅሽ ስምሽ ማነው ብትያት የራሷን ም የአባቷን ምስም ትጠራለች	36፣ 42				
	ሀ 526	ልጅሽ ሳትደጋግሚለት ወይም ሳትጠቁሚው ሶስት የተለያዩ ትዕዛዞችን በአንድ ጊዜ ነግረሽው ሶስቱን ም ያደርጋል (አጨብጭብ፣ ወደበሩ ፣ ሂድተቀመጥ)	42፣ 48፣ 54 ፣ 59				
	ሀ 527	ልጅሽ እነዚን ቃላቶች ሁሉ አረፍተ ነገር ሲመሰርት ይጠቀማል (ወደ ጓሮ ልሄድ ነው ኳስ አለ ወይ ምጫወትበት አንቺም ትመጫለሽ ወይ)	42፣ 48፣ 54				
	ሀ 528	ልጅሽ አንድ ቡድን ላይ ያሉ ሶስት ነገሮች ስም ይጠራልሻል (ለምሳሌ የእንስሳ ስምን ገረኝ ብትይው ድመት ዉሻ አይጥ ይላል)	48				
	ሀ 529	ልጅሽ ሲርብህ ምን ታደርጋለህ ስትይው እንደዚህ ብሎ ይመልሳል (እበላለሁ፤ ምግብ ስጡኝ እላለሁ፤ ምግብ እፈልጋለሁ) ሲደክምህ ምን ታደርጋለህ ስትይው (እተኛለሁ እቀመጣለሁ ከነዚህ ውስጥ አንዱን ብቻ ከመለሰ መልሱ **2**ነው	48፣ 59				
	ሀ 530	ልጅሽ ስለአንድ እቃ ሁለት ነገር ይነግርሻል (ለምሳሌ ስለኳስህ ንገረኝ ብትይው) ኳሴ ትልቅ ነው ፣ ክብ ነው ይልሻል	48፣ 54				
	ሀ 531	ልጅሽ ቅጥያ ቃላቶችን ይጠቀማል ለምሳሌ ሁለት ድመቶች ፤ እየተጫወትኩ ነው፤ ኳሱን መታሁት	48፣ 54				

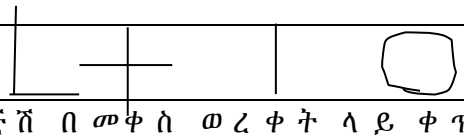
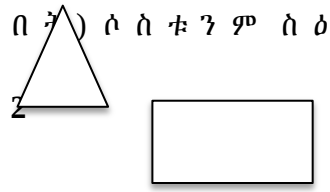
	ሀ 532	ልጅሽ አራት ወይም አምስት ቃላት ያለው አረፍተ ነገር ይናገራል ለምሳሌ እኔ ትልቁን ኳስ እፈልገዋለው	54፣ 59				
	ሀ 533	ልጅሽ ያለፈን ነገር ለማውራት በላሁ፤ ሄድኩኝ፤ ተጫወትኩ ብሎ ይናገራል	54፣ 59				
	ሀ 534	ልጅሽ አነፃፃሪ ቃላት ይጠቀማል ለምሳሌ ድመቷ ትልቅ ናት ውሻዋ ግን በጣም ትልቅ ናት	59				
	ሀ 535	ልጅሽ ከዚህ በታች ያሉትን አረፍተ ነገሮች ካነበብሽለት በኋላ ሳይሳሳት ሁለቱንም ይደግማል አንዱን ብቻ ከደገመልሽ መልሱ **2** ብሩክ ብርቱካን እንድታገኘው ጫማውን ደበቀው ተስፋዬ ወንበር ላይ መጽሀፍ አነበበ	59				
ዉጤት							
ጉልህ እንቅስቃሴ	ለ 501	ልጅህ/ሽ ወንበር ይዞ/ዛ ወደ መሬት ዝቅ ብሎ እቃ አንስቶ ተመልሶ ይቆማል	12				
	ለ 502	ልጅህ/ሽ ወንበር ይዞ/ዛ ሳትወድቅ ወደ መሬት ዝቅ ይላል/ትላለች	12				
	ለ 503	ልጅህ/ሽ ወንበሩን በአንድ እጅ ብቻ ተደግፎ ከወንበሩ ፈቀቅ ብሎ ይራመዳል	12				
	ለ 504	ልጅህ/ሽ ሚዛኑን እንዲጠብቅ ሁለቱንም እጁን ም ይዘሽ ብታቆሚውሳይወድቅ ይቆማል	12፣ 14				
	ለ 505	ልጅህ/ሽ ሚዛኑን እንዲጠብቅ አንድ እጁን ይዘሽ ውወደፊት ይራመዳል	12፣ 14				
	ለ 506	ልጅሽ/ህ ያለ ማንም ድጋፍ ቤቱ መሀል ላይ ቆሞ ሳይወድቅ ይቆያል	12፣ 14፣ 16				
	ለ 507	ልጅህ/ሽ ወንበር ላይ ወይም አልጋ ላይ ይሰቀላል	14፣ 16				
	ለ 508	ልጅህ/ሽ እቃ ለማንሳት ጎንበስ ወይም ቁጢጥ ብሎ ተመልሶ ያለድጋፍ ይቆማል	14፣ 16፣ 18				

	ለ 509	ልጅህ/ሽ በጉልበትና በእጁ በመዳህሳይሆን በእግሩ ይራመዳል ዙሪያ ዉን	14፣ 16፣ 18				
	ለ 510	ልጅህ/ሽ የሚፈልገውን እቃ ለማውረድ ወንበር ላይ ይሰቀላል	16፣ 18፣ 20				
	ለ 511	ልጅህ/ሽ በደንብ ይራመዳል እና አንዳንዴ ብቻ ይወድቃል	16፣ 18፣ 20				
	ለ 512	ልጅህ/ሽ አንድ እጁን ይዘሽው ደረጃ ይራመዳል ግርግዳ ተደግፎ ቢሆን	18፣ 20፣ 22፣ 25				
	ለ 513	ልጅህ/ሽ ትልቅ ኳስ እንዴት እንደሚመታ ብታሳይው ኳሱን ለመምታት እግሩን ወደ ፊት ያንቀሳቅሳል ወይም ወደ ኳሱ ይራመዳል	18፣ 20፣ 22፣ 25				
	ለ 514	ልጅህ/ሽ በደንብ ትሮጣለች እንዲሁም ከእቃ ጋር ሳትጋጭ ወይም ሳትወድቅ ትቆማለች	20,22,2527, 30,33				
	ለ 515	ልጅህ/ሽ ከከፍታ ወደ ዝቅታ ሁለት እርምጃ በራሱ ይራመዳል (ግርግዳ ተደግፎም ቢሆን)	20፣ 22፣ 25፣ 27፣ 30				
	ለ 516	ልጅህ/ሽ ሁለቱንም እግሩ እኩል ከመሬት ላይ አንስቶ ይዘላል	22፣ 25፣ 27፣ 30፣ 33፣ 36				
	ለ 517	ልጅህ/ሽ ያለ ምንም ድጋፍ ኳስ በሀይል ይመታል	22፣ 25፣ 27፣ 30፣ 33፣ 36				
	ለ 518	ልጅሽ ደረጃ ላይ አንድ እግሩን ለአንድ ደረጃ ይጠቀማል (ግራ እግሩን ቀጥሎ ቀኝ እግሩን አስከትሎ ይራመዳል) ግርግዳም እየተደገፈ	27፣ 30፣ 33፣ 36፣ 42				
	ለ 519	ልጅሽ ለአንድ ሰከንድ በአንድ እግሩ ብቻ ይቆማል ምንም ሳይደገፍ	30፣ 33፣ 36፣ 42				
	ለ 520	ልጅሽ ቆሞ እጁን ወደ ትከሻው ከፍ አድርጎ ኳስ ወደ ፊት ለፊት ይወረውራል (ኳሱን ከትከሻው ዝቅ አድርጎ ከወረወረ ወይም ከጣለ መልሱ **2**	33፣ 36፣ 42፣ 48፣ 54፣ 59				
	ለ 521	ልጅህ/ሽ በሁለቱንም እግሩ ወደፊትለፊት ይዘላል	36፣ 42				

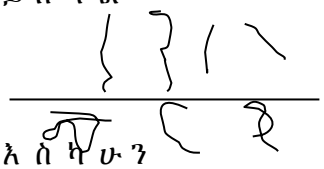
	ለ 521	ልጅሽ አልጋ ላይ ያለማን ም እርዳታ ይወጣል ይወርዳል	42፣ 48				
	ለ 522	ልጅሽ ትልቅ ኳስ በሁለቱም እጁ ይይዛል (አምስት እርምጃ እርቀሽ ሁለት ሶስቴ እንዲሞክር እድል ስጪው)	42፣ 48፣ 54 ፣ 59				
	ለ 523	ልጅሽ በቀኝ ወይም በግራ እግሩ ሚዛኑን ሳይስት ቢያንስ አንዴ ይዘላል	48፣ 54				
	ለ 524	ልጅሽ ወደፊት ለፊት ቢያንስ የራሱን መዳፍ ያህል እርዝመት ይዘላል	48፣ 54				
	ለ 525	ልጅሽ ሳይወድቅ ቢያንስ ለ 5ሰከንድ በአንድ እግሩ ይቆማል (ሶስት እድል ስጪው)	48፣ 54፣ 59				
	ለ 526	ልጅሽ በእግሩ ጫፍ ይራመዳል 15 ኢንች	54፣ 59				
	ለ 527	ልጅሽ በአንድ እግሯ ብቻ ወደፊትለፊት ትዘላለች ያኛውን ሳታሳርፍ (ሁለቴ እንድትሞክር እድል ስጫት)	59				
	ለ 528	ልጅሽ በአንድ እግሩ ብቻእግሮቹን እየቀያየረ ይዘላል	59				
ዉጤት							
ረቂቅ እንቅስቃሴ	ሐ 501	ልጅሽ/ህ ከአንድ ወይም ከሁለት ሙከራ በኋላ በአውራ ጣቷ ና በሌባ ጣቷ ክርታነሳለች	12				
	ሐ 502	ልጅሽ/ህ የዳቦ ፍርፋሪ በአውራ ጣቷና በሌባ ጣቷ ታነሳለች (እጇን ጠረጴዛ ላይ ልታሳርፍ ትችላለች)	12				
	ሐ 503	ልጅሽ/ህ በእጁ ያዘውን እቃ ሳይወረውር አስቀመጦ እጁንን ከእቃውላይ ያነሳል	12				
	ሐ 504	ልጅሽ/ህ እጅዋን ጠረጴዛ ላይ ሳታሳርፍ ፍርፋሪ በአውራ ጣቷ ና በሌባ ጣቷ ታነሳለች	12፣ 14				
	ሐ 505	ልጅሽ/ህ ኳስ ወደ ፊትለፊት ትወረውራለች	12፣ 14፣ 16 ፣				

			18				
	ሐ 506	ልጅሽ/ህ የመጽሀፍ ገጽ ለመግለጽ ይሞክራል	12፣ 14፣ 16				
	ሐ 507	ልጅህ/ሽ ወረቀት ላይ በእርሳስ ወይም በ እስክሪብት ለመሳል ሲሞክር ምልክት ያደረጋል	14፣ 16፣ 18 ፣ 20				
	ሐ 508	ልጅህ/ሽ ሳህን አንዱን በአንዱ ላይ ይደርባል	14፣ 16፣ 18				
	ሐ 509	ልጅህ/ሽ ሶስት ሳህን ያለማን ም እርዳታ ወደ ላይ ይደረድራል	14፣ 16፣ 18 ፣ 20				
	ሐ 510	ልጅህ/ሽ የመጽሀፍ ገጽ ራሱ ይገልጣል (በአንድ ጊዜ ከአንድ በላይ ገጽ ሊገልጥ ይችላል	16፣ 18፣ 20 ፣ 22፣ 24፣ 27				
	ሐ 511	ልጅህ/ሽ ልጅሽ ማን ኪያ ወደ አፏ ታስገባለች ምግቡ በትንሹ እየተደፋባት	18፣ 20፣ 22 ፣ 24፣ 27				
	ሐ 512	ልጅህ/ሽ ስድስትና ከዛ በላይ ሳህን ወይም ደብተር አንዱን በ አንዱ ላይ ይደርባል	20፣ 22				
	ሐ 513	ልጅህ/ሽ በር ወይም የተዘጋ ነገር ለመክፈት እጁን ታዞራለች (ምሳሌ የ ኮዳ ክዳን ለመክፈት)	20፣ 22፣ 24 ፣ 27፣ 30				
	ሐ 514	ልጅህ/ሽ ልጅሽ ማብሪያ ማጥፊያ ያበራል ያጠፋል	22፣ 24፣ 27				
	ሐ 515	ልጅህ/ሽ የጫማ ክር ውስጥ ዶቃ የተበሳ ቆር ኪ ይጨምራል	22፣ 24፣ 27 ፣ 30፣ 33፣ 36				
	ሐ 516	ልጅህ/ሽ ሰባትና ከዛ በላይ ሳህን ወይም ደብተር አንዱን በ አንዱ ላይ ይደርባል	24፣ 27				
	ሐ 517	አንቺ ስታሰምሪ ካየ በኋላ (ከላይ ወደ ታች) ልጅሽም እንዲያሰምር ጠየቅ ሽው አንቺ ያሰመርሽውን መስመር ያሰምራል (አንቺ ያሰመርሽውን እንዳታሳይው) አው	27፣ 30፣ 33 ፣ 36፣ 42				

		 አይ					
	ሐ 518	ልጅሽ አንቺ ከአንድ ጎን ወደ ሌላ ጎን አስምረሽ ልጅሽም አንቺ ያሰመርሽው አይነት መስመር ያስምራል ((አንቺ ያሰመርሽውን እንዳያይ)  አው አይ	27፣ 30፣ 33 ፣ 36፣ 42				
	ሐ 519	ልጅሽ አንድ ክብ ስትስይው ካየበኋላ እንዳንቺ ክብ እንዲስል ጠይቀውእንዳንቺ ገልብጦ ይስላል  አው አይ	30፣ 33፣ 36 ፣ 42				
	ሐ 520	ልጅሽ የመጽሀፉ ገጽ ይገልጻል በአንዴ አንድ ገጽ ብቻ ይገልጻል	30፣ 33				
	ሐ 521	ልጅሽ በመቀስ ወረቀት ለመቁረጥ ይሞክራል በአንድ እጁ ወረቀቱን ይዞ (ወረቀቱን ባይቆርጠውም መቀሱን መክፈት መዝጋት ይችላል)	33፣ 36፣ 42				
	ሐ 522	ልጅሽ ሲስል እርሳስ ወይም እስክሪብት እንደ አዋቂ ከጣቶቹ መሀልና በአውራ ጣቱ ይይዛል	36፣ 42				
	ሐ 523	ልጅሽ የክብሪት ቀፎ ተበታትኖ ቢያገኝ አስተካክሎ ይሰካዋል	42፣ 48				
	ሐ 524	ልጅሽ ከዚህ በታች ያለውን ስዕል አሳይተሽው በትልቅ ወረቀት ላይ በእርሳስ ወይም በእስክሪብቶ ይስላል (ስዕሉ መጠኑ ቢለያይ ችግር የለውም ቅርጹ ግን መምሰል አለበት)	42				
	ሐ 525	ልጅሽ ከዚህ በታች ያሉትን ስእሎች አይቶ አሳይተሽው በትልቅ ወረቀት ላይ በእርሳስ ወይም በእስክሪብቶ ይስላል (ስዕሉ መጠኑ ቢለያይ ችግር የለውም ቅርጹ ግን መምሰል አለበት)	48፣ 54				

							
	ሐ 526	ልጅሽ በመቀስ ወረቀት ላይ ቀጥ ባለ መስመር ይቆርጣል መቀሱን ከፍ ዝቅ እያደረገ ይቆርጣል	48፣ 54				
	ሐ 527	ልጅሽ አንድ ወይም ከዛ በላይ የልብስ ቁልፍ ራሱ ይፈታል	48፣ 54				
	ሐ 528	ልጅሽ ከነዚህ ውስጥ (አይን፤ አፍንጫ፤ ጭንቅላት፤ አፍ፤ ጸጉር፤ አንገት፤ እግር፤ እጅ)ቢያንስ ሶስት ያለውየሰውስዕል ይስላል	48				
	ሐ 529	አንቺ ከብስለሽ ልጅሽ ቀለም ሲቀባ ከመስመሩ ብዙም ሳይወጣ ይቀባል	48፣ 54				
	ሐ 530	ቀጥታ መስመር አስምረሽ ልጅሽ ከመስመሩ ብዙም ሳይወጣ አስደግፎ ያስምራል (ከመስመሩ ዉጪ ከሁለት ጊዜ በላይ ሳይወጣ)ሶስት ጊዜ በላይ ወጣ ብሎ ካሰመረ መልሱ **2**	54፣ 59				
	ሐ 531	ልጅሽ የወንድ ወይም የሴት ምስል ሳል ብትይው ጭንቅላት፤ እግር፤ እጅ፤ ሰውነት ያለው ሰእል ከሳለ መልሱ **1**ሶስት የሰውነት ክፍል ያለው ብቻ ከሳለ መልሱ **2** ሁለትና ከዛ በታች ከሆነ **3**	54፣ 59				
	ሐ 532	ወረቀት ላይ ቀጥ ያለ መስመር አስምረሽ በመቀስ ወረቀቱን እንዲቆርጥ ብታደርጊ አስተካክለ ይቆርጣል	59				
	ሐ 533	ከዚህ በታች የተሳሉትን ሶስት ስዕሎች ሳያስደግፍ በማየት ብቻ ወደ ወረቀት ይገለብጣል (ስዕሎቹ ሲስል በመጠን ሊለያይ በቀርፅ ግን መመሳሰል ለበት) ሶስቱንም ስዕሎች ከሳለ **1** ሁለተ ከሳለ **2** 	59				
	ሐ 534	ከዚህ በታች ያሉትን ፊደላት እያየ በትክክል ይጽፋቸዋል (አራቱንም ከጻፈ **1** ሁለት ና ሶስት ከጻፈ 2) ቨ	59				

		ሀ ተ አ ደ					
	ሐ 535	የ ል ጅ ሽ ስ ም ጽ ፊ ሽ ደ ግ መ ህ ጻ ፍ ብ ት ይ ው ይ ጽ ፋ ል (ት ን ሽ ቢ ሆ ን ቢ ገ ለ በ ጥ ሊ ዞ ር ይ ች ላ ል ከ ተ ነ በ በ ል ሽ እ ና ከ ግ ማ ሽ በ ላ ይ ከ ሆ ነ መ ል ሱ **2**	59				
ድ ም ር							
ች ግ ር የ መ ፍ ታ ት	መ 501	ል ጅ ሽ /ህ በ ሁ ለ ቱ ም እ ጆ ቹ አ ን ዳ ን ድ ካ ስ ይ ዞ እ ር ስ በ ር ስ ያ ጋ ጫ ቸ ዋ ል	12				
	መ 502	ል ጅ ሽ /ህ ን ጹ ህ ኮ ዳ ውስ ጥ ፍ ር ፋ ሪ ቢ ኖ ር እ ሱ ን ለ ማ ውጣ ት ይ ሞ ክ ራ ል	12				
	መ 503	ል ጅ ሽ /ህ መ ጫ ወ ቻ በ ል ብ ስ ወ ይ ም በ ወ ረ ቀ ት ብ ት ሸ ፍ ኚ ው ፊ ል ጎ ያ ገ ኘ ዋ ል	12				
	መ 504	ል ጅ ሽ /ህ አ ሻ ን ጉ ሊ ት ወ ይ ም መ ጫ ወ ቻ ጎ ድ ጓ ዳ ሳ ህ ን ወ ይ ም ሳ ጥ ን ውስ ጥ ብ ት ጨ ም ሪ እ ሱ ም በ ተ መ ሳ ሳ ይ ያ ደ ር ጋ ል	12፣ 14				
	መ 505	ል ጅ ሽ /ህ ሁ ለ ት ት ን ን ሽ መ ጫ ወ ቻ ዎ ች ወ ይ ም እ ቃ ዎ ች ተ ራ በ ተ ራ ጎ ድ ጓ ዳ ሳ ህ ን ወ ይ ም ሳ ጥ ን ውስ ጥ ይ ወ ረ ው ራ ል	12፣ 14				
	መ 506	አ ን ቺ ወ ረ ቀ ት ላ ይ ወ ደ ፊ ት ወ ደ ኋ ላ እ ያ ረ ግ ሽ በ እ ስ ክ ሪ ቢ ቶ ብ ት ሞ ነ ጫ ጭ ሪ ል ጅ ሽ /ህ ይ ሞ ነ ጫ ጭ ራ ል	12፣ 14፣ 16				
	መ 507	ል ጅ ህ /ሽ አ ን ቺ ካ ሳ የ ሽ ው በ ኋ ላ ከ አ ጠ ገ ቡ ት ን ሽ የ ራ ቀ ው ን አ ሻ ን ጉ ሊ ት ወ ይ ም እ ቃ በ ማ ን ኪ ያ ወ ይ ም በ እ ን ጨ ት ለ ማ ቅ ረ ብ ይ ሞ ክ ራ ል	14፣ 16፣ 18				
	መ 508	ል ጅ ህ /ሽ ፍ ር ፋ ሪ ወ ደ ን ጹ ህ ኮ ዳ ወ ይ ም ጆ ግ ይ ጨ ም ራ ል	14፣ 16				
	መ 509	ል ጅ ህ /ሽ ብ ዙ ል ብ ሶ ች ጎ ድ ጓ ዳ ሳ ህ ን ወ ይ ም ሳ ጥ ን ውስ ጥ ብ ት ጨ ም ሪ እ ሱ ም ያ ደ ር ጋ ል	14፣ 16፣ 18				
	መ 510	አ ን ቺ ሳ ታ ሳ ይ ዉ ወ ረ ቀ ት ላ ይ ወ ደ ፊ ት ወ ደ ኋ ላ እ ያ ደ ረ ገ በ እ ስ ክ ሪ ቢ ቶ ል ጅ ሽ /ህ ይ ሞ ነ ጫ ጭ ራ ል	16፣ 18፣ 20፣ 22				
	መ 511	ፍ ር ፋ ሪ ኮ ዳ ውስ ጥ ከ ገ ባ በ ኋ ላ	16፣ 18				

		ልጅሽ ሀይላንዱን ገልብጦ ፍርፋሪውን ለማውጣት ይሞክራል (አሳይተሸዉ)					
	መ512	ልጅህ/ሽ ፍርፋሪ ኮዳ ውስጥ ከገባ በኋላ ልጅሽ ሀይላንዱን ገልብጦ ፍርፋሪውን ለማውጣት ይሞክራል (አንቺ እንዴት እንደሚያወጣ ማሳየት አትችይም)	18፣ 22፣ 24				
	መ513	ልጅሽ አንቺ ወረቀት ላይ ከላይ ወደ ታች ስታሰምሪ ካየ በኋላ በእርሳስ ወይም በእስክሪብቶ እንዳንቺ ይስላል  አዎ አይ እስካሁን	18,20,22,24				
	መ514	ልጅህ/ሽ ከሚከተሉት ውስጥ ብታደርጊ እሱም እንዳንቺ ቢያንስ አንዱን ያደርጋል አፍሽን ከፍተሽ ብትዘጊ ጆሮሽን ብትጎትቺ አይንሽን ብታርገበግቢ ጉንጭሽን ብትመቺ	20				
	መ515	ልጅህ/ሽ እርሳስ ማንኪያ ወይም ኩባያ ገልብጠሽ ብትሰጪው አስተካክሎይዞ ይጠቀምበታል	20፣ 22				
	መ516	ልጅህ/ሽ በመስመር ተደረደሩ ሳህኖች ወይም ጫማ ቢያይ ቢያንስ ሁለት ጎንለጎን ያስቀምጣል	20፣ 22፣ 24፣ 27				
	መ517	ልጅህ/ሽ ራቅ ተደርጎ የተሰቀለ ሚፈልገው ነገር ካለ ለማውረድ ወንበር ይዞ ይመጣል	20፣ 24፣ 27፣ 30፣ 33፣ 36፣ 42				
	መ518	ልጅህ/ሽ እቃዎችን የሆነ ነገር እንደሆነ ያስመስላል ለምሳሌ ኩባያ እንደ ስልክ ጆሮው ላይ ማድረግ ጎድጓዳ ሳህን እንደኮፍያ	22፣ 24፣ 27				
	መ519	ልጅሽ እቃ ወደ ትክክለኛ ቦታቸው መልሶ ያስቀምጣቸዋል ለምሳሌ ሲኒ	24፣ 27				

		ረ ከ ቦ ት ላ ይ ብ ር ጭ ቆ ኮ መ ዲ ኖ ላ ይ የ ወ ን በ ር ል ብ ስ ከ ወ ደ ቀ ወ ን በ ሩ ላ ይ					
	መ 520	ል ጅ ህ /ሽ በ መ ስ መ ር ተ ደ ረ ደ ሩ ሳ ህ ኖ ች ወ ይ ም ጫ ማ ቢ ያ ይ ቢ ያ ን ስ አ ራ ቱ ን ጎ ን ለ ጎ ን ያ ስ ቀ ም ጣ ል	27፣ 30፣ 33 ፣ 36				
	መ 521	ል ጅ ሽ ወ ደ መ ስ ታ ወ ት እ ያ የ ስ ሙ ን ጠ ር ተ ሸ የ ታ ለ ህ ብ ት ይ ው መ ስ ታ ወ ት ላ ይ ወ ዳ ለ ው መ ል ኩ ይ ጠ ቁ ም ሻ ል	30፣ 33፣ 36				
	መ 522	ል ጅ ሽ ወ ደ ስ ዕ ል እ የ ጠ ቆ ም ሽ ው የ ሄ ም ን ድ ነ ው ብ ት ይ ው የ ሰ ው ወ ይ ም ከ ስ ዕ ሉ ጋ ር ሚ መ ሳ ሰ ል የ ሆ ነ ቃ ል ይ ጠ ራ ል (ለ ም ሳ ሌ ወ ን ድ ሴ ት አ ባ ት) እ ነ ዚ ን ካ ለ መ ል ሱ አ ው	27፣ 30፣ 33 36፣ 42				
	መ 523	አ ን ቺ ሰ ባ ት ሶ ስ ት ብ ት ይ ል ጅ ሽ ም እ ነ ዚ ን ሁ ለ ት ቁ ጥ ሮ ች በ ተ መ ሳ ሳ ይ መ ደ ዳ ይ ጠ ራ ል (ቁ ጥ ሮ ቹ ን እ ን ዳ ት ደ ግ ሚ ለ ት ካ ስ ፈ ለ ገ ሌ ላ ጥ ን ድ ቁ ጥ ር ጥ ሪ ለ ት ለ ም ሳ ሌ ስ ም ን ት ሁ ለ ት ል ጅ ሽ እ ነ ዚ ህ ን ሁ ለ ት ቁ ጥ ሮ ች በ አ ን ዴ ከ ጠ ራ መ ል ሱ 1	30፣ 33፣ 42				
	መ 524	ል ጅ ሽ የ ሆ ነ ሰ ዕ ል ከ ሳ ለ በ ኋ ላ ስ ለ ስ ዕ ሉ ይ ነ ግ ር ሻ ል	30፣ 33				
	መ 525	ል ጅ ሽ በ ክ ብ ሪ ት ቀ ፎ ቦ ይ እ ን ዴ ት እ ን ደ ሚ ሰ ራ ካ ሳ የ ሽ ው በ ኋ ላ መ ስ ራ ት ይ ች ላ ል	36፣ 42				
	መ 526	አ ን ቺ አ ም ስ ት ስ ም ን ት ሶ ስ ት ብ ት ይ ል ጅ ሽ ም በ ተ መ ሳ ሳ ይ እ ነ ዚ ን ቁ ጥ ሮ ች ይ ደ ግ ማ ቸ ዋ ል (ቁ ጥ ሮ ቹ ን እ ን ዳ ት ደ ግ ሚ ለ ት ካ ስ ፈ ለ ገ ሌ ላ ጥ ን ድ ቁ ጥ ር ጥ ሪ ለ ት ለ ም ሳ ሌ ስ ድ ስ ት ዘ ጠ ኝ ሁ ለ ት) ሶ ስ ቱ ን ም ቁ ጥ ሮ ች በ ተ ር ታ ከ ጠ ራ መ ል ሱ አ ው	36፣ 42፣ 48				
	መ 527	ል ጅ ሽ ከ ነ ዚ ህ ከ ቦ ች መ ሀ ል ት ን ሹ የ ት ኛ ው ነ ው ብ ት ይ በ ት ክ ክ ል ይ ነ ግ ር	42፣ 48፣ 54 ፣ 59				
	መ 528	ል ጅ ሽ የ ተ ለ ያ የ ል ብ ስ በ መ ል በ ስ እ ን ደ ሌ ላ ሰ ው ሆ ና ታ ስ መ ስ ላ ለ ች	42፣ 48፣ 54				

		(እንደ እናቷ አባቷ ወይም ወንድሟ)					
	መ529	ልጅሽ ምልክት ሳታሳያት እነዚህን ሶስቱን ትዕዛዞች ታደርጋለች (ጫማውን ከጠረጴዛ በታች አድርጊ፤ ኳሱን ከወንበር መሀል አስቀምጭ፤ መጽሀፍን ጠረጴዛው መሀከል ላይ አስቀምጪው)	48				
	መ530	ልጅሽ የተለያየ ከለር ያላችው አምስት እቃዎች አሳይተሽው ሁሉን ምከለር ያውቃቸዋል	48፣ 54፣ 59				
	መ531	አምስት እቃዎች ከልጅሽ ፊት ለፊት አስቀምጠሽ ቁጠር ብትይው አንድ ሁለት እያለ እስከአምስት ይቆጥራል	48፣ 54፣ 59				
	መ532	ልጅሽ እስከተራ ቁጥር አስራአምስት ድረስ ሳይሳሳት ይቆጥራል (እስከ 15 ከቆጠረ **1** እስከ 12 ከቆጠረ **2**	54፣ 59				
	መ533	ልጅሽ ከዚህ በታች የተጻፉትን ቁጥሮች ስማቸውን ያውቃል ሶስቱንም ካወቀ **1** ሁለቱን ካወቀ **2** 3 1 2	54፣ 59				
	መ534	ልጅሽ አነጻጻሪ ቃላትን ይጠቀማል ትራስ ለስላሳ ነው ድንጋይ ግን ጠንካራ ነው	59				
	መ535	ልጅሽ ከስሚ ውስጥ ቢያንስ ሁለቱን ፊደላት ታውቃለች ከፊደል ገበታ ላይ እያሳየሽ ብጠይቂያት	59				
ዉጤት							
ግላዊ-ማህበራዊ	ሠ501	ልጅሽ/ህ እጅሽን ዘርግተሽ መጫወቻ ስጠኝ ብትይው ሊሰጥሽ ወደአንቺ ይዘረጋል	12				
	ሠ502	ልጅሽ/ህ ልብስ እያለበስሻት እጇን ወደ እጅጌው ትገፋለች (መጀመሪያ እጇ ወደ እጅጌው ከገባ)	12				
	ሠ503	ልጅሽ/ህ እጅሽን ዘርግተሽ መጫወቻ ስጠኝ ብትይው እጅሽ ላይ	12				

		ያስቀምጠዋል					
	ሠ 504	ልጅሽ/ህ ጫማዋን ወይም ካልሲዋን ስታለብሻት ለመልበስ እግርዋን ታነሳልሻለች	12፣ 14				
	ሠ 505	ልጅሽ/ህ ኳስ ወደአንቺ ትወረውራለች ወይም ታንከባልላለች	12፣ 14				
	ሠ 506	ልጅሽ/ህ አሻንጉሊት አቅፋ ትጫወታለች	12፣ 14፣ 16፣ 18፣ 30				
	ሠ 507	ልጅህ/ሽ እየደፋችም ቢሆን እራሷን ችላ በማንኪያ ትበላለች	14፣ 16፣ 33፣ 36				
	ሠ 508	ልጅህ/ሽ በመስታወት የራሱን መልክ እያየ አሻንጉሊት መስታወት ውስጥ ላለውለራሱ መልክ ይሰጣል	16፣ 18፣ 20				
	ሠ 509	ልጅሽ ልብስ ስታወልቂለት ያግዝሻል ካልሲውን ኮፍያውን ያወልቃል	14፣ 16				
	ሠ 510	ልጅህ/ሽ የሆነ ነገር ሊያሳይሽ እጅሽን ወይም ልብስሽን ይጎትታል	14፣ 16፣ 18፣ 20				
	ሠ 511	ልጅህ/ሽ ልጅሽ እርዳታ ሲፈልግ ወዳንቺ ይመጣል ለምሳሌ የተከደነ እቃእንድትከፍቺለት	16፣ 18				
	ሠ 512	ልጅህ/ሽ በኩባያ ወይም በብርጭቆ ጠጥቶ ብርጭቆውን ወይም ኩባያውን መልሶ ያስቀምጠዋል (ትንሽም ቢሆን እየደፋ)	18፣ 20፣ 22፣ 24፣ 36				
	ሠ 513	ልጅህ/ሽ አንቺ የምታደርጊውን እያስመሰለ ያደርጋል ለምሳሌ፡ - መወልወል፤ መጥረግ ጸጉር ማበጠር ….	18፣ 20፣ 22፣ 24				
	ሠ 514	ልጅህ/ሽ በአሻንጉሊት ሲጫወት አሻንጉሊቱን እንደማብላት ማስደንገጥ አልጋ ላይ ለማስተኛት ይሞክራል	20፣ 22፣ 24፣ 27				
	ሠ 515	ልጅህ/ሽ በሹካ ይበላል	20፣ 22፣ 24፣ 27				
	ሠ 516	ልጅህ/ሽ ከሚከተሉት ውስጥ ብታደርጊ እሱምእንዳንቺ ያደርጋል አፍሽን ከፍተሽ ብትዘጊ ጆሮሽን ብትጎትቺ አይንሽን ብታርገበግቢ ጉንጭሽን ብትመቺ	22፣ 27፣ 30				

	ሠ 517	ልጅህ/ሽ ወንበር እየገፋ በእቃዎች ዙሪያ እየገፋ መታጠፊያ ጋ ሲደርስ መዞር ካልቻለ ወደኋላ ይመለሳል	22፣ 24፣ 27 30፣ 33፣ 36				
	ሠ 518	ልጅሽ የራሷን ስም ከመጥራት ይልቅ እኔ የኔ ትላለች ለምሳሌ እኔ በላሁ ትላለች ስሟን ጠርታ (መሰረት) በላሁ ከ ማለት ይልቅ እኔ በላሁ ትላለች	24፣ 27				
	ሠ 519	ልጅሽ ቲ-ሸርት ጃኬት ወይም ሹራብ እራሱ ይለብሳል	27፣ 30፣ 33 ፣ 36፣ 42				
	ሠ 520	ልጅሽ ለቀቅ ያለ ሱሪ ወደ እግሩ ካስገባሽ በኋላ ፣ እራሱ እስከወገቡ ከፍ ያደርጋል	30፣ 33				
	ሠ 521	ልጅሽ ወደ መስታወት እያየ መስታወት ውስጥ ያለው ማነው ብትይው እኔ ወይም ስሙን ይጠራል	30፣ 33፣ 36 ፣ 42				
	ሠ 522	ልጅሽ ሴት ነህ ወይስ ወንድ ብትይው በትክክል ይነግርሻል	33፣ 36፣ 42				
	ሠ 523	ልጅሽ ከልጆችጋ ሲሆን ተራውን ጠብቆ ይጫወታል	36፣ 42				
	ሠ 524	ልጅሽ ለራሱ ምግብ ያቀርባል ለምሳሌ በጭልፋ ወጥ ጨልፎ ወደ ሳህኑ ያደርጋል)	42፣ 48፣ 54 ፣ 59				
	ሠ 525	ልጅሽ እጁን ያለማንም እርዳታ በሳሙና ና በዉሀ ይታጠባል	42፣ 48፣ 54 ፣ 59				
	ሠ 526	ልጅሽ ከነዚህ ውስጥ ቢያንስ አራቱን ትነግርሻለች ስሟን ፤ እድሜ፤ የት እንደምትኖር ፤ የአባቷ ስም፤ ሴት ወይም ወንድ መሆኗን ፤ ስልክ ቁጥር	48፣ 54፣ 59				
	ሠ 527	ልጅሽ 2 ከዛ በላይ የጓደኞቿን ስም ይነግርሻል	48፣ 54				
	ሠ 528	ልጅሽ እንጨት ጥርስ መፋቂያ ብትሰጫት ትፍቃለች	48፣ 54				
	ሠ 529	ልጅሽ ያለማንም እርዳታ ልብስ ትለብሳለች	48				
	ሠ 530	ልጅሽ በራሱ ልብስ ማውለቅ ፤ መልበስ ይችላል (ቁልፍ መፍታትና ዚፕ መክፈትን ጨምሮ)	54፣ 59				
	ሠ 531	ልጅሽ ሸንት ቤት ራሱ ይጠቀማል ራሱ ይጠራረጋል	59				

	ሠ 532	ልጅሽ ከልጆች ጋ ሲጫወት ተራውን ጠብቆ ይጫወታል	59				
ዉጤት							
ጠቅላላ ድምር							

ከፍል አራት የመኖሪያ ቤት ሁኔታ

ቁጥር	የንብረት አይነት	ምላሽ		መልስ
		አዎ	የለም	
	የቤት እንስሳት			
1	ከብት (በሬ፣ ላም፣ ጥጃ)	አዎ	የለም	
2	በግ	አዎ	የለም	
3	ዶሮ	አዎ	የለም	
	ቋሚንብረቶች			
4	ሞባይል ስልክ	አዎ	የለም	
5	ጠረጴዛ	አዎ	የለም	
6	ወንበር	አዎ	የለም	
7	አልጋ	አዎ	የለም	
8	የእርሻ መሬት	አዎ	የለም	
9	ለከብቶች ና ሰው የተለያየ ክፍል	አዎ	የለም	
10	ሬዲዮ	አዎ	የለም	
11	የእጅ ባትሪ	አዎ	የለም	
12	ምግብ ማብሰያ እንጨት	አዎ	የለም	
13	የራስ መኖሪያ ቤት	አዎ	የለም	
	የቤት ሁኔታ			
14	የዉሀ ምንጭ	ቧንቧ	ቧንቧ	

			ያ ል ሆ ነ	
15	የ ወ ለ ል አ ይ ነ ት	ሲ ሚን ቶ /እ ን ጨት / ሴ ራ ሚክ	ካ ል ሆ ነ	
16	የ ጣ ራ አ ይ ነ ት	ኮ ን ክ ሪ ት /ብ ረ ት ሉ ህ	ካ ል ሆ ነ	
17	የ መ ጸ ዳ ጃ ቤ ት	በ አ የ ር ን ማ ሻ ሻ ል የ ተ ሻ ሻ ለ የ ጉ ድ ጎ ድ መ ፀ ዳ ጃ ቤ ት	ካ ል ሆ ነ	