Risk Factors of Stunting and Wasting among Children Aged 6–59 Months in Household Food Insecurity of Jima Geneti District, Western Oromia, Ethiopia: An Observational Study

Tamiru Yazew

Department of Food and Nutritional Sciences, Shambu Campus, Wollega University, Shambu, Ethiopia

Correspondence should be addressed to Tamiru Yazew; tamiruyazew2012@gmail.com

Received 2 July 2021; Accepted 20 December 2021; Published 13 January 2022

Academic Editor: Mohammed S. Razzaque

Copyright © 2022 Tamiru Yazew. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Undernutrition is the most difficult and widespread public health concern in low-income nations including Ethiopia. Therefore, this study aimed to investigate the associated risk factors of stunting and wasting among children aged 6–59 months in Jima Geneti district, Western Oromia, Ethiopia. A community-based cross-sectional study was conducted on 500 children from December 1 to 28, 2020. A multiple-stage sampling method was performed to select children from each kebele. Anthropometric measurements were taken, and the nutritional status was generated using WHO Anthro v. 3.2.1. Data analysis was performed using the SPSS version 20.0. Bivariate and multivariate logistic regression analyses were carried out to identify the associated risk factors of stunting and wasting among children in the study area. Statistical significance was set at $p < 0.05$. The study results showed that the prevalence of stunting and wasting among children was 27% and 11.8%, respectively. The findings of this study also revealed that the prevalence of household food insecurity and poor dietary diets was 19.6% and 52.2%, respectively. Low wealth status (AOR = 2.5; 95% CI: 1.1, 5.55) and poor dietary diets (AOR = 4.7; 95% CI: 2.5, 8.83) were associated risk factors for stunting. However, child meal frequency (AOR = 3.9; 95% CI: 1.23, 12.6), and children who did feed leftover food (AOR = 2.75; 95% CI: 1.02, 7.44) were associated risk factors for wasting. Poor dietary diets (AOR = 2.65; 95% CI: 1.06, 6.66) were also associated risk factors for wasting. The findings of this study concluded that the prevalence of stunting and wasting was high in the study area. Therefore, addressing family-level risk factors which are major drivers of children’s nutritional status is crucial to ensure the nutritional status of children.

1. Introduction

Globally, the prevalence of stunting and wasting among children under five years of age was 29.1% and 6.3%, respectively [1]. Annually, one-third of all deaths in children are due to acute and chronic undernutrition [2]. A substantially higher estimated prevalence of undernutrition was found in Africa, Southern Asia, and Southeast Asia than global average estimates [1]. In Ethiopia, it has been reported that the prevalence of stunting and wasting was 37% and 7%, respectively [3]. Undernutrition causes morbidity and mortality among children, and food insecurity is more prevalent [4]. Its high rates may also pose a significant obstacle to achieving better child health and nutritional outcomes [5].

Even though the government of the country was planning different interventions and programs to combat undernutrition and food insecurity, Ethiopia is still highly vulnerable to poverty, household food insecurity, and child undernutrition [6]. These problems are very prevalent, particularly in poor communities whose livelihoods depend on the backward farming system [7].

Several risk factors associated with stunting among children have also been identified, including a low wealth index [8–10]. Another associated risk factor of stunting was poorly diversified diets [11–14]. Moreover, studies conducted in Ethiopia reported that the sex of the child, age of the child, and immunization status were the major associated risk factors of stunting [15–17]. Poverty level, education, occupation, household food insecurity, and
2.1. Study Setting, Design, and Period. This cross-sectional study was carried out from December 1 to 28, 2020 in the Jima Geneti district, Western Oromia, Ethiopia. Jima district was purposively selected as the study site because many rural communities in the study areas were dependent on food aid and support for over ten years [22]. The 2007 national census reported a total population of 64,158, of whom 31,756 were men and 32,402 were women; 6,966 (10.86%) of its population were urban dwellers. A community-based cross-sectional study design was performed for this study. This procedure was reproduced from a previous study conducted in Jima Geneti district, Ethiopia [23]. All children aged 6–59 months found in the study area, Jima district was the target for the study, whereas the study population consisted of a sample of all households with 6–59 months old children who were residing in randomly selected kebeles. Mothers with children aged 6–59 months who had resided in the Jima Geneti district for at least six months were included in this study. Children aged 6–59 months who had deformities or were chronically sick, as well as mothers who were deaf, were excluded from this study.

2.2. Sample Size Determination. The sample size of the study was calculated using a formula for a single population proportion by considering the following assumptions: 95% CI, \( P = \) expected prevalence of stunting in the Oromia region, which was 27% [21]. Therefore, the total sample size required for this study was 500 children by considering a 10% nonresponse rate and a design effect of 1.5.

2.3. Sampling Procedures. The Jima Geneti district was purposively selected for this study site because there has been no study conducted prior study regarding the assessment of risk factors of stunting and wasting among children aged 6–59 months. The study area suffered from heavy rainfall and reduced agricultural production. A multistage sampling method was used to draw the samples for the study. From the 14 kebeles, five kebeles Gudetu Jima, Hunde Gudina, Gudetu Geneti, Lalisa Biya, and Kelela Didimtu were selected using a simple random sampling technique. The children in each kebele were also selected using population proportion to size allocation based on the available data at the Horo Guduru Wollega zonal health office. Finally, from each kebele, the eligible children required for the study were selected randomly.

2.4. Data Collection

2.4.1. Data Collection Procedures. Socioeconomic and demographic data were collected using a structured questionnaire adapted from relevant studies. The questionnaire was first developed in English and translated into a survey (Afan Oromo) language. Then it was translated back to English by different language experts to check for consistency. To manage the quality of the data, a pretest was performed on 5% of households that were not included in the actual samples of the study. To improve the quality of the data, three days of training were provided to all data collectors and supervisors. Questionnaires were also pretested on 5% of households that were not included in the actual samples of the study. At the end of each day, the completeness of the questionnaires was checked by the principal investigator.

2.4.2. Sociodemographic and Economic Data. The socioeconomic (sex, and age of child, parents’ educational and occupational status, marital status) and economic factors (wealth index, ownership of land or cattle) were collected from mothers/caregivers.

2.4.3. Dietary Diversity Data. The dietary diversity scores (DDS) and 24-hour recall method were conducted regarding the child’s diet intake in the 24 hours preceding the survey. Mothers/caregivers were requested to list all the foods consumed by the child in the 24 hours preceding the interview. Seven food groups were used for eligible children. Considering four food groups as the minimum acceptable dietary diversity, a child with a diet diversity score of <4, was classified as having poor dietary diversity and high if a child’s dietary diversity score was [24, 25].

2.4.4. Household Food Insecurity Data. Household food insecurity (HFI) was measured using the Household Food Insecurity Access Scale (HFIA), which has nine questions and is related to the households’ experience of food insecurity in the 12 months preceding the survey [26]. Then, the HFIA prevalence indicators were categorized households into four (4) levels of HFI: food-secure, mild, moderately, and severely food insecure. For this study, only two levels of the Household Food Insecurity Access Scale (food secure and insecure) were used because the sample size for this study was small.

dietary diets were also risk factors associated with stunting [18].

Similarly, lack of a balanced diet, housing quality, and water quality were other associated risk factors for wasting [19]. Family size, diarrhea [15], and prelacteal feeding [20] have also been reported as the major risk factors associated with wasting. Other associated risk factors for wasting were also household poverty level, educational status, occupational status, household food insecurity, and dietary diets [18]. In addition, birth order and no antenatal care visits have also been identified as risk factors associated with wasting [9, 21, 22].

The Oromia region produces adequate food in the country. However, it is reported to have a high prevalence rate of undernutrition compared to the less productive regions of Ethiopia [21]. In the Jima Geneti district, most of the kebeles suffer from food insecurity due to heavy rainfall and less agricultural production. However, no study has assessed the associated risk factors with stunting and wasting among children under five years of age in the study area. Therefore, this study was initiated to assess associated risk factors of stunting and wasting among children aged 6–59 months in Jima Geneti district, Western Oromia, Ethiopia.
2.4.5. Anthropometric Data. Anthropometric measurements were taken using the procedures of the World Health Organization guidelines [27]. The weight of the child was measured using an electronic digital weight scale. Wooden height scales were used to measure height. Anthropometric tools were calibrated before each day of data collection. The age of the child was calculated in months from the birth date to the day of data collection using a local event and childbirth certificate.

2.5. Variables of the Study. In this study, stunting and wasting of children were used as dependent variables, while household sociodemographic and economic characteristics, food insecurity, child feeding practices, and dietary diversity were independent variables.

2.6. Ethical Consideration. Ethical clearance was obtained from the Institutional Review Board (IRB) of the Wollega University, College of Health Sciences. A formal letter of permission was written to the Regional Health Office and each selected kebele administration. After explaining the purpose of the study, verbal consent was obtained from each study participant. Participants were informed that participation was voluntary. Personal identifiers were not included in the questionnaires to ensure participants' confidentiality. Nutrition and health education was given by the data collectors for households and those mothers who had malnourished children were advised to go to health facilities for further treatment.

2.7. Statistical Analysis. The data obtained were analyzed using the SPSS version 20.0. The nutritional status of children was generated using the WHO Anthro program, version 3.2.1. Children with a height for age and weight for height Z score less than -2 standard deviations or below the standard median were considered as stunted and wasted, respectively. Logistic regression was conducted to identify associated risk factors with stunting and wasting. A p value <0.05 was declared as statistically significant. The degree of association between dependent and independent variables was reported using an adjusted odds ratio (AOR) with 95% CI.

3. Results

3.1. Sociodemographic and Economic Characteristics. Of the total participants, 472 (94.4%) were married. About 406 (81.2%) mothers had no formal education. More than half of the participants (62.6%) had a family size of >5. In addition, 296 (59.2%), 113 (22.6%), and 91 (18.2%) households were categorized as low-, medium-, and high-income households, respectively (see Table 1).

3.2. Child Dietary Diversity Scores. Figure 1 illustrates that approximately about 428 (85.5%) and 398 (79.6%) children consumed cereal and legume-based foods, respectively. In addition, about 87 (17.4%) children did not receive meat/fish/poultry for consumption. Regarding the dietary diversity score, 239 (47.8%) and 261 (52.2%) children had high (≥4) and poor (≤3) dietary diversity scores, respectively.

3.3. Household Food Security Status. Table 2 indicates that about 143 (28.6%) households were unable to eat the kinds of foods they preferred. These findings also report that about 313 (62.6%) and 123 (24.6%) households ate a smaller meal...
than they felt was needed and ate fewer meals per day, respectively. In addition, about 106 (21.2%) households slept at night hungry. About 402 (80.4%) and 98 (19.6%) households were classified as household food security and insecurity, respectively. Table 2 is reproduced from a previous study done in Ethiopia [23].

3.4. Prevalence of Stunting and Wasting. Out of 500 children, the prevalence of stunting and wasting among children aged 6–59 months was 27% and 11.8%, respectively (see Figure 2).

3.5. Risk Factors of Stunting and Wasting. Table 3 shows that in the multivariate logistic regression analysis, low wealth status (AOR = 2.5; 95% CI: 1.1, 5.55) and poor dietary diets (AOR = 4.7; 95% CI: 2.5, 8.83) were risk factors for stunting, whereas child meal frequency (AOR = 3.9; 95% CI: 1.23, 12.6), children who did feed leftover food (AOR = 2.75; 95% CI: 1.02, 7.44), and poor dietary diets (AOR = 2.65; 95% CI: 1.06, 6.66) were risk factors for wasting (see Table 4).

4. Discussion

Despite various interventions and policies like National Nutrition and Nutrition-Sensitive to Agriculture being established to overcome risk factors of undernutrition in Ethiopia, the prevalence of stunting and wasting among children in Ethiopia and the study area was still high. The findings of this study illustrated that the prevalence of stunting and wasting in food-insecure households was 27% and 11.8%, respectively.

This finding was consistent with a study conducted in the Tigray region of Ethiopia, which showed that the prevalence of stunting and wasting among children in household food insecurity was 52.1% and 12.6%, respectively [28]. It also agreed with a study conducted in west Oromia, which showed that the prevalence of stunting and wasting among children in food-insecure households was 41.8% and 14.9%, respectively [29]. A

![Figure 1: Dietary diversity scores of children.](image-url)
similar report in South Ethiopia showed that the prevalence of stunting and wasting among children in household food insecurity was 45.6% and 14.6%, respectively [30]. Moreover, this study result is agreed with a study conducted in Malaysia, which explored that the prevalence of childhood stunting and wasting in household food insecurity was 54.7% and 27%, respectively [31]. However, the prevalence of stunting and wasting among children in the current was lower than the above study findings. This variation might be due to sample size, data collection period, and

**Table 3: Associated risk factors of stunting.**

| Variables                                      | No. (%) | COR (CI) | AOR (CI) |
|------------------------------------------------|---------|----------|----------|
| Wealth status                                  |         |          |          |
| High                                           | 98 (19.6) | 1.0      | 1.0      |
| Medium                                         | 176 (35.2) | 1.7 (0.92, 3.11)* | 1.4 (0.71, 2.76) |
| Low                                            | 226 (45.2) | 3.1 (1.52, 6.32)* | 2.5 (1.1, 5.55)** |
| Child meal frequency/day                        |         |          |          |
| >=4                                            | 112 (22.4) | 1.0      | 1.0      |
| <=3                                            | 388 (77.6) | 2.63 (1.65, 4.2)* | 0.75 (0.31, 1.8) |
| Child has breakfast                            |         |          |          |
| Yes                                            | 135 (27.0) | 1.0      | 1.0      |
| No                                             | 365 (73.0) | 3.46 (2.14, 5.6)* | 2.04 (0.46, 3.8) |
| The child has a midnight snack                 |         |          |          |
| Yes                                            | 259 (51.8) | 1.0      | 1.0      |
| No                                             | 241 (48.2) | 1.88 (1.923, 3.2)* | 0.92 (0.46, 1.85) |
| The child has afternoon snacks                  |         |          |          |
| Yes                                            | 234 (46.8) | 1.0      | 1.0      |
| No                                             | 266 (74.2) | 2.48 (1.6, 3.92)* | 1.46 (0.72, 2.96) |
| The child has bedtime snacks                    |         |          |          |
| Yes                                            | 137 (27.4) | 1.0      | 1.0      |
| No                                             | 363 (72.6) | 1.89 (2.9, 3.86)* | 1.13 (0.46, 2.8) |
| When does the child eat his food?               |         |          |          |
| Upon the child demands                          | 320 (64.0) | 1.0      | 1.0      |
| When convenient for the mother                  | 180 (36.0) | 1.72 (1.02, 2.9)* | 0.73 (0.37, 1.44) |
| Did you restrict the child during his/her meal? |         |          |          |
| No                                             | 246 (49.2) | 1.0      | 1.0      |
| Yes                                            | 254 (50.8) | 2.44 (1.52, 3.9)* | 1.16 (0.65, 2.08) |
| Did you pressure the child to eat his food?     |         |          |          |
| No                                             | 251 (50.2) | 1.0      | 1.0      |
| Yes                                            | 249 (49.8) | 1.82 (1.16, 2.9)* | 0.99 (0.55, 1.77) |
| Was food leftover in your home in the past 24 hrs day? |         |          |          |
| No                                             | 241 (48.2) | 1.0      | 1.0      |
| Yes                                            | 259 (51.8) | 1.44 (0.91, 2.3)* | 1.6 (0.92, 2.8) |
| What do you do when food is leftover at home?   |         |          |          |
| Give to the animal                              | 268 (53.6) | 1.0      | 1.0      |
| Give to the child                               | 232 (46.4) | 1.06 (0.57, 1.96) |          |
| Does your child eat all types of food?          |         |          |          |
| Yes                                            | 298 (59.6) | 1.0      | 1.0      |
| No                                             | 202 (40.4) | 2.17 (1.35, 3.5)* | 1.6 (0.92, 2.8) |
| Dietary diversity scores                        |         |          |          |
| High dietary diversity                          | 178 (35.6) | 1.0      | 1.0      |
| Low dietary diversity                           | 322 (64.4) | 5.69 (3.3, 9.94)* | 4.7 (2.5, 8.83)** |

COR: crude odds ratio; AOR: adjusted odds ratio; * statistically significant differences were observed at p < 0.05; 1 = references.
inequalities in socioeconomic and demographic conditions of the current study.

According to the finding of this study, children in low-income households have an increased likelihood of being stunted than those who were in the high income. This finding was consistent with studies done in Bangladesh [32, 33] and Ethiopia [34, 35].

The finding of this study also reported that children who had an undiversified diet were more likely to be stunted than those who had high dietary diversity scores. The study result was supported by studies conducted in Ethiopia [14, 18, 36]. This might be due to poor dietary diversity scores may not providing all the essential nutrients required for the child's growth and mental development.

The multivariate analysis of this study also revealed that children who did get poor dietary diets were more likely to be wasted than those who had high diets. This finding was in line with studies conducted in Ethiopia [18, 37]. Moreover, the present study found that those children who had meal frequency/day ≤ 3 were more likely to be wasted than that of the reference group (AOR = 1.0). This study result was consistent with those of a study result conducted in west Gojjam [37]. Furthermore, children who did feed leftover food were more likely to be wasted than those who did not. Similar results were reported in Ethiopia [38, 39]. This might be because leftover foods have unhygienic and are contaminated with lots of microorganisms that can cause the loss of the weight of the children.

5. Conclusions

It was observed that the prevalence of stunting and wasting among children aged 6–59 months in household food
insecurity in the Jimma Geneti district was high. The study findings concluded that low wealth status and poor dietary diets were associated risk factors of stunting. Child meal frequency, the child who did feed leftover foods, and poor dietary diets were also associated risk factors of wasting.

5.1. Limitation of the Study. This survey was conducted in a single period, and this may not explain the true children’s dietary diets and their nutritional status. The households being grouped as food secure and insecure based on productivity safety net program criteria may not also indicate the current food security status of the surveyed households; as many households classified as food secure were being out of the program for more than ten years, this may increase bias in the research. Anthropometric measurement errors and recall biases in dietary diversity and food insecurity could exist.

5.2. Recommendations. Based on the findings of this study, the following points are recommended:

(i) Providing health and nutrition education through behavioral change communication is crucial to tackling associated risk factors of malnutrition
(ii) Nutrition and health information should be given by health extension workers for mothers as poor child feeding practices were a major factor among children in the study area
(iii) Encouraging households to use home-gardening systems and rearing small animals is very important to diversify child’s food and ensure their household economic status

Data Availability
All data underlying the study results are available from the corresponding author upon reseanable request.

Conflicts of Interest
The author declares no conflicts of interest of any sort.

Acknowledgments
The author acknowledges the Wollega University for financial support. The data collectors, supervisors, and the study participants were also highly acknowledged. This study was financially supported by the Wollega University, Research and Innovation Technology grant No. 248/WuR-ITech/2020.

References
[1] P. Ssentongo, A. E. Ssentongo, D. M. Ericson et al., "Global, regional and national epidemiology and prevalence of child stunting, wasting and underweight in low-and middle-income countries, 2006–2018," Scientific Reports, vol. 11, no. 1, pp. 1–12, 2021.
[2] Z. A. Bhutta, J. K. Das, A. Rizvi et al., "Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?" The Lancet, vol. 382, no. 9890, pp. 452–477, 2013.
[3] Ethiopian Public Health Institute (EPHI) and ICF, Ethiopia Mini Demographic and Health Survey 2019: Key Indicators, EPHI and ICF, Rockville, MD, USA, 2019.
[4] J. Acharya, E. Van Teijlingen, J. Murphy, and M. Hind, "Study on nutritional problems in preschool aged children of Kaski district of Nepal," Journal of Multidisciplinary Research in Healthcare, vol. 1, no. 2, pp. 97–118, 2015.
[5] K. Takele, "Semi-parametric analysis of children’s nutritional status in Ethiopia," International Journal of Statistics and Applications, vol. 3, no. 5, pp. 141–154, 2013.
[6] H. Ghattas, Food Security and Nutrition in the Context of the Global Nutrition Transition, Food and Agriculture Organization, Rome, Italy, 2014.
[7] S. Coll-Black, D. O. Gilligan, J. Hoddinott, N. Kumar, A. S. Taffesse, and W. Wiseman, "Targeting food security interventions when “everyone is poor”: the case of Ethiopia’s productive safety net programme," ESSP Working Papers, vol. 24, p. 35, 2011.
[8] A. K. Tekile, A. A. Woya, and G. W. Basha, "Prevalence of malnutrition and associated factors among under-five children in Ethiopia: evidence from the 2016 Ethiopia demographic and health survey," BioMed Central Research Notes, vol. 12, no. 1, p. 391, 2019.
[9] B. T. Woldeamanuel and T. T. Tesfaye, "Risk factors associated with under-five stunting, wasting, and underweight based on Ethiopian demographic health survey datasets in Tigray region, Ethiopia," Journal of Nutrition and Metabolism, vol. 2019, Article ID 6967170, 11 pages, 2019.
[10] E. Afework, S. Menghesa, and D. Wachamo, "Stunting and associated factors among under-five-age children in west guji zone, Oromia, Ethiopia," Journal of Nutrition and Metabolism, vol. 2021, Article ID 8890725, 8 pages, 2021.
[11] Z. Ali, M. Saaka, A. G. Adams, S. K. Kawsininaang, and A. R. Abizari, "The effect of maternal and child factors on stunting, wasting and underweight among preschool children in northern Ghana," BMC Nutrition, vol. 3, no. 1, p. 31, 2017.
[12] A. Sié, C. Tapsoba, C. Dah et al., "Dietary diversity and nutritional status among children in rural Burkina Faso," International Health, vol. 10, no. 3, pp. 157–162, 2018.
[13] A. G. Khamis, A. W. Mwanri, J. E. Ntwenya, and K. Kreppel, "The influence of dietary diversity on the nutritional status of children between 6 and 23 months of age in Tanzania," BMC Pediatrics, vol. 19, no. 1, p. 518, 2019.
[14] A. Mengesha, S. Hailu, M. Birhane, and M. M. Belay, "The prevalence of stunting and associated factors among children under five years of age in southern Ethiopia: community based cross-sectional study," Annals of Global Health, vol. 87, no. 1, p. 111, 2021.
[15] A. Gebre, P. S. Reddy, A. Mulugeta, Y. Sedik, and M. Kahsay, "Prevalence of malnutrition and associated factors among under-five children in pastoral communities of Afar regional state, northeast Ethiopia: a community-based cross-sectional study," Journal of Nutrition and Metabolism, vol. 2019, Article ID 9187609, 13 pages, 2019.
[16] A. Nshimiyiryo, B. Hedd-Gauthier, C. Mutaganza et al., "Risk factors for stunting among children under five years: a cross sectional population-based study in Rwanda using the 2015 demographic and health survey," BMC Public Health, vol. 19, no. 1, p. 175, 2019.
[17] S. J. Rahman, N. F. Ahmed, M. M. Abedin et al., "Investigate the risk factors of stunting, wasting, and underweight among..."
under-five Bangladeshi children and its prediction based on machine learning approach,” *PLoS One*, vol. 16, no. 6, Article ID e0253172, 2021.

[18] M. Belayneh, E. Loha, and B. Lindtjørn, “Seasonal variation of household food insecurity and household dietary diversity on wasting and stunting among young children in a drought-prone area in south Ethiopia: a cohort study,” *Ecology of Food and Nutrition*, vol. 60, no. 1, pp. 44–69, 2021.

[19] H. Fekadu, A. Adeba, S. Garoma, and W. Berra, “Prevalences of wasting and its associated factors of children among 6–59 months age in Guto Gida district, Oromia regional state, Ethiopia,” *Journal of Food Process Technology*, vol. 5, no. 289, p. 2, 2014.

[20] W. Fentahun, M. Wubshet, and A. Tariku, “Undernutrition and associated factors among children aged 6–59 months in East Belesa District, northwest Ethiopia: a community based cross-sectional study,” *BMC Public Health*, vol. 16, no. 1, p. 506, 2016.

[21] N. Endris, H. Asefa, and L. Dube, “Prevalence of malnutrition and associated factors among children in rural Ethiopia,” *BioMed Research International*, vol. 2017, Article ID 6587853, 6 pages, 2017.

[22] B. Kaleab, N. Retta, and C. Abuye, “Comparison of the effects of conditional food and cash transfers of the Ethiopian productive safety net program on household food security and dietary diversity in the face of rising food prices: ways forward for a more nutrition-sensitive program,” *Food and Nutrition Bulletin*, vol. 35, no. 3, pp. 289–295, 2014.

[23] Y. Tamiru and D. Agama, “Dietary diversity, household food security and nutritional status of children (aged 6–23 months) in Jima Geneti district, Oromia, Ethiopia,” *EC Nutrition*, vol. 15, no. 10, pp. 50–65, 2020.

[24] World Health Organization, *Indicators for Assessing Infant and Young Child Feeding Practices Part 3-Country Profiles*, World Health Organization, Geneva, Switzerland, 2010.

[25] M. Saaka and S. M. Osman, “Does household food insecurity affect the nutritional status of preschool children aged 6–36 months?” *International Journal of Population Research*, vol. 2013, Article ID 304169, 12 pages, 2013.

[26] J. Coates, A. Swindale, and P. Bilinsky, *Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide*, pp. 1–36, Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, DC, USA, 2007.

[27] M. De Onis, A. W. Onyango, E. Borghi, C. Garza, and H. Yang, “Comparison of the World health organization (WHO) child growth standards and the national center for health statistics/WHO international growth reference: implications for child health programmes,” *Public Health Nutrition*, vol. 9, no. 7, pp. 942–947, 2006.

[28] A. Kabsay, A. Mulugeta, and O. Seid, “Nutritional status of children (6–59 months) from food secure and food insecure households in rural communities of saesic Tsaida-Emba district, Tigray, north Ethiopia: comparative study,” *International Journal of Nutrition and Food Sciences*, vol. 4, no. 1, p. 51, 2015.

[29] W. G. Berra, “Household food insecurity predicts childhood undernutrition: a cross-sectional study in west Oromia (Ethiopia),” *Journal of Environmental and Public Health*, vol. 2020, Article ID 5871980, 9 pages, 2020.

[30] B. Betebo, T. Ejaio, and F. Alemseged, “Household food insecurity and its association with nutritional status of children 6–59 months of age in east Badawacho District, south Ethiopia,” *Journal of Environmental and Public Health*, vol. 2017, Article ID 6373595, 17 pages, 2017.

[31] A. N. Ihab, A. J. Rohana, and W. W. Manan, “Assessment of food insecurity and nutritional outcomes in Bachok, Kelantan,” *Journal of Nutrition and Food Sciences*, vol. 5, no. 3, p. 1, 2015.

[32] M. M. Islam, M. Alam, M. Tariquzaman et al., “Predictors of the number of under-five malnourished children in Bangladesh: application of the generalized poisson regression model,” *BMC Public Health*, vol. 13, no. 1, p. 11, 2013.

[33] M. Saaka and Z. Galaa, “Relationships between wasting and stunting and their concurrent occurrence in Ghanaian preschool children,” *Journal of Nutrition and Metabolism*, vol. 2016, Article ID 4654920, 11 pages, 2016.

[34] B. Bogale, B. T. Gutema, and Y. Chisha, “Prevalence of stunting and its associated factors among children aged 6–59 Months in Arba Minch health and demographic surveillance site (HDSS), southern Ethiopia: a community-based cross-sectional study,” *Journal of Environmental and Public Health*, vol. 2020, Article ID 9520973, 8 pages, 2020.

[35] A. Yoseph and H. Beyene, “The high prevalence of intestinal parasitic infections are associated with stunting among children aged 6–59 months in Boricha Woreda, Southern Ethiopia: a cross-sectional study,” *BioMed Central Public Health*, vol. 20, no. 1, pp. 1–13, 2020.

[36] D. Tamiru and H. Jisha, “Dietary patterns and anthropometric status of under-five children in Arba Minch Zuria, Gamo Gofa Zone: a community-based cross-sectional study,” *Advances in Dairy Research*, vol. 03, no. 02, 2015.

[37] A. Motbainor, A. Worku, and A. Kumie, “Stunting are associated with food diversity while wasting with food insecurity among under-five children in east and west Gojjam zones of Amhara region, Ethiopia,” *PLoS One*, vol. 10, no. 8, Article ID e0133542, 2015.

[38] W. Godana and B. Mengistie, “Determinants of acute diarrhoea among children under five years of age in Derashe District, Southern Ethiopia,” *Journal of Remote and Health Research, Education, Practices, Policy*, vol. 13, p. 2329, 2013.

[39] B. M. Yalaw, “Prevalence of malnutrition and associated factors among children age 6–59 months at Lalibela town administration, North Wollo Zone, Anrs, Northern Ethiopia,” *Journal Nutrition Disorders Therapeutic*, vol. 4, no. 132, pp. 2161–0509, 2014.