

Practices of hygiene during complementary food feeding and associated factors among women with children aged 6–24 months in Dedo district, Southwest Ethiopia: A cross-sectional study

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Abstract

Background and Aims: Poor food handling practices contribute to food contamination, leading to food-borne illnesses and childhood diarrhea in developing countries like Ethiopia. This study examines hygienic complementary food feeding practices and associated characteristics among women with children ages 6–24 months in the Dedo District.

Method: A community-oriented cross-sectional study design was used in a multistage sampling strategy to gather information from 501 mothers of children between May 25 and July 10, 2022. There were absolute and relative frequencies assigned to each variable. Multiple logistic models have been used for factors that were 20% significant in univariate analysis. Odds ratios with corresponding 95% confidence intervals (CI) were produced to identify the important predictors.

Results: This study showed that mothers with a diploma (adjusted odds ratio [AOR]: 11.2; CI: 5.51–22.8), urban residency (AOR = 6.35; CI: 3.57–11.3), a positive attitude toward hygienic complementary food feeding (AOR = 2.23; CI: 1.19–4.20), good knowledge of complementary food feeding practices (AOR = 3.95; CI: 2.39–6.55), access to a hand washing facility close to the latrine (AOR = 2.60; CI: 1.55–4.36), and access to water close to their home (AOR = 2.42; CI: 1.27–4.59) were highly associated with good hygiene practices of mothers.

Conclusion: This study shows that mothers of children aged between 6 and 24 months have a very low overall prevalence of good hygienic complementary feeding practices. The concerned parties should therefore establish a healthcare educational program for mothers that emphasizes the importance of hand washing and informs them about the dangers of improper complementary feeding practices.

KEYWORDS

associated factors, children, complementary food feeding, hygiene practices, women

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1 | INTRODUCTION

The World Health Organization (WHO) explains that complementary feeding is a process that starts when breastfeeding alone is insufficient to meet an infant's nutritional needs and extra liquids and meals are required in addition to breast milk.¹ Newborns should start consuming complementary foods when they reach 6 months old. It is also important to continue breastfeeding for a minimum of 2 years alongside the introduction of solid foods.² Breastfeeding and breast milk substitutes are common among children.³ Adequate breastfeeding and ideal complementary feeding are essential to increasing growth, improving development, and enhancing health in newborns.^{4,5} Conversely, poor nutrition raises the risk of sickness and is thought to be directly or indirectly accountable for one-third of the estimated over nine million deaths of children under 5 years old that occurred in 2006.⁵ Hence, complementary feeding practices proved to be a reliable predictor of child survival and nutritional status worldwide.⁶

Complementary food contamination is a major problem in developing nations because of tainted water, poor personal hygiene, neglected utensil cleaning, and improper food storage after processing.⁷ Children under the age of 2 are at a higher risk of contracting enteric pathogen infections from food that has been contaminated with microorganisms. This is because their immune systems are not fully developed, making them more susceptible to such infections.⁸ Poor food handling practices are the most common source of food contamination, which leads to a variety of foodborne diseases. These diseases are the main causes of morbidity and mortality.^{5,9}

Studies have shown that improper food hygiene practices are one of the leading causes of diarrhea among children,^{10,11} accounting for up to 70% of diarrhea cases in low-income countries.¹¹ Diarrhea causes substantial nutrient malnutrition, liquid losses, and decreased appetite,¹² which harms children's nutrition and can cause stunting and wasting.¹³ About 525,000 children under the age of 2 die each year due to various infectious diseases worldwide.¹⁴ In South Asia and sub-Saharan Africa, diarrheal disease has the highest mortality rates among those children.¹⁵

Malnutrition in children also brought on by insufficient dietary intake, poor child care, and illness, is a serious public health issue in developing nations.¹⁶ Lack of proper breastfeeding and complementary feeding methods are the primary causes of malnutrition.¹⁷ Overall, malnutrition has become more widespread among children aged 6–24 months in many countries during the transitional period. This is attributed to deteriorating conditions and ineffective feeding practices.¹⁸

Each year, 3.4 million children pass away from malnutrition-related conditions resulting from improper complementary feeding during their first year of life.¹⁹ According to a study, 88% of these child deaths are caused by poor sanitation, hazardous water sources, and inadequate food hygiene.²⁰ The international consultation study found that 50%–70% of the burden of diseases, including diarrhea, measles, malaria, and lower respiratory infections, was attributed to malnutrition.²¹ The Ethiopian Demographic and Health Survey 2019

mini report shows 37% stunted, 21% underweight, and 7% wasted in children under five due to inadequate feeding practices. This may lead to high rates of morbidity and mortality, particularly in newborns and young children.²²

However, findings from various studies generally show that Ethiopia has a low prevalence of good food hygiene practices among women with children aged 6–24 months. For instance, 44.9% are recorded in the Debarq District of Ethiopia,²³ 33.6% take place in the Tegegie District of north-western Ethiopia,²⁴ 38.9% take place in the Bahrdar Zuria District of north-western Ethiopia,²⁵ and 51% are recorded in the Abobo District of southwestern Ethiopia.²⁶ Differences in traditional cooking techniques, residence,^{24,25,27} knowledge of complementary food feeding practice,²⁸ access to a hand washing facility,^{24–26} and access to water,²⁹ regional dietary preferences, limited access to education on good hygiene practices,^{4,27,30} regional and cultural disparities²⁵ in the practice of hygienic complementary food preparation, and the like contribute to variations in this proportion.

Optimal well-being, dietary habits, and development depend on improving newborn and childhood eating.³¹ Good hygiene, appropriate handling, safe preparation, and storage of complementary foods may prevent a significant source of foodborne illness during complementary feeding.³² The most important modification that can be made to increase hygiene is hand washing, which is the most cost-effective medical intervention for avoiding illnesses such as diarrhea and acute respiratory infections.²³ The availability of safe water for drinking, cooking, and serving the child's food, as well as good sanitation and hygiene, are necessary for appropriate complementary feeding and have been empirically shown to decrease child mortality.³³ A study indicated that the average number of deaths caused by childhood diarrheal illnesses may be reduced by 65 percent if proper hygiene habits are combined with access to water and sanitation.³⁴ Children aged 6–24 months who obtain appropriate complementary nutrition also have a chance to grow and are protected from stunting.³⁵

The WHO advocates dietary diversity in addition to proper hygiene measures; therefore, a variety of basic food categories should be provided as part of complementary feedings to ensure a diverse nutritional intake that fulfills the developing infant's need for all nutrients.¹ The Ethiopian government has incorporated various nutrition-related strategies into its development plans and emphasizes the importance of nutrition for achieving sustainable development, for instance in the Seqota Declaration, which aims to eradicate child malnutrition by the year 2030.³⁶ Malnutrition, however, is still a problem that affects a large portion of the population in Ethiopia and has many different causes, including poverty, a lack of access to healthy food and healthcare, low levels of education, unsanitary living conditions, and a lack of nutrition awareness.³⁷

Evidence showed that understanding the potential risks associated with hygienic standards in complementary food feeding is a top priority in Ethiopia for preventing and managing foodborne illnesses in infants and toddlers aged 6–24 months.^{38,39} Raising food hygiene standards significantly reduces child fatalities and morbidity.

However, hygienic procedures for preparing complementary foods, as well as some interesting factors, were not well addressed in Ethiopia, particularly in the study settings. Furthermore, it is still a challenge to meet actual hygiene standards in complementary feeding, which has serious implications for negative child health outcomes. To effectively address these challenges and assist decision-makers in areas such as policy formulation, program administration, and healthcare, it is essential to provide comprehensive support for better planning and problem-solving. This study investigated hygienic complementary food feeding practices and associated characteristics among women with children ages 6–24 months in Dedo District, Southwest Ethiopia.

2 | METHODS AND MATERIALS

2.1 | Study setting, period, and design

The study was carried out in the Jimma Zone's Dedo District in southwest Ethiopia. Dedo District is 19 km from Jimma town and 371 km from Addis Ababa, the capital of Ethiopia. Dedo district is one of the 21 woredas in the Jimma zone, and it includes a total of 36 kebeles, including 33 rural and 3 urban kebeles. The District had a total population of 237,844 as per the 2022 estimate. There were 118,684 men and 119,160 women among them. According to data obtained from the District's Health Bureau, 16.43% of the population is under 5 years old, and 2694 (5.71%) are under 2 years old. From June 25 to August 10, 2022, a community-oriented cross-sectional study design was carried out in the area being studied.

2.2 | Sources of population

All mothers with children between 6 and 24 months of age constitute the source of the population of Dedo District. There were a total of 2694 mothers in the district who had children aged between 6 and 24 months in June 2022.

2.3 | Inclusion criteria

Mothers of any age who had children aged 6–24 months and resided across the Dedo district for 6–24 months and were willing to participate in the study were included, while those who had only been there for 6 months or less were not included.

2.4 | Sample size and sampling procedure

The sample size was determined using a single population technique, and measurements were made in the Tegegie area of Ethiopia with a 33.6% rate of good hygiene habits,²⁴ a 95% confidence level, and a

5% error margin. The sample comprised 342 individuals. Due to the study's source population being less than 10,000, the adjustment formula was used, and 304 people were incorporated into the sample. When the 10% refusal response rate was taken into account, the sample size climbed to 334. After the design effect of 1.5 was taken into account, the final participant figure was 501.

The study participants were collected using the multistage sampling method. About 11, or 30.56%, of the kebeles in the Dedo district, were selected through the simple random sampling procedure. To compile our list of eligible women with children ranging in age from 6 to 24 months, we looked through the family folders inside every kebele. The size of the sample was then proportionately distributed to each of the chosen kebeles. We started by selecting a random direction from the kebele's center using a spinning pen, and we continued by using systematic random sampling every fifth interval until we reached the required sample size in each kebele (Figure 1).

2.5 | Study variables

The outcome variable was a hygienic practice during complementary feeding, which was assessed using 12 different questions. The hygienic complementary feeding practice was categorized as "good" if mothers answered those questions correctly in 75% or higher of the cases, and as "poor" if they did not.²⁴

While the independent variables, including age, sex, marital status, mother's education level, mother's occupation, husband's education level, husband's occupation, family size, number of under two children, residence, and wealth status, are regarded as socio-demographic and economic characteristics, whereas safe food preparation, proper food handling techniques, and timely hand washing were regarded as maternal knowledge regarding complementary feeding hygiene. The crucial roles of hand washing prepared food storage, and clean eating utensils were considered indicators of mothers' attitudes toward hygienic complementary feeding practices. While latrine conditions and water availability were regarded as housing and environmental factors.

2.6 | Operational definitions

2.6.1 | Poor and good hygiene

A score of less than 75% is regarded as poor hygiene, whereas a score of more than 75% is regarded as good hygiene.²⁵

2.6.2 | Protected water source

Water source that contains piped water boreholes or tube wells, as well as a protected spring.

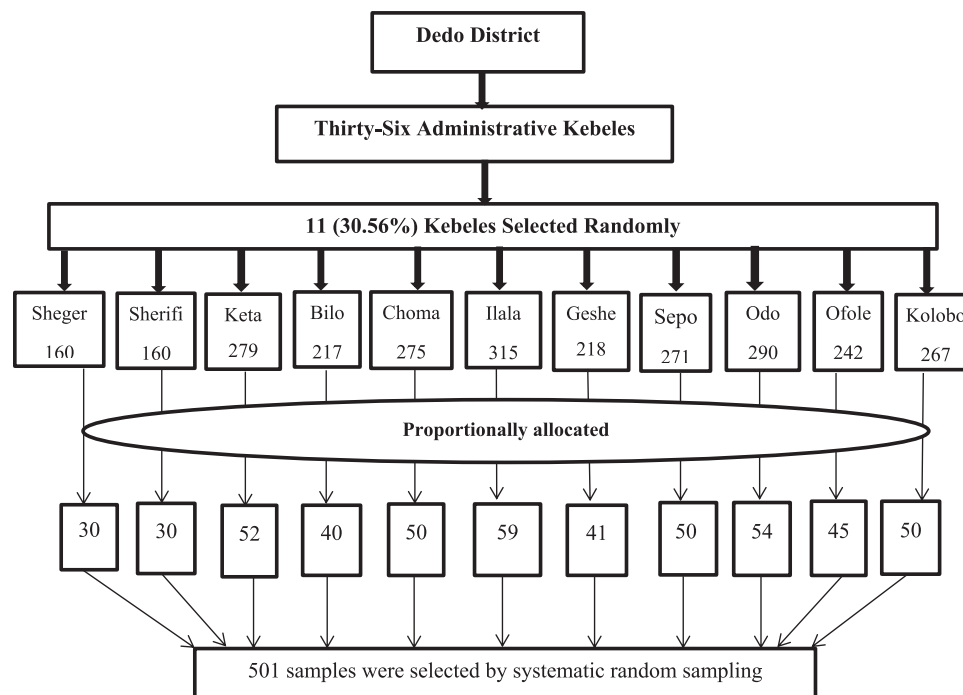


FIGURE 1 Schematic presentation of sampling procedure.

2.6.3 | Unprotected water sources

It include unprotected wells, unprotected springs, and surface water.

2.6.4 | Improved latrine facility

Any non-shared toilets that flush or pour should be attached to a sewer system septic tank, as well as any pit latrines with slabs.

2.6.5 | Wealth index

Scores are assigned to households depending on the quantity and variety of consumer items they own, including flooring, toilets, and various housing amenities like drinking water. These scores, which were obtained using Principal Component Analysis, are used to calculate the national wealth quintiles. Each typical household member was given a score, and the members of the household were then ranked according to those scores.

2.6.6 | Basic drinking water service

Drinking water from a protected source that is made available either on a round trip or collection time that is less than 30 min, as well as limited drinking water service from a protected source that is made available on a round trip collection time that is greater than 30 min.

2.7 | Data collection and assurance

A standardized interviewer questionnaire and an observational checklist were used to gather the data. The question was originally written in English, translated into the dialect of the area (Afan Oromo), and then back into English to verify consistency. The structured questionnaire asks about sociodemographic and economic characteristics, housing and environmental factors, a mother's knowledge and attitude toward hygienic complementary feeding practices, and a mother's actual complementary feeding practices.

Four health extension workers were hired as data collectors, and a nurse served as the process supervisor. Before the actual information gathering began, supervisors and data collectors received training on the inclusion and exclusion requirements for data gathering.

Data assurance was provided for supervisors who review data each day preceding the activity of the following day. The lead investigator and supervisor double-checked the completed questionnaire for completeness before entering the data into the computer. A well-designed protocol was utilized for the quality of data assurance. Before getting the data from the data collectors, the researcher verified its accuracy and consistency. Pretesting the questionnaire, training the data collectors/supervisors, supportive supervision, and making study participants aware of study objectives were activities that should be done to ensure data quality. All supervisors and data collectors were evaluated for their understanding of filling out the data collection format.

2.8 | Method of data handling and analysis

Each variable was assigned an absolute and relative frequency. The candidate factors with p -values less than 0.20 were chosen using the method of bivariate analysis. After that, the candidate variables were taken out into the multivariable logistic model to determine the key variables associated with the hygienic complementary feeding practice. Hosmer and Lemeshow's goodness of fit tests were used to assess the appropriateness of the model ($p > 0.05$), and in the end, a multivariable logistic analysis with a $p < 0.05$ was used to identify the components associated with the hygienic complementary feeding habits of mothers. For each analysis, we utilized IBM Corp.'s SPSS 21.0.

3 | RESULTS

3.1 | Sociodemographic information of the respondents

This study involved 501 women with children ages 6–24 months, and 495 (98.8%) of them gave a complete response. Out of 495 mothers, 229 (46.2%) were illiterate, 138 (27.9%) were aged between 25 and 29, 323 (65.3%) were married, 380 (76.8%) resided in rural areas, 204 (41.2%) were a housewife, 195 (39.4%) was a farmer, 418 (84.4%) had fewer than two children, and 184 (37.2%) had a medium socioeconomic status (Table 1).

3.2 | Environmental factors, housing situations, and practices used during complementary feeding of mothers

In this study, the overall proportion of good hygienic complementary feeding practices among mothers of children aged 6 to 24 months was 35.8%. Out of the total participants, the majority (42.4%) washed their hands before handling food for children, and 96.4% had access to restrooms. Furthermore, the majority of participants (67.3%) used home untreated water for drinking; 79.2% were more than 30 min from the water source; 86.3% drank from sources that were protected; 96.4% had latrines; and 78.4% had water containers that were correctly closed (Table 2 and Figure 2).

3.3 | Bivariate and multiple variable binary logistic model results of hygienic complementary feeding habits among mothers with children between 6 and 24 months

The Hosmer–Lemeshow test results ($p = 0.46$) were nonsignificant, demonstrating the good fit of the logistic model (Table 3). Bivariate logistic analyses show that the mother's educational level, age, occupation, husband's educational attainment, husband's

TABLE 1 Sociodemographic characteristics of the respondents.

Variable	Categories	Counts (%)
Maternal educational status	Illiterate	229 (46.3%)
	Read and write	65 (13.1%)
	Primary level	51 (10.3%)
	Secondary level	41 (8.3%)
Maternal age (years)	Diploma and above	109 (22.0%)
	18–24	106 (21.4%)
	25–29	138 (27.9%)
	30–34	89 (18.0%)
Maternal occupation	>35	162 (32.7%)
	Unemployed	29 (5.9%)
	Civil servant	93 (18.8%)
	Daily laborer	42 (8.5%)
Maternal marital status	Merchant	120 (24.2%)
	Housewife	204 (41.2%)
	Farmer	7 (1.4%)
	Single	60 (12.1%)
Place of residence	Married	323 (65.2%)
	Divorced	41 (8.3%)
	Widowed	34 (6.9%)
Number of under 2 children	Lives separately	37 (7.5%)
	Urban	115 (23.2%)
Husband occupation	Rural	380 (76.8%)
	Less than or equal to 1	418 (84.4%)
	2 and more	77 (15.6%)
	Unemployed	24 (4.8%)
Household wealth status	Civil servant	133 (26.9%)
	Daily laborer	54 (10.9%)
	Merchant	89 (18.0%)
	Farmer	195 (39.4%)
Total	Poor	141 (28.5%)
	Medium	184 (37.2%)
Participants	Rich	170 (34.3%)
	Participants	495 (100%)

occupational status, residence, presence of a latrine, knowledge, attitude, type of latrine, presence of a hand-washing station close to the latrine, presence of container water close to the latrine, presence of a distinct kitchen, and the distance traveled to arrive at the water source were significantly associated with the mother's hygiene practices during complementary food feeding at 0.2 levels of significance (Table 4). Nevertheless, the results of multivariable

TABLE 2 Environmental factors, housing conditions, and practice of mothers during supplemental feeding among children aged 6–24 months in Dedo District, Southwest Ethiopia.

Variable	Category	Counts (%)
Presence of latrine	Yes	477 (96.4%)
	No	18 (3.6%)
Type of latrine	Pour flush latrine	8 (1.7%)
	Ventilated improved pit latrine	24 (5%)
	Pit latrine with slab	154 (32.3%)
	Pit latrine without slab/open pit	291 (61%)
Presence of hand washing facility near latrine	Yes	190 (38.4%)
	No	305 (61.6%)
Hand washing technique when preparing food	Wash with soap and water	210 (42.4%)
	Wash only with water	187 (37.8%)
	No need to wash hands	98 (19.8%)
Household treatment of drinking water	Yes	162 (32.7%)
	No	333 (67.3%)
Distance traveled to reach the water source	Less than 30 min	392 (79.2%)
	More than equal to 30 min	103 (20.8%)
Sources of drinking water	Protected	427 (86.3%)
	Unprotected	68 (13.7%)
Presence of separate kitchen	Yes	358 (72.4%)
	No	137 (27.6%)
Hand washing facility near latrine	Yes	190 (38.4%)
	No	287 (57.9%)
Presence of latrine for household member	Yes	477 (96.4%)
	No	18 (3.6%)
Feeding utensils used for child bottle feeding	Yes	265 (53.5%)
	No	230 (46.5%)
Drinking water container closed properly	Yes	388 (78.4%)
	No	107 (21.6%)
Practice of hygiene during supplementary food feeding	Good	177 (35.8)
	Poor	318 (64.2)

logistic regression revealed a significant association between proper hygiene habits during complementary food feeding and the mother's educational level, place of residence, maternal knowledge about hygienic complementary feeding, maternal attitude toward hygienic complementary feeding, the existence of a hand-washing station

close to the latrine, and the distance traveled to arrive at the water source (Table 5).

Higher education has an association with good hygienic feeding practices among mothers of children ages 6–24 months. Mothers with at least a diploma had significantly higher odds of utilizing good hygiene practices while feeding complementary foods than mothers without any formal education (AOR: 11.2; 95% CI: 5.51–22.8).

Mothers' hygienic feeding practices were substantially correlated with their place of residence. Urban resident mothers had 6.35 times better odds of giving complementary foods in a health-hygienic manner than those who resided in rural areas (AOR = 6.35; 95% CI: 3.57–11.3). Similarly, mothers of children who had adequate understanding of complementary food feeding practices had 3.95 times greater odds of providing good hygienic complementary food feeding than those who had poor knowledge (AOR = 3.95; 95% CI: 2.39–6.55).

This result also shows that maternal attitude plays a significant factor in determining the adoption of hygienic complementary food-feeding practices. Mothers who had a positive attitude toward hygienic complementary food feeding were 2.23 times more likely to practice good hygienic complementary food feeding compared to those who had a negative attitude (AOR = 2.23; 95% CI: 1.19–4.20). Also, mothers who had access to a hand washing facility close to the restroom had 2.60 times greater odds of practicing good hygiene when feeding complementary foods to their children than mothers who didn't (AOR = 2.60; 95% CI: 1.55–4.36).

Furthermore, this study indicates that mothers' complementary food-feeding practices may be significantly improved by being close to a water source. Mothers of children who traveled under 30 min to the drinking source were 2.42 times more likely to have good hygienic complementary food feeding than mothers who traveled over 30 min (AOR = 2.42; 95% CI: 1.27–4.59).

4 | DISCUSSION

The study aimed to find out the practices of hygienic complementary food feeding for children and identify the factors influencing these practices. The results indicate that a small proportion of mothers adequately provide good hygienic complementary feeding for 6 to 24-month-old children (35.8%). The prevalence rate in this study is relatively high when compared to a study carried out in Tegedie District, northwest Ethiopia,²⁴ which found that 33.6% of the mothers had a good practice of complementary food preparation. Nevertheless, lower prevalence rates have been reported in comparison to other study results, including 44.9% in Debark, Ethiopia,²³ and 38.9% in Bahrdar Zuria District, northwest Ethiopia.²⁵ These variations in prevalence rates suggest that there may be regional and cultural disparities in the practice of complementary food preparation among mothers in Ethiopia.

The study identified that mothers with at least a diploma education were significantly more likely than mothers without any formal education to use good hygiene practices when feeding

FIGURE 2 Knowledge, attitude, and complementary hygienic practice among women's with 6–24 months in Dedo District Southwest Ethiopia.

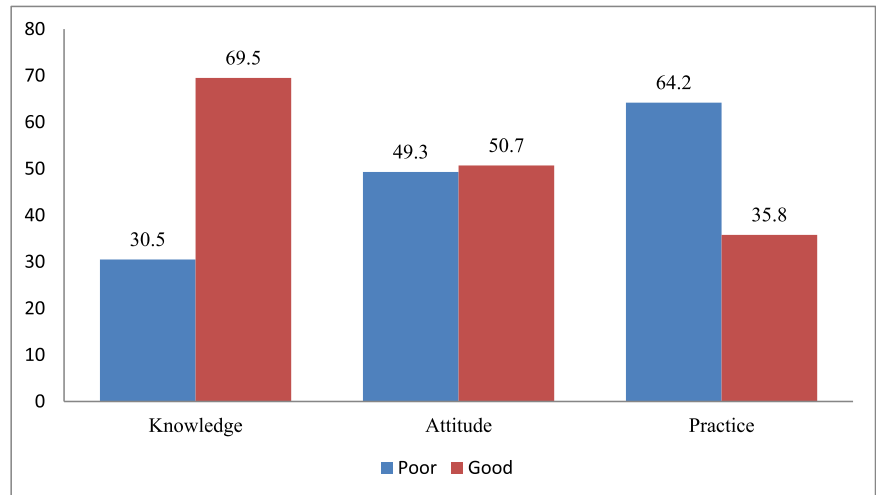


TABLE 3 Hosmer and Lemeshow test.

Step	χ^2	df	Sig.
1	7.696	8	0.46

complementary foods to their children. This result appears to be in line with reports from Ethiopia²⁷ and Nigeria³⁰ that demonstrated mothers with at least a primary education had a substantial association with the best child-feeding practices. Mothers who at least complete their primary schooling may be more exposed to the media for information on hygienic feeding habits. As a result, it promotes good hygiene habits when mothers introduce complementary foods to their children.

This study also found that urban resident mothers were significantly more likely to provide healthy complementary foods to their children than rural resident mothers. This finding is consistent with a study conducted by Teshome et al.,²⁴ Demmelash et al.,²⁵ and Shagaro et al.²⁷ that reported mothers who lived in urban areas were a greater likely to provide good hygienic complementary food-feeding than mothers who lived in rural areas. This may be because mothers who live in cities might gain exposure to information and a sufficient supply of water, which allows them to form the habit of proper hygiene practices.

The findings of this study indicated a significant association between attitudes toward hygienic complementary food feeding and hygienic complementary food feeding practices. Mothers who held a positive attitude toward hygienic complementary food feeding had higher odds of engaging in good hygienic complementary food feeding than mothers who had a negative attitude. The outcome is consistent with²⁵ which found that mothers with positive feelings regarding hygienic complementary feeding had higher odds of adhering to hygiene standards when complementary feeding than mothers who had negative attitudes.

This study also indicated that women who had a good understanding of complementary food feeding practices had a higher

likelihood of giving their children healthy hygienic complementary food than mothers with little knowledge, and this result was demonstrated by the study carried out in Bangladesh.²⁸ The study further found that mothers who obtained access to a hand-washing facility near a restroom had greater odds of practicing proper hygiene when providing children with complementary foods than mothers who did not. This finding has been confirmed by studies done by Teshome et al.,²⁴ Demmelash et al.,²⁵ and Okugn and Demelash.²⁶ The possible reason underlying this relationship is that having a hand washroom close to the restroom encourages hand washing after using the restroom, which aids in establishing hygienic habits in everyday tasks, particularly while preparing food. Moreover, mothers who have access to water near their home have a greater chance of feeding their children good hygienic complementary food than mothers who do not have access. The outcome is consistent with research carried out by Schuster et al.,²⁹ which found that a lack of access to water could restrict the type and quantity of complementary foods provided to children. This is because having access to water facilitates the preparation and cleaning of food so that it is safe for consumption. Additionally, mothers with access to water are better equipped to maintain proper hygiene practices while handling food, reducing the risk of contamination, and improving the overall nutritional intake of their children.

5 | CONCLUSION

This study reveals a very low overall practice of good hygienic complementary feeding among mothers of children aged 6–24 months. This study also demonstrated that mothers with a diploma, urban residency, a positive attitude toward hygienic complementary food feeding, good knowledge of complementary food feeding practices, access to a hand washing facility close to the latrine, and access to water close to their home were found to be highly associated with good hygienic habits of mothers during complementary food feeding of 6 to 24-month-old children.

TABLE 4 Bivariate logistic regression results of hygienic supplemental feeding practice among women's with children aged 6–24 months in Dedo District, Southwest Ethiopia.

Variable	Categories	Hygienic practice		COR (95% CI)	p Value
		Good	Poor		
Mothers education	Illiterate	40 (17.5)	189 (82.5)	1	<0.001
	Read and write	30 (46.2)	35 (53.8)	4.05 (2.23–7.34)	
	Primary level	15 (29.4)	36 (70.6)	1.96 (0.98–3.934)	
	Secondary level	17 (41.5)	24 (58.5)	3.34 (1.65–6.79)	
	Diploma and above	75 (68.8)	34 (31.2)	10.4 (6.13–17.7)	
Age of mothers	18–24	39 (36.8)	67 (63.2)	1.34 (0.80–2.25)	0.17
	25–29	55 (39.9)	83 (60.1)	1.53 (0.94–2.47)	
	30–34	34 (38.2)	55 (61.8)	1.43 (0.83–2.45)	
	≥35	49 (30.2)	113 (69.8)	1	
Mothers occupation	Unemployed	10 (34.5)	19 (65.5)	1	<0.001
	Civil servant	61 (65.6)	32 (34.4)	3.62 (1.50–8.70)	
	Daily laborers	10 (23.8)	32 (76.2)	0.59 (0.22–1.68)	
	Merchant	56 (46.7)	64 (53.3)	1.66 (0.71–3.87)	
	Housewife	40 (19.0)	171 (81.0)	0.44 (0.19–1.02)	
Husbands educational level	Illiterate	28 (17.9)	128 (82.1)	1	<0.001
	Read and write	63 (44.4)	79 (55.6)	3.64 (2.15–6.17)	
	Primary level	20 (38.5)	32 (61.5)	2.85 (1.43–5.71)	
	Secondary level	13 (30.2)	30 (69.8)	1.98 (0.92–4.27)	
	Diploma and above	53 (52.0)	49 (48.0)	4.94 (2.81–8.69)	
Occupational status of husband	Unemployed	11 (45.8)	13 (54.2)	1	<0.001
	Civil servant	67 (50.4)	66 (49.6)	1.20 (0.50–2.87)	
	Daily laborers	16 (29.6)	38 (70.4)	0.50 (0.18–1.34)	
	Merchant	43 (48.3)	46 (51.7)	1.10 (0.44–2.73)	
	Farmers	40 (20.5)	155 (79.5)	0.30 (0.13–0.73)	
Place of residence	Urban	81 (66.9)	40 (33.1)	5.86 (3.76–9.14)	<0.001
	Rural	96 (25.7)	278 (74.3)	1	
Presence of latrine	Yes	168 (35.2)	309 (64.8)	0.54 (0.21–1.39)	0.20
	No	9 (50.0)	9 (50.0)	1	
Knowledge	Poor	22 (14.6)	129 (85.4)	1	<0.001
	Good	155 (45.1)	189 (54.9)	4.81 (2.92–7.92)	
Attitude	Poor	109 (44.7)	135 (55.3)	1	<0.001
	Good	68 (27.1)	183 (72.9)	2.89 (1.98–4.24)	
Type of latrine	Pour flush latrine	6 (75.0)	2 (25.0)	1	<0.001
	Ventilated improved pit latrine	16 (66.7)	8 (33.3)	0.67 (0.11–4.07)	
	Pit latrine with slab	52 (33.8)	102 (66.2)	0.17 (0.03–0.87)	
	Pit latrine without slab/open pit	94 (32.3)	197 (67.7)	0.16 (0.03–0.80)	

TABLE 4 (Continued)

Variable	Categories	Hygienic practice		COR (95% CI)	p Value
		Good	Poor		
Presence of a hand washing facility near the latrine	Yes	85 (44.7)	105 (55.3)	1.99 (1.35–2.92)	<0.001
	No	83 (28.9)	204 (71.1)	1	
Presence of container water near the latrine	Yes	100 (39.4)	154 (60.6)	1.48 (1.01–2.16)	0.04
	No	68 (30.5)	155 (69.5)	1	
Presence of separate kitchen	Yes	138 (38.5)	220 (61.5)	1.57 (1.03–2.42)	0.04
	No	39 (28.5)	98 (71.5)	1	
Distance traveled to reach the water source	≤30 min	154 (39.3)	238 (60.7)	2.25 (1.35–3.73)	0.001
	>30 min	23 (22.3)	80 (77.7)	1	

Abbreviations: CI, confidence interval; COR, crude odds ratio.

TABLE 5 Multivariate logistic regression analysis of hygienic complementary feeding practice among women's with children aged 6–24 months in Dedo, Southwest Ethiopia.

Variable	Categories	Hygienic practice		AOR (95% CI)	p Value
		Good	Poor		
Mothers level of education	Illiterate	40 (17.5)	189 (82.5)	1	0.06
	Read and write	30 (46.2)	35 (53.8)	2.91 (0.90–3.04)	
	Primary level	15 (29.4)	36 (70.6)	1.62 (0.70–3.75)	
	Secondary level	17 (41.5)	24 (58.5)	2.45 (0.98–6.09)	
	Diploma and above	75 (68.8)	34 (31.2)	11.2 (5.51–22.8)	
Place of residence	Urban	81 (66.9)	40 (33.1)	6.35 (3.57–11.3)	<0.001
	Rural	96 (25.7)	278 (74.3)	1	
Knowledge	Poor	22 (14.6)	129 (85.4)	1	0.01
	Good	155 (45.1)	189 (54.9)	3.95 (2.39–6.55)	
Attitude	Poor	109 (44.7)	135 (55.3)	1	<0.001
	Good	68 (27.1)	183 (72.9)	2.23 (1.19–4.20)	
Presence of hand washing facility near the latrine	Yes	85 (44.7)	105 (55.3)	2.60 (1.55–4.36)	<0.001
	No	83 (28.9)	204 (71.1)	1	
Distance traveled to reach the water source	≤30 min	154 (39.3)	238 (60.7)	2.42 (1.27–4.59)	0.007
	>30 min	23 (22.3)	80 (77.7)	1	

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval.

Therefore, we recommend that the head of the woreda health office establish a healthcare educational scheme for rural mothers that emphasizes the significance of hand washing facilities close to latrines, provides access to water close to their homes to encourage the habit of hygienic food preparation, and informs mothers about the risks of poor complementary feeding practices.

5.1 | Strengths and limitations of the study

The study provides various strengths. To begin with, it uses primary data, which offers unprocessed facts and direct evidence. Its second strength is the high survey response rate and community-based design of the study. Nonetheless, it is possible to view the potential for social desirability bias as a study limitation.

AUTHOR CONTRIBUTIONS

Muluken T. Birhanu: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; resources; software; supervision; validation; visualization; writing—review and editing.

Abebe D. Liga: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing—original draft; writing—review and editing. **Yasin N. Jabir:** Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; resources; software; supervision; validation; visualization; writing—review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The information utilized in this investigation is available from the first author and the corresponding authors. It will thus be sent along with a valid request.

ETHICS STATEMENT

The Jimma University Institute of Health Science's ethical review board approved the approval code IHRPGJ/931/22 for this study. The administrative head of Dedo's district was informed of the primary objective of the study before the data collection process, and the letter of support was submitted to the office. After that, participants were given a brief explanation of the study's goal. A participant was informed that they could stop or refuse to take part in the study at any time before the interview. The cultural component was taken into account.

TRANSPARENCY STATEMENT

The lead author Abebe D. Liga, Yasin N. Jabir affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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