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Original Research

Sick Child Feeding Practices and Associated Factors Among Mothers of Sick Children Aged Less Than Two Years in Dire Dawa City Administration Public Health Facility, Eastern Ethiopia

Tizazu Tadesse[1], Zerihun Tariku[1]*, Yitagesu Sintayehu[2]

[1]Department of Public Health, College of Medicine and Health Sciences, Dire Dawa University, P.O.Box: 1362, Dire Dawa, Ethiopia
[2]Department of Midwifery, College of Medicine and Health Sciences, Dire Dawa University, P.O.Box: 1362, Dire Dawa, Ethiopia

Abstract

Background: Sick child feeding is important; feed your baby more often to help fight the illness, reduce weight loss, and recover quickly. Globally, about 40% of deaths of those under two years of age are attributed to inappropriate infant and young child feeding practices. In Ethiopia, a large range of inappropriate feeding practices of mothers of young children was documented. However, there was limited information on sick child feeding practices in low-income countries like Ethiopia, especially in the study area. The study aims to assess the magnitude of sick child feeding practices and associated factors among mothers of sick children aged less than 2 years in the Dire Dawa city administration.
Method: An institution-based cross-sectional study was conducted from May 17 to June 17, 2021. Study participants were recruited by using the systematic random sampling technique. A pretested questionnaire was used for data collection. The data were checked for their completeness and consistency each day, and the collected data were coded and entered into organized Excel and analyzed by using Statistical Package for Social Science version 20. The logistic regression assumption was checked and fitted at $P > 0.05$.
Results: Almost all of the mothers had antenatal care follow-up (90.9%), but nearly one-fourth of the respondents (25.6%) had gotten counseling on infant and young child feeding. About 90.4% of mothers gave birth to an index child at a health institution and were assisted by a health professional. The magnitude of good feeding practice during sickness in children was 52.4% (95% CI: 47.8%, 57.2%). Those mothers who had received counseling about sick child feeding were 2.6 times more likely to feed sick children appropriately than those mothers who had not received counseling about sick child feeding. Postnatal care follow-up (AOR = 2.89; 95% CI: 1.72, 4.90) and access to counseling on infant and young child feeding (AOR = 2.58; 95% CI: 1.55, 4.29) were factors that have a statistically significant association with the mother's sick child feeding practice.
Conclusion: The overall magnitude of good infant and young child feeding practices of sick children was moderate in the Dire Dawa city administration. Postnatal follow-up and counseling on infant and young child feeding indicators were independently associated with feeding practices of sick children.

Keywords: Dire Dawa, Ethiopia, Feeding Practices, Sick Children

**Corresponding author: Zerihun Tariku, Ztariku132@gmail.com, +251910023998*

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1. Introduction

Sick child feeding is to continue feeding during illness and feed more after an illness, which is to increase fluid intake during illness, including more frequent breastfeeding and longer feeds both day and night [1,2]. During an illness, children need additional fluids and encouragement to eat regular meals, and breastfeeding infants need to breastfeed more often. After an illness, children need to be offered more food than usual to replenish the energy and nourishment lost due to the illness [3–5]. To feed a sick baby from birth to 6 months, breastfeeding more frequently is needed when the baby is sick. It is important to feed the baby more often to help fight the illness, reduce weight loss, and recover quickly [6,7]. Giving more food and liquids than usual is also essential. A child needs more food and liquids when sick to make his/her body strong and able to fight the illness [8].

Early and exclusive breastfeeding is now recognized as one of the most effective interventions for children's survival particularly to address morbidity and mortality related to three major conditions that are neonatal infection, diarrhea, and pneumonia [9,10]. Appropriate feeding during and after illness is important to avoid weight loss and other nutrient deficiencies [10,11]. The cycle of infection and malnutrition can be broken if appropriate feeding of infants is ensured. Breast-feed babies have a lesser illness and are better nourished. A breastfeeding child should be given breastfeeding more frequently during illness [12, 13]. For infants older than six months, both breastfeeding and complementary feeding should continue during illness. Restriction or dilution of food should be discouraged. Time and care must be taken to help an ill child eat enough food. The infant can be encouraged to eat small quantities of food but more frequently and by offering foods the child likes to eat [2].

Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential [14]. Hence, the first two years of life provide a critical window of opportunity for the prevention of growth faltering and undernutrition through optimal feeding [15,16]. Improving infant and young child feeding (IYCF) practices based on this recommendation when children are well and sick is important to ameliorate undernutrition and its consequences [14,17]. Globally, about 40% of deaths of those below two years of age are attributed to inappropriate infant and young child feeding practices [13].

Every year, 8 million children in developing countries die of preventable diseases before they reach their fifth birthday; many of them die during the first year of life. Eight out of ten of these

deaths are due to child and neonatal conditions, acute respiratory infection (mostly pneumonia), diarrhea (including dysentery), malaria, or severe malnutrition, or a combination of these conditions. The majority [70%] of deaths and 80-90% of illnesses are due to the above childhood disease [18]. Starting from this, one of the common causes of illness and death among sick children less than two years old is poor feeding practices [19].

The global progress in reducing child mortality over the past few decades: an estimated 5.4 million children under 5 died in 2017, and roughly half of these deaths occurred in sub-Saharan Africa [20]. More than 50% of child deaths are attributed to common childhood illnesses; of these, 60% were attributed to malnutrition that is associated with an inappropriate child feeding practice [21–23]. One study in Guatemala showed that children who were normally given solid foods but not breastfed at the time of illness reduced their energy intake by about 30 percent during acute diarrhea. Children of the same age who were still breastfed only reduced their energy intake by about 7 percent [2].

Evidence from Sub-Saharan African (SSA) & Asian countries have indicated that inappropriate introduction of complementary foods and bottle feeding was associated with the onset of diarrhea among infants and young children [24]. In SSA countries, including Tanzania, children are more likely to die before their fifth birthday from illnesses such as diarrhea and upper respiratory tract infection compared to their counterparts in developed countries [25]. Reviews of studies from developing countries show that infants who are not breastfed are 6 to 10 times more likely to die in the first months of life than infants who are breastfed [26,27]. Diarrhea and pneumonia are more common and more severe in children who are artificially fed and are responsible for many of these deaths [10,28,29].

There are several reasons for poor breastfeeding practices in Ethiopia, including traditional and cultural beliefs, low education levels, heavy workload of mothers, poor sanitary conditions, type of assistance at delivery, duration of stay at home, ethnicity, poor maternal knowledge, age, parity, antenatal care service utilization, and place of delivery [1,28,30–32]. Literature shows that child feeding practices had a direct link with childhood diarrhea. Early breastfeeding initiation, maintenance of breastfeeding, complementary feeding, time to the start of complementary feeding, hygiene of complementary foods, and child vaccination were some of the practices associated with childhood diarrhea [28,30,33–36].

Proper IYCF practices protect children from undernutrition and overnutrition and their consequences later in life. Infants with inadequate growth can catch up with weight gain in the first two years of life and reduce the risk of child morbidity and mortality [37]. In developing countries, where the incidence of childhood illness is high and feeding practices may be poor, loss of appetite or anorexia is just one factor that can contribute to a vicious cycle of illness and malnutrition [5,6]. Ethiopia has one of the highest infant mortality rates in the world, and inappropriate neonatal feeding is a primary factor [38].

There is a gap for the health provider to counsel the caregiver or the mothers on how to feed during sick child visits and their follow-up properly, and the integration status of maternal and child health service is poor in our study area, according to the report. Feeding challenges during illness vary from child to child. Good counseling begins with questions to understand these challenges and then negotiation with the caregiver to find out what practices will be feasible. Good counseling also includes reinforcement of any positive feeding behaviors [4].

In Ethiopia, a large range of inappropriate feeding practices of mothers during sick child feeding was documented. However, there was limited information on sick child feeding practices in low-income countries like Ethiopia, especially in the study area. Therefore, this study assesses the magnitude of sick child feeding practices and associated factors among mothers of children aged less than 2 years visiting under-five OPD and NICU admissions at Dire Dawa public health facilities in the Dire Dawa city administration, Eastern Ethiopia.

2. Methods and Materials

2.1. Study Area and Period

The study was conducted in the Dire Dawa city administration, which is located in the eastern part of Ethiopia. It has 9 urban and 38 rural kebeles. According to the Ethiopian Central Statistics Authority's recent report, the Dire Dawa administrative region has a total population of 506,640, of whom there is an almost one-to-one male-to-female ratio (the data taken from the Dire Dawa regional bureau). It is situated 515 km from Addis Ababa. Dire Dawa city administration is one of the two city administrations, and the majority of its population lives in urban areas, with 233,224, or around 68.22%, of the population being urban inhabitants. The public health organizations that are involved in health care delivery include 2 public general hospitals and 15 public health centers. All health institutions provide maternal health services in addition to other services. The study was conducted from May 17, 2021, to June 17, 2021.

2.2. Study Design

Facility-based cross-sectional study design was employed

2.3. Source Population

All mothers/caregivers of sick children aged less than two years visiting under-five OPD and NICU admission during the data collection period at Dire Dawa public health facilities.

2.4. Study Population

All randomly selected mothers/caregivers of sick children aged less than two years visiting under-five OPD and NICU admissions during the data collection period in selected Dire Dawa public health facilities.

2.5. Eligibility Criteria

2.5.1 Inclusion Criteria

All mothers or caregivers of sick children aged less than two years who had visited under-five OPD and NICU admissions in selected public health facilities in the Dire Dawa city administration during the data collection period were included in the study.

2.5.2. Exclusion Criteria

Those mothers or caregivers who had a serious illness were excluded from the study.

2.6. Sample Size Determination

The sample size for the first objective was determined by using the single population proportion formula by considering the following assumption: 5% margin of error, 95% confidence level, 5% non-response rate, and proportion of appropriate sick child feeding (53.6%) from a study done in Burayu [1]. The sample size required for the study was calculated using the formula to estimate sample size:

$$n = \frac{(Z\alpha_{/2})^2 P(1-P)}{d^2}$$

Where: n: required sample sizes, $Z_{\alpha/2:}$ critical value for normal distribution at 95% confidence level (1.96) (Z = 0.05), P: the proportion of mothers who properly practiced sick child feeding was (53.6%) from a study in Burayu town, d: an absolute precision (margin of error) = 5%, non-response rate is 5%.

$$n = \frac{(1.96)^2 0.536(0.464)}{0.005^2} = \underline{382}$$

n = 382+ 19.1 = <u>401</u>

The sample size for the second objective was calculated by using the Epi Info version 7 by considering the following assumptions: Confidence level 95%, power 80% ratio 1:1, and non-response rate 5% (Table).

Table 1: Sample size determination for factors associated with sick child feeding practices from literature review among mother or caregiver children less than 24 months.

#	Factors	OR	Prevalence of sick child feeding practice among		Outcome variable	Sample size with 5% no response rate	Ref.
			Exposed, %	Non-exposed, %			
1	Receive counseling on IYCF	2.1	No 62.2	Yes 43.5	Sick child feeding practices	242	[1]
2	Maternal age	2.2	20-29 years 43.3	30-39 years 25.8	Sick child feeding practices	252	[46]
3	Occupation of mother	2.2	Housewife 88.8	Working outside 77.8	Sick child feeding practices	418	[28]

Comparing the first and second objectives, the final sample size for this study was 418.

2.7. Sampling Procedures

There are 17 governmental health facilities in the Dire Dawa city administration. From these 17 health facilities, 5 were selected by simple random sampling. The calculated sample size was proportionally allocated to the randomly selected public health facility in Dire Dawa based on the average number of clients 6 months within a month for each selected health facility prior to the study period in the respective under-five OPD and NICU admission units. To select study subjects from each under-five OPD and NICU admission unit, systematic sampling was applied by using the client's registration order to get under-five OPD and NICU admission care during the data collection period.

$$K = \frac{N}{n} = \frac{1050}{418} \sim 3$$

Where: N- is the total number of the selected health facility average 6 months of the registration taken per month prior to the study period, n- It is the sample size of the study population.

2.8. Data Collection Tools and Procedures

Data were collected using a structured questionnaire adapted from freely accessed WHO and EDHS for this specific study [49]. The questionnaire included 14 questions concerning socio-demographic characteristics, 10 questions about maternal health-related factors, 10 questions concerning feeding practices of infants and young children, 11 questions on feeding practices of infants and young children during illness, and 3 questions on information on sick child feeding. Afaan Oromo, Somali, and Amharic translations of the English version of the questionnaire were prepared. For the assessment of sick child feeding practices, currently used

definitions and recommendations of the WHO and the national strategy for IYCF were used. In this study, mothers have been requested to provide information regarding how they feed their babies during illness. Five nurses and one supervisor were trained for two days by the principal investigator about the purpose of the study and how to interview as well as fill out the questionnaire properly. The interviewer-administered face-to-face data collection techniques were implemented in the selected health facilities.

The data collectors were the trend and updated on the current situation of COVID-19 along with precautions that must be implemented during the data collection. The data collectors were provided with personal protective tools (face mask, glove, and sanitizer hand rub), and a proper time and calendar were developed to limit crowding during data collection with other data collectors at the site. Throughout all processes, data collectors had followed the COVID-19 protocol, and it was applied both during and outside of data collection activities.

2.9. Study Variables

2.9.1. Dependent Variable

- Sick child feeding practices

2.9.2. Independent Variables

- **Socio-demographic variables**: Maternal age, occupation, educational status & sex of child
- **Health service-related factors**: Postnatal care services, attendance of antenatal care services and number of antenatal visits.
- **Obstetrics history variables**: Place of delivery, birth attendance, parity and birth interval.
- **Access to sick child feeding information**: Health professionals during ANC (IYCF counseling), health extension workers to care home to home visit, information access, television, radio and others.

2.10. Operational Definitions and Measurement

- **Sick child**: An infant or young child who had either of the common childhood illness like pneumonia or diarrhea and seeks treatment [1].
- **Sick baby feeding:** Continues feeding during illness and feed more after an illness which is to increase fluid intake during illness, including more frequent breastfeeding and longer, feeds both day and night, encourage the sick child to eat soft, varied, appetizing, foods.
- **Sick child-feeding practice:** Feeding of a child at the time of illness.
- **Good sick child-feeding practice:** To identify the appropriate feeding practices of a sick child by knowing the continuity of feeding during illness and feeding more after an illness

which is to increase fluid intake during illness, including more frequent breastfeeding and longer feeds both day and night, encourage the sick child to eat soft, varied, appetizing, foods to less than 24 months of age has been used.

- **Poor sick child-feeding practice:** Whereas those mothers who gave the usual amount of liquids and those giving somewhat less amount and frequency of liquids than usual or withholding feeding were considered as having poor sick child-feeding practices**.**
- **Feed less than usual:** Decreased amount & frequency to feed child when the child is sick.
- **Feed more than usual:** Increased amount & frequency to feed child when the child is sick.
- **Increase feeding frequency:** Giving a child any food or breast milk more repeatedly.
- **Decrease feeding frequency:** Giving a child food or breast milk less frequently repeatedly.
- **Infant and young children:** Infants (birth to 1 year) & children less than 2 years of age.

2.11. Data Quality Control

The collected data were checked manually for completeness, cleaned, and double entered by using the Kobo Toolbox humanitarian software. The questionnaire was pretested on 5% of the calculated sample size in a health facility that was not included in the study (Addis Ketema health center) preceding the actual data collection period. Additional adjustments in the sequence and wording of the questionnaire had been done based on the results of the pretest. Two days of training were given both for data collectors and supervisors on the whole process of data collection. The supervisor controlled the completeness of the questionnaire and consistency of data and communicated with the principal investigator in cases of difficulties.

2.12. Data Management and Analysis

The data were entered by using the Kobo Toolbox software and analyzed using SPSS v. 24. Descriptive statistics like frequency distribution, percentage, and means were used to describe respondents in relation to pertinent variables and presented using tables and graphs. Variables that show association with the dependent variable in the bivariable analysis at p-value <0.25 are entered into the multivariable logistic regression model to identify variables that had a statistically significant association with mothers' sick child feeding practice. Adjusted odds ratios (OR), along with corresponding 95% confidence intervals, were estimated to measure the strength of the association. The level of statistical significance was declared at a *p*-value less than 0.05. Model fitness was tested by the Hosmer-Lemeshow goodness-of-fit test.

3. Results

3.1. Socio-demographic Characteristics of Study Participants

In this study, a total of 418 mothers whose children were aged less than 24 months were interviewed, making the response rate 100%. The mean (+SD) age of mothers was 27.47 (+5.1) years. More than one-third, 170 (40.7%), of mothers were in the age range 25-29 years. Nearly three-fourths (72.2%) of the respondents were Muslim by religion, and 71.3% of the respondents were urban by residence. 290 (70.8%) of them had attended formal education, and 309 (73.9%) of fathers have followed formal education. Out of the <24-month-old children recorded in this study, more than half (52.9%) of them were females. Children's average (±SD) age was 8.91 (+6.6) months. More than one-third of children, 155 (37.1%), were less than 6 months of age (Table 2).

Table 2: Socio-demographics of mothers attending the under-five OPD and NICU ward, Dire Dawa city administration, east Ethiopia 2021 (n=418).

Variable	Category	Number	Percent (%)
Mother age	15-19	11	2.6
	20-24	103	24.6
	25-29	170	40.7
	30-34	90	21.5
	35 and above	44	10.5
Current marital status	Married	403	96.4
	Single	8	1.9
	Divorced	3	0.7
	Widowed	4	1
Residence	Urban	238	56.9
	Rural	180	43.1
Religion	Orthodox	104	24.9
	Muslim	302	72.2
	Catholic	2	0.5
	Protestant	10	2.4
Maternal education	Illiterate	145	34.7
	Read and write	13	3.1
	Primary education	124	4.7
	Secondary education	66	15.8
	College diploma and above	70	16.8
Occupation of mother	House wife	290	69.4
	Governmental employee	76	18.2
	Other*	52	12.4
Husband education	Illiterate	106	25.4
	Read and write	3	0.7
	Primary education	84	20.1
	Secondary education	117	28
	College diploma and above	108	25.8

Age of child	Below 6 months	155	37.1
	6-12 month	161	38.5
	Above 12 months	102	24.4
Sex of child	Male	197	47.1
	Female	221	52.9

***Other:** Merchant, Farmer, Student and Casher

3.2. Health Care Service Utilization and Obstetrics Related Characteristics of Mothers

Almost all of the mothers had antenatal care follow-up (90.9%), but nearly one-fourth of the respondents (25.6%) of them had gotten counseling on infant and young child feeding. About 90.4% of mothers gave birth to an index child at a health institution and were assisted by a health professional. About 35% of mothers used bottles for child feeding. Nearly less than half of the respondents (48.1%) got advice about feeding a child more frequently during illness. More than half of the respondents replied that they heard the information from health professionals during their visit to a health institution. Three-fourths of the respondents, 143 (73.7%), replied that they heard the information from health professionals during their visit to a health institution (Table 3).

Table 3: Obstetrics and health service variables of mothers/care givers in Dire Dawa city administration, eastern Ethiopia, 2021 (n=418).

Variable	Category	Number	Percent (%)
Parity	1-2	237	56.7
	3-4	128	30.6
	5 and above	53	12.7
History of ANC	Yes	380	90.9
	No	38	9.1
Number of ANC visits	1-2	28	6.7
	3-4	189	45.2
	>4	164	39.2
Health education on BF during ANC	Yes	107	25.6
	No	273	65.3
Place of delivery	Home	40	9.6
	Health institution	378	90.4
Birth attendant	TBA	24	5.7
	Health professional	378	90.4
	Relatives	16	3.8
Postnatal follow up	Yes	255	61
	No	163	39
Bottle feeding	Yes	119	47.6
	No	219	52.4
Sick child feeding Counseling	Yes	201	48.1
	No	217	51.9
Source of information	Health professionals	142	34
	Health extension workers	8	1.9

	Mass media	39	9.3
	Others	12	2.9

*Others: Book, Internet, Neighbor and Family.

3.3. Magnitude of Feeding Practice of Sick Child Feeding Practice

The current study showed that more than half of the respondents, 52.4% (95 CI: 47.8%, 57.2%), had a good practice of sick child feeding according to the recommendation (Figure 1).

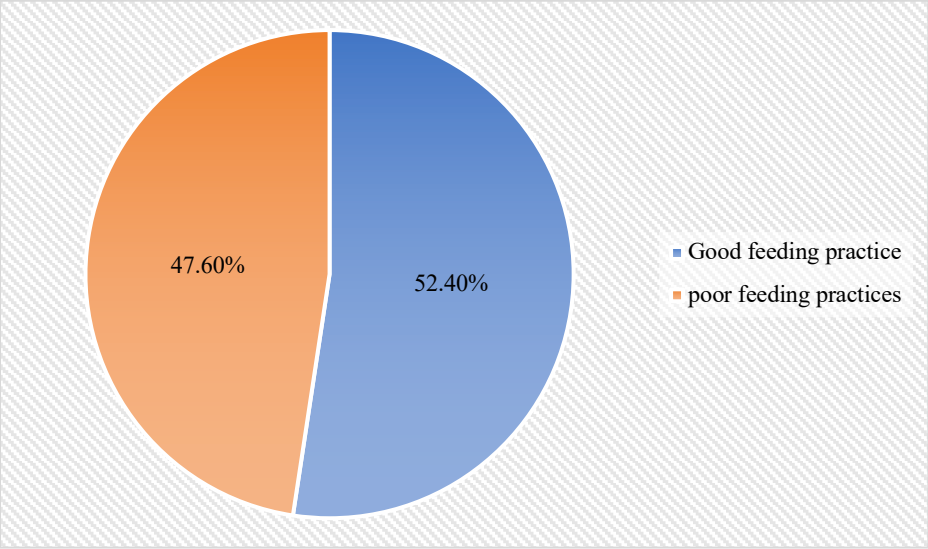

Figure 1: Sick child feeding practice of mothers in Dire Dawa city administration, Ethiopia, 2021 (n=418)

3.4. Factors Associated with Sick Child Feeding Practices

3.4.1. Results of Bivariate Analysis on factors

In this study the bivariate analysis, residence, paternal education, ANC follow-up, parity, place of delivery, birth attendant, PNC follow-up, and receiving counseling on IYCF with sick children were eligible for multivariable analysis.

3.4.2. Results of Multivariable Analysis on Factors

After bivariate analysis, those predictors that showed a p-value less than 0.25 were used to run multivariable analysis. In a multivariable analysis, those mothers who had received counseling about sick child feeding were 2.6 times more likely to feed sick children appropriately than those mothers who had not received counseling about sick child feeding (AOR: 2.58; 95% CI: (1.55, 4.29); $p < 0.001$). Those mothers who had postnatal care follow-up were nearly three times (AOR: 2.89; 95% CI: (1.72, 4.89); $p < 0.01$) more likely to feed a sick child than those who had no postnatal care follow-up (Table 4).

Table 4: Results of Multivariable analysis on factors associated with sick children feeding practices among mothers of sick children aged less than 2 years visiting the under-five OPD and NICU admission unit of public health facility in Dire Dawa city administration, east Ethiopia, 2021.

Variable	Sick Child Feeding Practice	95 Confidence Interval

	Good	Poor	COR	AOR
Place of delivery				
Home	8 (17.8%)	37 (82.2%)	1	1
Institution	211 (56.6%)	262 (43.4%)	6.02 (2.73,13.29)**	0.397 (0.106,1.490)***
PNC Follow Up				
Yes	170 (78%)	48 (22%)	4.79 (3.13,7.33)***	2.899 (1.72,4.899)***
No	85 (42.5%)	115 (57.5%)	1	1
Receive counseling on IYCF				
Yes	143 (65.6%)	75 (34.4%)	4.668 (3.086,7.062)***	2.575 (1.545,4.292)***
No	58 (29%)	142 (71%)	1	1
Residence				
Urban	176 (59.1%)	122 (40.9%)	2.194 (1.479,3.256)	0.949 (0.495,1.820)
Rural	43 (35.8%)	77 (64.2%)	1	1
Paternal Education				
Non-formal	35 (32.1%)	74 (67.9%)	1	1
Formal	184 (59.5%)	125 (40.5%)	3.071 (1.935,4.872)***	1.964 (0.704,4.076)
Parity				
1-2	129 (54.4%)	108 (45.6%)	1	1
3-4	70 (54.7%)	58 (45.3%)	0.507 (0.275,0.935)*	0.806 (0.431,1.508)
5 & more	20 (37.7%)	33 (62.3%)	0.518 (0.275,0.998)*	0.405 (0.145,1.129)*
ANC Follow Up				
Yes	206 (54.2%)	174 (45.8%)	2.253 (1.119,4.536)	1.093 (0.328,3.643)
No	13 (34.2%)	25 (65.8%)	1	1
Birth Attendant				
Nonprofessional	8 (17.8%)	37 (82.2%)	1	1
Professional	211 (56.6%)	162 (43.4%)	5.959 (2.701,13.144)***	0.397 (0.106,1.490)

***p<0.001, **p<0.01, *p<0.05, COR: Crude Odds Ratio, AOR: Adjusted Odds Ratio

4. Discussion

The current study showed that nearly more than half of the respondents 52.4 %, (95 CI: 47.8%, 57.2%) had a good practice of sick child feeding according to the recommendation. This finding was better when compared to the study conducted in Ethiopian Demographic and Health Survey (EDHS) (39%) [49], in Rural Burkina Faso (35.9%) [42], and in the Afar region (26.2%) [33]. The possible reason might be due to this study being conducted at the health facility level; the fact that those mothers who had visited health facilities had better knowledge as compared to those who had not visited health facilities. This difference also might be due to behavioral characteristics of study participants, the existence of a nutrition intervention program by a nongovernmental organization, and the efforts of health extension workers, health professionals, nutrition animators, and practices changing with time.

But this finding is similar to the finding in Nigeria (56.5%) [41], in Uttarakhand, India, (56%) [45] and in a Tribal District of Maharashtra, India (51.5%) [39] and Burayu, Ethiopia, (53.3%) [1]. the possible reason might be due to those studies being conducted at the health facility level; the fact that those mothers who had visited health facilities had similar knowledge. Although this finding is less than with the finding Mirab Abaya district, Ethiopia, (70.1%) [46] and Southwestern Saudi Arabia, (65%) [34]. This could be due to the age difference of study

participants; the study was done in Mirab Abaya district; Ethiopia includes children less than five years. But, in Southwestern Saudi Arabia this difference might be due to higher maternal literacy rates and utilization of institutional delivery in the latter study areas, which are the main fertile grounds to step up mothers' attitude towards appropriately feeding practices during sick children and the previous researches also illustrated that mother's education was positively associated with appropriately feeding practices during sick children.

Those mothers who had visited postnatal care about sick child feeding were 2.9 times more likely to appropriate sick child feeding practices than those who had not visited postnatal care services which is consistent with findings of the study from in Evidence from the Ethiopian Demographic and Health Survey 2016 but it is inconsistent with a study conducted in Ethiopia like Burayu [1] and Gamo Gofa [46]. This might be due to the reason that women who had postnatal care visits might have highly likely to get education on IYCF practice during their sick child. Mothers who had PNC follow-up may receive information, education, and counseling from health professionals about appropriate child feeding practices during an illness.

Those mothers who had received counseling about sick child feeding were 2.6 times more likely to feed sick children appropriately than those mothers who had not received counseling about sick child feeding which is consistent with findings of the study from Burayu [1], Burkina Faso [42], Nigeria [41], Debre Birhan Town [47] and Mirab Abaya District Ethiopia [46]. This could be counseling on infant and young child feeding practices enhances mothers' understanding and appreciation of the demands and benefits of feeding during sick child. Provision of counseling for mothers on the three rules of home treatment; giving extra fluid, continuing feeding, and advising the mother when to return health facility is very crucial for the control and the prevention of the disease.

5. Conclusion

The magnitude of sick child feeding practices among mothers of children aged less than two years was moderate in the study area compared to other studies. In this study, postnatal follow-up and counsel on infant and young child feeding indicators about feeding practice were independently associated with proper feeding practice during childhood illness. Mobilization of health professionals who will provide counseling on infant and young child feeding at any visit by promoting on-the-job training of IYCF (infant and young child feeding) will have a better role in promoting sick child feeding practice. Provision of evidence-based information

regarding the effect of sick child feeding and child health outcome may motivate health professionals to provide nutrition education regularly during ANC visits, delivery, PNC visits, and any other visits. There is a need for strengthening the promotion of IYCF practice during postnatal care to give emphasis to optimal sick child feeding practices. Further study to identify factors affecting the feeding of infants and young children during illness in the area is recommended as a case-control study design.

Abbreviations

ANC: Antenatal Care, AOR: Adjusted Odds Ratio, COR: Crude Odds Ratio, EDHS: Ethiopian Demographic and Health Survey, IYCF: Infant and Young Child Feeding, NICU: Neonatal Intensive Care Unit, OPD: Outpatient Department, PNC: Postnatal Care, SSA: Sub-Saharan African, SD: Standard Deviation, WHO: World Health Organization.

Authors' Contributions

All authors contributed significantly to the work, including conception, study design, execution, data acquisition, analysis, and interpretation. They also contributed to the drafting, revision, and critical review of the article, gave final approval, and agreed on the journal for publication.

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Ethical Approval

The study was conducted after getting ethical clearance from Dire Dawa University, College of Medicine and Health Science ethical committee. Support letters were obtained from Dire Dawa University to the Dire Dawa Administrative Health Bureau and from the Dire Dawa Administrative Health Bureau to the respective health institutions. In addition, informed, voluntary, and written consent was obtained from the facility head and study participant to confirm willingness for participation after explaining the objective of the study. The respondents were notified that they have the right to refuse or terminate at any point of the interview. The information provided by each respondent was kept confidential. Individual records were coded and accessed only by the principal investigator.

Competing Interests

The authors state that they have no competing interests

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Consent for Publication

Not Applicable.

Availability of Data and Materials

Data will be available upon request from the corresponding author.

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