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Prevalence of Early Breast Feeding Termination and Associated Factors among Mothers with Children Aged 2 to 3 Years in Dire Dawa City

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Abstract

Background: Breast milk is the primary natural food for children. It has nutritional, immunological, social and psychological benefits. Stopping breastfeeding before two years of age has several adverse concerns to children. Despite some studies have indicated practice and duration of breast feeding in the first one year, prevalence of mothers ending the recommended duration of breast feeding and associated factors has not been observed in Dire Dawa city. Thus, this study aimed to fill this stated gap.

Methods: Community based cross-sectional study was conducted among mothers of children aged 2 to 3 years in Dire Dawa city from June 04 to July 08 in 2022. Two-stage sampling technique was employed. Association between early breastfeeding cessation and explanatory variables were analyzed using logistic regression model and degree of association was quantified by AOR with 95% CI.

Results: The prevalence of early breastfeeding termination was 44.8 % at (95% CI: 42%-48%). Mothers with 3rd birth order (AOR = 0.472; 95%CI: 0.311 0.715), gave birth in private facility (AOR = 0.376; 95% CI: 0.236 0.598), attended higher education (AOR = 0.403; 95% CI: 0.205-0.792), aged above 35 years (AOR = 0.400 95% CI: 0.240-0.667), had good breastfeeding knowledge (AOR = 0.229; 95% CI: 0.108-0.483), husbands who support breastfeeding (AOR = 0.202; 95% CI: 0.130-0.312), were less likely to cease breastfeeding early than counterparts. However, mothers being employed (AOR = 1.784; 95% CI: 1.160-2.743), unmarried or separated from husbands (AOR = 1.631; 95% CI: 1.058-2.515) were less likely to cease breastfeeding early than counterparts.

Conclusion: Education, age, occupation of women, breastfeeding knowledge, birth order, delivery place, marital status, husband support of breastfeeding were significantly predictors of early breastfeeding termination. Hence, promotion programs of continuing breastfeeding should be focused among younger age, uneducated, low education, employed, unmarried women to reduce early breastfeeding termination.

Key words/Phrases: Termination of Breastfeeding; Associated factors; Mothers; Dire Dawa City

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1. Introduction

Breast milk is the first natural food for children, and it has been shown to have nutritional, immunological, environmental; and psychological benefits. Breast milk is an essential source of energy and nutrients to children aged from 6 to 24 months. It can give half or more of infants' energy needs between the age of 6 and 12 months, and one third of energy needs between 12 and 24 months [1]. It is also a key source of vitamin A, calcium and proteins and provides protection against infectious agents [2]. Breast milk feeding contributes in increasing the child's intelligence, strengthening the emotional bond between the mother and child, and playing a role in the psychosocial development of the child in the future [3]. It is recommended initiation of breastfeeding within one hour of birth, exclusive breast feeding for the first six months of life, and followed by continued breastfeeding with adequate and safe complementary foods for up to two years of age or beyond [4]. Appropriate feeding practice during infancy and early childhood is a key stone of care to ensure optimal child growth and development during the first 2 years of life for the promotion of health, good growth, behavioral, mental development and overall well-being in early vulnerable years of life. Inappropriate feeding practices in these periods are a major cause of childhood under nutrition [5]. Infant and young child feeding is an important area for improving child survival and promoting healthy growth and development. The first two years of children's' life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic diseases, and fosters better development overall. The risk of mortality due to diarrhea and other infections can increase in infants who are either partially breastfed or not breastfed at all [6]. Then, infants should be introduced to nutritionally adequate and safe complementary foods with continued breast feeding for at least two years of life.

Even though, WHO emphasizes that infants should be breastfed for at least two years it is scarce and duration of breastfeeding termination is diverse from one nation to another. A study of analysis carried out of 19 articles by [2] reported the combined prevalence of breastfeeding up to two years of age was 43 %. However, important heterogeneity of prevalence across different countries was observed. The result of studies in Georgia and Iran reported that, 60% and 34% of mothers stopped breastfeeding before the children were two years of age, respectively [7,3]. The period from birth to the second year of life is a vulnerable period for under nutrition as well as a critical period for the promotion of optimal growth, health and behavioral development. Poor nutrition during this critical period is associated with significant morbidity and mortality, and delayed motor and mental development as immediate consequences [8]. The potential negative impact of under nutrition during this critical period also has long lasting and irreversible consequences, including growth failure, poor resistance to infections [9]. Globally, about 5.4 million under-five children die each year with 2.7 million deaths occurred in Sub- Saharan African countries including Ethiopia. Where estimated 3.1 million child deaths is to cause by under-nutrition annually worldwide. A major contributor to under-nutrition is poor breastfeeding practices. But it has been estimated that optimal breastfeeding of children until two years of age has potential to prevent 1.4 million deaths in children under five aged in the world annually [1]
Worldwide more than one-third of children are terminated breastfeeding before 24 months. In the low income families 36% of children were terminated breastfeeding

before two year of age. Similarly, in eastern Africa, 29% of children were not benefiting from the recommendation of breastfeeding [10]. Only 31.8% of Australian mothers were continued breastfeeding to 24 months of age [11]. The median duration of breastfeeding was 12 months; and only 25% of women breastfed to 24 months or more in India [12]. Although breastfeeding practice is universal in South Africa with more than 90% of mother's breastfeed, some of them initiate the practice late; some do not do it exclusively, and others cut the duration before the children become two years of age. Late cessation of breastfeeding has greater effects on child morbidity and mortality [13].

Ethiopian Federal Ministry of Health has settled a guideline on infant and young child feeding, that is maintaining breastfeeding up to two years of age is an important source of energy, calcium and micronutrients providing 35-40% of energy needs [14]. However, the recommended duration of breastfeeding among mothers has reduced from time to time [15]. Despite some studies indicated the issues that affect the practice of breastfeeding in Ethiopia, the attention was on the prevalence of initiation of breastfeeding and exclusive breastfeeding than continuing breastfeeding. As a result, some of the studies conducted in Samara-Logia [16], Wolaita Zone [17], and Bahir Dar city [18] showed that the prevalence of exclusive breastfeeding practices were 64.5%, 64.8% and 57.3% respectively. Similarly, a study conducted on suboptimal breastfeeding practice in Debre Berhan town among mothers having children aged less than 23 months old found the prevalence of late initiation of breastfeeding, not exclusively breastfeeding and early cessation of breastfeeding were 17.5 %, 49.8 %) and 12.8 % respectively [19]). But for this survey the study population was on mothers of children aged bellow 2 years and so the result of study does not tell the exact proportion of early termination of breastfeeding before two years of age. For example, if a mother with a child aged one year was breastfeeding during the study period is unknown that whether she continued breastfeeding up to two years of age or not. Again, there was no a study conducted on the status of early cessation of breastfeeding in Dire Dawa Administration. Thus, the present study tried to fill these gaps and intended to assess the prevalence of early breastfeeding termination and its associated factors among mothers of children aged two to three years in Dire Dawa City.

2. Materials and Methods

2.1. Study Area and Design

A community based cross-sectional study design was conducted in Dire Dawa City from June 04/2022 to July 08/2022.

2.2. Study Population

The source population of this study was all households of mothers who have children aged two to three years of age in Dire Dawa city. All households of mothers with children aged 2 to 3 years in selected kebeles were study populations. In the selected kebeles, randomly selected households of mothers who have children aged 2 up to 3years were study units. Mothers those with health problem recommended by medical doctors to cease breast feeding early and to not feed breast milk at all were excluded in the study.

2.3. Sampling Techniques and Procedures

For this study, two-stage sampling technique was employed. From a total of nine kebeles, four kebeles were selected by simple random sampling technique having 8674 of mothers with children aged 2 to 3 years in those selected kebeles. To select eligible households of mothers, sampling frame was done in community-based information registration prepared by health extension workers. Eligible households were sampled to each selected kebeles using population proportion allocation formula. A systematic random sampling method was used to get the study participants at the household level with in the interval. After determining the sampling interval, the first households was selected using lottery method between 1 and k in sampling frame. Finally, every kth interval of eligible mother was interviewed until required sample was obtained.

2.4.Sample Size Determination

The optimal sample size was calculated using single population proportion formula with the assumption of 95% confidence level, 3% margin of error, 50% proportion of early breastfeeding termination. The sample size was calculated and obtained as 950. Considering an expected 10% of non-response rate, the final required sample was 1045.

2.5.Data collection and procedures

The data were collected using face to face interview from the percipients through self-administered questionnaire structure. The questionnaire was adopted from the other related literatures [19, 20]. First, English version of the questionnaire was prepared and translated to major local languages like Amharic, Oromiffa and Somaligna by language experts and then retuned back to English for keeping the consistency and accuracy.

2.6.Data quality assurance

To ensure the quality of data, one day training was given for data collectors about the overall content of questionnaire, how to approach respondents and data collection process. Pre-test was done on 5% of the calculated sample size of mothers and readjustment was done on the questionnaire. During data collection period, investigators closely supervised the data collection process. Finally the collected data were checked by the investigators for its completeness.

2.7. Dependent variable

The dependent variable for this study was early termination of breastfeeding before two years.

The outcome variable was early termination of breast feeding. The duration of breastfeeding was assessed through the questions. ‘Are you currently breastfeeding?’ ‘If not, did you breastfeed until 2 years of age?’ and ‘if not, how many months after birth did you stop breastfeeding?’ the response of these questions were used to create a binary outcome variable.

(1) Mothers who stopped breastfeeding before two years of age

(0) Mothers who were currently breastfeeding and/or have breastfed for at least two years.

2.8.Explanatory Variables

Socio-demographic factors, health service and breastfeeding related factors

2.9.Operational Definitions

Early termination of breastfeeding: A mother stopped to feed breast milk before her child aged two years of age.

Exclusive breastfeeding: Feeding breast-milk to infants without any complementary foods except for medicines, vitamins or mineral supplements for the first 6 months of life from birth until six months of age.

Optimal breast feeding: Breast feeding practice including initiation of breastfeeding within one hour of birth, breastfeeding exclusively for up to 6 months of age and continuing breastfeeding a child 2 years of age [4].

2.10.Ethical Consideration

Ethical clearance and approval was obtained from Ethical Review committee of Dire Dawa University and permission was obtained from Dire Dawa Administration Health Bureau. Respondents were informed about the purpose, benefits and risk of the study and written consent was obtained from each participant. The privacy and confidentiality of information was assured for participants in the study and the questionnaire was kept by omitting name of study participants. The right of decision on participating in study was explained, that is participation in study is voluntary, and refusal to participate involves no penalty.

3. Results

3.1.Results of Socio Demographic Characteristics

1027 mothers of children aged two to three years with the response rate of 98.27% were included in the analysis. More than half (51.2%) mothers were aged between 26–35 years and two hundred eight (28.2%) were aged above 35 years. 871(84.8%) respondents were living with their husbands. About 8.6% of respondents were not having formal education and 16.7% were above secondary education. Similarly, about 3.9% of partners were uneducated and about 37.1% were above secondary education. Nearly two-fifth (39.5%) of respondents was housewives and only 29% of the respondents were government and /or private employed. Like ways, about 39.1% of partners were employed. The gender ratio was almost the same that is 50.9% females (Table 1).

Table 1: Scio-demographic characteristics of respondents in Dire Dawa City in 2022(n = 1027)

Variable(Level)	Frequency	Percent	Variable(Level)	Frequency	Percent
Age of the mother			Religion		
15-25 years	211	20.5	Orthodox	400	38.9
26-35 years	526	51.2	Muslim	452	44.0
Above 35 years	290	28.2	Protestant or other	175	17.0
Marital Status			Mother employment		
Married	871	84.8	House wife	406	39.5
unmarried/separated	156	15.2	Employed	298	29.0
Mother's education			Trader or other	323	31.5
Uneducated	88	8.6	Partner Employment		
Primary	353	34.4	Employed	402	39.1
Secondary	414	40.3	Unemployed	625	60.9
Higher	172	16.7	Monthly income		
Father's education			≤ 7380 birr	583	56.8
Uneducated	40	3.9	> 7380 birr	444	43.2
Primary	242	23.6	Sex of children		
Secondary	364	35.4	Male	504	49.1
Higher	381	37.1	Female	523	50.9

3.2.Results of Health Service and Breastfeeding Related Characteristics

Nine hundred twenty eight (90.4%) of mothers have attended ANC follow-up during pregnancy About 83.4% of mothers attended PNC service after delivery and 57.4% of them received counseling on infant feeding during the follow-up. More than four fifth (81.3 %) of respondents gave birth at government health facility. Nearly four fifth (79.5%) of husbands were supporting their wives (respondents) to feed breast milk infants up two years of age. Of respondents, 91.7% had awareness of breastfeeding. About 48.1% of respondents had good knowledge and 44.7% had moderate knowledge of breastfeeding (Table 2).

Table 2 : Health service and breastfeeding related factors of women in DDC in 2022(n = 1027)

Variable(Level)	Frequency	percent	Variable(Level)	frequency	percent
ANCF(n = 928)			ANC follow up		
One time	94	9.2	No	99	9.6
Two times	180	17.5	Yes	928	90.4
Three times or more	654	63.7	Breastfeeding information		
PNC follow-up			No	85	8.3
No	170	16.6	Yes	942	91.7
Yes	857	83.4	Breastfeed counseling during PNC (n = 857)		
Breastfeeding knowledge			No	268	26.1
Less	74	7.2	Yes	589	57.4
Moderate	459	44.7	Place of birth		
Good	494	48.1	Govt. facility	835	81.3
Source of inform (n = 942)			Private facility	192	18.7
Health workers	514	50.0	Husband support of breastfeeding		
Family or friends	283	27.6	No	211	20.5
Mass media	145	14.1	Yes	816	79.5

3.3.Proportion of exclusive breastfeeding

Of the study participants, 56.86% of participants responded that they were feeding breast milk only to infants up to six months of birth (Fig 1).

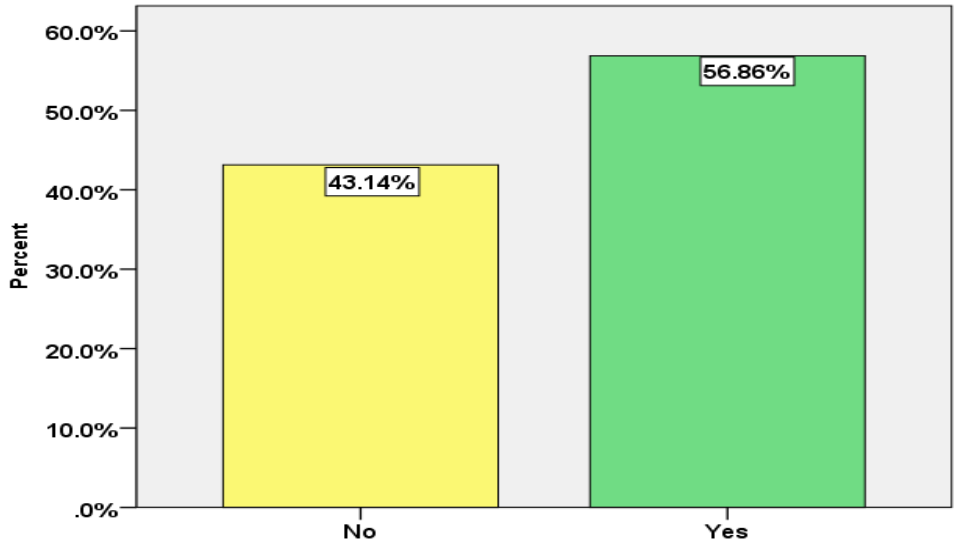

Figure 1: Exclusive breastfeeding up to 6 months of birth

Prevalence of early termination of breastfeeding

In the present study, the overall prevalence of early breastfeeding termination was 44.8 % at (95% CI: 42%-48%) (Fig.2).

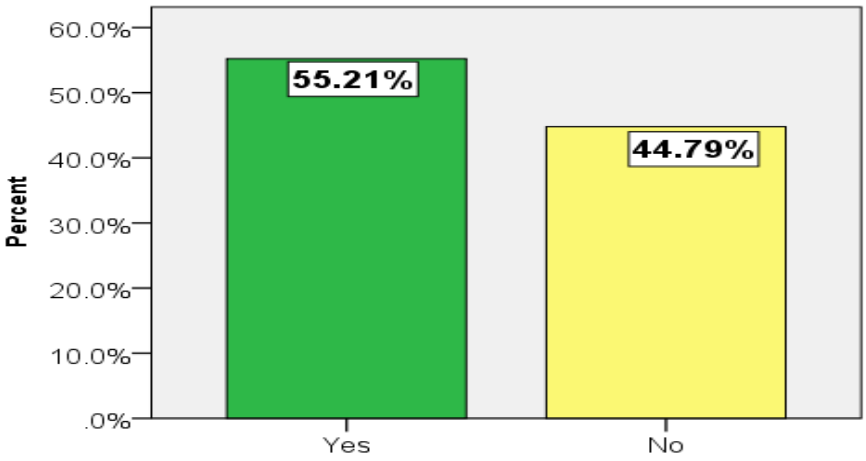

Figure 2: Termination of breastfeeding before two years of age.

3.4.Reasons for Early Termination of Breastfeeding

Of the study participants who discontinued breastfeeding before two years of age, 41.94% mothers responded as a reason that they were busy on work and 36.13% mothers responded as a reason that the infants did not eat complimentary food. About 11.18% mothers responded as a reason of stopping breastfeeding early that they were pregnant with another child (Fig 3).

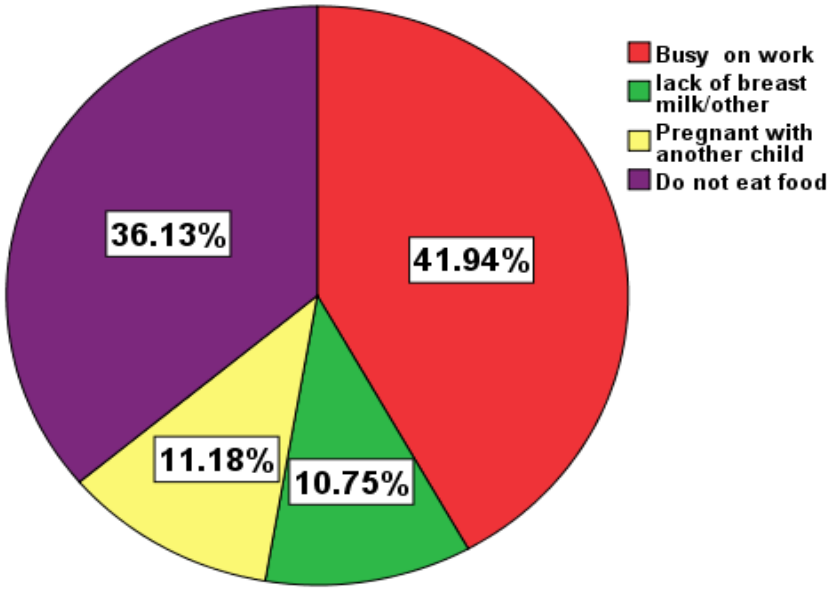

Figure 3: Reasons of discontinuing breastfeeding before the children became two years

3.4.Factors associated with Early Termination of Breastfeeding

Multiple logistic regressions were used to analyze the association between each independent variable and early termination of breastfeeding while controlling for the other independent variables held constant in the model. As shown in Table 3, the result of the analysis indicates the likelihood of having early cessation of breastfeeding was

significantly affected by birth order. Respectively, the odds of having early termination of breastfeeding among mothers with 2nd order and 3rd order children were less likely (AOR =.611; 95%CI: .425 .880) and (AOR =.472; 95%CI: .311 .715) as compared to mothers with 1st order children. Place of delivery was significantly associated with the odds of occurring early cessation of breastfeeding. The odds of early discontinued breastfeeding among mothers who delivered at private facility were less likely (AOR=.376; 95% CI: .236 .598) than mothers who delivered at Government facility. The result of the analysis also showed that women's educational level was negatively associated with the occurrence of early cessation of breastfeeding. Mothers who attended higher education were 60% less likely (AOR = .403; 95% CI: .205-.792) to have early termination of breastfeeding than uneducated mothers. Maternal age was found to be inversely associated with the occurrence of early cessation of breastfeeding. Mothers who aged above 35 years were 60% less likely (AOR=.400 95% CI: .240-.667) to have early termination of breastfeeding than mothers aged below 25 years. Being unmarried was a significant risk for early breastfeeding cessation. The odds of early breastfeeding cessation for unmarried women were 1.631 more likely (AOR = 1.631; 95% CI: 1.058-2.515) to that of married women. Regarding occupational status, employed mothers were 1.784 times more likely (AOR=.1.784; 95% CI: 1.160-2.743) to experience early breastfeeding cessation than housewife mothers. Mothers who had good knowledge about breastfeeding were less likely (AOR=.229; 95% CI: .108-.483) to discontinue breastfeeding than mothers with less breastfeeding knowledge. Similarly, the odds of mothers with partners who support to feed breast milk until two years were less likely (AOR=.202; 95% CI: .130-.312) to discontinue breastfeeding than mothers with none supporter partners (Table 3).

Table 3: Multiple Logistic Regression Output Showing the Association between Predictors and Early Termination of Breastfeeding among Mothers of Children Aged Two to Three Years.

Predictors	Categories	ETB		B	Sig.	AOR	95% C.I.
		Yes (%)	No (%)				
Sex of children	Male	230(54.0)	270(46.0)				
	Female	230(43.6)	297(56.4)	-.131	.392	.877	(.650-1.184)
Birth order	1 st order	182(55.7)	145(44.3)				
	2 nd order	170(43.8)	218(56.2)	-.492	.008	.611	(.425-.880)
	3 rd order	108(34.6)	204(65.4)	-.751	.000	.472	(.311- .715)
Place of birth	Gov. facility	399(47.8)	435(52.2)				
	Private facility	61(31.6)	132(68.4)	-.979	.000	.376	(.236-.598)
PNC crevice	No	87(51.2)	83(48.8)				
	Yes	373(43.5)	484(56.5)	.390	.109	1.477	(.917-2.378)
Husband support	No	156(73.9)	55(26.1)				
	Yes	304(37.3)	512(62.7)	-1.602	.000	.202	(.130-.312)
Breastfeeding Information	No	69(81.2)	16(18.8)				
	Yes	391(41.5)	551(58.5)	-1.340	.000	.262	(.132-.519)
Educational level of mothers	Uneducated	42(47.7)	46(52.3)				
	Primary	194(55.0)	159(45.0)	.519	.088	1.681	(.926-3.050)
	Secondary	176(42.5)	238(57.5)	-.300	.312	.741	(.415-1.325)
	Higher	48(27.9)	124(72.1)	-.909	.008	.403	(.205-.792)
Educational level of fathers	Uneducated	14(35.0)	26(65.0)				
	Primary	97(40.1)	145(59.9)	.161	.720	1.175	(.487-2.838)
	Secondary	159(43.6)	206(56.4)	-.474	.304	.623	(.252-1.537)
	Higher	190(50.0)	190(50.0)	.131	.793	1.140	(.430-3.023)
Mother' age group	<26 years	120(56.9)	91(43.1)				
	26-35 years	237(45.1)	289(54.9)	-.606	.009	.546	(.345-.862)
	Above 35 years	103(35.5)	187(64.5)	-.916	.000	.400	(.240-.667)
Marital status	Married	371(42.6)	500(57.4)				
	Unmarried	89(57.1)	67(42.9)	.489	.027	1.631	(1.058-2.515)
Average monthly income	≤ 7380 birr	244(41.9)	339(58.1)				
	> 7380 birr	216(48.6)	228(51.4)	.329	.083	1.389	(.958-2.013)
Religion	Orthodox	189(47.2)	211(52.8)				
	Muslim	198(43.8)	254(76.2)	-.140	.435	.870	(.612-1.235)
	Protestant/other	73(41.7)	102(58.3)	.034	.874	1.035	(.678-1.581)
Occupational status of fathers	Employed	197(49.2)	203(50.8)				
	Unemployed	263(41.9)	364(58.1)	-.265	.300	.767	(.464-1.266)
Occupational status of mothers	Housewife	161(39.5)	247(60.5)				
	Employed	170(57.4)	126(42.6)	.579	.008	1.784	(1.160-2.743)
	Trader/other	164(50.8)	159(49.2)	.056	.803	1.058	(.682-1.641)
Breastfeeding knowledge	Less	59(79.7)	15(20.3)				
	Moderate	240(52.3)	219(47.7)	-.706	.058	.494	(.238-1.024)
	Good	161(32.6)	33(67.4)	-1.476	.000	.229	(.108-.483)

4. Discussions

The current study examined the prevalence of early termination of breastfeeding and its associated factors in Dire Dawa City. Among the total participants, 44.8 % mothers discontinued breastfeeding before the infants became 2 years at (95% CI:

42%-48%). This finding was higher than a study conducted in Debre Berhan town [19], in Arba Minch [21] where 12.8% and 29.30% of infants were exposed to early cession of breastfeeding respectively. The variation might be due to the fact of study population or study area. The study population in Debre Berhan town was infants below 2 years our study was above 2 years. The study in Arba Minch focused rural area whereas our study focused on urban area. Again the finding of the current study was higher than the national estimated level reported by Ethiopian demographic and health survey data [15]. This variation may be due to that the current study considered only urban resident mothers while the national survey considered both urban and rural resident mothers. It was also higher than a study conducted in Iran [3] and in Bangladesh [22] where 34.2% and 30% mothers discounted breastfeeding before the first 2 years respectively. The difference might be due to the socio-demographic, cultural variations across the countries. On the other hand, the finding of this study was lower than the study conducted in India [12], in Vietnam [20]), in the state of Bahia [23],), in Uganda [24] in South Asia [2] where 74.5%, 79.1%, 79.2 % 50% and 67% of women discontinued breastfeeding before 24 months of infant's age respectively. The variation might be due to socio-demographic differences across the countries and study populations.

The current study also showed that birth order was significantly and statistically associated with early cessation of breast feeding. Mothers with high order of children were significantly less likely to discontinue breastfeeding before 2 years of age than mothers with low order of children. This is in line with a study implemented in Australian [11] and in United Arab Emirates [25] that women with multiparous were more likely to breastfeed babies compared to women with primiparous. On the contrary, it is dissimilar from a study done in Bangladesh [22]. The finding of this study also confirmed that the duration of breastfeeding was higher in better-educated mothers than low educated mothers. This finding is similar with studies done in Debre Berhan town [19] and in Bangladesh [22]. But it contradicted other studies done in Iran [2] and in India [12]). The finding of the current study also indicates that the likelihood of early discontinued breastfeeding for employed mothers were more likely than housewife mothers. This is inconsistent with a study done in India [12] and in Bangladesh [22]. The reason for this different observation might be due to the fact that most of the working women in Bangladesh take their babies with them to the workplace but it is not in our country. The odds of early breastfeeding termination for younger women were higher than that of older women. It is inconsistent with a study done in Debre Berhan town [19]. But it was in line with a study done in Bangladesh [22] and in Vietnam [20] that older women were more likely continuing breastfeeding than younger women. Place of delivery was significantly a factor for the odds of occurring early cessation of breastfeeding. Mothers who delivered their infants at private facility were more likely to continuing breastfeeding as compared with those mothers who delivered their infants at government facility. This contradicted with the result of a study conducted in India [12].

5. Conclusion and Recommendations

More than two fifth of the mothers discontinued breastfeeding before infants became two years of age, which is higher than the national estimated level reported by the 2016 EDHS data. Age, occupational status, educational status of mothers, marital status, breastfeeding knowledge, husband support of breastfeeding, place of

delivery and birth order were the significant factors of early breastfeeding cessation which lacks to meet the guidelines stated by world health organization that breastfeeding should be continued for at least two years to achieve optimal growth and development for infants' life. Thus, the risk factors of continuing breastfeeding should be targeted and reduced by the concern bodies. Policy makers should implement the settled programs to facilitate optimal breastfeeding practices. Health care providers should pay attention to younger age, uneducated or low education, employed and unmarried women to promote the recommended duration of breastfeeding.

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6. Abbreviations

ANC: Antenatal care, AOR: Adjusted odds ratio, EDHS: Ethiopia demographic and health survey, CI: Confidence interval, WHO: world health organization.

7. Conflict of Interest

There is no any conflict of interest.

8. Funding

No funding was obtained for this study.

9. Author's contributions

MA involved in the design, supervision of data collection and conception of the study, performed data analysis and interpretation of the results, wrote the draft and final manuscript. AA designed the data collection tool and worked as the supervisor, approved the final research with constructive comments, reviewed and wrote the manuscript. Each author reviewed, revised and approved the final manuscript.

10. Competing of interests

The authors stated that they have no conflicting interests.

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