

ORIGINAL RESEARCH ARTICLE

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KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS COLOSTRUM FEEDING AMONG ANTENATAL CARE ATTENDANT PREGNANT WOMEN IN MEKELLE HEALTH FACILITIES, MEKELLE, TIGRAY, ETHIOPIA, 2018

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ABSTRACT

Background of the study: Colostrum is the first milk produced by the mammary glands of mammals in late pregnancy just prior to giving birth and continuing through the early days of breastfeeding. This special milk is yellow to orange in color and thick and sticky. It is very rich in proteins, carbohydrates, vitamin A and sodium chloride, but contains lower amounts of lipids, fat and potassium than normal milk. The aim of the present study is to assess the knowledge, attitude and practice towards colostrum feeding among antenatal care attendant pregnant women in Mekelle health facilities. **Methods:** The data were collected by using semi-structured questionnaire which contains variables as well as open and close-ended questions to 195 women who follow antenatal care were included in the study. An institutional based cross-sectional study design was conducted and the data was collected by systematic random sampling method. **Results:** This study found that 157 (80.5%) of mothers had information about colostrum feeding during pregnancy from various sources. One hundred seventy five (89.7%) of mothers have knowledge about advantage of colostrum feeding. Most mothers had positive attitude 67.2% about colostrum feeding and 71.8% agreed that colostrum is good milk for body growth and mental development of newborn. 93 (47.7%) start colostrum feeding within 1 hour after delivery. **Interpretation and conclusion:** The findings of the study showed that many women had good knowledge 89.7%, positive attitude 67.2% & practice 80.5% about colostrum feeding, but the data still indicates further effort are required to improve knowledge, attitude and practice of colostrum feeding. So, there should be clear policy guideline to promote colostrum feeding as well as exclusive breast feeding.

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INTRODUCTION

The colostrum feeding has significant effects for immediate and future health of newborn infants, especially in developing countries such as Ethiopia that have high rates of malnutrition, infectious diseases and mortality for children under the age of 5 years. Newborns have a premature digestive system which suits the low-volume concentrated form of the nutrient supply system of colostrum. The laxative effect of colostrum encourages passage of baby's first stool, meconium. This helps to clear excess bilirubin, which is produced in large quantities at birth and helps prevent jaundice.

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It contains various immunoglobulin, like IgA (reactive to Escherichia coli virulence associated proteins) IgG and IgM. Other immune components of colostrums are lactoferrin, lysozyme, lacto peroxides, complement and praline-rich peptide (PRP). It also contains various cytokines and growth factors. PRP helps fight against various viral infections like herpes viruses and HIV, bacterial and viral infections which are difficult to treat, various cancers, asthma, allergies and autoimmune diseases. It helps to reduce one of the leading causes of death in our country like diarrhea. The importance of colostrum is known to the limited population. There are still many people who believe that colostrum is a harmful substance which should be discarded. It is thought to be an unwanted substance related to ill health. There are certain barriers perverting the feeding of colostrum to the new born babies.

Maternal barriers – Many mother's lack knowledge about the importance of early initiation of breastfeeding and the benefits of colostrum feeding. Some mothers dislike the color of colostrum. They even discard it themselves and also on the advice of in-laws. There is also misinterpretation that breast milk doesn't come in the first few days after delivery and it is insufficient for the baby's needs. Prolonged labor and surgical deliveries are also the hindrance to colostrum feeding. Neonatal barriers- Neonatal illness is one of the major barriers to colostrum feeding. Some babies are not able to suck breast milk due to illness, deformities or other reasons. Lack of family support, discouragement for early initiation of breastfeeding by traditional birth attendants, decision made by family members (husband) to give other fluids are some important barriers to colostrum's feeding.

Significance of the Study

The study is significant because, it is anticipated to identify the gaps on colostrum feeding and recommend ways of bridging of the identified gaps to improve neonatal survival. Also, this study will help to know the concept of colostrum's among the general population. It also decreases poor interaction of health personnel with the pregnant women for promoting and supporting colostrum's is still unsatisfactory as only a few percentages of women received antenatal advice regarding colostrum feeding. Huge gaps may exist in colostrum's feeding behaviors, mostly due to lack of awareness. So, it helps the community to create awareness about the importance of colostrum feeding and advise mothers to practice it in every delivery. Appreciate and initiate Counselling methods to reinforce specific, priority messages by health facility staff and community-based workers at all contact points with pregnant women. It also provides baseline information for further study. The study about colostrum's was not conducted in Mekelle zone North Ethiopia. So, this study, therefore will explore the knowledge, attitude and practice that influence colostrum feeding among mothers in Mekelle City.

MATERIALS AND METHODS

Operational Definition

- **Knowledge:** In this study refers to awareness about colostrum's feedings of a pregnant woman during the breast feeding period. It was evaluated by the mother's answer to the questions
- **Good knowledge:** Those answers greater than or equal to 60% questions out of total knowledge related questions.
- **Poor knowledge:** Those answers less than 60% questions out of total knowledge related questions.
- **Attitude:** The way that you think and feel.
- **Positive attitude:** Those who answer positively > 60% of attitude related questions.
- **Negative attitude:** Those who answer positively to less than 60% of attitude related questions.
- **Practice:** The overt behavior habit or custom of women.
- **Good practice:** Score > 60% of the overall practice questions.
- **Poor practice:** Those who answer <60% of practice related questions.

Study Area and Period

The study was carried out in Mekelle Health facilities; Tigray, Ethiopia, Mekelle is the capital city in the northern Tigray Region of Ethiopia. It is located around 783 kilometers north of the Ethiopian capital Addis Ababa, at a latitude and longitude of 13°29'N 39°28'E Coordinates 13°29'N 39°28'E, with an elevation of 2084 meters above sea level. The total population of Mekelle is estimated to be 215,914 among the total population 104,925 and 110,989 males and females, respectively according to the 2013 EFY population estimation. There are 5 Hospitals (1 Governmental Hospitals 3 Private Hospitals), and 6 Health centers and in Mekelle.

Sampling Technique: In this study a simple random sampling technique is used.

Study Design: Institutional based cross-sectional study design was conducted.

Source Population: The source population was all pregnant mothers in Mekelle City.

Study Population: The study population was selected pregnant mothers who were attending ANC clinic during the data collection period in Mekelle Health facilities.

Inclusion Criteria: All pregnant mothers who have an ANC follow up during data collection period.

Exclusion Criteria

- Mothers who are primigravida.
- A pregnant mother who was appointed for a second visit within the data collection period after interview of those mothers. Explaining this idea me!!!
- Pregnant mothers who are critically ill
- Those unable to speak or/and hear.

Study Variables

Dependent variable

- Knowledge of colostrum feeding
- The attitude of colostrum feeding
- Practice of colostrum feeding.

Independent variables

Pregnancy intention: Wanted, Unwanted.

Maternal Socio-demographics: Age, marital status, residence, occupation, maternal educational status, ethnicity, religion, monthly income, husband educational status and information access.

Utilization of maternal health service related factors: Attendance of antenatal care services, number of antenatal visits, Provision of advice on breastfeeding by healthcare staff during ANC, Attendance of postnatal care services (PNC), and place of delivery and birth attendance.

Obstetrics and Medical variables: Mode of delivery, birth order, Parity and birth interval.

Data Collection Instrument and Procedure

Data collection instrument: Semi Structured questionnaire and interview was used to collect the data which is adapted from peer reviewed published literatures and modified to the local context in such a way that all the variables to be assessed was included. Questionnaires were made in Tigrigna languages.

Data collection method: Method of data collection was employed by using semi structured questionnaires and face to face interviewing. The data collectors were four members of the group.

Data quality control: Questionnaires were prepared first in English and then translated to Tigrinya by members of the group to maintain its consistency. Pre-test was done before the actual data collection among 5% of the study subjects in health centers similar to the study population and the necessary modifications and correction was made to standardize and ensure its validity. During data entry and analysis, data were cleaned carefully; missing values were handled not to be excluded from analysis by checking again and again through data exploration. The data was checked, cleaned and entered into SPSS version 23.0 software for analysis. Incomplete and inconsistent data were excluded from the analysis. Descriptive statistics were used to describe the sample. The results of the descriptive statistics were expressed as percentages and frequency. The study showed that 157 (80.5%) of mothers had information about colostrum feeding during pregnancy from various sources.

RESULTS

The study aimed to assess the knowledge, attitude and practice towards colostrum feeding among antenatal care attendant pregnant women in Mekelle Health Facilities.

Socio-demographic characteristics

Mothers participated in the study, of which 195 (96.0%) responded to our mean of the age were used $28.56 \pm$ and 5.3 (SD). Most mothers 163 (83.6 %), were married. The analysis' of educational level of mothers showed that 33 (16.9%) unable to read and write. Most mothers' 90 (46.2%) responsibility was a house wife. Most mothers 145 (71.4%) residence was urban. The dominant religion of the study population was found to be orthodox 172 (88.2%).

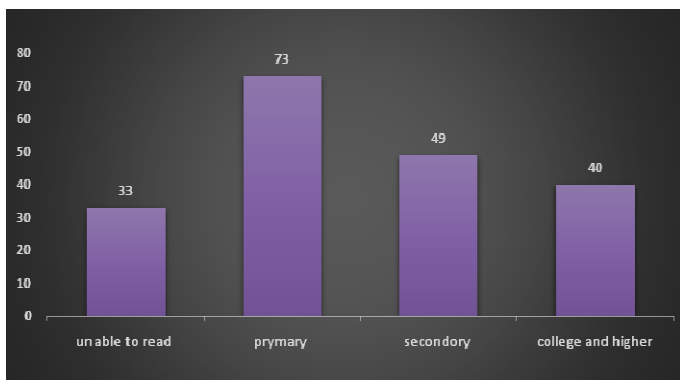


Figure 1. Socio-demographic characteristics that are shown below summarized level of the educational status of the mother at Mekelle Health facility, Ethiopia, 2018

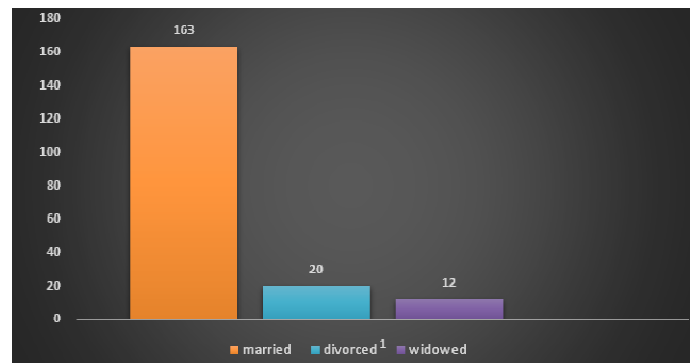


Figure 2. Mothers distribution based on level of marital status of the mother at Mekelle Health facility, Ethiopia, 2018

The table that shown below summarizes the level of social-demographic characteristics of the mothers.

Table 1. Socio-demographic characters of mothers attending ANC follow up in Mekelle Health facility, Ethiopia, 2018

Variables	Category	Frequency	Percentage
Age	15-19	2	1.0%
	20-24	51	26.2%
	25-29	63	32.3%
	30-34	47	24.1%
	35-39	26	13.3%
	40-44	6	3.1%
	Total	195	195%
Occupation of respondents	House wife	90	46.2%
	Civil servant	62	31.8%
	Business women	42	21.5%
	Others	1	0.5%
	Total	195	100.0%
Residence	Urban	50	25.6%
	Rural	145	74.4%
	Total	195	100.0%
Ethnicity	Tigray	172	88.2%
	Others	23	11.8%
	Total	195	100.0%
Monthly Income	Lowest income	3	1.5%
	Second income	22	11.3%
	Middle income	26	13.3%
	Fourth income	32	16.4%
	Highest income	112	57.4%
	Total	195	100.0%
Religion	Orthodox	155	79.5%
	Muslim	32	16.4%
	Catholic	4	2.1%
	Protestant	3	1.5%
	Total	195	100.0%

Maternal experience

Most mothers 172 (83%) had ANC follow up for previous pregnancy, but the remaining 35 (17%) had not. Among of those mothers 119 (61.0%) visit three times, 71 (36.4%) visit two times and 5 (2.6%) visit four times. During ANC follow up visit 169 (86.7%) were counseled about colostrum feeding in addition to breast feeding but the remaining 26 (13.3%) did not. Among 195 mothers 157 (80.5%) had got information about advantage of colostrum feeding. Among 195 mothers 36 (18.5%) were delivered at home, 124 (63.6%) at a health center, and 35 (17.9%) at the hospital. At the time of delivery most mothers 169 (86.9%) were attended by health professionals and 26 (13.3%) attended by traditional birth. About 179 (91.8%) had post natal follow up but the remaining 16 (8.2%) did not.

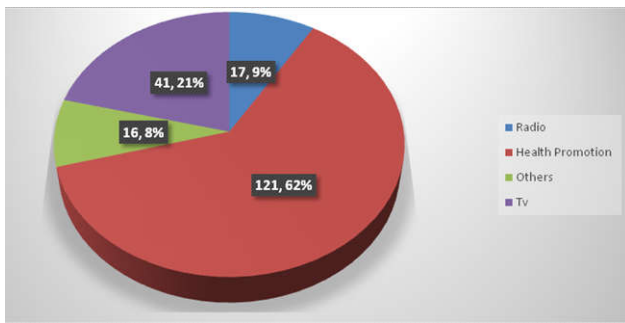


Figure 3. Mothers distribution based on the main source information on initiating breast feeding in Mekelle City, Ethiopia, 2018

Knowledge of respondents about colostrum feeding

According to the criteria for colostrum's feeding knowledge 175 (89.7%) were found to be knowledgeable and 20 (10.2%) fairly knowledgeable. According to the response of mothers on knowledge measuring questions; 100 (51.3%) knew about the benefit of feeding colostrum for growth of baby, 48 (24.6%) protect from illness 29 (14.9%), better concentration and 18 (9.2%) high tendency to catch cold. One hundred forty two (72.8%) respondent also believed that starting breastfeeding within one hour after delivery is important. And most mothers 111 (56.9%) believed that colostrum is important for growth of baby and 84 (43.1%) fed colostrum when they were sick and 100 (51.3%) respondent also believed that noadditional food or drink should be provided from birth to six months. Most of the respondents had good knowledge (89.7%) as shown below in the summarized Table.

Table 2. Mothers distribution by level of colostrum feeding knowledge at in Mekelle Health facility, Ethiopia, 2018

Level of knowledge	Frequency	Percentage
Good knowledge	175	89.7%
Poor knowledge	20	10.3%
Total	195	100.0%

The Majority of respondents had fed colostrum when they were sick and the baby is also sick (Table 3) below summarizes shown level of knowledge of the mother.

Table 3. Mothers distribution who fed colostrum when they are sick in, Mekelle Health facility, Ethiopia, 2018

Should child feed colostrum when you are sick	Frequency	Percentage
Yes	118	60.5%
No	77	39.5%
Total	203	100%
Should child feed colostrum when he/she sick		
Yes	111	56.9%
No	84	43.1%
Total	203	100.0%

The attitude of respondent towards colostrum feeding

According to the criteria for the attitude of colostrum feeding, this study indicated that the majority 131 (67.2%) of mothers have a positive attitude towards colostrum feeding is important for baby's growth. But the remaining 64 (32.8%) has a negative attitude. The reason for not giving colostrum was mothers believed that it is forbidden in culture 127 (65.2%), causes an abdominal cramp and diarrhoea 64 (32.8%) and it is a dirty part of breast milk 21 (10.8%). Among the study participants 49

(25.1%) of them have responded that Colostrum feeding is forbidden in the culture and 146 (74.9%) of mothers have positive attitude towards colostrum feeding. The most respondents towards colostrum feeding the (Table 4) below summarized shown level of level of Attitude mother.

Table 4. Mothers distribution based on attitude towards colostrum feeding in Mekelle Health facility, Ethiopia, 2018

Attitude towards colostrum	Response	Frequency	Percentage
Colostrum feeding is important for baby's growth	Agree	131	67.2%
	Do not agree	47	24.1%
	I do not know	17	8.7%
Total		195	100.0%
Colostrum feeding is not good b'c it cause abdominal cramp and diarrhea.	Agree	68	34.9%
	Do not agree	106	54.4%
	I do not know	21	10.8%
Total		195	100.0%
Colostrum feeding is forbidden in the culture	Agree	49	25.1%
	Do not agree	130	66.7%
	I do not know	16	8.2%
Total		195	100.0%
Colostrum feeding is not important for a child b'c it is dirty part of milk.	Agree	49	25.1%
	Do not agree	130	66.7%
	I do not know	16	8.2%
Total		195	100.0%
Father's support is important to give colostrum for baby.	Agree	140	71.8%
	Do not agree	43	22.1%
	I do not know	12	6.2%
Total		195	100.0%

Practice of respondents towards colostrum feeding

Among the mothers participated in this study, higher proportion 157 (80.5%) gave colostrum for their baby, while the remaining 38 (19.5%) did not. From those who gave colostrum for their baby 93 (47.7%) start colostrum feeding within 1 hours after delivery. Practice of respondents towards colostrum feeding is summarized below in Table 5.

Table 5. Mothers distribution by level of colostrum feeding attitude at Mekelle Health facility, Ethiopia, 2018

Level of attitude	Frequency	Percentage
GoodPractice	157	80.5%
PoorPractice	38	19.5%
Total	195	100%

DISCUSSION

This study examined mothers Knowledge, Attitude and Practice towards the colostrum feeding at Mekelle city, Ethiopia. Among the mothers majority 157 (80.5%) have had information on colostrum feeding during pregnancy from different sources. Most respondents 120 (79.5%) received information on colostrum feeding from health professionals and it is greater than previous finding of EDHS 2016 that was 62.7%. This is due to easy access health education about colostrum feeding. Our study shows that studied population believed that colostrum should be discarded. The reason for not giving colostrum was mothers believed that it is forbidden in culture 127 (65.2%), cause abdominal cramp and diarrhea 64 (32.8%) and it is a dirty part of breast milk 21 (10.8%). but this study gate different ideas, Almost all mothers 140 (71.8%) agrees that colostrum are important for growth and mental development, but it is higher as compared Raya Kobo district, Ethiopia 145 (58%). The variation may be because of socio-cultural difference, geographical difference, lack of create of awareness and lack education during antenatal care which

majority of mothers indicated those gave colostrum for their baby 93 (47.7%) start colostrum feeding within 1 h after delivery, 39 (20.0%) wait six hours after delivery, 21 (10.8%) with 24hr after delivery and 3 (1.5%) but it is lower as compared to Bahir Dar City, Ethiopia 112 (96.4%) (69.5%). This indicates that better understanding about colostrum feeding among mothers, which is higher than previous study (Raya Kobo district, north -east Ethiopia 2016) shows that studied believed that it colostrum is the dirtiest part of milk (25.9%), have a tradition (23.5%) and 58% not awarded. The reason behind variation may be cultural, studies period and health education difference between Mekelle city and Raya Kobo. The finding of this study indicates that 146 (74.9%) had a positive attitude which is higher than previous finding in Jimma 144 (20.6%). The reason behind variation may be our study concern about institutional based or small sample size and also maybe it is due to lack awareness regarding colostrum feeding in Jimma community. In this study the prevalence of colostrum feeding practice was 157 (80.5%), which it is similar with the prevalence of colostrum feeding practice reported from Harar, 188 (80%). This consistent prevalence in colostrum feeding practice could be because of similar access to information and health facility and is higher in our study area as compared to India (23%). The variation may be our study concern about institutional based or small sample size and also maybe it is due to lack awareness regarding colostrum feeding in Tigray, the sociocultural difference between India and Mekelle city (Ethiopia). According to our study, 46 (28.57%) had practiced pre-lacteal feeding, among those 19 (9.7%) were giving butter, which is lower than the study report in Jimma district that shows 57 (37.8%) of mothers were fed pre-lacteal feeding. The reason for the variation is may be due to lack of awareness about colostrum and also it is due to the cultural difference between Jimma district and Mekelle city, (Ethiopia).

Strength and limitation strength of the study

Strength

- Training and strict supervision on data collection instrument and data collection.
- Method of data collection method (Face to face interview) increases response rates and quality of data
- There was a high response rate and adequate sample was used to represent.
- Full information was given about the objective of the study and agreement was obtained from clients, before data collection, and daily checkup made for the completeness of the questionnaire at field level and during the data collection time.

Limitation of the study

- The respondents were selected from government health facilities only; further study is needed to include private health facilities.
- As the study is conducted in Mekelle health facility only, generalization of this finding to the city may be difficult.
- As the study was conducted among women currently attending ANC care from the health centers social desirability bias may not have been completely eliminated, but proper training of research assistants helped in minimizing this.

Conclusion

This study concludes that most of the mothers had good knowledge and attitude on the importance of colostrum feeding. The present study showed that 157 (80.5%) of mothers had information about colostrum feeding during pregnancy from various sources. 175 (89.7%) of mothers have knowledge about advantage of colostrum feeding. Most mothers had positive attitude 67.2% about colostrum feeding and 71.8% agreed that colostrum is good milk for body growth and mental development of newborn. 93 (47.7%) start colostrum feeding within 1hour after delivery. Colostrum feeding practice was more common among mothers who gave birth at the institution. Due to education, promoting institutional delivery and creating awareness on the advantage of colostrum feeding, increase colostrum-feeding practice. Many pregnant women have awareness about colostrumfeeding, but the results study still indicates that further awareness is necessary to improve colostrum's feeding in Mekelle City. And also this study shows most mothers have a positive attitude towards colostrumfeeding, but some mother need further advice on colostrum feeding because they think colostrum's cause diarrhea and abdominal cramp, it is forbidden in culture and it is a dirty part of milk.

Recommendations

In view of the study findings, we have made the following recommendations;

Mekelle Health Centres: The Heath centres should intensify on school health services and outreach activities.

Mekelle General Hospital: The hospital need to be supervised community volunteers when giving IEC to the women at the centres and outreach posts to ensure that they deliver proper, correct and standardized information.

Mekelle University Researcher's office: We also need to recommend researcher to do further study in Mekelle city on these topics.

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