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Prevalence of Colostrum Feeding Practice and Associated Factors among Mothers of Babies Born at Hargeisa Group Hospital Hargeisa Somaliland

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1. Abstract

Colostrum is defined as the first initiation of breast milk within the 1 hour of birth. Globally, it estimated that everyday about 4,000 infants and young children die due to lack of colostrum within the first hour after birth. Initiation of colostrum in the first hours after birth gives the new borns antibodies that protect them against disease.

Objectives: The aim of this study was to assess the prevalence of colostrum feeding practice and associated factors among mothers of babies born at Hargeisa Group Hospital in Hargeisa, Somaliland, 2021.

Methods: An institutional based cross-sectional study was conducted from April to May2021 on 165 mothers in Hargeisa, Somaliland. A structured questionnaire was used for data collection. Descriptive analysis was used to get frequencies and percent. Bivariate logistic regression was used to identify the association between the independent and the outcome variables. Multivariable logistic regression was used to determine the independent predictors and colostrum feeding practice.

Result: A total number of 43 (26.1) mothers did not give colostrum while 122 (73.9%) respondents initiated colostrum for their babies in the 1 hour. Mothers who attended ANC visiting were 15 times more likely to initiate colostrum compared to those who did not attend ANC visiting (AOR15.6; 95% CI 4.041, 28.555). Mothers who had PNC visit were 6.5 more likely toiniate colostrum compared to mothers who did not attend PNC. Mothers with university education was 22 times higher than those who were illiterate to initiate colostrum feeding practice.

Conclusion: One out of four mother didn't initiate colostrum in the first 1-hour birth. Factors include ANC, PNC and maternal education were associated factors of colostrum feeding practices. Therefore, it is crucial to develop and strengthen services and provide advice on the significance for initiation of colostrum among mothers during their ANC and PNC.

2. Keywords: Colostrum feeding, associated factors, mothers, Somaliland.

3. Abbreviations

ANC: Anti-Natal Care
EIBF: Early Initiation of Breast feeding
MOH: Ministry of Heath
NGOs: Non-Governmental Organizations
UNICEF: United Nations Children's Fund
PNC: Post-Natal Care; WHO: World Health Organization

4. Background

Colostrum is the first milk, or a sticky white or yellow fluid secreted by the breast during the second half of the pregnancy and for a few days (3-4) after birth before the regular breast milk comes. It is a concentrated form of 'immature milk', which is very high in protein, antibodies, and other protective components that are important new born babies [1].

Colostrum is a normative ordinary for the newborns concerning the comprehensive form of nutrition which is well thought out as the "golden milk" is highly nutritious and contains anti- infective substances. It is very rich in vitamin A, protein and recommended as the newborns' absolute nourishment by UNICEF and WHO that should begin soon after delivery [2].

Maternal advantages of early initiation of breastfeeding include stimulation of oxytocin release that helps uterus to contract hence reducing the risk of postpartum hemorrhage. It also enhances early bonding between mother and newborn and in establishing exclusive breastfeeding and continued breastfeeding [3].

Globally, 43% of newborns are put to the breast within the first hour after birth with different prevalence across the globe [4]. The prevalence of colostrum practice among some of Asian in like India was 82 % [5], and in Nepal was 41.8 % [6]. In northern India Uttarakhand 92% of the children does not get colostrum milk after while only 9% found colostrum milk [7].

A study done among Ghanaian mothers found that 81.0% of the mothers were offering colostrum to babies after delivery [8]. While in Nigeria 76.7%of the mothers gave colostrum to the newborn whereas 23.33% discarded to feed babies colostrum [9]. In Kenya 91.8% of the mothers gave colostrum to their newborn babies [10]. In developing countries where the rate of communicable diseases high, timely provision of colostrum is reducing diarrheal disease in the neonates [11]. Worldwide, about 2.7 million newborns died during the first month of life (0-27 days) and more than a third of which being on the first day [12]). Different studies have shown different mortalities across the countries [13].

Among the Somali populations, the proportion of mothers who normally give the colostrum was reported about 30%among the pastoralists, 20% and -40% among urban communities [14].

Also statistics of infant and young child feeding practices showed that feeding practices relating to breastfeeding - including breastfeeding within the first hour of an infant's life, - are extremely poor at 23% There are different reasons for these poor practices among the Somali communities such as Cultural and Socio demographic factors [15]. Additionally, other factors that influence colostrum feeding practices include traditional beliefs prolonged labor, surgical deliveries and neonatal illness are also the hindrances of colostrum' feeding, cesarean delivery, and lack of knowledge regarding the benefits of colostrum' feeding [16]. In addition, other factors that affect colostrum feeding includes number of antenatal care visit, lack of postnatal follow up, poor maternal level of information on colostrum feeding [17].

However, there are limited information about the frequency of colostrum feeding practices and the associated factors among mothers of newborn babies in Hargeisa, Somaliland.

The aim of this study was to assess the prevalence of colostrum feeding practices and the associated factors among mothers of babies born at Hargeisa Group Hospital in Hargeisa, Somaliland.

5. Material and Methods

5.1. Study design and sampling

An institutional-based Cross-sectional study design was applied to assess the prevalence of colostrum feeding practice and associated factors among mothers of babies born at Hargeisa Group Hospital from April to May 2021.Hargeisa Group Hospital is one of the largest and referral hospitals in Hargeisa. The source population was mothers who delivered at Hargeisa Group Hospital during the data collection period, the types of data were primary and quantitative data variables that used structured questionnaires. A simple random sampling was made to choose mothers who delivered at the maternity ward during data collection.

5.2. Sample size determination

The study used single population formula to calculate the sample size with the preparation of women who feed colostrum to be 76%, [18] 5% degree of precision and 95% confidence level.

Z2*P*{1-P} (1.96)2 (0.76) (1-0.76) = 280

Since the total population less than 10,000 correction formulas will apply hence

$$n = \frac{n}{1 + N\,(e2)}$$

Here:
n = the required sample size, N = the population size W, E = the level of significance which is give as (0.05) in social science

$$n = \frac{280}{1 + 280(0.05)2} \text{----------1}$$

$$n = \frac{280}{1 + 280(0.0025)} \text{----------2}$$

$$n = \frac{280}{1 + 0.7} \text{----------3}$$

n = 165

After it was adding 10% none response rate the final sample size designed for this study was 182 but about this study there was no returned rate, so the final sample size was original result 165.

5.3Sampling procedure

A systematic random sampling method was employed for this study. This method was chosen to ensure a representative sample from the continuous flow of mothers delivering at Hargeisa Group Hospital.

The total number of mothers attending the hospital for birth was estimated using a monthly average of approximately 660 mothers. Given our target sample size of 165 mothers, a sampling interval (k) was calculated by dividing the estimated total monthly admissions by the sample size (660 / 165 = 4).

To determine the starting point, four individuals were randomly selected using a simple random sampling approach from the initial eligible mothers. Therefore, beginning with the first randomly chosen respondent, every fourth eligible participant was subsequently included in the study until the necessary sample size of 165 mothers was achieved.

5.4. Data collection and data quality assurance

A structured questionnaire was prepared after reviewing different published literature and then adapted to the local situation. A pilot test was done to the questionnaire prior before data collection was carried. The questionnaire was first prepared in English and then translated into Somali language. Retranslation was also be made to see the consistency of both questionnaires. After this, the questionnaire was carried on to interviewing the study participants through the face-to-face interview method.

To insure the Quality of the data was conducted 5% of from total sample size before it was being taken to the field to measure whether it is suited to the needed information from the respondents.

6. Study variables

6.1. Dependent variable

Colostrum breastfed practice (good or poor) or Colostrum breastfed (Yes/No).

6.2. Independent variables

Socio-demographic profile of mothers (Age, educational level and occupational status), knowledge and attitude of mother towards colostrum breastfeeding, obstetric factors (mode of delivery, complication during pregnancy, parity gravidity and birth interval) and service related factors (ANC, PNC and colostrum counseling) are independent variables of the study.

6.3. Statistical analysis

Data was entered in Epi Data version 3.1 and later transferred to Statistical Package for the Social Science (SPSS) version 22 and was used for data analysis. Descriptive summary statistics such as frequency distribution and proportions (percentages) was used to describe different characteristics.

The Crude Odds Ratios (COR) with a 95% confidence interval were estimated in the bivariate analysis to assess the association between each independent variable and the outcome variable. In the multivariate analysis backward logistic regression method was used. Adjusted Odds Ratio (AOR) with a 95% confidence interval was estimated to assess the strength of the association.

6.4. Ethics statement

The study was approved by Hargeisa University and the research ethical review committee. A formal letter from the research and review committee of the Faculty of Graduate studies was submitted to the Hargeisa Group Hospital to obtain their cooperation. Written informed consent letter was obtained from all participants.

7. Results

7.1. Background characteristics

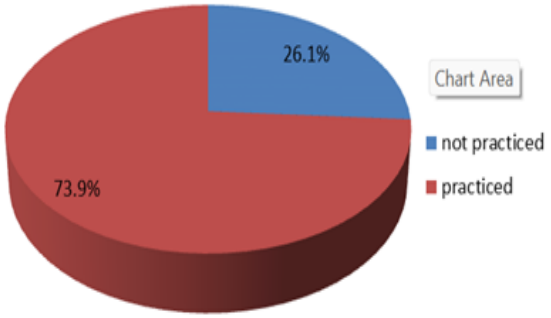
A total of 165 mothers were included in this study to investigate the prevalence of colostrum practices and associated factors. In **Supplementary 1**, the majority of the respondents were between the ages of 25-34 with 60%, whereas only 2.4% were between the age of 44-49. The per cent of mothers without education was 27.3% were while 26.1% had primary education, 24.2% secondary education and22.4% had a university education. Whereas the paternal education was 41.2%secondary, 29.1% had a university education, 11.5% had primary education and18.2% were illerate.

The majority of the mothers were housewives (55%), 18.7% were governmental employees 17% were businesswomen. Family income per month (17.6%) up to (24.2%) of the families were low middle-income level while (19.4%) are middle lower-income (21.8%) middle upper income and (17%) are high income. the child's sex. The majority 86 (52.1%) of children were girls while 79 (47.9%) were boys.

7.2. Prevalence of colostrum feeding practice

In this study, the prevalence of Colostrum breastfeeding practice was 73.9%. A majority (73.9%) of mothers' breastfed their children with colostrum while the rest (26.1%) didn't breastfeed their children with colostrum.

Figure 1: Prevalence of colostrum feeding practice.



7.3. Predictors of colostrum feeding practice

In a multivariable analysis, ANC visiting, PNC attendance and maternal education about colostrum feeding remained significant. But paternal education attended ANC, mode of delivery, the importance of colostrum feeding practice, lost their significance. Mothers who had ANC visiting were 15.6 times more likely to give colostrum compared to those who do not visit antenatal care (AOR15.6; 95%CI 4.041,28.555).

Those mothers who get post-natal care counselling during post-natal care were 6.5 times more likely to breastfeed their children colostrum than those who didn't get counselling (AOR 6.5; 95%CI 2.073, 20.533). Mothers who have university were 22 times are more likely to breastfeed colostrum than those who illiterate (AOR 22.771; 95% CI.

3.120, 166.185) those whose primary level was 7 times are more likely to breastfeed colostrum than those who illiterate (AOR=7(CI: 1.803, 28.055) also those secondary level were 13 times are more likely to breastfeed colostrum than those who illiterate (AOR=.13) 95% CI. 3.148, 58.218].

8. Discussion

Colostrum feeding patterns and associated characteristics were investigated among mothers of newborn newborns at Hargeisa Group Hospital. One in every four mothers (26.1%)

did not give their newborns colostrum in the first hour after birth. This conclusion was linked to the mother's level of education, prenatal care (ANC), and postnatal counseling (PNC). Similar findings were discovered in Pakistan's Addis Ababa [19]. Previous research, on the other hand, have found higher rates of colostrum feeding than our findings [20].

ANC visits, PNC visits, and maternal education were revealed to be predictors of early initiation of colostrum feeding practices among mothers. 85.5 percent of the mothers in our survey stated they went to ANC. When compared to mothers who did not receive antenatal care, those who did were 15.6 times more likely to provide colostrum. This is in line with a study undertaken in Ethiopia, which found that mothers who attend ANC are better fed than those who do not.

This could be due to mothers attending antenatal services being exposed to information about initiation of colostrum feeding practice [21].

Furthermore, this study revealed that mothers who have university level were 22 times are more likely to breastfeed colostrum compared to illiterate mother, and those who primary level were 7 times are more likely to breastfeed colostrum than those who illiterate, also those secondary level were 13 times are more likely to breastfeed colostrum than those who illiterate. Our finding been supported by study done in Nepal Pooled data analysis revealed higher odds of early initiation of breastfeeding among the mothers with primary education and secondary or higher education (compared to mothers with no education) [22].

The association found in our study might be due to the role of education in improving awareness about Initiation and colostrum practice and increasing health seeking behaviors like attending an ANC and PNC visits.

In this study Mothers who get post-natal care counseling during post-natal care was 6.5 times more likely to breastfeed their children colostrum than those who didn't get counseling. Similarity study revealed that Mothers who received both counselling and support were 2.7 times more likely to initiate early breastfeeding. [23].

This is due to immediate counseling and support after delivery helps mothers to initiate and establish breastfeeding, as well as manage common breastfeeding difficulties during this critical period.

8.1. Strengths and weaknesses

This study can be interpreted in light of its strengths and limitations. The use of validated questionnaires, the fact that this study assessed individual factors, including knowledge and attitude of mothers, as well as variables related to families can be considered as a major strength of this study.

A limitation of our study was not using enough literatures from the surrounding towns on the study area in specific due to the unavailability of published journals on the topic of interest could be mentioned as a limitation. Also, this study was institutional based data. Thus further population-based studies are needed in the future.

9. Conclusion

One of the four mother did not initiate colostrum feeding practices in the 1 hour of birth. Factors such as ANC, PNC and maternal education were associated with colostrum feeding practices. Thus it is crucial to develop and strengthen services and provide advice on the significance for initiation of colostrum among mothers during their ANC and PNC.

10. Funding

No funding was received for conducting this survey.

11. Data Availability

Data that supports the findings would be available at the request of the corresponding author on reasonable request.

13. Code Availability

N/A

14. Competing Interest

The authors confirm that this article content has no conflict of interest.

15. Contribution

Nimcaan M Mohamed, Abdriahman Khadar Abdihaad and Abdiaziz Ali Nour are the researchers and drafted the manuscript. Soheir H Ahmed reviewed and finalised the manuscript.

16. Acknowledgment

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17. Reference

1. Yeshambel Wassie A. (2020) Knowledge, Attitude, and Associated Factors towards Colostrum Feeding among Antenatal Care Attendant Mothers in Gununo Health Centre, Wolaita Zone, Ethiopia 2019: Cross-Sectional Study. International journal of pediatrics. 2020
2. Gargamo DB. (2020) Colostrum Feeding Practices And Associated Factors Among Mothers Having Children Less Than 12 Months Of Age In Wolaita Sodo City, Wolaita, Ethiopia 2019. Biomedical Sciences. 6(2): 17.
3. Hadija Y, Lyellu1, et al. Prevalence and Factors Associated with Early Initiation Of Breastfeeding Among Women In Moshi Municipal, Northern Tanzania.
4. Organization WH. (2019) Global Breastfeeding Scorecard, 2019: Increasing Commitment To Breastfeeding Through Funding and Improved Policies and Programmes, World Health Organization.
5. Sultania P, et al. (2019) Breastfeeding knowledge and behavior among women visiting a tertiary care center in India: A cross-sectional survey. Annals of global health. 85(1).
6. Bhandari S, et al. (2019) Determinants of infant breastfeeding practices in Nepal: A national study. International breastfeeding journal. 14(1): 14.
7. Mukherjee K, PN Venugopal. (2018). Colostrum avoidance and breastfeeding practices among mothers of Khos tribal Community of Uttarakhand: A community-based cross-sectional study. Journal of the Anthropological Survey of India. 67(1): 45-55.
8. Asare BYA. (2018) Breastfeeding practices and determinants of exclusive breastfeeding in a cross-sectional study at a child welfare clinic in Tema Manhean, Ghana. International breastfeeding journal. 13(1): 1-9.

9. Sanghvi AA. (2020) Awareness of breast feeding practices amongst women visiting government hospital at Ahmedabad. International Journal of Community Medicine and Public Health. 7(10): 3872.
10. Wekesa NM. (2017) Infant feeding knowledge and practices among lactating mothers in Kwale County, Kenya. East African Medical Journal 94(10): 855-862.
11. M Adhikari, V Khanal, R Karkee, et al. (2014) Factors associated with early initiation of breastfeeding among Nepalese mothers: further analysis of Nepal Demographic and Health Survey 2011. International Breastfeeding Journal. 9(1): 21.
12. Raihana S. (2019) Early initiation of breastfeeding and severe illness in the early newborn period: An observational study in rural Bangladesh. PLoS medicine. 16(8): e1002904
13. Liu L, Oza S, Hogan D, et al. (2000) Global , regional , and national causes of under-5 mortality in 2000–15: An updated systematic analysis with implications for the Sustainable Development Goals. Lancet.; 388(10063): 3027-3035
14. FSAU. (2007) kowledge attitude and practice of colostrum feeding practice.
15. Kwame Karko, IFRC (2013) How breastfeeding helps save lives: focus on Somalia.
16. Weldesamuel GT. (2018) Colostrum avoidance and associated factors among mothers having children less than 2 years of age in Aksum town, Tigray, Ethiopia: A cross- sectional study 2017. BMC research notes. 11(1): 1-7.
17. Teketel A. (2020) Assessment of colostrum feeding practice and associated factors among postnatal mothers in selected health facilities in Addis Abeba, Ethiopia.
18. (2016) Kismaayo Knowledge, Attitude AndPracticesSurvey.
19. Sohail J, A Khaliq. (2017) Knowledge, Attitude and Practice Of Mothers Regarding Colostrum Feeding To Newborns In Rural Pakistan: A Cross-Sectional Study. Khyber Medical University Journal. 9(4).
20. Belachew A. (2019) Timely Initiation of Breastfeeding And Associated Factors Among Mothers Of Infants Age 0-6 Months Old In Bahir Dar City, Northwest, Ethiopia, 2017: A Community Based Cross-Sectional Study. International Breastfeeding Journal. 14(1): 1-6.
21. Teketel A. (2020) Assessment of colostrum feeding practice and associated factors among postnatal mothers in selected health facilities in Addis Abeba, Ethiopia.
22. Pawan Acharya, Vishnu Khanal (2015) the effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surveys
23. Vasanthakumar, (2021) Association of prenatal counseling and immediate postnatal support with early initiation of breastfeeding in Uttar Pradesh, India.

Supplementary 1: Socio-demographic characteristics of mother's babies born Hargeisa Group Hospital Hargeisa Somaliland 2021.

Variable	Category	N	%
Age of mother	15-24	41	24.8
	25-34	99	60
	35-44	21	12.8
	44-49	4	2.4
Maternal education	Illiterate Primary Secondary University	45	27.3
		43	26.1
		40	24.2
		37	22.4
Paternal education	Illiterate Primary Secondary	30	18.2
	University	19	11.5
		68	41.2
		48	29.1
Sex of child	Male Female	79	47.9
		86	52.1
Occupation	Housewife Government Merchant NGO	92	55.8
		31	18.7
		28	17
		14	8.5
Income per monthly	<150$ 150_-200$	29	17.6
	200-499	40	24.2
	500-899	32	19.4
	900 and above	36	21.8
		28	17

Supplementary 2: Bivariate analyses of factors associated with colostrum feeding practice among mothers of babies born Hargeisa group hospital 2021.

Variable	Categories	Colostrum feeding		COR*	95% CI	P Value
		Not Practiced	Practiced			
Maternal Educational	Illiterate	25	20	**1:00 (ref)**	**1:00 (ref)**	
	Primary	8	35	5.469	2.08, 14.38	<0.001
	Secondary	10	30	7.083	2.48, 20.20	<0.001
	University	8	29	10.312	3.129, 33.98	<0.001
Paternal education	Illiterate	13	17	**1:00 (ref)**	**1:00 (ref)**	
	Primary	11	17	6.5	1.27, 33.29	0.025

	Secondary	19	40	1.972	.80, 4.83	0.137
	University	9	39	3.314	1.19, 9.22	0.022
Sex of child	Male	12	67	3.147	1.48,6.70	0.003
	Female	31	55	**1:00 (ref)**	**1:00 (ref)**	
Importance colostrum	Yes	10	110	**1:00 (ref)**	**1:00 (ref)**	
	No	42	3	0.001	.000,006	<0.001
Mod delivery	Normal	21	77	0.558	.15, 2.04	0.379
	C-section	19	19	0.143	..04,.56	<0.001
	Assisted	8	21	**1:00 (ref)**	**1:00 (ref)**	
Antenatal	Yes	26	115	10.7	4.04, 28.55	<0.001
Care	No	17	7	**1:00 (ref)**	**1:00 (ref)**	
PNC	Yes	19	96	4.593	2.105, 10.023	<0.001
counseling	No	20	22	**1:00 (ref)**	**1:00 (ref)**	

Supplementary 3: Multivariate analyses of factors associated with Colostrum breastfeeding among mothers of babies born in Hargeisa Group Hospital Hargeisa, Somaliland, 2021.

Variable	**Categories**	**Clostrum feeding**		**AOR**	**95% CI**	**P-Value**
		Not Practiced	**practiced**			
Maternal Educational	Illiterate	25	20	**1:00 (ref)**	**1:00 (ref)**	
	Primary	8	35	7.11	1.80,28.05	<0.001
	Secondary	6	34	13.54	3.15,58.22	<0.001
	University	8	29	22.77	3.12.,16.18	<0.001
Antenatal care	Yes	26	115	15.6	3.87,63.44	<0.001
	No	17	7	**1:00 (ref)**	**1:00 (ref)**	
PNC	Yes	19	96	6.52	2.07,20.53	<0.001
counseling	No	20	22	**1:00 (ref)**	**1:00 (ref)**	