# Exclusive breastfeeding practices in the Coast region, Tanzania.

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**Abstract**

**Background:** Although breastfeeding in general is common and culturally accepted in many sub-Saharan countries, recommended exclusive breastfeeding infants to 6 months is rare. In rural Tanzania, data on infant feeding practices is rare.

**Objective:** To examine and describe exclusive breastfeeding practices in rural settings (Coast Region) of Tanzania.

**Methods:** A cross-sectional study was conducted in Coast Region of Tanzania involving 342 mothers. Only mothers with children aged between 6 and 23 months were interviewed in their residences. Data analyses included descriptive and logistic regression analyses.

**Results:** The majority, 66%, of mothers reported to have breastfed their new born within the first hour of life. About 30% reported to have breastfed exclusively for up to at least six months. Those who did not practice complete exclusive breastfeeding mentioned insufficient milk as the main reason. Correlates of exclusive breastfeeding included maternal education and attitudes towards exclusive breastfeeding.

**Conclusion:** The rate of exclusive breastfeeding in rural areas like the Coast Region of Tanzania is still very low. Programs aimed to promote exclusive breastfeeding must take multi-factorial considerations.

**Keywords:** Exclusive breastfeeding, practice, rural, Tanzania

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## Introduction

Exclusive breastfeeding (EBF) is defined as giving breast milk only and no other liquids, except drops or syrups with vitamins, mineral supplements or medicines. The World Health Organization (WHO) recommends that newborns and infants should be fed only with breast milk within the first hour after birth until 6 months of life; therefore practice exclusive breastfeeding for the first six months of life[1,2]. Various benefits for practicing EBF that include nutritional, social, economic, environmental and health, nutritional, psychological and developmental have been outlined and discussed extensively elsewhere[3-7].

Although breastfeeding in general is common and culturally accepted in many sub-Saharan countries[8], recommended EBF of infants to 6 months of life is rare[9-11]. Reported rates of EBF especially in developing countries are still low[12]. Epidemiological studies show that in most of the low and middle income countries, the rate of EBF for infants less than six months is around 30%[13]. A recent report in Tanzania indicated 17% of infants less than 6 months of age were predominantly breastfed but rare in rural areas[14]. The national duration average of EBF is 2.4 months being longer in rural areas than in urban areas (2.5 and 1.9 months respectively)[15].

Practices of feeding infants during the first six months and beyond are diverse based on geographical, economic and cultural settings. However, the main concerns are the time when mothers initiate breastfeeding, the duration of breastfeeding and the age at which infants are weaned[16].

In Tanzania, enough data on infant feeding practices is available either in urban settings or in relation to HIV. The gap is on the situation about breastfeeding practices in rural settings of Tanzania. Therefore, we conducted a study to examine and describe EBF practices in Coast Region which is a rural setting of Tanzania.

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## Methodology

A cross-sectional study was conducted in a rural setting (Coast Region) of Tanzania. The Region was projected to have a rural total population of 844,643 (74.4% of total region population). Furthermore, infants aged between 0 and 2 years were estimated to be 85,684[17].

The study targeted mothers of children aged at least 6 months but less than 2 years (23 months) at their res-

idences. Using sample size calculator for a single proportion (proportion of mothers breastfeeding exclusively was estimated to be 30%), we estimated a sample of 350 mothers to be sufficient for the study. Sampling was based on a random selection of wards (an administrative unit comprising of villages (in rural settings) or streets (in urban settings). Selected wards were Kibiti, Ikwiriri, Chalinze, Bagamoyo, Zinga and Mlingotini. In each of the selected wards, one village was selected at random from which all households with mothers having a living child aged at least 6 months but less than 24 months and present at the time of the survey were interviewed. For a mother with more than one child aged between the desired age ranges, the youngest child was selected. We excluded multiple births, for example twins. Interview schedules were used to capture data. The study tool included demographic information of the mother and the child, mother's attitude towards EBF and feeding practices of the selected child during the first 6 months of life. Recruitment into the study and interviews of all study participants lasted for four working days.

An oral informed consent was acquired from each mother before initiating the interview. Privacy and confidentiality were observed throughout the study so that participants were comfortable when responding to the questions and none was identified by names rather by code numbers necessary during data entry, cleaning and further processing. Permission to implement the study was sought from the district administrative and health authorities.

Reported feeding practices were based on mother's ability to recall their experiences during the past 6 to 23 months. There was no missing information for the main variable (case-wise, outcome variable) but for the independent, like background variables, no attempts were made to adjust for missing information before cross-tabulations. The analyses were performed using the Statistical Package for Social Sciences (SPSS) software (Version 20).

We assessed attitudes towards exclusive breastfeeding on the basis of 16-items; each rated on a five-point Likert scale (1 = strongly agree; 5 = strongly disagree). Therefore, during data processing, a respondent could potentially score from 16 to 80 points. Total low scores, indicated positive attitudes and total high scores suggested negative attitudes. A respondent scoring below the average was considered to have a positive attitude and those scoring above the average were considered to have a negative attitude. In assessing the overall internal consistency, we used Cronbach's alpha and we found a moderate reliability (Cronbach's alpha=0.54).

In order to assess predictors of EBF, we first run bivariate analysis (with a Chi-square test) between the outcome variable (mothers practicing EBF) and possible independent variables. Variables whose p-values were at most 0.20 in the bivariate analyses were included as explanatory variables in the binary logistic regression models. Using the logistic regression analysis, we estimated the odds of practicing EBF with 95% confidence intervals to assess the strengths of association.

## Results

### Characteristics of the sample

We recruited 342 (97.7%) mothers out of the original estimated sample size. Their mean age was 27.2 (SD=6.7) years. The majority, 126 (36.8%), either never attended school or had incomplete primary education. Almost half, 169 (49.4%) of these mothers were peasants and two thirds, 228 (66.7%), reported were currently married (Table 1).

**Table 1: Distribution of mothers by their background characteristics (n= 342)**

| Characteristics | Number (%) |
|---|---|
| **Maternal age group (years)** | |
| 15 – 19 | 42 (12.3) |
| 20 – 24 | 90 (26.3) |
| 25 – 29 | 86 (25.1) |
| 30 – 34 | 65 (19.0) |
| 35 + | 59 (17.3) |
| **Level of Education** | |
| None/Incomplete primary | 126 (36.8) |
| Primary education | 175 (51.2) |
| Above primary education | 41 (12.0) |
| **Marital status** | |
| Single | 68 (19.9) |
| Married/Cohabiting | 250 (73.1) |
| Divorced/Widow | 24 (7.0) |
| **Occupation** | |
| Subsistence farming | 169 (49.4) |
| Unemployed | 85 (24.9) |
| Formally employed | 13 (3.8) |
| Petty business | 75 (21.9) |

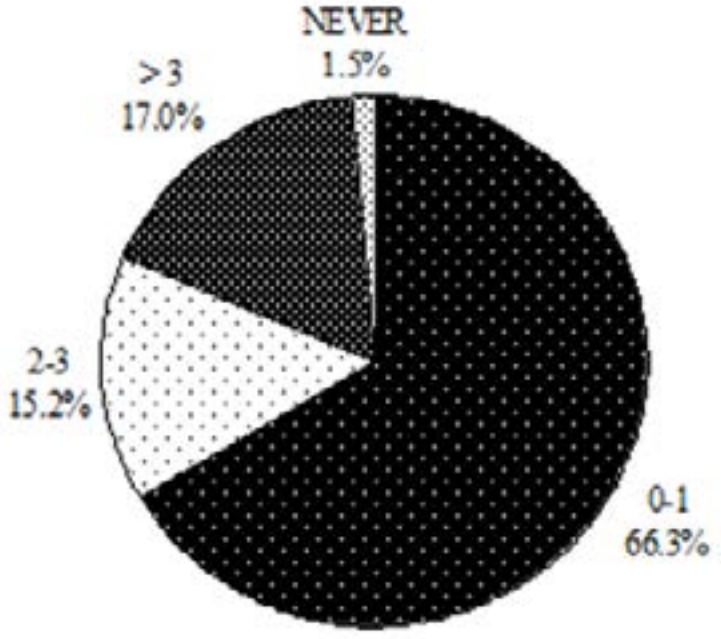
With their mothers, 172 (50.3%) children were girls. The mean age of all children was 13.0 (SD = 4.8) years. Mothers of nulligravida, gravida 1 or gravida 2 were 98 (28.7%), 94 (27.5%) and 56 (16.1%). The remaining 94 (27.8%) were above gravida 2.

**Breast feeding practices**

**Breastfeeding initiating**

The majority, 227 (66.3), reported to have breastfed the newborn within an hour of delivery whereas only 5 (1.5%) mothers did not breastfeed the baby at all (Figure 1). (Table 1)

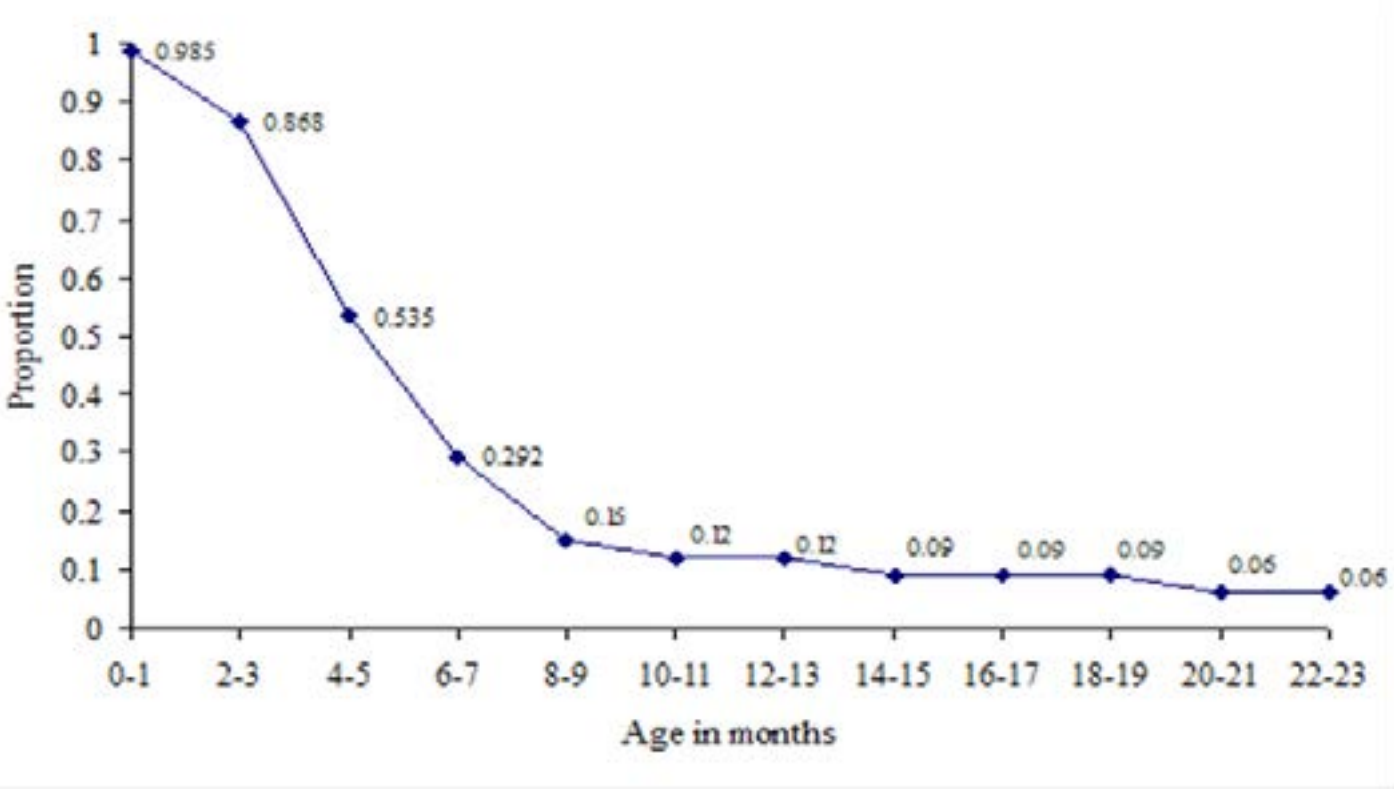
**Figure 1. Time (hours) taken before breastfeeding the newborn after delivery**



**Exclusive breastfeeding**

Of the total mothers interviewed, 100 (29.2%) reported to have breastfed their infants exclusively up to six months. Only 6% of children aged 24 months were breastfed exclusively at least 23 months. The rate of breastfeeding exclusively decreased dramatically from birth to about 9 months (Figure 2).

**Figure 2. Proportion of children under the age of 24 months breastfed exclusively**




**Reasons for not breastfeeding exclusively**

Of the mothers who did not exclusively breastfeed their children or who interrupted exclusive breastfeeding, 158 (68.7%) alleged that breast milk was insufficient, 39 (16.8%) were advised by relatives to immediately begin complementary feeding and 31 (16.6%) reported stopping due to work commitments. The main diet during this period was maize or cassava porridge reported by 225 (94.6%) mothers.

(Figure 1) (Figure 2)

**Predictors of exclusive breastfeeding**

Table 2 presents results from binary logistic regression analysis with EBF being the dependent variable and three independent variables (education level, occupation and attitude towards EBF). The proportion of mothers reporting EBF increased with increasing level of maternal education. Mothers who attained above primary education had almost six odds to exclusively breastfeed for six months as compared to those with incomplete or no primary education (AOR=5.5; 95% CI = 2.2. 13.6). Furthermore, mothers with positive attitudes towards EBF had twice the odds, (AOR = 2.1; 95% CI = 1.2, 3.6), to practice EBF up to six months after birth as compared to mothers with negative attitudes. (Table 2)

**Table 2. Correlates of Exclusive Breastfeeding**

| Characteristic | Number EBF (%) | OR (95% CI)* | |
|---|---|---|---|
| | | Unadjusted | Adjusted |
| **Education level** | | | |
| None/some primary | 21 (16.7) | Reference | Reference |
| Completed primary | 58 (33.1) | 2.5 (1.4, 4.4) | 2.0 (1.1, 3.6) |
| Above primary | 23 (56.1) | 6.4 (2.9, 13.9) | 5.5 (2.2, 13.6) |
| **Occupation** | | | |
| Peasant | 38 (22.5) | Reference | Reference |
| Employed | 3 (23.1) | 2.1 (1.2, 3.7) | 1.8 (1.0, 3.3) |
| Petty business | 29 (38.7) | 2.2 (1.2, 3.9) | 1.2 (0.6, 2.4) |
| Unemployed | 32 (37.6) | 1.0 (0.3, 3.9) | 0.3 (0.1, 1.5) |
| **Attitude towards EBF** | | | |
| Negative | 30 (19.0) | Reference | Reference |
| Positive | 72 (39.1) | 2.7 (1.7, 4.5) | 2.1 (1.2, 3.6) |

* Odds ratio (95% Confidence Interval)

## Discussion

Despite strong initiatives to promote breastfeeding in general and EBF in particular, the proportion of women EBF has remained low[18-20]. In this study, less than 30% of women reported to breastfeed infants exclusively for up to six months. This level is lower than the 50% reported national average[15]. However, similar or lower proportions have been reported from middle- and lower-income countries specifically from the sub-Sahara African countries[21-24]. More than two-thirds, (69%), reported insufficient milk to be the main reason for not breastfeeding exclusively; a reason that has been cited earlier elsewhere[25-26].

In this study, education level of mothers and attitude towards exclusive breastfeeding were identified to be independent predictors of exclusive breastfeeding. Although, to the best of our search, we could not get literature citing independent relationship between EBF in rural sub-Saharan Africa areas with maternal education, a study in Canada indicated such association[27]. Furthermore, few studies from high-income countries have documented maternal attitudes to be independent predictors of EBF[28-30].

Findings from this study must be interpreted with caution bearing in mind that this was a cross-sectional study. Therefore, it is difficult to make inference about the causality. Secondly, responses might have been limited to the ability to remember breastfeeding outcomes of 6 to 24 months before the survey. However, as reported in the past, it is optimistic that mothers always remember accurately the duration of breastfeeding their infants[31]. Thirdly, although inference made from may apply to this region (Coast) only, cultural differences and other factors that may influence EBF practices between rural populations in Tanzania may not vary significantly. Nevertheless, we recommend additional qualitative data to explore factors for EBF in rural areas. Last but not least, although we used interviewers with social/medical background, we are not able to assess how these attributes influenced the respondent's opinion in describing the breast-feeding practices and the possibility of respondents offering socially desirable answers causing desirability bias. However, because of intensive training of research assistants and having control questions in the tool, if such biases existed, they were very minimal and random.

## Conclusion

The rate of EBF in rural areas like the Coast Region in Tanzania is still low. In order to enhance comprehensive EBF during the first six months of the baby, programs aimed to promote EBF must take multi-factorial considerations.

## Conflict of interest

None declared.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