IMPLEMENTATION OF BREASTFEEDING PRACTICES IN BAGAMOYO DISTRICT TANZANIA

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IMPLEMENTATION OF BREASTFEEDING PRACTICES IN BAGAMOYO DISTRICT TANZANIA

By

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A Dissertation Submitted in (partial) Fulfillment of the Requirements for the Degree of Master of Science in Project Management, Monitoring and Evaluation in Health of Muhimbili University of Health and Allied Sciences
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CERTIFICATION

The undersigned certify that he has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation titled **"*Implementation of Breastfeeding Practices in Bagamoyo District Tanzania"***, in partial fulfillment of the requirements for the Degree of Master of Science (Project Management, Monitoring and Evaluation in Health) of Muhimbili University of Health and Allied Sciences.

Dr. Nathanael Sirili

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Rebecca Watson Sanga**, declare to Muhimbili University of Health and Allied Sciences, this dissertation report titled*:* ***Implementation of Breastfeeding Practices in Bagamoyo District Tanzania*** is my original work carried out by me under the guidance of Dr. Nathanael Sirili and Dr. Germana Leyna. It has not been presented and will not be presented to any other university for a similar or any other award.

Signature …… Date …….

ACKNOWLEDGEMENT

First and foremost, I express my thanksgiving to My Almighty God for keeping me healthy both physically and mentally, He gave me strength to carry out this study and to write this report.

I appreciate the guidance I got from my supervisor, Dr Nathanael Sirili for his dedication, advice, constructive criticisms and unlimited guidance in the course of proposal dissertation and dissertation production. This study and report could not be any better without his help and guidance. Also, I would like to thank my parents (Mr. & Mrs. Watson Sanga), my brothers for their love and support to this study. I, also acknowledge the Director of Bagamoyo town council for granting permission to conduct this study. Moreover, I would like to thank my classmates and friends for their helpful inputs and feedback after proof reading. Also, I would like to acknowledge the assistance I got from Mr. Nassib who helped me during data collection. I also acknowledge the people from Bagamoyo who agreed to participate as respondents, without them this study would not be possible.

DEDICATION

This dissertation is dedicated to my supportive parents (Mr. & Mrs. Watson Sanga) and my brothers for their prayers, love, support and understanding during my studies.

ABBREVIATION

BFI	Breastfeeding Initiation
CBF	Continuous Breastfeeding
EBF	Exclusive Breastfeeding
IYCF	Infant and Young Child Feeding
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MOHSW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
NBS	National Bureau of Statistics
SPSS	Statistical Package for Social Sciences
TFNC	Tanzania Food and Nutrition Centre
UNICEF	The United Nations Children's Fund
WHO	World Health Organization

DEFINITIONS

Breastfeeding	Is also called nursing, is the process of feeding a mother's breast milk to her infant, either directly from the breast or by expressing (pumping out) the milk from the breast and bottle-feeding it to the infant (1).
Breastfeeding initiation	Means breastfeeding within the first hour of life (1).
Continuation of breastfeeding	Means that the child continues to breastfeed up to two years of life (1).
Exclusive breastfeeding	Means that the infant receives only breast milk; no other liquids or solids are given not even water except oral rehydration solution, or drops/syrups of vitamins, minerals, or medicines for the first six months of life (1).
Young child:	Means a child aged between 0 to 59 months of age (1).

ABSTRACT

Background:

Breastfeeding is one of the best primary interventions in ensuring appropriate infant health and child survival. Breastfeeding practices involves breastfeeding initiation, exclusive breastfeeding, and continued breastfeeding. In 2013, Tanzania introduced Infant and Young Children feeding guideline aiming at improving breastfeeding practices. However, despite introduction of the IYCF guideline breastfeeding practices is still low. The factors influencing breastfeeding practice in Tanzania are not well documented. It is not clear if parity and marital status have association with breastfeeding practices in Tanzania. Therefore, a study to determine associations existing between these factors and breastfeeding practice in Tanzania setting is essential in the implementation of the IYCF guidelines.

Objective:

To assess the implementation of breastfeeding practices as stated by the IYCF guideline in Bagamoyo District and to determine the factors that are associated with breastfeeding practices.

Methods:

A cross-sectional study was conducted at Bagamoyo from 19 of April to 7 of May 2021. Interviewer administered questionnaire was used to collect data from 384 mothers whose children were aged under 2 years. Data were analyzed using SPSS. Descriptive statistics was used to calculate frequencies and proportions. Additionally, chi-square test was carried out using cross tabs to analyze if there was significant difference between respondents' groups and breastfeeding practice in order to understand and to be able to explain the proportions obtained. It must be noted, chi square was used to provide additional information and was not meant to establish associations. To determine the factors associated with breastfeeding practices, stepwise logistical regression was used to develop a model. Omnibus chi-square test was included to determine if the prediction of breastfeeding practice using the factors was significantly better compared to prediction without factors. Results were compared with results from other studies and data relating to IYCF National guidelines.

Results:

The results for the proportion of mothers practicing breastfeeding in Pwani were 55%, 75, 62% for BFI, EBF and CBF respectively. Logistic regressions models were developed each for BFI, EBF, and CBF. Seven associated factors were identified: awareness (aware vs not aware), cultural values (non-believer vs believer), due date delivery (yes vs no), marital status (married vs single), mode of delivery (normal vs caesarian), number of children, and parity (primiparous vs multiparous). BFI model: awareness (OR = 5.47; 95% CI: 3.05,9.78), delivered on due date (OD = 4.64; 95% CI: 1.22,17.69), and parity (OR = .28; 95% CI: .1,.77). EBF model: awareness (OR = 2.05; 95% CI: 1.177,3.58), marital status (OR = 2.14; 95% CI: 1.22, 3.74), cultural values (OR = 5.08; 95% CI: 1.27,20.45), and mode of delivery (OR = 2.01; 95% CI: 1.15,3.5). CBF model: awareness (OR = 2.25; 95% CI: 1.39,3.65), marital status (OR = 2.55; 95% CI: 1.51,4.31), and number of children (OR = 1.80; 95% CI: 1.12,2.90).

Conclusion:

The proportions indicate an improvement in breastfeeding practice in Pwani region, implying that the implementation of the IYCF National guidelines is optimal. The study identified important factors that influences breastfeeding practices in Pwani region that need to be considering in efforts of improving nutritional status on children in Tanzania through breastfeeding practices as proposed by the Infant, Youth and Child Feeding National Guideline. These factors are marital status, awareness of the benefits of breastfeeding practice and understanding of cultural values relating to breastfeeding.

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CHAPTER ONE

1 INTRODUCTION

1.1 Background

Breastfeeding benefits a population's overall health in multiple ways through the promotion of better health outcomes for mothers and infants which decreases maternal and infant mortality and lowers the economic burden of medical care costs (2). Breastfeeding is regarded as one of the best primary interventions in ensuring appropriate infant health and child survival (3). United Nations Children's Fund and the World Health Organization officially recommend initiation of breastfeeding within the first hour after the birth and then continued exclusive breastfeeding for the first six months followed up by continued breastfeeding for two or more years. Complementary feeding can be combined with safe, nutritionally family foods in the sixth month (3). WHO and UNICEF maintain that virtually all mothers can breastfeed, provided they have accurate information and skills; access to supportive health care and health systems; and also the support of their family and society at large (3).

Globally, 42% of newborns are breastfed within one hour of birth of birth and 41% of the children are exclusively breastfed (4).The overall rate of exclusive breastfeeding for infants under six months of age is 41%. Only 23 countries have achieved at least 60% of infants less than six months being exclusively breastfed (4). This problem is particularly seen in the Americas, where only 6 percent of the countries have an exclusive breastfeeding rate above 60%. The Collective has established a target to increase the rate of exclusive breastfeeding to at least 60% by 2030. Overall, rates of continued breastfeeding are much higher (74%) at one year. Nearly 40% of the countries with data have rates above 80%. In Africa, nearly 70% of countries have high rates of continued breastfeeding at one year, but in the Americas, only four countries have such high rates. At two years of age, rates of continued breastfeeding drop off dramatically to 45%. No country in the Americas observes a high rate of continued breastfeeding at two years. The Collective targets for continued breastfeeding at one and two years are 80% and 60% (3).

In many sub-Saharan settings early infant feeding practices have been influenced by a variety of less favourable habits, both cultural and propagated by health facilities, such as separation from the mother, early cord clamping, early bathing of baby and separate cleansing rituals of the mother before initiation of breastfeeding, and routine feeding. The overall prevalence of EBF in SSA was 36.0%, the prevalence was highest in Rwanda and lowest in Gabon (5).

According to a survey conducted in Tanzania by the National Bureau of Statistics (6), the rate of breastfeeding initiation within one hour of birth was 49% which was slightly less than the presented rate of 59% in 2004. Rates of exclusive breastfeeding among infants aged less than two months was 81%, with a decrease to 51% at the age of two to three months, and 23% at four to five months. The national median duration of exclusive breastfeeding for Tanzania children was 2.4 months (6). Considering the sub-optimal feeding practices in Tanzania, establishment of its effect on infant health in a longitudinal study is paramount.

In Tanzania, the majority of infants are breastfed, approximately 94%, breastfeeding initiation (within one hour after birth) is only 60% but 54% of children are continually breastfed up to two years of age (7). However, the establishment of exclusive breastfeeding (EBF) to six months is not as high, approximately 41%, of infants are often supplemented foods or water early in life (8,9). Data extracted from five demographic surveys conducted with an interval of five years indicates the rate of any breastfeeding to be almost universal in Tanzania (6).

The Infant and Young Child Feeding National guideline focuses on nutritional needs and feeding practices in children less than two years of age, the most critical period for child nutrition after which sub-optimal growth is hard to reverse. The Infant and Young Child Feeding National guideline includes descriptions of essential skills that every health professional should master such as positioning and attachment for breastfeeding (1).

The breastfeeding is being not being practiced as stipulated in the guideline is being used appropriately (10). So far there is limited knowledge on the implementation of the Infant and Young Child Feeding National Guideline. We are not able to conclude if the

mothers with under two years' children have enough awareness and knowledge of what the Guideline wants them to practice.

1.2 Problem Statement

The period from the birth of a child to two years of age is critical for growth, health and development. The feeding of infant and young children during this period is particularly crucial in determining their growth, health, survival and development when it is correctly adhered to. Poor feeding practices coupled with high rates of infection in infancy and early childhood that result in malnutrition contribute to significant morbidity, delayed mental and motor development, poor school performance and reduced productivity in later life(3). Tanzania introduced a guideline for the Infant and young child feeding (IYCF) in 2013, which among other things has adopted the concept of breastfeeding for the early years of life as recommended by WHO.

According to the IYCF guideline breastfeeding involves, breastfeeding initiation, exclusive breastfeeding and continued breastfeeding. Breastfeeding initiation means breastfeeding within the first hour of life. The exclusive breastfeeding means that the infant receives only breast milk, no other liquids or solids are given not even water with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines for the first six months of life. Continuation of breastfeeding means that the child continue to breastfeed up to two years of life (1).

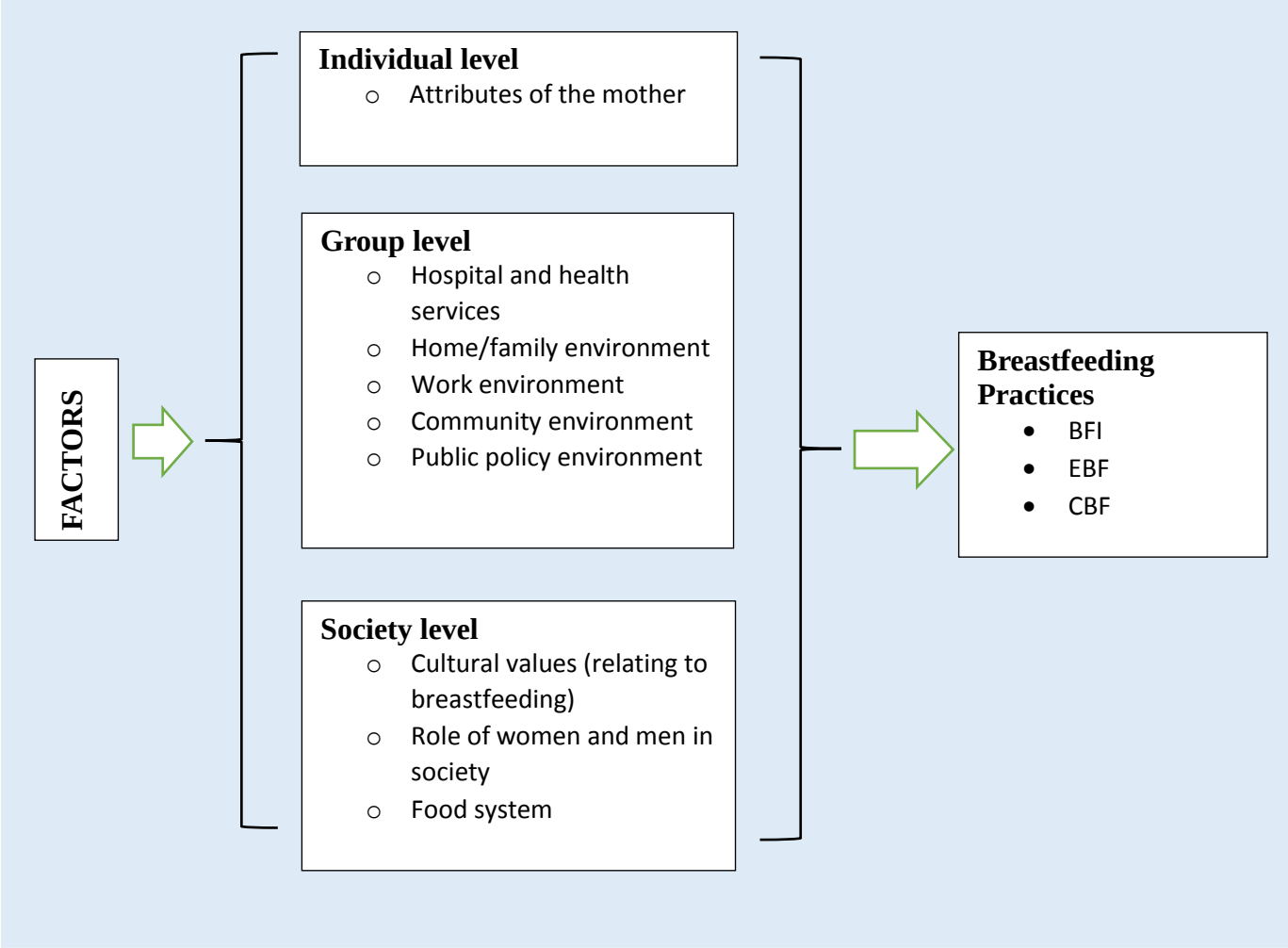
However, despite introduction of the IYCF guideline breastfeeding practices is still low. The factors influencing it are not well documented. What is known anecdotally is that initiation of breastfeeding remains to be a challenge and often is not adhered and sometimes it is not even possible. The harmful cultural traits reported to affect optimal breast- feeding practices include: giving prelacteal feeds, discarding colostrum and avoiding breastfeeding after quarrelling out of 'fear of bad blood entering the milk which later may affect the child. These beliefs and practices are reported to lead to early cessation of EBF and breastfeeding in general. In other settings, lack of support from family members or heath care professionals, peer pressure, mothers' body image, the role of mothers in the reproduction process and pressure to use artificial feeding

have led to early cessation of EBF and breastfeeding (11) and continuity of breastfeeding, is still a challenge, often more to formal workers. Accurate information on the factors underlying the infant feeding practices in Tanzania is inadequate (1). It is not clear if parity and marital status have association with breastfeeding practices in Tanzania (12). Also, there is no knowledge regarding the significance of factors, that is, which factors have more influence compared to others when applied together. The aim of this study was to assess the implementation of breastfeeding practices as stated by the IYCF guideline in Bagamoyo District.

1.3 Conceptual Framework

According to IYCF guideline breastfeeding is determined by three indicators, breastfeeding initiation, exclusive breastfeeding and continued breastfeeding. There are many factors which cork together in determining the practice of breastfeeding. These factors can be grouped into three levels: individual, group and society (Figure 1). Individual level factors relate to directly to the mother and infant in practicing breastfeeding. They include the health status, knowledge and experience of breastfeeding. Group level factors are related to the environment in which the mother and infant interact with. Such environments include hospital and health facilities, home environment (husband support,) size of household and family matters), work environment (supportive: maternity leave and policies. Also, public policies such as building special places for mothers to breastfeed in public and the community acceptance for mothers to breastfeed in shared services such as buses and entertainment sites. Societal level factors include cultural values regarding breastfeeding practices, role of women ii society (sole carer of children: men's social role in supporting breastfeeding) and food system (availability of complementary foods and substitutes) (13). These factors interact and together they influence breastfeeding practices. For example, a mother with knowledge may adhere to breastfeeding practices but a non-supportive environment may lead her to halt practicing breastfeeding optimum. Independent variable in this study was the factors (individual, group and society level) and the dependent variable was breastfeeding practices (BFI, EBF, and CBF).

Figure 1: Conceptual framework indicating study variables



Adopted from Hector et al. [13]

1.4 Rationale

The findings of this study provide insights on how factors such as marital status and parity can be intervened in the implementation of the IYCF guidelines by stakeholders (individuals, society and health care facilities). Also it helps to evaluate the pace of improvements in the nutritional status, growth and development, health and survival of infants and young children through breastfeeding practices in Pwani region.

1.5 Research Questions

1.5.1 Main research question

How is breastfeeding practices implemented as stated by the IYCF guideline in Bagamoyo district?

1.5.2 Specific research questions

1. What is the proportion of mothers who breastfed the children in the first hour of life?
2. What proportion of mothers is practicing exclusive breastfeeding to their children?
3. What is the proportion of mothers who continued to breastfeed their children up to two years of life?
4. What are the factors associated with breastfeeding practices among mothers in Bagamoyo district?

1.6 Research objective

1.6.1 Broad objective

To assess the implementation of breastfeeding practices as stated by the IYCF guideline in Bagamoyo district.

1.6.2 Specific objectives

1. To determine the proportion of mothers who breastfed their children in the first hour of life.
2. To determine the proportion of mothers practicing exclusive breastfeeding.
3. To determine the proportion of mothers who continued to breastfeed their

children up to two years of life.

4. To determine the factors associated with breastfeeding practices mothers in Bagamoyo district.

CHAPTER TWO

2 LITERATURE REVIEW

2.1 Prevalence of breastfeeding practices

By 2012, the global exclusive breastfeeding prevalence was 38% (3). By 2016 it was 37% in Africa (5,14). Recent study conducted in Tanzania showed that exclusive breastfeeding prevalence was 58% in Mainland, and 53% in Pwani region. Also, breastfeeding initiation and continuous breastfeeding prevalence in Tanzania Mainland was 54% and 45% respectively (15).

2.2 Factors influencing breastfeeding practices

Factors influencing breastfeeding practices can be categories into three levels namely individual, group, and societal level factors (13).

2.2.1 Individual level

These are factors which relates to the attributes of the mother such as age, knowledge, attitude, parity (breastfeeding experience), marital status and level of education. Previous studies revealed that level of education reached by a mother was associated with breastfeeding practices. Increased the odds of a mother to practice breastfeeding (5,16–20) whereas some studies reported contrary (21,22). In Tanzania, mothers with at least secondary education were reported to have higher chance of adhering to breastfeeding practices compared to mothers with primary education and no education (8). Young mothers are associated with both increased and decreased odds of adhering to breastfeeding practices respectively (23,24)(5,20,22). The influence of knowledge and attitude toward breastfeeding is controversial (25,26)(27). On the other hand, studies in Tanzania agrees that knowledge and attitude increase the odds of mothers to stick on breastfeeding practices (7,28)(8,11). Some studies found that multiparity detrimental to breastfeeding practices. Multiparity resulted into shortened gaps between pregnancy leading to decreased odds of adhering to breastfeeding practices (29,30). Contrary, one study used parity to represent breastfeeding experience. Multiparous mothers were deemed to have more experience in breastfeeding compared to

primiparous mothers, the results found supported their theory (31). Marital status has been associated with increased odds of timely initiation of breastfeeding and decreased odds of exclusively breastfeeding the infant (32). In Tanzania, the association between marital status and breastfeeding practice well understood. A study conducted in Kilimanjaro, found no association between marital status and breastfeeding practice (12).

2.2.2 Group level

These factors relate to the environment in which the mother and infant interact with. Such environments include hospital and health facilities, home environment (husband support and number of children), work environment. Caesarean delivery has been associated with poor timing of initiating breastfeeding and may later have detrimental influence in adhering to exclusive breastfeeding due to health instability to some mothers (5,7,16,18,20,31,33,34). Husband support and society support have been linked with increased odds of following optimal breastfeeding practices (5,20,27,29)(26). Urban residence has been reported to increase the likelihood of adherence of breastfeeding practices particularly in areas where there is a high regional difference in availability of health and educational services unlike regions without such differences which found no association (19,29)(12,24). Contrary, some studies have reported that urban residence to have detrimental influence in breastfeeding practice (16,31). Some studies have reported that the presence of a higher number of children a home was associated with decreased odds of following optimal breastfeeding practices, contrary to other studies (8,16)(19,23,35). In Tanzania, the association between number of children and breastfeeding practices have not been established**.**

2.2.3 Society level

These factors include cultural values regarding breastfeeding practices. In Tanzania, cultural norms regarding breastfeeding have been reported to have detrimental association with optimal breastfeeding practices (11,36).

2.3 Research gap

Accurate information on the factors underlying the infant feeding practices in Tanzania is inadequate (1). It is not clear if parity, number of children and marital status have association with breastfeeding practices in Tanzania (12).

CHAPTER THREE

3 METHODOLOGY

3.1 Study design

The study design used was cross-sectional which involved breastfeeding mother with under two years' children in Bagamoyo district, Tanzania. Quantitative techniques were used to collect information on breastfeeding practices among mothers of children under the age of two years in Bagamoyo district. The major entity that was analyzed during the study period was individuals: women who had a child/children aged below 24 months.

3.2 Study area and settings

The study area was Pwani Region, which has seven districts, Bagamoyo, Kibaha, Kisarawe, Kibiti, Mkuranga, Rufiji and Mafia. We purposely selected Bagamoyo district because it has the highest population (157,542) of mothers compared to other districts (6). All respondents were mothers who had a child/children aged less than 24 months. Participation was voluntary, all mothers who were busy, ill or reluctant to participate were excluded. Interviews with mothers were conducted in their residence during weekends and after working hours to encourage comfort and enough time for data extraction. To maximize accuracy, the interviewer guided and elaborated to respondents in answering and filling the questionnaires.

3.3 Study population

Based on the population and Housing Census, the population of mothers in Bagamoyo district is 157,542. The study population was mothers with under two years children in Pwani Region, Bagamoyo district during the study period (37)**.**

3.4 Sample size

The sample size formula for estimation of a single proportion:

$$n = \frac{Z^2 P(100-P)}{\varepsilon^2}$$

Where,

n = Minimum sample size

z = Standard normal deviate for given confidence level (CI) = 1.96 for a 95% CI

p = expected prevalence or proportion of breastfeeding

p = 50% for Breastfeeding in Tanzania according to TDHS (37).

ε = Margin of error (the precision) = 5%

$$n = \frac{1.96^2 * 50\ (100-50)}{5^2}$$

n =384

3.5 Sampling procedure

Multistage sampling technique was used. Coastal zone and Pwani region were purposively selected. Bagamoyo district was selected due to the high population of the mothers in Pwani region, thus increasing the chance of obtaining respondents who had attributes that was required to obtain valid data for this study (27). Purposive sampling was used to select two ward from both rural and urban areas basing on the presence of mothers with children aged between 12 and 24 months. Urban area included Nianjema and Bagamoyo, and rural areas included Fukayosi and Yombo. Selection of villagers was done for better data collection, management, and interpretation. The participants were recruited until the required number of participants was reached**.**

3.6 Eligibility criteria

3.6.1 Inclusion criteria:

The study included mothers with under two years' children in Bagamoyo district. All mothers had a child whom was at least 12 months old. All mothers, mothers with at least 6 months old child, and mothers with at least 12 months old child were included for BFI, EBF and CBF respectively (1).

3.6.2 Exclusion criteria:

The study excluded under 6 months regardless, and two years' children with a severe congenital illness or mothers who were sick and unable to participate in the study.

3.7 Study variables

3.7.1 Dependent variables

The dependent variable (DV) is the outcome or response variable and in this study the dependent variable was:

D.VARIABLE		**OPERATIONAL DEFINITION**
Breastfeeding practices: this includes BFI,EBF and CBF		Providing breast milk to the child within the first hour after birth (BFI), exclusively providing breast milk to the child for the first six months (EBF), and continuing to provide breast milk to the child as part of his/her diet up to 24 months (CBF) **(1).**
	First hour of breastfeeding	Coded as 1 if participant reported breastfeeding with one hour after giving birth, 0 otherwise
	Exclusive breastfeeding	Coded as 1 if participant reported exclusive breastfeeding, 0 otherwise
	Continue breastfeeding	Coded as 1 if participant reported continued breastfeeding up to two years, 0 otherwise

3.7.2 Independent variables

Independent variables (IV) are the exposure or predictor variables and in this study the independent variables for objectives are socio-demographic characteristics, breastfeeding practices:

I.VARIABLE		**OPERATIONAL DEFINITION**
Demographic information		
	Age	Age reported by respondent (in years)
	Education level	The highest level of formal education attained respondent (This question was not included in the questionnaire but it was asked and recorded subtle in greetings before the interview because in pre-test some respondents did not want to answer that question)
	Village	Location of household and the health facility
	Marital status	Respondent's relationship of with another person whether married, separated, divorced, widowed, cohabiting or not married
Factors affecting breastfeeding		
	Mode of delivery	Coded as 1 if normal delivery, 0 otherwise (had cesarean section)
	Milk production	Coded as 1 if participant delayed to breastfeed because she had no milk, 0 otherwise
	Cultural values	Coded as 1 if no (friendly), 0 if yes (unfriendly)
	Awareness	Coded as 1 if no (friendly)
	Parity	Coded a 1 if yes (Primiparous), 0 if no (Multiparous)
	Premature baby	Coded as 1 if participant reported baby born before due date, 0 otherwise (premature)
	Demographic information	Education, Age, Marital status, Residence

3.8 Data collection tools

3.8.1 Questionnaire

A questionnaire that was developed in English language and then translated to Swahili language was used to collect data about socio-demographic characteristics, initiation of breastfeeding, exclusive breastfeeding, continued breastfeeding and factors associated with breastfeeding practices in the Bagamoyo district. The questionnaire was initially developed in English and then translated to Swahili to make it convenient to the targeted group (mothers with under two children in Bagamoyo district) and it was reverted back to original language for analysis and presentation purposes.

3.9 Data collection methods

Data collection was conducted by the researcher and two trained research assistants. The techniques which was used to collect data was interviewer administered questionnaire.

For objective one: To determine the proportion of mothers who breastfed their children in the first hour of life in Bagamoyo district. Questionnaires were administered by an interviewer to mothers whose children's age were under two years. The mothers were asked, "Did you breastfeed your baby one hour after delivery?". The answer was either yes or no.

For objective two: To determine the proportion of mothers that practice exclusive breastfeeding.

Questionnaires were administered by an interviewer to mothers whose children's age were under two years. The mothers were asked, "When did you start introducing contemporary food to your baby?". The answers fell into either of the two groups, namely after 6 months or before 6 months. All mothers were eligible (Had a child whom was at least 12 months old).

For objective three: To determine the proportion of mothers who continued to breastfeed their babies up to two years in Bagamoyo district. Questionnaires were administered by an interviewer to mothers whose children's age were under two years. Mothers were asked, "When did/ will you stop breastfeeding your baby?". The answers

fell into either of the two groups, namely after 2 years or before 2 years. All mothers were eligible (Had a child whom was at least 12 months old).

For objective four: To determine the factors associated with breastfeeding practices in Bagamoyo district. Data were collected using quantitative method of data collection. Interviewer administer questionnaires was carried out with mothers with under two years' children. The table below shows the question that was asked for corresponding factor associated with breastfeeding practice.

FACTOR	QUESTION
Marital Status	What is your marital status?
Parity	Are you a first time mom?
Awareness of breastfeeding benefits	Are you aware that breastfeeding a child is important and beneficial for the child's health? If yes, explain. (knowledge was reflected from their answers compared actual definitions and information from literatures)
Cultural values	Do your cultural values affect your breastfeeding practices?
Delivery on due date	Did you deliver your baby on the due date?
Milk production	Did you have milk production complication after delivery?
Mode of delivery	What was your mode of delivery?

3.10 Investigation tools and validity and reliability issues.

Validity and reliability refers to the extent that an instrument yields the same results over multiple trials and measures what it was designed to measure respectively (38). To

ensure validity of the questionnaire, the questions asked were based on the definitions provided by the IYCF National guidelines. Also, a pre-test was conducted to measure the reliability of the questionnaire. The questionnaire was tested on small sample of respondents prior to roll out to a larger scale. The same questionnaire was later administered by an interview to respondents over the phone. The Answers were compared to ensure reliability of the questionnaire, that is, if the same questionnaire was used would yield the same results.

3.11 Data management

At the end of each day of data collection, the questionnaire was checked for completeness and correctness. Meetings were held every morning with the research assistants to rectify data collection problems encountered in the previous day before going to the field. Then, data were coded, entered into the Statistical Package for the Social Sciences (SPSS for window, version 22.0) and cleaned for errors due to inconsistent entry. A copy of the datasheet was stored in a separate drive to save as backup. Then, data collection tools that have been recorded was filled and stored.

3.12 Data analysis

Data collected were entered into the Statistical Package for the Social Sciences (SPSS for window, version 22.0). For the first three objectives, descriptive statistics was used to determine the proportions of mothers who practiced breastfeeding. Then, chi-square test was carried out using cross tabs to determine if there was significant difference between respondents' groups and breastfeeding practice in order to understand and to be able to explain the proportions obtained. For instance, the presence of mothers with health milk production may result into a higher breastfeeding prevalence chi-square will provide information if there was significant difference between mothers with and without milk production to conclude the proportion obtained. It must be noted, chi square was used to provide additional information and was not meant to establish associations (39). Associations were established by using logistic regression.

The followings are the formulas used to determine the proportions:

i. Proportion of BFI

$$\frac{Children\ born\ in\ the\ last\ 24\ months\ who\ were\ breastfed\ within\ hour\ of\ birth}{Children\ born\ in\ the\ last\ 24\ months} \times 100$$

ii. Proportion of EBF

$$\frac{\text{Children who received only breast milk during the first six months after birth}}{Children\ born\ in\ the\ last\ 24\ months} \times 100$$

iii. Proportion of CBF

$$\frac{\text{Children born in the last 24 months who have or will receive breast milk up to 2 years of age}}{Children\ born\ in\ the\ last\ 24\ months} \times 100$$

For the last objective, multivariate logistic regression was used to develop a model to determine the relationship between various factors present in study population with breastfeeding practice. The model was developed by using a stepwise method whereby the cut point was a p-value of 0.20 as proposed by many statisticians (29,30). Stepwise method was used to select factors which provided more significant contribution to the model. Multivariate logistic regression was chosen because the data was categorical. Also, multivariate logistic regression determines the effect of multiple factors to breastfeeding practice when applied together rather than individually which is more realistic to real-life situations.

3.13 Ethical considerations

Ethical clearance to carry out the study was obtained before conducting the study from MUHAS Research and Ethics Committee. Permission to conduct the study in Pwani region was obtained from Local authorities. The consent forms conveyed information about individuals' right to withdraw from participation at any time during the study without negative consequences. Consent forms written in the Kiswahili language was used to obtain consent from each participant before enrolment into the study.

CHAPTER FOUR

4 RESULTS

4.1 Introduction

Under this chapter, the findings from the field work are presented and analyzed. Data were analyzed using the statistical Package for Social Science (SPSS) version 22. P-value of < 0.05 was considered statistically significant. Descriptive statistics was used to analyze for frequency and proportions of mothers who breastfed their children in the first hour of life, mothers practicing exclusive breastfeeding, and mothers who breastfed their children up to two years of life. Chi-square test was used to measure significant differences between responses, and multivariate logistic regression was used to determine the factors that were associated with breastfeeding practices. For each breastfeeding practice, a model was developed to analyses the effect of significant factors. The model included few selected factors because not all factors provide significant influence when applied together to determine breastfeeding practices. Three models were developed for BFI, EBF and CBF (one for each). All factors were inputted as covariates. Selection of significant factors was done using forward-stepwise: conditional variable selection method. The probability for entry and removal into the model was set to 0.05 and 0.2. The cut point for variable selection was $p<0.2$ as proposed by some statisticians (38,40).

4.2 Socio-demographic characteristics

All respondents were women, in which 74% of them were married. The population was saturated with young women aged from 21 to 30 years (72.4%). Most of the respondents had completed their primary school education (68.2%) but only 29.7% of the respondents had reached secondary school. Also, the majority of the respondents (82%) were primiparous, that is, they had only one child at the time, and the maximum number of children per respondent was 6 children which were mothered by 1.3% of the population.

Table 1: Socio-demographic characteristics of the study participants (n=384)

Characteristic		Frequency	Percentage
Age (years)	21<	61	15.9
	21-30	278	72.4
	31-40	35	9.1
	>40	10	2.6
Marital Status	Not married	100	26.0
	Married	284	74.0
Residence	Rural	192	50
	Urban	192	50
Education	None	8	2.1
	Primary	262	68.2
	Secondary	114	29.7
Parity	Multiparous	69	18.0
	Primiparous	315	82.0
Number of children	1	316	82.3
	2	39	10.2
	3	16	4.2
	4	7	1.8
	5	1	0.3
	6	5	1.3

4.3 The proportion of mothers who breastfed their children in the first hour of life.

More than half of the respondents (55.7%) breastfed their babies within the first hour of life. Table 2, show that most of the respondents (43.2%) who initiated breastfeeding were aged from 21 to 30 years old and 47.4% out of 55.7% were married. Also, all respondents who initiated breastfeeding (55.7%) delivered their babies normally and their milk production was stable. Also, 54.7% delivered their babies on due date, 45.3% were aware of the benefits of breastfeeding practices to the baby, 41.1% were multiparous (had more than one biological child), and 31.3% were residing in rural areas.

Table 2: Proportions of breastfeeding Initiation practice (n=384)

VARIABLE		Breastfeeding Initiation				CHI-SQURE TEST	
		No		Yes		d	$\chi 2$
		N	%	N	%		
Age (years)	21<	52	13.5	9	2.3	3	60.82***
	21-30	112	29.2	166	43.2		
	31-40	5	1.3	30	7.8		
	>40	1	0.3	9	2.3		
Marital Status	Not married	68	17.7	32	8.3	1	29.57***
	Married	102	26.6	182	47.4		
Residence	Rural	72	18.8	120	31.3	1	6.60*
	Urban	98	25.5	94	24.5		
Education	None	5	1.3	3	0.8	2	2.95
	Primary	121	31.5	141	36.7		
	Secondary	44	11.5	70	18.2		
Mode of delivery	Caesarian section	91	23.7	0	0	1	147.19***
	Normal	79	20.6	214	55.7		
Awareness	No	109	28.4	40	10.4	1	82.33***
	Yes	61	15.9	174	45.3		
Delivery on due date	Premature	16	4.2	4	1	1	9.44**
	Due date	154	40.1	210	54.7		
Cultural Values	Unfriendly	4	1.04	5	1.3	1	.0
	Friendly	166	43.2 2	209	54.4		
Stable milk production	No	0	0	0	0	-	-
	Yes	170	44.3	214	55.7		
Parity	Multiparous	13	3.4	56	14.6		
	Primiparous	157	40.9	158	41.1	1	22.05***
Sub-Total		170	44.3	214	55.7		

*p<.05, ** p < .01, ***p<.001

4.4 The proportion of mothers practicing exclusive breastfeeding.

More than half of the respondents (75.5%) exclusively breastfed their babies for the first six months after birth. Table 3, show that most of the respondents (56.3%) who exclusively breastfed their babies were aged from 21 to 30 years old and 60.4% out of 75.5% were married. Also, 61.4% of respondents who practiced exclusive breastfeeding delivered their babies normally, 51.6% were aware of the benefits of breastfeeding practices to the baby, and 59.6% were multiparous (had more than one biological child).

Table 3: Proportions of exclusive breastfeeding practice (n=384)

VARIABLE		Exclusive Breastfeeding				CHI-SQURE TEST		
		No		Yes		D	$\chi 2$	phi
		N	%	N	%			
Age (years)	21<	28	7.3	33	8.6	3	22.32***	.241
	21-30	62	16.1	216	56.3			
	31-40	4	1	31	8.1			
	>40	0	0	10	2.6			
Marital Status	Not married	42	10.9.	58	15.1	1	21.19***	.242
	Married	52	13.5	232	60.4			
Residence	Rural	46	12	146	38	1	.01	-.01
	Urban	48	12.5	144	37.5			
Education	None	2	0.5	6	1.6	2	.25	.03
	Primary	66	17.2	196	51			
	Secondary	26	6.8	88	22.9			
Mode of delivery	Caesarian section	37	9.6	54	14.1	1	15.76***	.21
	Normal	57	24.5	293	61.4			
Awareness	No	57	14.8	92	24	1	23.79***	.26
	Yes	37	9.6	198	51.6			
Delivery on due date	Premature	3	0.8	17	4.4	1	.56	-.05
	Due date	91	23.7	273	71.1			
Cultural Values	Unfriendly	5	1.3	4	1	1	3.25	.11
	Friendly	89	23.2	286	74.5			
Stable milk production	No	0	0	0	0	-	-	-
	Yes	94	24.5	290	75.5			
Parity	Multiparous	8	2.1	61	15.9	1	6.73**	-.14
	Primiparous	86	22.4	229	59.6			
Sub-Total		94	24.5	290	75.5			

*p<.05, ** p < .01, ***p<.001

4.5 Proportion of mothers who continued to breastfeed their children up to two years of life

More than half of the respondents (62.8%) continued to breastfed their children up to two years of life. Table 4, show that most of the respondents (46.1%) who practiced continuous breastfeeding were aged from 21 to 30 years old and 52.9% out of 62.8% were married. Also, 45.6% of respondents who continued to breastfeed their children were aware of the benefits of breastfeeding practices to the baby, and 47.7% were multiparous (had more than one biological child).

Table 4: Proportions of Continuous breastfeeding practice (n=384)

VARIABLE		Continuous Breastfeeding				CHI-SQURE TEST		
		No		Yes		D	$\chi 2$	phi
		N	%	N	%			
Age (years)	21<	36	9.4	25	6.5	3	24.92***	.25
	21-30	101	26.3	177	46.1			
	31-40	5	1.3	30	7.8			
	>40	1	0.3	9	2.3			
Marital Status	Not married	62	16.1	38	9.9		35.47***	.30
	Married	81	21.1	203	52.9			
Residence	Rural	73	19	119	31	1	1	.02
	Urban	70	18.7	122	31.8			
Education	None	4	1	4	1	2	3.32	.09
	Primary	104	27.1	158	41.1			
	Secondary	35	9.1	79	20.6			
Mode of delivery	Caesarian section	42	10.9	49	12.8	1	3.57	.10
	Normal	101	26.3	192	50			
Awareness	No	83	21.6	66	17.2	1	34.24***	.30
	Yes	60	15.6	175	45.6			
Delivery on due date	Premature	7	1.8	13	3.4	1	.00	-.01
	Due date	136	35.4.	228	59.4			
Cultural Values	Unfriendly	5	1.3	4	1	1	.64	.06
	Friendly	138	35.9	237	61.7			
Stable milk production	No	0	0	0	0	-	-	-
	Yes	143	37.2	241	62.8.			
Parity	Multiparous	11	2.9	58	15.1	1	16.32***	-.21
	Primiparous	132	34.4.	183	47.7			
Sub-Total		143	37.2	241	62.8			

*p<.05, ** p < .01, ***p<.001

4.6 The factors associated with breastfeeding practices mothers in Pwani region.

4.6.1 Breastfeeding initiation (BFI)

Using SPSS, forward-stepwise logistic regression was performed to assess the impact of factors associated with breastfeeding initiation. The omnibus chi-square test of model coefficient was included to determine if the model with factors (dependent variables) was significantly better in predicting BFI compared to the model without factors (dependent variables).

The model explained 62.7% (Nagelkerke R^2) of the variance in the practice of breastfeeding initiation, and correctly identified 83.1% of the cases. The sensitivity of the model was 82.7% and specificity of the model was 83.5% indicating that the model was able to correctly classify 82.7 per cent of the people who practiced BFI and 83.5% who did not practice BFI. Variables that were significantly associated with BFI include parity, awareness of the benefits of breastfeeding and delivery on due date (Table 5). Mothers who were aware of the benefits of breastfeeding were 5.47 times more likely to perform BFI compared to mothers who were not aware (OR = 5.47; 95% CI: 3.05,9.78). Also, mothers who delivered on due date were 4.64 times more likely to perform BFI than those who did not deliver on due date (OD = 4.64; 95% CI: 1.22,17.69), and primiparous mothers were 0.28 times less likely to perform BFI compared to multiparous mothers (OR = .28; 95% CI: .1,.77).

Table 5: Logistic regression predicting factors associated with breastfeeding initiation

	B	S.E.	Wald	df	p	Odds Ratio EXP(B)	95% C.I.for EXP(B)	
							Lower	Upper
Mode of delivery	21.99	3917.03	.00	1	.996	3.56×10^9	.00	-.
Parity	-1.27	.52	6.05	1	.014	.28*	.10	.77
Awareness of benefits	1.70	.30	32.74	1	.000	5.47***	3.05	9.78
Delivery on due date	1.54	.68	5.05	1	.025	4.64*	1.22	17.69
Constant	-22.41	3917.03	.00	1	.995	.00		

Omnibus $\chi 2$ (4) = 242.343, $p < .001$, $R2$ = .468 (Cox & Snell), .627 (Nagelkerke)
*p<.05, ** p < .01, ***p<.001,

4.6.2 Exclusive breast feeding (EBF)

Forward-stepwise logistic regression was performed in SPSS to assess the impact of factors associated with exclusive breastfeeding. The omnibus chi-square test of model coefficient was included to determine if the model with factors (dependent variables) was significantly better in predicting EBF compared to the model without factors (dependent variables).

The model was statistically significant $\chi 2(4, N = 384) = 42.378$, $p < .001$, indicating that the model was able to distinguish between respondents who reported and did not report to have exclusively breastfed their babies up to 6 months after birth. The model explained 15.6% (Nagelkerke R^2) of the variance in the practice of EBF, and correctly identified 78.1% of the cases. The sensitivity of the model was 25.5% and specificity of the model was 95.2% indicating that the model was able to correctly classify 95.2 per cent of the people who practiced EBF and 25.5% who did not practice EBF. Variables that were significantly associated with EBF include marital status, mode of delivery, cultural values, and awareness of the benefits of breastfeeding (Table 6). Mothers who were aware of the benefits of breastfeeding were 2.05 times more likely to perform EBF compared to mothers who were not aware (OR = 2.05; 95% CI: 1.177,3.58). Mothers who had friendly cultural values relating to breastfeeding were 5.08 times more likely to perform EBF compared to mothers who held bad cultural values relating to breastfeeding practices (OR = 5.08; 95% CI: 1.27,20.45). Also, mothers who delivered normally were 2.01 times more likely to perform EBF than those who delivered through caesarian section (OR = 2.01; 95% CI: 1.15,3.5), and married mothers were 2.14 times more likely to perform EBF compared to mothers who were not married (OR = 2.14; 95% CI: 1.22, 3.74).

Table 6: Logistic regression predicting factors associated with exclusive breastfeeding

	B	S.E.	Wald	df	p	Odds Ratio EXP(B)	95% C.I.for EXP(B)	
							Lower	Upper
Marital status	.76	.29	7.10	1	.008	2.14**	1.223	3.74
Mode of delivery	.70	.28	6.04	1	.014	2.01*	1.151	3.50
Awareness of benefits	.72	.28	6.43	1	.011	2.05*	1.177	3.58
Cultural values	1.62	.71	5.20	1	.023	5.08*	1.256	20.45
Constant	-1.86	.76	5.98	1	.014	.156		

Omnibus $\chi 2$ (4) = 42.378, $p < .001$, $R2$ = .104 (Cox & Snell), .156 (Nagelkerke)
*p<.05, ** p < .01, ***p<.001

4.6.3 Continuous breast feeding (CBF)

Forward-stepwise logistic regression was performed to assess the impact of factors associated with continuous breastfeeding). The omnibus chi-square test of model coefficient was used to determine if the model with factors (dependent variables) was significantly better in predicting CBF compared to the model without factors (dependent variables).

The model was statistically significant $\chi 2(3, N = 384) = 58.151$, $p < .001$, indicating that the model was able to distinguish between respondents who reported and did not report to have breastfed their babies up to 2 years after birth (Continuous breastfeeding). The model explained 19.2% (Nagelkerke R^2) of the variance in the status of CBF, and correctly identified 72.1% of the cases. The sensitivity of the model was 92.1% and specificity of the model was 38.5% indicating that the model was able to correctly classify 92.1 per cent of the people who practiced CBF and 19.2% who did not practice CBF. Variables that were significantly associated with CBF include marital status, awareness of the benefits of breastfeeding, and number of children (Table 7). Married mothers were 2.55 times more likely to perform CBF than those who were not married (OR = 2.55; 95% CI: 1.51,4.31). Also, mothers who were aware that breastfeeding was important to the child were 2.25 more likely to practice CBF than those who were not aware (OR = 2.25; 95% CI: 1.39,3.65). Also, for every unit increase in the number of children the odds for practicing CBF is 1.80 times (OR = 1.80; 95%

CI: 1.12,2.90).

Table 7: Logistic regression predicting factors associated with continuous breastfeeding

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Marital status	.936	.268	12.229	1	.000	2.550***	1.509	4.310
Number of children	.588	.244	5.829	1	.016	1.801*	1.117	2.902
Awareness of benefits	.812	.247	10.788	1	.001	2.251**	1.387	3.654
Constant	-1.336	.332	16.171	1	.000	.263		

Omnibus $\chi 2$ (3) = 58.151, $p < .001$, *R2* = .141 (Cox & Snell), .192 (Nagelkerke)
*p<.05, ** p < .01, ***p<.001

CHAPTER FIVE

5 DISCUSSION

5.1 Introduction

This chapter aim to provide answers to the research questions and to show how this study contribute to existing knowledge by relating the findings of this study to previous studies.

5.2 The proportion of mothers who breastfed their children in the first hour of life.

According to the report by TNNS (2018) of prevalence of breastfeeding practices in Pwani region was 69.7% (15). In the present study, the proportion of mothers who initiated breastfeeding was found to be 55.7%. This observation was slight lower compared to the study conducted in Addis Ababa, Ethiopia, Coast region, Tanzania, Unguja, Tanzania, Accra, Ghana and higher compared to the study conducted in Amibara district, Ethiopia (8,12,13,16,21).

Similar studies in Tanzania reported a higher proportion compared to the present study. The difference can be explained by delivery through caesarian section and premature birth of which previous studies that were conducted in Unguja and coast region did not take into account. In this study all mothers who delivered through caesarian section and 80% of mothers who delivered prematurely did not practice BFI, hence this explains the difference in proportions of BFI. The results from the present study imply that mothers who delivered through caesarian section did not receive adequate support or the efforts failed to enable BFI.

5.3 The proportion of mothers practicing exclusive breastfeeding.

Exclusive breastfeeding practices prove to be difficult for mothers to adhere to. As of 2018, the globally proportion of children being exclusively breastfed was 41% (4). In Tanzania the National IYCF estimated that only 50% of mothers practiced EBF (1).

In the present study, the proportion of mothers who practiced EBF was 75.5%. The proportion found was high compared to those found in Coast region, Tanzania, in Unguja, Tanzania and in Angola (8,36,42). The results are favorable and adhere to the established proportion of 60% proposed by UNICEF (3).

The proportion found in this study is higher compared to previous studies conducted in Tanzania. The study conducted in Unguja reported that failure of milk production and cultural beliefs contributed to the lower proportion of EBF. Also, the study conducted in Coast region of Tanzania reported that insufficient milk production as the main reason hindering EBF (8,36). In the present study, cultural beliefs were not significant to EBF. Milk production was significant associated with EBF and all mothers reported to have stable milk production which explains the higher proportion of EBF. The results from this study provides clarity to the importance of stable milk production in exclusive breastfeeding practice.

5.4 The proportion of mothers who continued to breastfeed their children up to two years of life.

Continuous breastfeeding practice from one year up to two years tends to decrease from 70% to 45%, and the collective target for continued breastfeeding at two years is 60% (3). According to IYCF National guidelines only 56% of mothers in Tanzania practice CBF (1).

The present study found out that 62.8% of mothers reported to have continued breastfeeding their babies up to two years of life. The results were slight lower compared to the study conducted in Accra, Ghana, which was for mothers who breastfed up to one year (22). Also, the results lower compared to those found in the study conducted in Unguja, Tanzania and higher compared to those found in Mauritius (21,24).

In Unguja, the proportion of CBF was higher but only 5.8% of the breastfed children were 20 to 23.9 months old. In Accra, Ghana only children up to one year were included in the study. In the present study children up to 24 months old were included which explains the difference in the reported proportions compared to previous studies. The results from this study implies that there is an improvement and rise in the willingness of CBF practice up to two years in Pwani.

5.5 The factors associated with breastfeeding practices mothers in Pwani region.

The objective was to determine the factors that are associated with breastfeeding

practices. Breastfeeding practices includes initiation, exclusive and continuous breastfeeding.

5.5.1 Breastfeeding initiation

Despite the guidelines of breastfeeding initiation provided by various institutes including IYCF and WHO, adherence to breastfeeding initiation is still low. The challenges and factors hindering breastfeeding initiation practice are not clearly understood (4). This study examined the factors that were associated to breastfeeding initiation.

Results of this study indicate that parity was negatively associated with BFI that is primiparous (first-time mothers) were less likely to perform BFI whereas awareness of the benefits of breastfeeding and delivery on due date were positively associated with BFI. This is due to the fact that primiparous lack experience in child birth giving. Contrary, multiparae are more experienced and therefore are more likely to initiate breastfeeding on time basing on their previous encounters.

The results are contrary to those found in the study conducted in Kilimanjaro region of Tanzania which did not find an association between marital status, parity and BFI (12). The difference in results may be related to children's age inclusion criteria since the accuracy of the answers provided relied more to the memory of the mothers by the time of interviews. The study conducted in Kilimanjaro included mothers with children up to 5 years' old which is 3 years more compared to the present study. As years pass, the memory of breastfeeding practices fed away.

The present study provides new insights to how parity, marital status and delivery on due date are associated with BFI in Tanzania. Also, results imply that maternal experience matters when it comes to breastfeeding initiation. Primiparous (first-time mothers) might be more exhausted than Multiparous to initiate breastfeeding.

5.5.2 Exclusive breastfeeding

According to IYCF exclusive breastfeeding reduce the risk for the baby to get diarrhea and enhance motor development. The practice of exclusive breastfeeding is still a problem as only 23 countries have achieved 60% of exclusive breastfeeding (4). This study examined the factors associated with EBF.

The results indicated that marital status, mode of delivery, friendly cultural values, awareness of breastfeeding benefits are positively associated with EBF. Marriages brings parents together in raising a family. During the first six months a child must be breast fed twice to thrice a day. But other life circumstances such as work and chores must also continue. Being a single mother i.e. the carer and provider for the baby burdens a woman in accomplishing exclusive breastfeeding practices. But, married mothers enjoy the benefits of support from their husbands because husbands must provide for their families in marriages. Furthermore, mode of delivery particularly normal delivery enables the mother to be intact to continue breastfeeding her baby during the recovery period after birth. Contrary, caesarian delivery may live the mother weak and can lead to sporadic patterns in breastfeeding eventually forcing her to introduce other sources of foods for the baby. Finally, cultural values such as abstinence from sexual activities during breastfeeding to avoid spoiling the quality of breast milk, may force a mother to stop breastfeeding her baby.

A similar study conducted in Tanzania found out that when the decision of child care was up to the father, mothers were less likely to practice EBF as compared to when the mother was responsible for decision making of child care (24). In marriages, mothers tend to be more decisive when it comes to child care as they spend more time with the child than fathers. Another study conducted in Malaysia indicated that marital status increased the chance of exclusive breastfeeding. Also, the results are similar to the study conducted in Unguja, Tanzania which found an association between breastfeeding education, cultural values and EBF (21).

5.5.3 Continuous breastfeeding

Children must be breastfed up to two years of age after birth to ensure good health, growth and development. Therefore, it is necessary for mothers to abide to continuous breastfeeding practice as it determines the survival and development of their children (1). The problem is that the rate of continuous breastfeeding drops dramatically as the child approaches to two years. The objective of the study was to determine the factors that are associated with breastfeeding practice.

Results indicate that marital status, number of children and awareness of the benefits of

breastfeeding are positively associated with continuous breastfeeding practice. The implication of the results is that a married multiparous-mother who is aware of breastfeeding benefits is more likely to practice CBF than the one who does not have these characteristics. As described earlier, married mothers receive more support from their husbands to ensure child health compare to sing mothers. Thus, married mothers are more likely to continue breastfeeding because of family support such as exclusion from chores and home businesses. Also, parity and number of children reflects the experience of mothers in breastfeeding. Multiparae are more likely to adhere or learn from their past experience regarding continued breastfeeding.

The results are in line with the study by Cohen et al. which found a relationship between multiparous and continuous breastfeeding (43). Similarity in these findings can be explained by maternal experience attain through parity. Mothers with more children gains more maternal experience such as repetitive education from health care givers and mastery of breastfeeding techniques. Another study conducted in Ethiopia found out that continuous births were associated with shorter durations of breastfeeding (31). Thus, although number of children ins positively associated with CBF, if the time between each birth is shorter than recommended the association becomes negative. The present study shed some light on the factors that contribute to the drop of CBF practices in Tanzania.

5.5.4 Limitations of the study

The use of cross-sectional data permits the establishment of associations but not causality. Participants were interviewed face to face, some were hesitant to provide answers relating to beliefs I cultural values and breastfeeding their babies to protect their image (a good mother). Respondents could have provided positive answers to protect their self-image and ego. Also, the study was confined to Pwani region only, therefore results cannot be generalized to other regions in Tanzania.

CHAPTER SIX

6 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The proportions of mothers who performed BFI, EBF and CBF in Pwani region are 55.7%, 75.5% and 62.8% respectively. Pwani region surpassed this target indicating an improvement in breastfeeding practice in Pwani region, implying that the implementation of the IYCF National guidelines is optimal (1). **Key factors associating to breastfeeding i.e. marital status, awareness of the benefits of breastfeeding practice and understanding of cultural values relating to breastfeeding were identified. Other identified factors include parity, mode of delivery and number of children mothered. These factors influence breastfeeding practices in Pwani region thus need to be considering in efforts of improving and sustaining nutritional status of children in Tanzania through breastfeeding practices.**

6.2 Recommendations

Proportion of mothers practicing BFI, EBF and CBF

The findings of the study indicate that the **prevalence of breastfeeding practice in Pwani region is optimal** and in line with the IYCF national guidelines. Nonetheless, there are still rooms for improvement.

Mothers should seek breast feeding knowledge and advice from health care providers to ensure successful implementation of the IYCF National guidelines. The community including family members and experienced mothers must provide assistance and support to inexperienced mothers regarding breastfeeding practice. Also, health facilities should adhere to the guidelines to ensure these improvements are incremental.

Factors associated with breastfeeding practice

The findings indicated that awareness of breastfeeding benefits to the child, multiparity, married mothers, understanding of cultural values and normal (vaginal) delivery they are positively associated with breastfeeding practices.

Individually, the father of the child regardless of marital status should provide support to the mother to ensure the child receive optimal breast milk. Also, mothers should seek

advice and technical support from health care givers to increase their awareness and understanding of breastfeeding practices. Also, mothers must adhere to 2 years gap between consecutive birth to ensure that the baby is optimally breast fed because continuous multiple birth tends to disrupt adherence to breastfeeding duration.

The community particularly multiparous mothers who have more maternal experience should provide support to primiparous mothers on breastfeeding techniques and practice. Also, communities must let go and stop entertaining negative cultural values that affect the practice of breast feeding.

Health facilities should insist and require nurses and midwives to convince pregnant women to deliver normally (vaginal delivery) rather than through elective caesarian section unless a medical emergence arise. For mothers who delivered through caesarian section, they should be supported by health care providers to initiate breastfeeding. Also, facilities should counsel and educate pregnant women and their families about the benefits of breastfeeding practice.

Authorities should debunk negative cultural values by providing scientific and medical facts related to breastfeeding practice and sexual relationship during breastfeeding period to the community.

Areas for further studies

Future studies should look on the roles of family members, husband support, and employment status of a mother during maternal period on breastfeeding practices. Also, future studies shall use anonymous data collection methods such as phone interviews and anonymous questionnaires to avoid withholding of correct answers by respondents to maintain one’s ego or image. Also, instead of a cross sectional study, a longitudinal study should be conducted which will enable the collection of data at multiple points in time, hence allowing to assess how breastfeeding practice change over a certain period of time and understanding if the changes are incremental or otherwise.

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APPENDICES:

Appendix I: Consent form: English version

CONSENT FORM TO PARTICIPATE IN RESEARCH

Introduction

This Consent form has 2 parts:

- Information sheet **(information to the participants about the research)**
- Consent part **(for signature if the participant has agreed to participate in the research)**

Part 1: Information sheet

Introduction

Hello! My name is ……., a student from Muhimbili University of Health and Allied Sciences. We are doing a research on breastfeeding practices. I would like to give you information about this research and invite you to take part in it. It is possible that this consent form has information that you do not understand, please don't hesitate to stop the conversation for me to explain the part that is not understood. If you have any questions, you can ask me or another researcher who accompanied me.

Purpose of the research

To assess the implementation of breastfeeding practices.

What does your participation involve?

Your participation involves to agree to answer questions and give information to the principal investigator or the research assistant during the interview.

Confidentiality

All the information that will be obtained in this research, will be well preserved and will be used for the research purposes only. There will be no any document that will reveal your identity.

Right to withdraw

Your participation is voluntary. Refusal to participate or withdrawal at any time after you consented, won't affect you or bring effects to another person related to you.

Benefits

There will be no direct benefits that you will obtain when you participate in this research, although your participation is very important in answering the research questions that will enable better understanding of breastfeeding practices.

Risks

We do not anticipate any negative impacts when you participate in this study.

Feedback questions

In case we will need more explanation after our previous conversation or if we require to ask for further questions after previous responses, we ask you to respond to us when we come back or make phone calls.

Who to contact for further questions or instructions

If you have any questions about the study, you can contact Rebecca W Sanga from Muhimbili University of Health and Allied Sciences, P.O. Box 65001 Dar es Salaam, phone number: +255 716 578 678.

Concerning your rights as a participant, you can contact Chairman of Senate Research and Publications Committee (SRPC) of Muhimbili University of Health and Allied sciences, Dr. Bruno Sunguya, phone number: 0685 217 272 or P.O. Box 65001 Dar es Salaam.

Signature (Researcher).....

Part two: Consent

I have been invited to participate in a study on breastfeeding practices. I have read / someone has read for me the basic information on this study. I have had the opportunity to ask questions related to this study and I have been answered enough to my satisfaction. By my own free will, I agree to participate in this study.

Name of participant _____

Signature of participant _____

Date _____
Day/Month/Year

Researcher's Statement

I certify that the participant has been given the opportunity to ask questions and all the questions he or she has asked have been answered correctly according to my understanding. I certify that the participant has given consent to voluntary participate without coercion or deceit.

A copy of this consent form has been provided to the participant;

Name of researcher _____

Signature of researcher _____

Date _____
Day/Month/Year

Phone number of the participant: _____

Appendix II: Consent form: Swahili version

FOMU YA IDHINI YA KUSHIRIKI KATIKA UTAFITI

Utanguzi

Fomu hii ya idhini ina sehemu mbili:

- Fomu ya taarifa**(Taarifa kuhusiana na utafiti kwa washiriki)**
- Hati ya idhini **(Kwa ajili ya sahihi ikiwa mshiriki amekubali kushiriki)**

Sehemu ya 1: Fomu ya taarifa

Utangulizi

Habari. Majina yangu ni …… ……kutoka chuo kikuu cha afya na sayansi shirikishi za afya Muhimbili. Tunafanya utafiti juu ya uteketezaji wa unyonyeshaji wa watoto. Ningependa kukuelezea na kukualika katika utafiti huu. Inawezekana fomu hii ya idhini ikawa na maneno ambayo huyaelewi, tafadhali usisite kunisimamisha kusudi nielezee pale ambapo hapajaeleweka. Kama utakuwa na maswali waweza kuniuliza mimi au kumuuliza mtafiti mwingine aliyeambatana nami.

Lengo la utafiti

Kujifunza kuhusu utekelezaji wa unyonyeshaji wa watoto.

Ushiriki wako unahusisha nini?

Kushiriki kwako kunamaanisha kukubali kujibu maswali kutoka kwa mtafiti mkuu au Msaidizi wakati wa mahojiano.

Usiri

Taarifa zote zitazopatikana katika utafiti huu zitatunzwa kwa usiri mkubwa na zitatumika kwa malengo tu ya utafiti huu. Hakuna chapisho lolote au andiko litakalobainisha utambulisho wako.

Haki ya kujiondoa

Ushiriki wako ni wa hiari. Kukataa kushiriki au kujiondoa wakati wowote baada ya kutoa idhini hakutasababisha athari wala madhara yoyote kwako au kwa mtu yeyote Yule anayekuhusu.

Faida

Hakuna faida yoyote ya moja kwa moja utakayoipata kutokana na ushiriki wako katika utafiti huu, hata hivyo ushiriki wako ni muhimu sana katika kuwezesha kujibu maswali ya utafiti huu ambayo huweza yakasaidia katika kupata uelewa mzuri wa utekelezaji wa unyonyeshaji wa watoto.

Athari

Hatutegemei ikiwa kuna athari hasi zozote zitakazotokana na ushiriki wako katika utafiti huu.

Maswali mrejesho

Ikiwa tutahitaji ufafanuzi baada ya mazungumzo ya awali au kuhitaji kuuliza maswali ya nyongeza baada ya kujibiwa hapo awali, tutaomba tunaporudi au kupigia simu utupokee.

Nani wa kuwasiliana nao

Kwa maswali kuhusiana na utafiti huu waweza kuwasiliana na Rebecca W Sanga kutoka Chuo kikuu cha Afya na Sayansi Shirikishi Muhimbili, SLP 65001 Dar es Salaam, Simu nambari: 0716 578 678

Kuhusu haki zako katika ushiriki, waweza kuwasiliana na Mwenyekiti wa kamati ya Seneti ya Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili inayohusika na Tafiti na Machapisho, Dkt. Bruno Sunguya kwa simu nambari 0685 217 272 au SLP 65001 Dar es Salaam.

Sahihi (Mtafiti).....

Sehemu ya pili: Hati ya idhini

Nimealikwa kushiriki katika utafiti juu ya utekelezaji wa unyonyeshaji wa watoto.
Nimesoma/kusomewa maelezo ya msingi juu ya utafiti huu. Nimepata fursa ya kuuliza maswali kuhusiana na utafiti huu na nimejibiwa kiasi cha kuniridhisha. Kwa hiari yangu mwenyewe nakubali kushiriki katika utafiti huu.

Jina la Mshiriki_____

Sahihi ya Mshiriki _____

Tarehe _____
Siku/mwezi/mwaka

Maelezo ya mtafiti au muomba idhini

Nathibitisha kuwa mshiriki amepewa fursa ya kuuliza maswali na maswali yote aliyouliza yamejibiwa kwa ufasaha kwa mujibu wa ufahamu wangu. Nathibitisha kuwa mshiriki ametoa idhini ya kushiriki kwa hiari yake mwenyewe bila shuruti wala kurubuniwa.

Nakala ya fomu hii ya idhini imetolewa kwa mshiriki;

Jina la mtafiti/ muomba idhini_____

Sahihi ya mtafiti/ muomba idhini_____

Tarehe _____
Siku/mwezi/Mwaka

Nambari ya mshiriki: _____

Appendix III: Questionnaire (English Version)

QUESTIONNAIRE
(QUESTIONS TO BE ASKED AMOTHER WITH UNDER YEARS OLD CHILD)

Interviewer Name: ……
Name of the respondent: …….
Sex: ……. Age: ……
Marital status: …
Name of Household: ……
Address/Street: ……
Phone Number: …….

ASSESSMENT OF BREASTFEEDING PRACTICES

1) Are you a first time mom?
   □ Yes □ No
2) How many children do you have?
   …….
   (Leave the question if she is a first time mom)
3) What was your mode of delivery?
   □ Normal delivery □ caesarean section
4) Are you aware that breastfeeding a child is important and beneficial for the child's health?
   □ Yes □ No
   If YES to above, what kind of benefits to a child?
   ……
5) Did you breastfeed your baby one hour after delivery?
   □ Yes □ No

If No, Why?
   □ Caesarean section
   □ Delay of milk production
   □ Delivering before due date (premature baby)
   □ Others
   Mention……

6) When did you start introducing contemporary food to your baby?
   □ Before six months □ After six months
7) Do your cultural values affect your breastfeeding practices?
   □ Yes □ No
   The cultural values include

□ Considering colostrum as 'dirty' or 'curdled milk'
□ A curse 'bad omen' associated with breastfeeding while engaging in extra marital affairs
□ A fear of the 'evil eye'
□ Others
Mention…….

8) When did/ will you stop breastfeeding your baby?
   □ Less than Six Months □ One Year □ Less than one year □ Up to two years
   Why?

9) Do you face breastfeeding challenges?
□ Yes □ No
If YES to above, what kind of challenges? ……
……

10) Did you have milk production complication after delivery
□ Yes □ No
If YES to above, why? ……
……

11) Did you deliver your baby on the due date?
□ Yes □ No
If NO to above, why……
……

Appendix IV: Questionnaire (Swahili Version)

DODOSO
(MASWALI YA KUMUULIZA MAMA MWENYE MTOTO CHINI YA MIAKA MIWILI)

Jina la Muulizaji: ……
Jina la Anayehojiwa: ……..
Jinsia: ……..
Umri: ……
Hali ya ndoa :……
Jina la nyumba: ……
Mtaa: ……
Namba ya simu: …….

UTEKELEZAJI WA UNYONYESHAJI WA WATOTO

1) Je, hii ni mara yako ya kwanza kuwa mama?
   □ Ndio □ Hapana
2) Una watoto wangapi?
   …….
   (Acha hili swali kama ni mara yake ya kwanza kuwa mama)
3) Je, ulijifungua kwa njia gani?
   □ Kwa njia ya kawaida □ Kwa upasuaji
4) Je, unatambua kuwa unyonyeshaji wa mtoto una faida katika afya ya mtoto?
   □ Ndio □ Hapana
   Kama ni NDIO hapo juu, ni faida gani anazopata mtoto?
   ……
5) Je, ulimnyonyesha mtoto wako lisaa limoja baada ya kujifungua?
   □ Ndio □ Hapana

Kama ni HAPANA Kwanini?

   □ Je ilitokana na kujifungua kwa upasuaji
   □ Maziwa yalichelewa kutoka
   □ Ulijifungua kabla ya muda (mtoto njiti)

6) Lini ulianza kumuanzishia chakula mtoto wako?
   □ Kabla ya miezi sita □ Baada ya miezi sita
7) Je, maadili ya kitamaduni yanaathiri utekelezaji wako wa unyonyeshaji?
   □ Ndio □ Hapana
   Maadili ya kitamaduni kama:

□ Kuzingatia kolostramu kama maziwa machafu au maziwa yaliyochachuka
□ Laana inayohusiana na kunyonyesha huku unajihusisha na tendo la ndoa
□ Hofu ya jicho baya

8) Lini uliacha/utaacha kumnyonyesha mtoto wako?
   □ Chini ya miezi sita □ Mwaka mmoja □ Chini ya mwaka mmoja □ Mpaka miaka miwili
   Kwanini?
9) Unakutana na changamoto gani katika unyonyeshaji?
   □ Ndio □ Hapana
   Kama ndio hapo juu, Je, ni changamoto gani? ……
   ……

Je ulipata changamoto ya kutoka kwa maziwa baada ya kujifungua?
□ Ndio □ Hapana
Kama NDIO hapo juu, kwanini?……
……

10) Je, ulijifungua mtoto wako katika siku uliyokadiriwa kujifungua?
□ Ndio □ Hapana
Kama HAPANA hapo juu, Kwanini? ……
……

11) Je, unapata muda wa kutosha kumyonyesha mtoto wako?
□ Ndio □ Hapana
Kama HAPANA Hapo JUU,
Kwanini?……

Appendix V: Ethical clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR - RESEARCH AND PUBLICATIONS

Ref. No.DA.282/298/01.C/ Date: 01/04/2021

MUHAS-REC-04-2021-542

REBECCA W. SANGA
MSc. PMMEH,
School of Public Health and Social Sciences
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: BREASTFEEDING PRACTICES IN PWANI REGION

Reference is made to the above heading.

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 01/04/2021
EXPIRATION DATE OF APPROVAL: 31/03/2022

STUDY DESCRIPTION:
Purpose:
The purpose of this analytical cross-sectional study is to assess the implementation of breastfeeding practices as stated by the IYCF guideline.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%20534.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Dr. Bruno Sunguya
Chairman, MUHAS Research and Ethics Committee

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research & Publications
Box 65001

Cc: Director of Postgraduate Studies