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INFANT FEEDING KNOWLEDGE AND PRACTICES AMONG LACTATING MOTHERS IN KWALE COUNTY, KENYA

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ABSTRACT

Background: **Lactating mother's knowledge on infant feeding and its practices are key determinants of children's nutritional status and future food habits. In Kenya, stunting rates among children below five years is 26 %. Objective: To assess infant feeding knowledge and practices among lactating mothers in Kwale County where stunting stands at 29%.**
Design: **A cohort study. Setting: Maternal and Child Health clinics or respective households.**
Subjects: **Lactating mothers who were part of the baseline survey.**
Results: **One hundred and ninety-seven lactating mothers were interviewed. Most mothers (65.3%) had knowledge of breastfeeding within the first hour and majority (91.8%), gave colostrum to the newly born. Majority (84%) had no knowledge on expressing a mother's milk for later use. Complementary feeds had been introduced by 48.2% of which more than a quarter gave before six months. Maize meal porridge was the common weaning food in addition to mother's milk. There was a significant relationship between: breast feeding advice given during antenatal care and use of colostrum (r = 0.165, N = 197, p = 0.021); breastfeeding initiation and pre-lacteal feeding (r = - 0.264, N = 197, p = 0.0001); parity and place of birth (r = 0.184, N = 197, p = 0.001) as well as pre- lacteal feeding and use of colostrum (r = - 0.289, N = 197, p = 0.0001).**
Conclusion: **There was poor knowledge of preservation of mother's milk and dietary diversity during complementary feeding. There is need for an intervention to empower mothers on best practices for optimal growth and development of infants.**

BACKGROUND

Infant feeding practices are the principal determinant of a young child's nutritional status and future food habits. Appropriate infant feeding, namely, early initiation of breastfeeding with colostrum as the first food, no pre-lacteal feeding, exclusive breastfeeding to six months, followed by the introduction of appropriate complementary foods with continued breastfeeding, is important for survival as well as physical growth and mental development of the child (1), (2). It is important to identify feeding practices that place infants at risk of developing malnutrition. This helps determine environmental factors that can be modified and be amenable to intervention (3), (4). Studies on infant and young child feeding have indicated that inappropriate feeding practices can have profound consequences on growth, development, and survival of infants and children, particularly in resource-poor settings (5), (6),Exclusive breastfeeding for the first six months of an infant's life is the most effective strategy for reducing infant morbidity and mortality (7), (8).

Practices that promote the success of exclusive breastfeeding include antenatal education on breastfeeding rate, rooming (9) and avoidance of pre-lacteal feeds. Ninety-nine percent of children in Kenya have ever been breastfed but only 61 % of those aged below six months are exclusively breastfed (10).

Breastfeeding should begin within one hour after birth and continue every 2 to 3 hours during the initial weeks of postpartum (11). The mother's milk provides infant with temporary immunity against many infectious diseases. Breastfeeding contributes to the health and well-being of mothers: it helps space children, reduces the risk of ovarian cancer and breast cancer, and is secure way of feeding and safe for the environment.

Failure to initiate breast feeding early within the first one hour, not only endangers the health and development of newborns by denying them colostrum, but also the mother's health may be compromised, and mother–child bonding may be suboptimal (12, 13)Globally, 38% of infants are exclusively breastfed for the first four months of life (14) It has been shown that over 800, 000 deaths and about 10% of the global burden of disease among children under 5 years in resource-poor settings results from sub-optimal breastfeeding practices (11, 15).

In Africa, exclusive breastfeeding ranges from 1% in Djibouti to 85% in Rwanda. Higher rates of breastfeeding and exclusive breastfeeding are generally observed among lower income countries, while rural mothers usually breastfeed longer than their urban counterparts (11; 1)

In Kenya, the proportion of children who are exclusively breastfed has markedly increased (10) though there is still a difference between rural and urban set ups and from region to region. The transition from EBF to complementary feeding (CF) is associated with challenges in resource-poor settings, including infrequent feeding, low energy, less nutrient dense foods, poor food storage, sanitation and food taboos. Premature cessation or low frequency of breastfeeding contributes to insufficient nutrient and energy intake in infants beyond 6 months of age (16; 17). Occupation and education have been cited as barriers to EBF and poor complementary feeding. Little is known if mothers are given necessary knowledge on breastfeeding as required during ANC visits so as to improve on their infant feeding skills ((18, 19).

MATERIALS AND METHODS

Study Design: A follow up for a cohort study. Population: The study was conducted in Kwale County, which is located in the southern part of Kenyan Coast County. Kwale County has 3 government referral hospitals, 32 private and 6 faith based health facilities, 8 health centers and 64 dispensaries.

In spite of government emphasis on the promotion of facility deliveries, more than 50 % of women in Kwale County still deliver at home without the assistance of skilled birth attendants. The county has a higher child stunting rate (29.7%) as compared to the national rate (26%). Kwale County has an < 5 mortality rate estimate of 149 per 1000 live births (10).

Lactating mothers were interviewed if they were part of the baseline survey that recruited expectant mothers at a pregnancy age of 20 weeks and above, as well as if they had a living child. Setting: Mwaluphamba and Kizibe health centers and the respective households. Sampling procedure: The dispensaries were purposively sampled within Kwale Health and Demographic Surveillance System (HDSS) program that was implemented in the area by the Kenya Medical Research Institute in collaboration with Nagasaki University (20). Convenience sampling was done due to the length of the study.

Pregnant mothers at a pregnancy of 20 weeks and above were recruited during baseline. A follow up was done for all lactating mothers after delivery. Data collection. The participants answered questionnaires concerning socio economic status, breastfeeding and general knowledge and Practices on infant and young child feeding (17). Questionnaires written in Kiswahili were administered to obtain information on infant demographic status, birth related events, knowledge, and practices related to infant feeding and sources of breastfeeding education.

At the end of each day, data collection forms were reviewed to identify omissions and errors and were corrected on the same day. The data were double entered into computer.

DATA ANALYSIS

Data was analyzed using SPSS for windows version 20 (IBM SPSS). Descriptive statistics were tabulated and presented in form of frequencies. Pearson correlation analysis was used to identify significant relationships between different variables. Bivariate analysis was done to check the association between various variables. $P \leq 0.05$ were considered significant.

RESULTS

Socio-demographic characteristics of study participants. A total of 197 mother- infant pair were interviewed. The mean age (SD) of mothers was 25.7 (6.9) years. More than 50% of the mothers had no formal education and about three quarters were housewives. About a third of the fathers had no formal education (Table 1b). Of the 197 infants 103 (53.3%) were males while 94 (47.7%) were females. More than a third (78, 39.6 %) of the infants were not born in health facilities (Table 1a). Majority of those born in hospital (106, 94.4%) were discharged before the end of one day. Thirteen percent of the infants had low birth weight.

Table 1 a

Demographic characteristics of infants in Kizibe and Mwaluphamba in Kwale County

Characteristics		Frequency (N=197)	%
Gender of Child			
	Male	103	52.3
	Female	94	47.7
Child age group			
	Below 3 months	25	12.7
	Between 3 – 5.9 months	120	60.9
	6 months and above	52	26.4
Child's place of birth			
	Hospital	119	60.4
	Home, TBA, Other	78	39.6
Delivery			
	Normal	188	95.4
	Caesarian/ induction	9	4.6
Birth weight (n=174)			
	Low birth weight	23	13.2
	Normal weight	151	86.8
Labor duration (n=190)			
	Less than six hours	59	31.1
	6 - 12 hours	78	41.1
	12 - 24 hours	51	26.8
	1-3 days	2	1.1
Hospital stay after delivery (n=116)			
	< 2 hours	15	12.9
	2 to 4 hours	37	31.9
	one day	54	46.6
	≥ 2 days	2	1.7

Table 1b

Socio-demographic characteristics of mothers in Kwale County

Characteristics		Frequency	%
Age group (Years)			
	15 - 19	38	19.5
	20 - 29	98	50.3
	30 - 39	40	20.5
	40 - 45	11	5.6
	Unknown	10	5.1
Marital status			
	Married	179	91.3
	Single	15	7.6
	Divorced	2	1
Religion			
	Muslim	167	84.8
	Christian	30	15.2
Type of marriage			
	Monogamous	124	81
	Polygamous	29	19
Husband' s education level			
	No schooling	62	31.5
	Primary	106	53.8
	Secondary and above	29	14.7
Mother's education level			
	No formal schooling	103	52.3
	Primary school	76	38.6
	Secondary and above	19	9.1
Mother's alcohol use			
	Yes	14	7.1
	No	183	92.9
Mother's cigarette / tobacco use			
	Yes	10	5.1
	No	187	94.9
Mother's employment status			
	Housewife	146	74.1
	Casual laborer	38	19.3
	Government employee	6	3.0
	Self-employed	7	3.6

Infant feeding practices

About ten percent of the infants were given other feeds before breastfeeding was initiated. The infant feeding practices are shown in table 2. More than a third (37.1%) of the infants were breastfed after an hour or more. The reasons given for late initiation of breastfeeding included too much pain for the mother (43.8%), mother had no milk (17.8%) and baby was sick (13.7%). Majority (91.8%) fed the infants with colostrum in the first three days and the feeding was done on demand (95.4%). About a quarter of the infants were introduced to complementary feeds before the age of six months.

Table 2

Infant feeding practices among lactating mothers in Mwaluphamba and Kizibe health centers, Kwale County

Variables		Frequency	%
	Nothing	177	90.3
Prelacteal feeding	Water	15	7.7
	Tinned milk	5	2.0
Breastfeeding initiation	Immediately	73	37.2
	less than one hour	47	24.0
	between one hour and a day	72	36.7
	1- 3 days	4	2.0
Reason for delayed initiation of breastfeeding (n = 76)	Had undergone a CS.	16	21.1
	I had no milk	14	18.4
	Child was given tinned milk	1	1.3
	I was in too much pain /was sleepy	32	42.1
	baby was sick (pain, discomfort, in nursery)	13	17.1
Colostrum use	Child continued to breastfeed.	180	91.8
	I removed and poured	3	1.5
	I had no milk in the first three days	11	5.6
	Other	2	1.0
Complementary feeding	Yes	95	48.5
	No	101	51.5
Type of complementary feeds (n = 94)	Water	2	2.1
	Formula milk	3	3.2
	Milk from cow / pasteurized	1	1.1
	Porridge (maize meal)	74	78.7
	Other	2	2.1
	Water, Milk from cow, Porridge	11	11.7
	porridge, ugali	1	1.1
Number of times the baby is fed per day (n = 93)	Two times per day	60	64.5
	Three times per day	14	15.1
		6	6.5
	Fed on demand		
	Once a day	13	14.0
	Feeding bottle	7	7.5
Cutlery for feeding the baby (n = 93)	Cup	19	20.4
	Cup and spoon	67	72.0
Foods eaten yesterday (n = 92)	Grains, Roots, Tubers (porridge, potatoes, rice, ugali)	80	87.0
	Dairy products (Milk, Yoghurt, Cheese)	5	5.4
	Grains and Tubers (porridge, potatoes) and dairy products	7	7.6

CS: Caesarian sectio

Infant feeding knowledge among lactating mothers

Majority of the lactating mothers (179, 95%) reported having received advice on breastfeeding from health care providers. About two thirds of the mothers (65.3% had knowledge that breastfeeding of a new born child should be initiated within the first one hour A quarter of the mothers (25.3%) said the infants will be thirsty if they are not given water. Half of the mothers agreed that crying is a sign that the mother's milk is not sufficient. About a third of the mothers didn't know that EBF till six months can be sufficient for the infant. More than half (52.1%) of the mothers didn't know that feeding the infant on formula and other feeds could affect the quantity of breast milk. Majority (84%) of the mothers are not aware that breast milk can be expressed and be kept for later use. The responses are outlined in table 3

Table 3

Infant feeding knowledge among lactating mothers in Mwaluphamba and Kizibe health centers, Kwale County

VARIABLES	KNOWLEDGE			
	YES		NO	
	n	(%)	n	(%)
Breastfeeding initiation within the first 1 hour after birth (n = 196)	128	(65.3)	68	**(34.7)**
Infant cannot be sustained on breast milk alone for six months (n =194)	153	(78.9)	41	(21.1)
Infant will be thirsty if not given water (n = 194)	145	(74.7)	49	(25.3)
Infant will be hungry if not fed formula milk within the first 24 hours	137	(70.6)	57	(29.4)
Crying is a sign that mother's milk is insufficient	97	(50.0)	97	**(50.0)**
Exclusive breastfeeding until six months is not sufficient for the baby	129	(66.5)	65	**(33.5)**
Combining breastmilk with other types of milk when infant is less than six months gives better nutrition.	137	(70.6)	57	(29.4)
Infant should be breastfed on demand	179	(92.3)	15	(7.7)
Proper attachment to the breast is not needed for sufficient milk production	169	(87.1)	25	(12.9)
Women with small breast size have insufficient milk for the baby	165	(85.1)	29	(14.9)
Feeding infant on formula milk and other foods does not affect the quantity of breast milk produced	93	(47.9)	101	**(52.1)**
EBF until six months does not provide all the nutrients needed for optimal growth and development	152	(78.4)	42	(21.6)
Breast milk can be expressed and be kept for later use	31	(16.0)	163	**(84.0)**

Bivariate analysis of Infant feeding practices among lactating mothers in Kizibe and Mwaluphamba health centers in Kwale County

A Pearson correlation analysis was conducted to examine whether there is a relationship between different feeding practices among the lactating mothers.

The results revealed: a significant positive relationship between advice given on breast feeding during ANC and use of colostrum (r = 0.165, N = 197, p = 0.021); a significant negative relationship between breastfeeding initiation and pre lacteal feeding (-0.264, N = 197, p = 0.0001); a significant positive relationship between parity and place of birth (0.184, N = 197, p = 0.001) as well as a significant negative relationship between pre- lacteal feeding and use of colostrum (r = - 0.289, N = 197, p = 0.0001).

DISCUSSION

This study investigated infant feeding knowledge and practices among lactating mothers who had children below one year in Kwale County.

About 20% of the mothers were teenagers and the infants were aged between two and eight months. Majority were married (91.3%) and aged between 20 – 29 years (50.3%). In this study, majority of the mothers reported having received information on infant feeding from healthcare providers while a few received from close family members (mother, sisters and mother in laws).

Obtaining information from relatives and other significant people other than health care providers puts to question the quality and accuracy of the information given. It can be a source of wrong information. Similar findings on relatives and significant persons as the source of information have previously been reported (21; 6; 22) The prevalence of breastfeeding was high (99%) and on demand breastfeeding was common. This is similar to previous findings (23).

Poor knowledge relating to initiation of breastfeeding, insufficiency of mothers milk and the sufficiency of exclusive breastfeeding until six months were noted. Majority had poor knowledge of mothers milk can be expressed and kept for later use. Most mothers also had inadequate knowledge of the negative effects of giving other feeds on the quantity of breastmilk produced. Similar inadequencies of knowledge have been reported previously (8)All the mothers had knowledge of the importance of breastfeeding infants.

However only 128 (65.3%) knew that breastfeeding should be initiated within the first one hour. Breast feeding within the first hour was initiated by 120 (61.2%) mothers. This is similar to studies done by (22) where two thirds of the study participants initiated breastfeeding within the first hour but contrary to a study done in Uganda by (25) where a third of the mothers delayed initiating breastfeeding. In this study, about two thirds (66.5%) agreed that exclusive breastfeeding is enough up to six months only 51.7% feed their children on breastmilk alone. This is lower than the national average (61%) of the children who are exclusively breastfed (10). This could be attributed to misconception that crying is a sign that breast milk is a sign that the breast milk is not enough. (50%).

In this study majority (90.3%) did not give any food to the new born before initiation of breastfeeding but about a third initiating breastfeeding after one hour with reasons given as caesarian section delivery, having no mil or being in pain. Majority (91.8%) continued to feed the baby on the colostrum. This is similar to findings of other studies (26, 11). Prelacteal feeding was minimal (20, 10.2%) and mainly due to mothers' health condition or lack of milk from new mothers.

This is contrary to a study by (27) on the prevalence of prelacteal feeding in SSA that showed the prevalence as 32.2%. Almost half 93 (48.5%) had introduced complementary foods with majority of them giving maize meal porridge (78.7%) or porridge enriched with some milk (11.7%). Majority of the infants (87.0%) were fed on grains, roots or tubers. A similar trend is seen in (28) that reported most children in east Africa being fed on grains and tubers.

CONCLUSION

Infant feeding knowledge and practices among the study participants reveal the need for a culturally acceptable intervention to empower the caregivers on optimal practices for proper growth and development of infants.

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