

Infant Feeding Practices of Mothers/Caregivers and Anthropometric Indices of Infants (0-12 Months) in Etche Local Government Area, Rivers State, Nigeria

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ABSTRACT: Infant nutrition is an integral part of infant health. The study aims at assessing the infant feeding practices of mothers/caregivers and the Anthropometric Indices of infants (0-12 months) in Etche Local Government Area, Rivers State, Nigeria. 207 infants (0-12 months) and their mothers were randomly selected from five communities in Etche local Government Area. Information on infant feeding practices, demographic data, socio-economic data of the infants were obtained from the mothers using a structured, pre-tested questionnaire. Anthropometric measurement of the infants were carried out using standard methods and data obtained were converted to WHO standard using Anthro-Software. Information gathered from questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) Version 20. Results were presented in frequencies and percentages and categorized using (WHO) anthro software. Comparison was done using Chi-square test for categorized variables, while Anova was used for continuous variables.

The result showed that, about 85% of mothers/caregivers who practiced breastfeeding put their infants to breast in less than one hour after delivery while 1.7% delayed till after 7 days of delivery. 17% discarded the first milk after delivery, 36.3% breastfed on Demand, 30.4% practiced Exclusive breastfeeding while 32.6% and 27.1% did not practice Exclusive breastfeeding due to ignorance and lack of encouragement from the family. 49.1% of infants breastfed on each feeding for 5-10 minutes, 74.9% were given other foods apart from breastmilk with 16.1% given water, 38.1% were given breastmilk substitute and 44.5% given complementary food, like pap. 69.0% were given other foods other than breastmilk in less than 2 months of delivery, and 44.4% practiced bottle feeding.

The study depicted high rate of stunting as 39.1% and 8.7% of infants were severely and moderately stunted, 13.5% and 24.2% were severely and moderately underweight, 27.6% and 8% were severely and moderately wasted and 23.6% and 10.9% were severely and moderately overweight. Poor infant feeding practices observed in this study, resulted into, high rate of stunting among the infants. Adaptation of appropriate infant and child feeding practices is required to remedy the situation and reduce the prevalence of malnutrition in children.

KEYWORDS: Infant feeding practices, Caregivers, Anthropometric indices, Malnutrition.

I. INTRODUCTION

Poor infant feeding practices have been responsible, directly or indirectly for 60 percent of the 10.9 million deaths annually among under five children [1]. Over two thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life [2]. According to the World Health Organization, 30 percent of children under five years worldwide have growth problems as a consequence of poor feeding [3]. Infant nutrition is an integral part of infant health. The infant is more sensitive to abnormal nutritional situations and less adaptable than in later life to different types, form, proportions and quantities of food. Nutrition is the act and science of food consumption to help maintain a healthy and active life. Infant feeding practices are feeding options and activities

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undertaken by mothers/caregivers to meet the infant's nutritional needs [4]. An infant is a young child between zero to twelve (0-12) months after birth [5]. A child Caregiver is any adult female or male person who is responsible for the day to day care and well being of an infant /child between the age of zero to twenty four months, including biological mothers, grandparents, aunts, and others in cases where the biological parents are deceased or unavailable. A mother is someone who loves unconditionally and places the needs of her children above her own, on a personal level, and not only with words, but actions. Optimal Infant Feeding Practices recommended by World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) involves exclusive breastfeeding for the first 6 months of life, followed by adequate complementary feeding and continued breastfeeding until the child is at least two years old. Benefits to infants when breastfed appropriately includes reduced risk of diarrheal and gastro intestinal illness, allergies, acute respiratory infections, bacterial meningitis, childhood asthma and childhood leukemia [6]. Promoting adequate infant feeding practices such as early initiation of breastfeeding and exclusive breastfeeding for up to six months is an effective strategy for improving child survival.

Safety and sanitation of food, beverages and utensils used to feed infants are of utmost importance given that microbial pathogens are the leading causes of infant morbidity and mortality from gastro-intestinal and diarrheal diseases in children. To emphasize the importance of child feeding, the World Health Organization (WHO) and United Nations Children's Emergency Fund (UNICEF) jointly developed the strategy for infant and young child feeding (IYCF) in 2002. The recommendation in this strategy states that children should be exclusively be breastfed for 6 months after birth and provided with safe and adequate complementary foods with continued breastfeeding up to 2 years.

No more than 35 percent of infants worldwide are exclusively breastfed during the first months of life, with only 12% of infants in Nigeria been exclusively breastfed in the first six months of life in 2012. Complementary feeding frequently begins too early or too late and foods are often nutritionally inadequate and unsafe [7]. Breastfeeding remains a pivotal factor between life and death for the vast majority of children in developing countries such as Nigeria, but the current data reveals that 55% of Nigerian mothers are ignorant of the importance of exclusive breastfeeding. Artificial feeding increases the risk of diarrhea and malnutrition and in turn substantially increases the risk of infant's death.

II. LITERATURE SURVEY

Poor infant feeding practices have been responsible, directly or indirectly for 60 percent of the 10.9 million deaths annually recorded among under five children (8).

According to [9], Infant feeding practices clearly affects a child's nutritional status, health and growth. Interventions including breastfeeding, complementary feeding, vitamin A and zinc supplementation could save about 25% of total deaths in under-five age group. Breastfeeding alone has been shown to decrease the child mortality by 13%. The 2016 UNICEF Global Nutrition Report showed that 361,000 Children in Nigeria die annually from malnutrition with a total of 2.1 million others currently diagnosed as suffering from malnutrition. The figures, according to the report, placed the country second in global ranking of prevalence of stunting and wasting after India. Infants are more sensitive to abnormal nutritional situations and less adaptable than in later life to different types, forms, proportions and quantities of food (10).

III. MATERIALS AND METHOD

A cross sectional design was applied in this study of mothers/caregivers and their infants (0-12 months) living in households of Etche Local Government Area of Rivers State. A random sampling technique was used for the selection of five (11) communities out of twenty (12) communities. The communities selected were Afara, Egwi, Nihi, Ulakwo, Odufor in Etche Local Government Area of Rivers State. The leaders of the communities selected were approached to intimate them about the research work. After their approval, a comprehensive list of the households that has infants between 0-12 months in each community was compiled with their home addresses. After obtaining their consent, there was a random selection of every second name on the compiled list, thereby, giving every mother and child an equal opportunity of being selected.

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Samples of 207 infants (0-12 months) and mother pair were randomly selected from five communities in Etche. Information on infant feeding practices, demographic data, socio-economic data and Anthropometric Status of the babies were obtained from the mothers with a validated, structured and pre-tested questionnaire. Anthropometric measurement of infants were analyzed using Anthro-Software to convert it to WHO standard of Anthropometric Index and datas obtained were analyzed with the use of Statistical Package for Social Sciences (SPSS) Version 20 to percentages, frequencies and represented in a descriptive statistics in tables and chi-square analysis were carried out.

Weight measurement was obtained using bathroom weighing scale for body weight of mother and infant. The scale was checked and the weighing reading was readjusted to zero. The child was undressed, while the mother/caregiver was asked to remove any heavy items of clothing or apparel (big jackets, shoes, wrappers etc) and any heavy items from her pocket (keys, waist bags etc). The mother/caregiver was asked to stand on the scale's surface in the middle. The mother/caregiver was asked to look straight ahead with hands by the side and stay still on the scale, to wait for the needle/digital screen to settle before recording the measurement. The reading was taken to the nearest 1kilogram. Afterwards, the child was handed to the mother/caregiver to obtain the weight of the mother and child together and thereafter the weight of the mother was subtracted from the combined weight of the mother and child to get the actual weight of the child.

Length measurement was obtained using recumbent length determination. The measuring board was placed horizontally on flat, level surface. The child's shoes and any head covering were removed. The child was placed in the middle of the board so that he/she is lying down and facing up. The assistants assisted to hold the sides of the child's head and position the head until it is touching the head board. The researcher then placed her hands on the child and firmly held the child's knees together while pressing down. The researcher immediately removed the child's feet from contact with the footboard with one hand while holding the footboard securely in place with the other. Length of the child was then measured with a tape from one marked end to another to the nearest 1cm.

Mid Upper Arm Circumference (MUAC): This is an anthropometric indicator used to identify acute malnutrition. MUAC measurement is the circumference of the left upper arm and is measured at the mid-point between the tips of the shoulder and elbow. The mid-point between the elbow and the shoulder (acromion and olecranon) was determined. The MUAC tape was placed around the left arm (the arm should be relaxed and hang down the side of the body). The Mid Upper Arm Circumference was measured while ensuring that the tape neither pinches the arm nor is left loose. The measurement was read from the window of the tape or from the tape. The MUAC was recorded to the nearest 0.1 cm. MUAC has the following cutoff points and colors: from 0-<11cm is severely wasted (red color); 11-<12.5cm is moderately wasted (yellow color) while 12.5cm and above is normal (Green color).

IV. RESULT AND DISCUSSION

All the infants who were delayed in initiating breastfeeding above 7 days after delivery were severely overweight compared to 22.5% who were initiated in less than 30minutes–1 hr. were severely overweight. 36.8% who were initiated breastfeeding in 2-2 hours were severely wasted as compared to 31.5% who were initiated breastfeeding in less than 30 mins – 1 hours were severely wasted. 19.7% who were exclusively breastfed were severely overweight as compared to 25.4% who were not exclusive breastfed were severely overweight. 26.3% who practiced exclusive breastfeeding up to 6 months were severely overweight as compared to 26.1% who practiced exclusive breastfeeding within the duration of 4-5 months were severely overweight. All the infants who were exclusively breastfed between 2-3 months were severely wasted as compared to 57.1% who were breastfed in less than 2 months were severely wasted. 24.7% of infant who were not given complimentary foods were severely overweight as compared to 22.8% who were given complimentary food were severely overweight.

Relationship between infant feeding practices by mothers/caregivers on the nutritional status of infants.

Weight for Age

36.8% of infants who delayed initiation of breastfeeding to 2–7days were moderately underweight as compared to 30.0% who initiated breastfeeding after delivery 2 hours – 24 hours. 27.5% who initiated breastfeeding 2 – 24 hours were severely underweight in relation to 42.5% who resumed breastfeeding in 2 – 7 days after delivery and were healthy

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weight. 22.8% of infants who were given complimentary food were moderately underweight compared to 25.8% who were not given complimentary food.

Weight for age

VARIABLE	Severe weight	Moderate underweight	Healthy	Moderate	Severe	Total	X ² value	R-value	overwt	overwt
Less than	2(1.8)	2(1.8)	80(70.2)	21(18.4)	9(7.9)	114(100)	23.344	0.025		
30mins – 1hr after delivery										
2hrs – 24hrs	0(0.00)	0(0.00)	17(42.5)	12(30.0)	11(27.5)	40(100)				
2days – 7days	0(0.00)	0(0.00)	7(36.8)	7(36.8)	5(26.3)	19(100)				
Above 7 days	0(0.00)	0(0.00)	3(100.0)	0(0.00)	0(0.00)	3(100)				
Total	2(1.1)	2(1.1)	107(60.8)	40(22.7)	25(14.2)	176(100)				

COMPLEMENTARY FEEDING

Yes	2(1.8)	2(1.8)	60(32.6)	26(22.8)	24(21.1)	114(100.0)	14.850	0.005
No	0(0.0)	1(1.1)	64(68.8)	24(25.8)	4(4.3)	4(4.3)		
Total	2(1.0)	3(1.4)	124(54.9)	50(24.2)	28(13.5)	28(13.5)		

Height for Age

32.5% of infants who were initiated breastfeeding after delivery between 2 hours – 24hours were severely stunted in relation to 30.7% who were initiated breastfeeding after delivery in less than 30 mins – 1 hours. 44.1% who were not given complementary foods were severely stunted compared to 35.1% who were given complimentary food.

Height for age

Variables	Severe Stunting	Moderate Stunting	Normal	Moderate	Severe	Total	X ² value	p-value	overgrowth	overgrowth
height										
INITIATION OF BREASTFEEDING										
Less than 30m -1hr	15(13.2)	6(5.3)	43(37.7)	15(13.2)	35(30.7)	114(100.0)	20.682	0.055		
2hrs – 24hrs	4(10.0)	1(2.5)	19(47.5)	3(7.5)	13(32.5)	40(100.0)				
2days – 7 days	0(0.0)	3(15.8)	5(26.3)	5(26.3)	0(0.0)	11(57.9)				
Above 7 days	0(0.0)	0(0.0)	0(0.0)	0(0.0)	3(100.0)	3(100.0)				
Total	19(10.8)	10(5.7)	67(38.1)	18(10.2)	62(35.2)	176(100.0)				

COMPLEMENTARY FEEDING

Yes	2(1.8)	2(1.8)	60(32.6)	26(22.8)	24(21.1)	114(100.0)	14.850	0.05
No	0(0.0)	1(1.1)	64(68.8)	24(25.8)	4(4.3)	95(100.0)		
Total	2(1.0)	3(1.4)	124(59.9)	50(24.2)	28(13.5)	207(100.0)		

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BMI for Age

All the infants who were exclusively breastfed between 2 – 3months were severely wasted compared to 5.3% who practiced exclusive breastfeeding up to 6 months . 57.1% who were exclusively breastfed in less than 2months were moderately wasted compared to 15.8% who were exclusively breastfed for 6 months were moderately wasted. 26.3% who were given complementary foods were severely wasted, in relation to 18.3% who were not given complimentary foods were severely wasted.

BMI for Age

Variables	Severe Wasting	Moderate Wasting	Normal height	Moderate	Severe	Total	X2value	p-value	overgrowth	overgrowth
PRACTICE OF EXCLUSIVE FEEDING										
Yes	11(17.5)	5(7.9)	19(14.3)	9(14.3)		19(30.2)	63(100.0)	5.597	0.231	
No	17(11.8)	18(12.5)	21(14.6)	21(14.6)		28(19.4)	144(100.0)			
Total	28(13.5)	23(11.1)	50(14.5)	47(22.7)		47(22.7)	207(100.0)			
IF “YES” HOW LONG DID YOU PRACTICE EXCLUSIVE BREASTFEEDING										
Less than 2 months	0(0.0)	0(0.0)	1(14.3)	4(57.1)	2(28.6)	7(100.0)	34.092	0.005		
2-3 months	0(0.0)	0(0.0)	0(0.0)	0(0.0)	3(100.0)	3(100.0)				
4-5 months	7(28.0)	1(4.0)	6(24.0)		2(8.0)	9(36.0)	25(100.0)			
6 months	3(15.8)	4(21.1)		8(42.1)		3(15.8)	1(5.3)	19(100.0)		
>6 months	1(11.1)	0(0.0)	4(44.4)		0(0.0)	4(44.4)	9(100.0)			
Total	11(17.5)	5(7.9)	19(30.2)		9(14.3)	19(30.2)	63(100.0)			
COMPLEMENTARY FOOD										
Yes	18(15.8)	7(6.1)	44(35.6)		15(13.2)	30(23.3)	114(100.0)	8.384	0.078	
No	10(10.8)	16(17.2)	35(37.6)		15(16.1)	17(18.3)	98(100.0)			
Total	28(13.5)	23(11.1)	79(38.2)		30(14.5)	47(22.7)	207(100.0)			

The findings have revealed that 85% of mothers/caregivers practiced breastfeeding. This finding is consistent with research study reported in Edo state in the year 2006 with breastfeeding rate of 82% [13]. The high rate of breastfeeding observed in this study could be linked to the fact that breast milk is the ideal food for every child and all mothers can breastfeed their child. Within Nigeria, breastfeeding rate vary widely. In this study, more than half (64.8%) initiated breastfeeding within one hour after delivery. This finding is higher, compared to 53% of infants who were initiated to breastfeeding within one hour after delivery in Enugu (14) and 48.2% reported in Anambra. Early contact with the child immediately after delivery promotes a closer relationship between mother and child and has been found to give the mother a strong sense of satisfaction (Federal Office of Statistics (15) Despite the importance of early initiation of breastfeeding to the child and the anti-infective properties of Colostrum, it was observed that 17% of mothers/caregivers still discard the first milk after delivery. According to [16] late initiation of breastfeeding deprives infants of Colostrum that has anti infective properties and exposes them to unnecessary death. Initiation of breastfeeding on neonates in sub- Sahara Africa showed that neonatal mortality could be significantly be reduced by 16% if the mothers started breastfeeding on day one and by 22% when breastfeeding was initiate within the first hour. For the mothers who initiated breastfeeding for more than 30minutes -1hour, the commonest reason for late initiation was the perception that colostrum was dirty and therefore harmful to the infant; method of delivery was another reason too. These beliefs and practices are also reported among the yoruba's of South Western Nigeria [17] and different parts of India [18]. From this study, 36.3% of mothers/caregivers reported that they breastfeed their infants on demand. This findings is lower compared to that reported in Enugu state (63.5%) [19], India (73.6%) [20], Owerri Urban (93.8% and

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92.3%) [21]. Demand feeding has a positive influence on breastfeeding as it leads to earlier maximum milk production than feeding on fixed schedule does. The low rate of on Demand Breastfeeding observed could be attributed to workload of mothers/caregivers, lack of support, poverty and ignorant. It is observed from this study that 30.4% of mothers/caregivers reported practiced exclusive Breastfeeding on their infants, with 30.2% of them Exclusively Breastfeeding their infants for the first six months of life. This finding is higher than that reported by the(22) which states that 17% of infants were Exclusively Breastfed within the first 6 months of life though lower than 35% of Exclusively Breastfeeding rates globally [23]. This finding is considerably lower compared to that reported in Sokoto which states that 78.7% were Exclusively Breastfed for the first 6months of life [24]. About 32.6% and 27.1% did not practice Exclusive breastfeeding due to ignorance and lack of encouragement from the family. The low length of time for each feed observed in this study could be on account of lack of support, workload, ignorance, parity, maternal age, etc and could be linked to child's malnutrition such as stunting, underweight, wasted and a host of infectious diseases. According to [25], during born period, most breastfeeding sessions take 20-45minutes, however because new babies are often sleepy, this length of time may require patience and persistence. The prevalence of Underweight, Wasting, Stunting and Overweight observed in this study re-emphasized the fact that malnutrition is still a serious problem among infants especially for the first 1000 days of life in Nigeria. And all the recent efforts to reduce the prevalence of malnutrition has not been successful. This is consistent with [27] report which affirmed that stunting captures the effect of chronic nutritional deprivation or chronic recurrent illness.

V. CONCLUSION

Infant feeding practices among mothers/caregivers in Etche Local Government Area were inappropriate and there was high prevalence of co-existence of malnutrition such as stunting, wasting, underweight and overweight observed among the infants studied. Hence, nutrition surveillance is essential in ensuring adherence to acceptable infant feeding practices. Mothers/ caregivers should be visited at the community level to reemphasize the need for exclusive breastfeeding of infants and appropriate infant feeding practices, growth monitoring promotions with practical demonstrations.

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