

## Infant Feeding Practices Among Mothers and Their Infants Attending Maternal And Child Health In Enugu, Nigeria.

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### ABSTRACT

Inappropriate feeding of infants has long been observed in our society and it is one of the global problems responsible for about one-third of the cases of malnutrition world wide. The study assessed the Infant feeding Practices among mothers and their infants attending Maternal and child health in Enugu, Nigeria. Samples of 410 infants (0-12 months) and mother pair, were randomly selected from these hospitals: Institute of Child Health University of Nigeria Teaching Hospital, Poly Clinic Asata, Christ Specialist Hospital Ogui and ESUT Teaching Hospital (Parklane) all in Enugu State of Nigeria. These four hospitals were purposefully selected because of their involvement in maternal and child health. Information on infant feeding practices, demographic data, socio-economic data, were obtained from the mothers with a structured and pre-tested questionnaire. The data obtained were analyzed with the use of Statistical Package for Social Sciences (SPSS) version 16 to percentages, frequencies and represented in a descriptive statistic in tables and charts. Results showed that most (43%) mothers were within the age of 26–30 years, 92.2% were married, 41% had secondary education, 45.1% were civil servants, 36.8% earned a monthly salary of less than ₦10,000 per month. Majority (97.5%) of the infants were Breastfed, 53% initiated breastfeeding within one hour after birth, 65.3% breastfed on-demand, 62.2% of the infants were exclusive breastfed, only 34.5% were breastfed exclusively for a duration of 5–6 months, 38.8% of mothers practiced prelacteal feeding on their infants, 44% were fed on breastmilk substitute, 72.4% were fed on complementary food, 48.3% initiate complementary feeding at the age of 5 to 6 months, 70% were fed on Pap (Akamu, Ogi) as a complementary food. This study depicted high prevalence of inappropriate infant feeding practices among mothers despite all the nutrition education and promotion of optimal breastfeeding and adequate complementary feeding practices in our maternal and child care institute.

**Key Word:** Infant, Breastfeeding, Exclusive breastfeeding, Complementary Feeding.

### INTRODUCTION

Poor feeding practices during the first two years of life have both immediate and long-term consequences. It is estimated that inappropriate feeding of children is responsible for about one-third of the cases of malnutrition world wide (Engle et al., 1997). However Infant feeding is far from simple operation, in that the methods or food use must conform to a variety of criteria which change as the infant develops and which may be modified to suit the peculiar needs of the child (Madukwe & Edeh, 2012). Inappropriate feeding practices and consequences are major obstacles to sustainable socioeconomic development and poverty reduction. Rapid social and economic change only intensifies the difficulties that families face in properly feeding and caring for their children. Expanding urbanization results in more families that depend on informal or intermittent employment with uncertain incomes and few or no maternity benefits.

Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants, it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health (World Health Organization, 2003). Although breastfeeding is widely accepted in Nigeria, exclusive breastfeeding (EBF) has been reportedly low particular in the rural areas, due to ignorance, cultural belief and doubts about the ability of breast milk alone to satisfy the nutritional and hydration needs of the infants in hot tropical environments. Reports show that only about 35% of infants worldwide are exclusively breastfed during the first 4 months of life (WHO, 2003). By 12 months, the proportion of children exclusively breastfed is higher in Uganda than in Nigeria. Ugandan children less than six (6) months of age, approximatey 57% are exclusively breastfed compared to approximately 1% of Nigerian

children (World Health Organization, 1996). Nigeria Demographic and Health Survey (NDHS) (1999) reported that only 38% of women in Nigeria initiate breastfeeding within the first hour of birth, while about 17% of children under six months of age are exclusively breastfed (NDHS, 1999).

Complementary feeding is defined as the feeding of an infant with foods and liquid alongside breast milk, when breast milk alone is no longer sufficient to meet its nutritional requirements (Pan American Health Organization, 2003). It has been reported that most children are fed complementary foods that are inadequate in quality and quantity (NDHS, 1999) and Complementary feeding frequently begins too early or too late and the food given are often nutritionally inadequate and unsafe. The early introduction of other liquids or complementary foods will displace the energy and nutrients provided by breast milk rather than provide an additional source of nutrition. The target age range for complementary feeding is generally taken to be 6 to 24 months of age.

#### Statement of Problems

In Nigeria, child malnutrition which occurs in more than 60% of children has been identified to be responsible for more than 50% of infant's death in the country. This malnutrition in Nigerian infants was found to be as a result of inappropriate child feeding practices such as delayed introduction of complementary foods, low energy and nutrient density of foods offered, feeding in small amounts at meals, food restrictions due to cultural beliefs, low birth-weight and high morbidity. Thus, this study was conducted to assess the infant feeding practices among mothers in Enugu Nigeria.

#### Materials and Methods

**Study Area:** The study was carried out in Institute of Child Health University of Nigeria Teaching Hospital, Poly Clinic Asata, Christ Specialist Hospital Ogui and ESUT Teaching Hospital (Parklane) all in Enugu State of Nigeria. These four hospitals were chosen because of their involvement in maternal and child health, where mother

**Population of Study:** The study was carried out on four hundred and ten (410) mothers in Enugu Urban community who had infants between 0 and 12 months and attended post natal and programme on immunization clinics at Institute of Child Health University of Nigeria Teaching Hospital, Poly Clinic Asata, Christ Specialist Hospital Ogui and ESUT Teaching Hospital (Parklane) all in Enugu State of Nigeria.

**Sample Design:** A cross-sectional study of mothers and infants who attended maternal and child health and institute of child health in four of the hospitals. The study sample consisted of four hundred and ten mothers and their children, which were selected randomly from the turnout at the four hospitals (Poly Clinic, Christ Specialist Hospital, ESUT Teaching Hospital consisted 100 samples of mothers and their infants each while Institute of Child Health University of Nigeria Teaching Hospital consisted 110 samples of mothers and their infants).

**Sample Size:** The sample size was determined using the formula postulated by the Centre for Disease Control (CDC, 2007);  $n = p \times (1-p) \times (Z_{\alpha} / d)^2$

Where  $n$  = Sample Size.

$P$  = Proportion or a best guess about the value of the proportion of interest.

$d$  = tolerance level (0.05)

$Z_{\alpha}$  = Probability of an error (1.96)

Therefore,  $n = 0.5 \times (1-0.5) \times (1.96/0.05)^2$

$n = 384$

7% of the Sample Size ( $n$ ) was added to the sample.

$n = 410$

**Data Collection:** Ethical Clearance for the study was obtained from UNTH ethical committee and informed consent of the mothers were obtained before data collection. The data were generated through the use of validated structured questionnaire, which were administered with the help of trained research assistants. The questionnaire solicited information on socio-economic, breastfeeding, initiation, duration and frequency, complementary feeding, age of introduction, types and other liquid or food given to infants.

**Data Analysis:** the data collected was analyzed using statistical package for social sciences (SPSS) (Version 16) and expressed in a frequency and percentages. The results were represented in tables and charts.

#### RESULTS

Table 1 shows the demographic and socio-economic characteristic of mothers. A good number of mothers (43%) are within the age of 26 – 30 years while 2.2% were within the age range of above 40 years. Majority (92.2%) of

the mothers were married while (1.0%) were separated. More than half (51.5%) of the mothers had tertiary education, 41% had secondary education with few 1.2% with no education. Approximately (45.1%) of the mothers were civil servants, 22.7% were traders, 18.3% were housewives and students, with few 4.4% and 3.2% as Teachers and Artisans respectively. More than one third (36.8%) of the mothers earned a monthly salary of less than ₦10,000 per month, 28.5% earned ₦31, 000 and above with few 8.3% on monthly earning ranging from ₦21,000 to ₦30,000 per month. Majority 93.4% of mother were Igbo, with few 2.9%, 1.5% and 1.5% of mother from, other ethnic group, Hausa and Yoruba respectively.

Table 1: Demographic and Socio-economic Characteristics of mothers

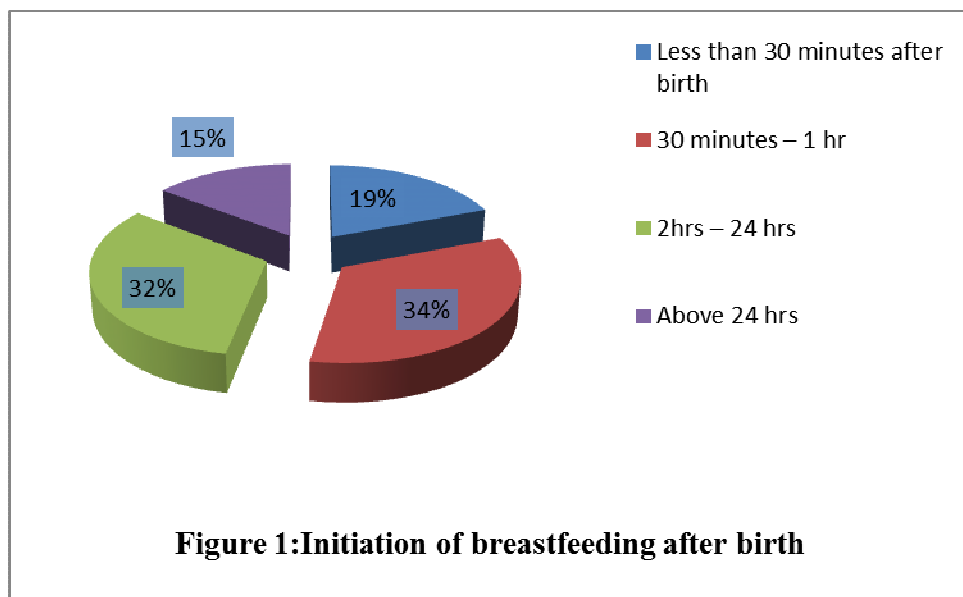
Variables	Frequency	Percentage (%)
<b>Age of Mother (yr)</b>		
20 yrs and Below	21	5.1
21 – 25	113	27.6
26 – 30	176	43.0
31 – 35	72	17.6
36 – 40	19	4.6
Above 40	9	2.2
Total	410	100.0
<b>Marital Status</b>		
Single	17	4.1
Married	381	92.9
Divorce	8	2.0
Separated	4	1.0
Total	410	100.0
<b>Education</b>		
None	5	1.2
Primary	26	6.3
Secondary	168	41.0
Tertiary	211	51.5
Total	410	100.0
<b>Occupation</b>		
Farmer	18	4.4
Trader	93	22.7
Civil Servant	193	47.1
Teacher	18	4.4
Artisan	13	3.2
Housewife/Student	75	18.3
Total	410	100.0
<b>Income</b>		
Less than ₦10,000	198	47.3
₦10,000 - ₦20,000	61	14.9
₦21,000 - ₦30,000	34	8.3
₦31,000 and above	117	28.5
Total	410	100.0
<b>Ethnic Group</b>		
Igbo	386	94.1
Hause	6	1.5
Yoruba	6	1.5
Other Ethnic group	12	2.9
Total	410	100.0

Table 2 shows infant feeding practices, majority (97.5%) (n=400) of the infants were breastfed, while few (2.5%) were not breastfed. Among the breastfed infants, 53% were put to breast (initiation breastfeeding) within one hour after birth (33.8% were put to breast within 30 minutes – 1 hour after after birth and 19.2% less than 30 minutes after birth), 32.5% were put to breast 2 to 24 hours after birth, while 14.6% were put to breast 2 days

and more after birth. Majority (65.3%) of the infants were breastfed on-demand, 22.5% were breastfed 7 to 9 times in a day, 10% were breastfed 4 – 6 times in a day while few (2.2%) breastfeeds their infants less than 4 times in a day.

Table 2: Breastfeeding, Initiation of breastfeeding and frequency of breastfeeding practice among the respondents

Variables	Frequency	Percentage (%)
<b>Breastfeeding</b>		
Yes	400	97.5
No	10	2.4
Total	410	100.0
<b>Initiation of Breastfeeding</b>		
Less than 30 minutes after birth	77	19.2
30 minutes – 1 hr	135	33.8
2hrs – 24 hrs	130	32.5
2 days and above	58	14.6
Total	400	100.0
<b>Frequency of Breastfeeding</b>		
Below 4 times	9	2.2
4 – 6 times	40	10.0
7 – 9 times	90	22.5
On-demand	261	65.3
Total	400	100.0



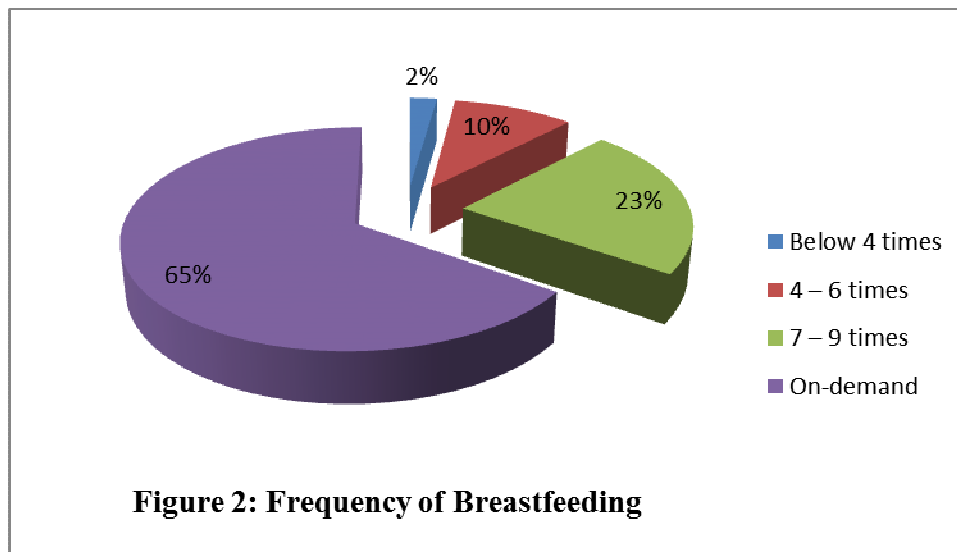


Table 3 Shows exclusive breastfeeding and duration of exclusive breastfeeding practices among 400 breastfed infants. Majority (62.2%) of the infants were exclusively breastfed while 37.8% were not breastfed exclusively, approximately one third (34.5%) of the infants were breastfed exclusively for a duration of 5 – 6 months, 18.3% were breastfed exclusively for a duration of 3 – 4 months, 8.0% were breastfed exclusively from birth to 2 months, few (1.5%) were breastfed exclusively for more than 6 months, while 37.8% indicated no action

Table 3: Exclusive Breastfeeding And Duration of Exclusive Breastfeeding Practices Among 400 Infants Breastfed.

Variables	Frequency	Percentage (%)
Practice of Exclusive Breastfeeding		
Yes	249	62.2
No	151	37.8
Total	400	100.0
Duration of Exclusive Breastfeeding		
Birth – 2 months	32	8
3 – 4 months	73	18.25
5 – 6 months	138	34.5
Above 6 months	6	1.5
No Action	151	37.75
Total	400	100

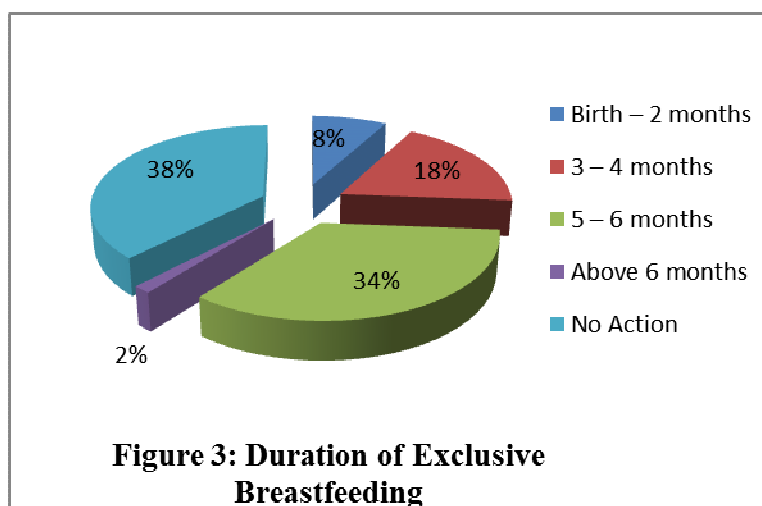
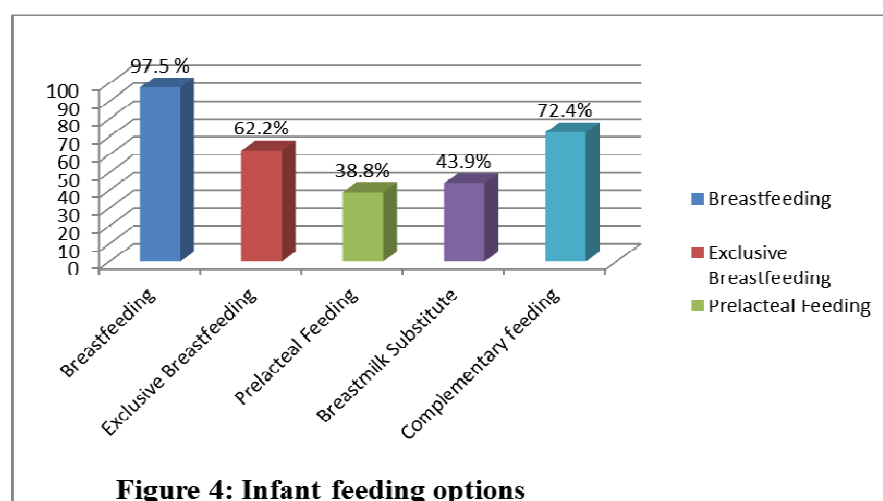


Table 4 Shows the prelacteal feeding (PF), breastmilk substitute (BMS) feeding and complementary feeding (CF) practices. More than one third 38.8% of mothers practiced prelacteal feeding on their infants, and 61.2% did not practiced prelacteal feeding. Approximately 44% of mothers fed their infants on breastmilk substitute, while 56.1% did not fed their infants on breastmilk substitute.

Most (72.4%) of the infants were fed on complementary food while 27.6% were not. Forty eight percent of mothers initiated complementary feeding to their infants at the age of 5 to 6 months, 23.3% , 18.3%, initiated Complementary feeding at the age 3 to 4 months and above 6 months respectively, while few (10.1%) initiated Complementary feeding from birth to 3 months. Seventy Percent were fed on Pap (Akamu, Ogi) as a complementary food, 15.8% were fed on commercial infant formular, 7.3% were fed on mashed solid foods or pureed food such as yam, rice, beans and fruits, while 1.9% were fed with iso meal.

Table 4: Prelacteal Feeding, Breastmilk Substitute Feeding and Complementary Feeding Practices

Variables	Frequency	Percentage (%)
<b>Prelacteal Feeding</b>		
Yes	159	38.8
No	251	61.2
Total	410	100.0
<b>Breastmilk Substitute</b>		
Yes	180	43.9
No	230	56.1
Total	410	100.0
<b>Practice of Complementary Feeding</b>		
Yes	297	72.4
No	113	27.6
Total	410	100.0
<b>Introduction of Complementary Feeding</b>		
From Birth – 3 months	30	10.1
3 – 4 months	69	23.3
5 – 6 months	143	48.3
Above 6 months	54	18.3
Total	297	100.0
<b>Complementary Foods</b>		
Pap (Akamu or Ogi)	223	75.1
Mashed Yam/Rice/Beans	22	7.3
Iso Meal	6	1.9
Commercial Infant Formular	47	15.8
Total	297	100.0



## DISCUSSIONS

The findings of the study depicted high literacy level and women empowerment, young adult mothers. Almost all the mothers in this study had basic education which is one of the most effective investments in improving economy, creating literate, self reliant and healthy societies.

From this study only a very few mothers (18.3%) were unemployed (housewives or students), while a good percentage of mothers either worked full-time in the public or private sectors, and majority of the working mothers left their children in the care of alternative caregivers. According to Armar-Klimesu *et al.*,(2000) maternal employment may not be a constraint to child care, because mothers modified their work patterns to attend to their young children's need; but could influence child's feeding. Low monthly income earned by mothers as observed in this study could account to high rate of breastfeeding and the use of local cereal-based complementary foods among the mothers in the study. Majority of mothers were within the age group 26 to 30 years (young adult) indication the peak of fertility, and at which ladies commonly marry, although mothers within the age of below 20 years depicted prevalence of adolescence pregnancy.

Breast milk meets all of an infant's nutritional requirements for the first 6 months of life and is superior to any substitute, it is a norm and one of the basic infant feeding practices since early past of this century. This accounts for the high percentage (97.5%) of breastfeeding recorded in this study. This collaborate with the report by United Nations Administrative Committee on Coordination Sub-Committee on Nutrition (ACC/SCN) (2000) Breastfeeding rates are very high in developing countries, exceeding 95% in more than half of the countries surveyed.

Initiation of breastfeeding immediately after birth, preferably within the first 30 minutes of delivery is highly desirable. In this study, slightly above half (53%) of the infants were put to breast within one hour after birth, this is higher than 48.2% reported in Anambra State (Ukegbu *et al.*,2010), and trend of late initiation of breastfeeding reported in Nigeria (Onuoha and Ene-Obong, 2005; Holdges, 2001), but similar to study reported among rural women in vietnam (Duong *et al.*,2004). Late initiation of breastfeeding deprives infants of colostrum that has anti-infective properties, and exposes them to unnecessary death. This is confirmed by a recent study in Ghana; about 22% of newborn deaths were prevented if babies started breastfeeding within one hour after birth (Edmond *et al.*, 2006). Early contact with the baby immediately after birth promotes a closer relationship between a mother and her baby and has been found to give the mother a strong sense of satisfaction (Federal office of statistics/ National Population Census, 2009). Moreover, previous studies have emphasised the risk of delayed initiation of breastfeeding on neonates in sub-Saharan Africa and showed that neonatal mortality could be significantly reduced by 16% if the mothers started breastfeeding on day one and by 22% when breastfeeding was initiated within the first hour (Nakao *et al.*,2008; Welde, 2001). For the mothers who initiated breastfeeding later than 30 minutes, the commonest reason for late initiation was the perception that colostrum was dirty and therefore harmful to the new born (69.2%). Although, breast feeding is a universal practice, there are cultural aspects that vary considerably about Colostrum which is secreted for the first 2 days. Most mothers, who cannot wait for the few days that the 'clean and safe milk' is expected, resort to expressing the milk and discarding same. These practices are often upheld and enforced by aunts, mother's in-laws and other elderly women or relatives in the family. These beliefs and practices are also reported among the Yoruba's of South western Nigeria (Edmond *et al.*,2006; Omotola and Akinyele, 1985), different parts of India (Onayande *et al.*,1996; Khan, 1990) and in Turkey (Giovannini *et al.*,1992; Ergenekon-Ozelci,*et al.*,2006). Whereas, current evidence shows that colostrum contains immunoglobulin's, lactoferrin and lysozymes which may help reduce and protect against neonatal septicaemia, diarrhoea, and acute respiratory infections, thus reducing infant mortality rates (Singh *et al.*,1997). There is a need to intensify breastfeeding education among these mothers, with emphasis on the advantages of the early initiation of breastfeeding.

high prevalence of on demand breastfeeding (63.5%) observed in this study is lower than that reported in Anambra state (92.5%) ( Ukegbu *et al.*,2010), India (73.6%) (Parehk *et al.*,2004), Owerri Urban (93.8% and 92.3%) (Anoshirike and Asinobi, 2008). Demand feeding has a positive influence on breastfeeding as it leads to earlier maximum milk production than feeding on fixed schedule does (Chiang Mai, 1989).

According to the UNICEF,(2006) only every third child living in the developing world is exclusively breastfed during first six months of life. Exclusive breastfeeding is not widely practiced. Exclusive breastfeeding rate observed in this study declined from 62.2% at birth to 34.5 % at 5 to 6 months of age. This collaborate to a previous study report were Exclusive Breastfeeding rate declined from 64.9% at birth to 37.3% at 24 weeks of age (Ukegbu *et al.*,2010). However, this rate is higher compared to previous values reported for Nigeria

(Nigerian Demographic and Health Survey (NDHS), 2003; Omotola *et al.*, 2005) and other developing countries (Foo *et al.*, 2005). The improvement in the Exclusive Breast Feeding rate could be attributed to the progressive impact of the Baby Friendly Hospital Initiative programme adopted by this country in 1992. Breast milk is the ideal food in the first early stages of life and the current recommendation is that infants should be exclusively breastfed for the first six months of life (WHO, 2003).

Prelacteal feeds are not recommended because of the resulting effect on the onset of lactation, and on perinatal morbidity and mortality (Duong *et al.*, 2004). In this study, the percentage of prelacteal feeding observed was 38.8%; feeding was mainly in the form of water, usually mixed with glucose. This is higher compared to report of the previous study carried at Nnamdi Azikiwe University Teaching Hospital, Anambra State (Nigeria) from September 2006 to June 2007 (Ukegbu *et al.*, 2010) and collaborate with reports of previous studies in Nigeria (Nwankwo and Brieger, 2002; Ighogboja *et al.*, 1996).

Breastmilk cannot be duplicated by any artificial means (Picciano, 2001). Breast milk is unique in its composition and function, Of the infants not exclusively breastfed, the majority continued breastfeeding along with formula milk or Complementary foods. It was observed that 44% of the infants were fed on breastmilk substitute, which could be as a result aggressive promotion of breast milk substitute in the country, workload of mothers, low income level, large family size, lack of support and beliefs of mother that breastmilk is insufficient to meet the requirement of their infants.

In this study, high proportion 72.4% of the infants were fed on complementary foods and 33.4% of mothers commenced complementary food before the age of 4 months. This is higher compared to study in Sokoto Nigeria which revealed that only 22.4% of the mothers commenced complementary feeding before the age of four months (early weaning) (Umar and Oche, 2013). Early initiation of complementary feeding has been reported from several studies (Giovannini *et al.*, 1992; Nakao *et al.*, 2008; Igbedioh *et al.*, 1996). Early complementary feeding in age is harmful in many ways as food and water displaces breastmilk, affects exclusive breastfeeding and if not well processed could harbour pathogenic microorganisms resulting in diarrhoea. Studies have found poor nutritional status to be significantly associated with earlier complimentary feeding and early weaning has been reported to be a cause of anaemia in the first year of life (Hizel *et al.*, 2006). Among the reasons given by mothers for practicing early weaning was insufficient breast milk. This is consistent with findings from Tehran (Buyukgebiz *et al.*, 1992). Among the Hausa women of the study area, there is a strong and widely held belief about insufficient milk and hence the need to commence complimentary feeding. In this study, 48.3% of the mothers commenced timely complementary food at 5 to 6 months and 18.3% initiated Complementary food to their infants at above 6 months. Late initiation of complementary feeding affects the nutritional status of the infant. Cereal Pap (*Akamu, Ogi or kunu*) made from corn (maize, *zea mays*), guinea corn (*sorghum*) or millet (*pennisetumtyphoides*) usually prepared by the mothers themselves or bought from markets was the most common weaning food given to the infants.

## CONCLUSION AND RECOMMENDATIONS

This study has demonstrated a sub optimal infant feeding practices in our environment, through poor breastfeeding practices in terms of early initiation of breastfeeding, six months of exclusive breastfeeding, prelacteal feeding and inadequate complementary feeding and has a significant effect on infant and young child survival, growth and development, nutritional status, morbidity and mortality and impend economic development. Hence, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond.

In view of the findings of this study, efforts must be intensified to re-educate the benefits of optimal infant feeding; such as promotion of breastfeeding, early initiation of breastfeeding within 1 hour after delivery, practice exclusive breastfeeding for the first six months, and timely introduction of complementary feeding at 6 months of age. Address the identified constraints through health and nutrition education of the broader community (church, markets, meetings and occasions) to enlist family support for breastfeeding mothers while dispelling breastfeeding myths.

Lactating mothers should be encouraged and supported by their family and also be relieved from hard labour.



Baby-Friendly Hospital Initiative (BFHI), National Immunization Programme (NIP), Breast Milk Substitute Marketing Code and other Programmes that promote optimal infant feeding Practices in Nigeria should be Re-evaluated at periodic base, and health professionals send to update training from time to time.

## REFERENCE

- ACC/SCN (2000) Highlights: 4th Report on The World Nutrition Situation: Nutrition Throughout the Life Cycle, United Nations Administrative Committee on Coordination Sub-Committee on Nutrition (ACC/SCN) Geneva.
- Aghaji M.N (2002) Exclusive breastfeeding practice and associated factors in Enugu, Nigeria. *West Afr J Med* 2002; 21: 66-69.
- Anoshirike C.O, Asinobi C.O (2008) Associations between caregivers caring behaviour and child's anthropometric status, appetite and food consumption practices in owerri Municipality: *Nig. J of Nutr. Sciences* vol 29(1) 2008 pg 96-110
- Buyukgebiz B, Cevik N, Oran O. (1992) Factors related to the duration of breastfeeding in Ankara with special reference to socio-cultural aspects. *Food and Nutrition Bulletin*. 1992;4:289-293.
- Centre for Disease Control (CDC) (2007): An epidemiologic approach for reproductive health. WHO, Geneva Switzerland.
- Chiang M (1989) Lactation project. Breastfeeding practices in the developing world. *Int J Gynaecol Obstet* 1989;30(Suppl 1):129-32.
- Department of Census and Statistics in collaboration with Ministry of Healthcare and Nutrition (2008): Sri Lanka Demographic and Health Survey 2006/7. Sri Lanka: Department of Census and Statistics; 2008.
- Dhammika B.L.K, Gunawardena N.S (2012) Knowledge, practices and concerns regarding Exclusive breastfeeding for six months among mothers in a suburban setting in Sri Lanka. *Sri Lanka J Child Health* 2012, 41(1):9-14.
- Duong D.V, Binns C.W, Lee A.U (2004) Breastfeeding initiation and exclusive breastfeeding in rural Vietnam. *Public Health Nutr* 2004;7(6):795-9.
- Edmond K.M, Zandoh C, Quigley M.A, Amenga-Etogo S, Owusu-Agyei S, Kirkwood B.R (2006) Delayed breastfeeding initiation increases risk of neonatal mortality. *Pediatrics*. 2006;117:e380-6.
- Engle, P.L., Lhotska, L. and Armstrong, H. (1997) *The care initiative: assessment, analysis and action to improve care for nutrition*. Nutrition Section, UNICEF: New York.
- Ergenekon-Ozelci P, Elmaci N, Ertem M, Saka G.(2006) Breastfeeding beliefs and practices among migrant mothers in slums of Diyarbakir, Turkey 2001. *European Journal of Public Health*. 2006;16:143-148.
- Federal office of statistics/ National Population Census (2009) Nigerian Demographic and Health 2008 Survey, 2009, Columbia MD, USA: IRD Micro International Inc. Accessed 15 April 2012. Available: [http://pdf.usaid.gov/pdf\\_docs/PNADQ923.pdf](http://pdf.usaid.gov/pdf_docs/PNADQ923.pdf)
- Foo L.L, Quek S.J.S, NG S.A, Lim M.T, Duerenberg-Yap M (2005) Breastfeeding prevalence and practices among Singaporean Chinese, Malay, and Indian mothers. *Health Prom Internat* 2005;20(3):229-37.
- Giovannini M, Banderali G, Agostoni C, Silano M, Radaelli G, Riva E. (1992) Epidemiology of breastfeeding in Italy. *Acta Paediatrica Scandinavica*. 1992;88:19-22.
- Hizel S, Ceyhun G, Tanzer F, Sanli C. (2006) Traditional beliefs as forgotten influencing factors on breastfeeding performance in Turkey. *Saudi Medical Journal*. 2006;27(4):511-518.
- Holdges A (ed.) (2001) Children's and women's rights in Nigeria: a wake-up call. Situation assessment and analysis. NPC/UNICEF Nigeria, 2001.
- Igbedioh S.O, Ogbeni A.O, Adole G.M (1996) Infant weaning practices of some Tiv women resident in Makurdi, Nigeria. *Nutr Health*. 1996;11(1):13-28.
- Ighogboja I.S, Odumodu C.U, Olarewaju R.S (1996) Breastfeeding pattern in Jos, Nigeria, before Baby Friendly Hospital Initiative. *J Trop Pediatr* 1996;42:178-9.
- Khan M.E.(1990) Breast-feeding and weaning practices in India. *Asia-Pacific Population Journal*. 1990;5(1):71-88.
- Madukwe E.U. and Edeh, R.I (2012) Evaluation of infant feeding practices of mothers in Nusukka Local Government Area, Enugu State. *Journal of Home Economics Research*. Vol.16 2012.
- Nakao Y, Moji K, Honda S, Oishi K. (2008) Initiation of breastfeeding within 120 minutes after birth is associated with breastfeeding at four months among Japanese women: A self-administered questionnaire survey. *International Breast feeding Journal*. 2008;3:1.
- Nigerian Demographic and Health Survey (NDHS) (2003). National Population Commission, ORC Macro, Calverton, Maryland, USA 2003;151-4.

- Nigeria Demographic and Health Survey (1999) Federal Office of Statistics, Lagos and IRD/ Macro International Inc., Columbia, Maryland, USA, 1999: 34-37.
- Nwankwo B.O, Brieger W.R (2002) Exclusive breastfeeding is undermined by use of other liquids in rural south western Nigeria. *J Trop Pediatr* 2002;48:109–11.
- Omotola B.D, Akinyele I.O.(1985) Infant feeding practices of urban low income group in Ibadan. *Nutr. Rep. Int.* 1985;31:837–48.
- Omotola B.D, Grange A.O, Adedoyin J.A, Brai B.I.C, Omotola E.B, Njepuome N. (2005) Breastfeeding practice in the first six months of life in Epe Local Government Area of Lagos State. *Nig J Nutr Sci* 2005;26(2):16–22.
- Onayande A.A, Davies-Adetugbo A, Torimiro S.Z.A, Abejide O.R, Adejuyigbe E.A, Okonofua, F.E, (1996) Breastfeeding: Knowledge, attitude and practices of Nursing mothers in Ife Central LGA, Osun State, Nigeria. *Nigerian Med J.* 1996;30(3):105-110.
- Onuoha N, Ene-Obong H.N.(2005) Exclusive breastfeeding: mother’s experience, attitude and effect on child’s health in Nsukka Urban, Nigeria. *Nig J Nutr Sci* 2005;26(1):34–42.
- Orumabo R.S, Mbuagbaw L.T(1985) Attitudes of mothers admitted to a maternity ward in Port Harcourt to breastfeeding. *Nig J Paediatr* 1985;13(3):81–5.
- PAHO/WHO (2003) Guiding Principles for Complementary Feeding of the Breastfed Child; PAHO/WHO Division of Health Promotion and Protection/Food and Nutrition Program, Washington, DC, USA, 2003. Full text in English: [http://www.who.int/child-adolescent-health/New\\_Publications/NUTRITION/guiding\\_principles.pdf](http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/guiding_principles.pdf)
- Parehk C, Bavdekar S.B, Shaharao V (2004) Study of infant feeding practices: factors associated with faulty feeding. *J Trop Pediatr* 2004;50(5):306–8.
- Picciano M.F (2001) Nutrient composition of human milk. *Pediatr Clin North Am* 2001; 48: 53–67.
- Singh M.B, Haldiya K.R, Lakshminarayan J.(1997) Infant feeding and weaning practices in some semi-arid rural area of Rajasthan; *Journal – Indian – Med – Assoc.* 1997;95(11); 576–578.
- Ukegbu A.U, Ebenebe E.U, Ukegbu P.O (2010) Breastfeeding pattern, anthropometry and health status of infants attending child welfare clinics of a teaching hospital in Nigeria. *S Afr J Clin Nutr* 2010;23(4):191-196
- Umar A. S. and Oche M. O. (2013) Breastfeeding and Weaning Practices in an Urban Slum, North Western Nigeria. *International Journal of TROPICAL DISEASE & Health* 3(2): 114-125, 2013
- UNICEF (2006) Progress for children, report card on nutrition: number 4. 2006, [http://www.unicef.org/progressforchildren/2006n4/index\\_breastfeeding.html](http://www.unicef.org/progressforchildren/2006n4/index_breastfeeding.html).
- Welde Gebriel A. (2001) Determinants of weaning practices. *Ethiopian J Health Dev.* 2001;14(2):183-189.
- World Health Organization (1991) *Indicators for Accessing Breastfeeding Practices.* WHO/CDD/SER/91.1. Geneva: World Health Organization, 1991.