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INFANT FEEDING PRACTICES AMONG MOTHERS DELIVERED AT THE JOS UNIVERSITY TEACHING HOSPITAL INTENDING TO BREASTFEED EXCLUSIVELY FOR SIX MONTHS

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ABSTRACT

Objective: The practicability of excusive breastfeeding (EBFing) for 6 months by mothers, especially the employed ones, in this country has been a big question to answer considering the short duration of their maternity leave of 3 months around their delivery. Using WHO recommendation as a point of reference, the present study assessed the infant feeding practices of mothers delivered at Jos University Teaching Hospital, (JUTH). Emphasis was moved on the employed ones.

Method: Infant feeding practices was studied prospectively among 461 mothers who delivered in JUTH and who initially intended to breastfeed exclusively for 6 months.

Result: Four hundred and twenty two (91.5%) of the recruited mothers continued EBFing practice for 6 months, while 25 (5.4%) dropped out from the practice before 6 months. Formular feed was introduced by 5(1.1%), water by 13(2.8%), while 7(1.5%) babies were started on solid and semi-solid feeds before 6 months. Seventy six of the eight-two (92.7%) employed mothers continued EBFing practice for up to 6 months. Government employed counterpart (96.6%vs 64.0%), so also was primigravidae more than the grand-multigravidae (97.4% vs 80.0%). EBFing was also practiced most by house wives (98.1%) and petty traders (93.9%), and least practiced by business women and students mothers (67.9%) and (51.9%). No significant difference was observed in EBFing practice among mothers from different socio-economic background (92.9%,95.4% and 94.4%) for upper, middle and lower socio-economic class (SEC), and between male and female infants (50.4% Vs 49.6%), $P > 0.05$.

Key words: Exclusive Breastfeeding, Employed Mothers, Maternity Leave, Infant Feeding Practices
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INTRODUCTION

Infant feeding influences child survival and development, and when inappropriate constitute a major casual factor of malnutrition [1]. Breastfeeding is believed to be significant predictor of infant mortality during the first 6 months of life [1]. The health benefits of breastfeeding have been documented for long [2-4]. In fact, the UNICEF workshop held in New York in 1988 on prevention and treatment necessity for diarrhea appropriately chose the them "Breastfeeding, Passport to life" [5], and the International Baby Food Action Network (IBAFAN) of May 1993 referred to breast milk as the "Cinderella substance of the decade"[6].

Traditionally, breastfeeding is the generally accepted practice in Nigeria, where 98% of mothers breastfeed their babies [1,7]. In spite of this high rate of breastfeeding in the country, literature evidence shows sub-optimal feeding practices like widespread predominant breastfeeding (80%), postponed timely first sucking (78%), low rate of EBFing (2%), wrong timing of complementary feeding (23%), widespread resort to bottle feeding, and use of infant formula (38.7%), [1,7]. Theses practices reduce the intensity, area coverage, and duration of breastfeeding. As defined by WHO, an infant predominantly breastfed (PB) receives breast milk and additional water or water-based drinks, drops and syrups of vitamins and ritual fluids in limited quantities [1]. EBFing implies feeding infants only on breast milk to the exclusion of other feeds and drinks including water up to the age of 6 months [8].Complementary feeding (CF) practices refers to feeding an infant on breast milk and solid or semi-solid deeds; an infant who receives infant formulae with or without breast milk is said to be artificially fed (AF) [1,7]. Today, EBFing is advocated world wide as the best method of infant feeding

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following the Innocent Declaration on Supporting, Promoting and Protection of Breastfeeding[8]. However, owing to the increasing economic roles of women, many mothers recognize that their income generating activities do not permit them to breast feed infants at all times. [1,7,9] In Nigeria, it appears to some mothers especially the employed class that EBFing is not practicable especially from the point of view of short maternity leave of (3 months) given to them around their delivery, their low nutritional profile, assume poor milk output, and the tropical nature of our environment. [7]

Using the WHO recommendation as a point of reference, the present study assessed the infant practices of mothers of infants delivered at JUTH, a Baby Friendly Hospital. A baby friendly Hospital is a hospital that practices the ten steps to successful breastfeeding e.g. encouraging EBFing up to 6 months, no use of feeding bottle and infant formular, putting baby to breast within 3 minutes of delivery[8], etc.

SUBJECT AND METHODS

In order to obtain result within 95% confidence interval, a minimum sample size of 337 was estimated. Allowance was made for an attrition rate of 40% hence a projected sample size of 461 was utilized using Kish and Leslie surveying sampling method [10], in which the sample size, Ss is defined as:

$Ss = n/[1+(n/population)]$

Where, $n = z*z[p(1-p)]/D*D$

P is the true population of factor in the study population. 98% being the breastfeeding rate for the country was utilized.

D represents the maximum differences between sample mean and population mean.

Z is the area under the normal curve corresponding to the significance level.

Five hundred and seven (507) mothers who met the following criteria were recruited in the hospital Antenatal Clinic (ANC).

- Aged between 15-45 years.
- Delivered not more than 8 children
- Normal, term and uncomplicated pregnancy.
- Showed willingness to practice EBFing up to 6 months.
- Having no chronic disease requiring continuous drug therapy.
- Should have antibody to retrovirus (by the ELIZA screening test)
- Should have attended ANC in JUTH, and planned to deliver in the same hospital.

Must be living within Jos metropolis for easy follow up. Eligible mothers whose babies finally met the following criteria were recruited after delivery.

Full-term (37-42weeks) and appropriate for gestational age (2.5-3.9kg). Maturity assessment was by using mothers last menstrual periods and by Dubowitz and Dubowitz [11].

- Not asphyxiated at birth (Apgar score> 8 at 15 minutes).
- Healthy, normal babies with no congenital abnormality, which may interfere with growth and breastfeeding e.g. congenital heart disease, cleft clip/palate etc.
- No risk factor for sepsis or blood group incompatibility.

The authors obtained approval from the ethical committee of the hospital, and signed consents were obtained from the mothers after adequate explanation of the implications and objectives of the study. JUTH is one of the tertiary hospital to be designated a Baby Friendly Hospital in this country. As a Baby Friendly Hospital, all the ten steps to successful breasfeeding include, encouraging feeding on demand with breast milk only for 6 months, practice of rooming and bedding in after delivery, encouraging no use of feeding bottles, etc. As a baby friendly hospital, other forms of infant feeding practices were practically non-existent within the hospital delivery and postnatal wards.

Mothers were educated on the significance of EBFing, dangers of artificial and bottle feeding, as well as dangers of early complementation and addition of water and other fluids to the infants' feeds before the age of 6 months. They were equally taught how to complete the breastfeeding chart, and were followed up for their infant feeding practices at the Hospital Breastfeeding and Growth Monitoring Clinic for 6 months. At follow up visits, inquiries on infant feeding practices were made, and breastfeeding charts reviewed and recorded. Follow-up was initially on a weekly basis until the babies were one month old, subsequent follow-up was on a fortnightly basis until two months after delivery. Mothers who did not turn up to the hospital for the follow-up exercise were visited at home to obtain information on their infant feeding practices. Members of Breastfeeding support Group of the hospital living close to the mothers were empowered to visit them on a regular basis at their homes for support on EBFing. After maternity leave, employed mothers practicing EBFing were advised and educated on how to express their breast milk for their infant's feeding while at work, or to carry their babies to their places of work if their employers permitted them. Other EBFing mothers who had to leave home for various purposes were equally advised to either carry their babies with them or practice milk expression. The non EBFing (mothers) studied were those mothers who initially intended to breastfed exclusively for 6 months, but later willingly opted for other forms of infant feeding practices.

Olusanya's two-factor index (husband's occupation and maternal level of education) was used to group the subjects according to their socio-economic status (SES)[12]. For husband's occupation, 3 points score was given to unskilled workers, 2 points each for middle level bureaucrats, skilled artisans, well to do traders and 1 point score to top civil servants, politicians and businessmen. For maternal level of education, 0 point was assigned to those who had university education, 1 point for those who completed secondary or post secondary school and 2 points for those who completed only primary education or received no education at all. The scores were summed up and total score was used to determine SES as follows. 1 &II (Upper SES), III (Middle SES) and IV and V or (low SES)[12]. The data was analysed using SPSS programme version 3.

RESULTS

Four hundred and sixty-one (66%) out of 710 of the mothers who delivered during the study period were recruited, 356 (77.2%) had normal vertex delivery, 2(0.45) was by forceps, while 103 (22.3%) were delivered by Caesarean Section. Five (5) of the recruited mothers had twin deliveries, four of whom defaulted from EBFing practice. The mean age of 461 recruited mothers was 27±5.0 years with a range of 15-40, and their number of deliveries also ranges from 1 to 8 with a mean of 3 ±1.0 EBFing was practiced most by house wives (98.1%) and least by student mothers (51.9%). Employed mothers practice EBFing in 92.7% of cases, while only 7.3% mentioned work as a reason for early supplementation before 6 months. Government employed mothers counterpart 15/23 (64%), $\times^2$ =0.0018. Finance officers were also observed to be the greatest defaulters in EBFing in both government (14.5%) and private establishments (100%). Other use of feeding bottles in 56% of the non-EBFing mothers. This practice was predominately among business and student mothers in 10.7% and 22.2% of cases respectively. By the third month after delivery, 97.4% of employed mothers have resume work while by the sixth months, all the mothers (100%) have started work. 69.7% of EBFing mothers who resume work after delivery carry their babies to their working places, while 30.2% practice manual milk expression for feeding of their infants while away from work (TableIV)

There was a significant difference in the practice of EBFing between primigravidae (97.7%) and grand-multigravidae (86.5%) P<0.05.It also appears that the practice was more acceptable to those mothers with fewer number of children (= 3), than those with greater number (= 5). Even though the male infants appeared to be more EBFed (50.4%) than their female counterpart (49.6%), no significant difference was noted in the practice, P > 0.05, and no difference was also observed in EBFing practice of mothers from different SES, 92.9%, for lower, 95.5% for middle and 92.9% for upper SES, P value was also > 0.05.

Table 1: **Mother's Occupation**

Types of Occupation	No of Mothers (% of Total)
House-wives (HW)	209 (45.3)
Petty-trader (PT)	115 (24.9)
Employed mothers (EM)	82 (17.8)
Business Mothers (BM)	28(6.1)
Student Mothers (SM)	27 (5.9)
Total	**461 (100)**

Table II: **Background Information of Recruited Babies**

Details of Recruited babies	Total	Male	Female
No of babies	466	233	233
Length of gestation (week 0	*39.4 ± 2.0	* 40.2 ±1.0	*38.5 ±1.0
Time when first suckled for N/D (mins)	*4.1 ± 1.5	*4.2 ± 0.5	*3.9 ± 1.0
Time when first suckled for C/S (mins)	*60.6 ± 7.0	*60.9 ± 2.5	*60.3 ± 4.5
No of time b/f on the first day	*13.3 ± 1.3	*13.4 ± 0.9	*13.2 ±1.6
No of time b/f daily at the age of 3 months	*11.4 ± 0.7	*12.1±0.4	*10.7 ±0.9
No of time b/f daily at the age of 6 months	*10.2 ± 0.4	*10.6 ± 0.2	*9.8 ±0.2

Values are means ± SD
N/D normal delivery
C/S- Caesarian section
b/f- breast fed

Table III: **Mothers Occupation and Infant Feeding Practices**

Mothers Occupation	No (% of) Total)	EBFing (%)	PB (%)	AF (%)	CP (%)	BF (%)
House wives	209(45.3)	205(98.1)	3(1.4)	0(0)	1(0.5)	0(0)
Petty Traders	115(24.9)	108(93.9)	2(1.7)	0(0)	1(0.9)	1(0.9)
Private and Govt. Employed Mothers	82 (17.8)	76(92.7)	1(1.2)	2(2.4)	3(3.7)	4(4.9)
Business Mothers	28 (6.1)	19 (67.9)	3(10.7)	1(3.6)	2(7.2)	3(10.7)
Students Mothers	27(5.9)	14(11.1)	4(11.1)	2(7.4)	2(7.4)	6(22.2)

PB Predominant breastfeeding; AF Artificial feeding; CP Complimentary feeding; EBFing-Exclusive breastfeeding; BF- Bottle feeding.

Table IV: **Different Categories of Government/Private Employed Mothers and Their Breastfeeding Practices**

Categories of Employed	No of Employed Mothers	No of Govt Employed	EBFing (%)	Non-EBFing EBFing Employed	No of Private Employed	EBFing (%)	Non EBFin (%)
Health Workers	11	9	9(100)	0(0)	2	7(5)	1(50)
Teaching Staff	23	17	17(100)	0(0)	6	6(100)	0(0)
Admin Staff	10	9	9(100)	0(0)	1	0(0)	1(100)
Supporting Staff	16	13	13(100)	0(0)	3	3(100)	0(0)
Finance Officers	1	48	6(85.7)	2(14.5)	6	0(0)	6(100)
Catering Staff	3	1	1(100)	0(0)	2	2(100)	0(0)
Others	5	2	2(100)	0(0)	3	3(100)	0(0)
Total	**82**	**59**	**57(96.6)**	**2(3.4)**	**23**	**15(64.0)**	**8(36.0)**

EBFing for Government Vs Private Employed P =0.0018

Table V: **Method of exclusive Breastfeeding Practice of Employed Mothers on Maternity Leave**

Months After delivery	No of Employed Mothers	No of mothers RW(5)	No of mothers carrying their babies to work(% of Those SW)	Mothers pracitisin manual expressio (% of those RW)
1.0	82	--	--	---
1.5	82	11(63.6)	7(63.6)	4(36.4)
2.0	82	32(39.0)	21(65.6)	11(34.4)
2.5	79	56(97.0)	37(66.1)	19(40.0)
3.0	76	75(97.4)	50(67.6)	25(30.6)
3.5	76	76(100)	51(67.1)	25(32.8)
4.0	76	76(100)	51(67.1)	25(32.8)
4.5	76	76(100)	53(69.7)	23(30.2)
5.0	76	76(100)	53(69.7)	23(30.2)
5.5	76	76(100)	53(69.7)	23(30.2)
6.0	76	76(100)	53(69.7)	23(30.2)

RW = resuming work
P=0.01

DISCUSSION

The present study showed high level of EBFing practice among mothers delivered in JUTH. Other forms of infant feeding practices were uncommon except for the use of feeding bottle. EBFing practices among mothers delivered at JUTH was judged satisfactory considering that the National coverage as reported by the NDHS prior to introduction of baby Friendly Hospital Initiative (BFHI) in the country was not encouraging (2%). The high level of EBFing practice by the majority of the mothers can be explained by the motivation they received through counseling and support provided during the period and more so during early days of location.The study also showed that employed mothers can practice EBFing for 6 months as recommended by WHO even though they had only 3 months maternity leave around their delivery. Only 7.3% mentioned work as a reason for early introduction of other feeds and drinks before the 6 months period of EBFing. This finding conforms with the observation earlier made by Van Estrik,[13] and O'Gara[14]. These workers indicated that minority of women in their study mentioned work as reason for early supplementation. It was also noted that 69.1% of the employed mothers practicing EBFing in the present study took their infants with them to their work places to enable them continue the practice of EBFing after resuming work, while 31.9% practice manual milk expression. This situation was also reported by van Esterik et al[13],and O'Gara[14]. According to them many of their study mothers were allowed to bring their infants to their work places or they practiced "reverse rhythm" methods of breastfeeding, a term describing breastfeeding during the night and manual milk expression in the day time while away from home. Our findings can be explained by the level of awareness and mobilization efforts that have been created for breastfeeding in the hospital and local environment. Also, the observation made where Government employed mothers significantly practice EBFing more than their private employed counterparts may have resulted from more support in terms of allowing mothers to bring infants to their work place by government establishment.

In the present study, only 1.2% of EBFing mothers had breast problems.(data not shown) It may be argued that the small number of the mothers observed to have breast problems in the course of EBFing in the study might be as a result of intervention aimed at providing information on breastfeeding management to the pregnant and lactating mothers during their ANC and postnatal visits. Helen Armstrong [15] in her Training Guide on Lactation Management mentioned lack of knowledge on breastfeeding management and infrequent breastfeeding as the key factors responsible for breast problems encountered by breastfeeding mothers.

As showed by the findings of this study, mothers were not biased by the sex of their infants in their choice of sustaining EBFing for the first 6 months. This result however differs from report by Juez et al [16] who noted in their Chilean study that more males were EBFed than the female. The difference might be a reflection in their Chilean societal perception to gender role.

No significant difference was noticed in the practice of EBFing between mothers from different SES, probably as result of information and support provided study. The observation that the primiparous mothers significantly practiced EBFing more than their multiparous counterparts was considered interesting as literature evidence indicates that the number of previous lactation experience influence future breastfeeding practices 19.It is possible that the previous experience of the multiparous mothers rendered them less receptive to their interventive message of EBFing. The situation observed in JUTH suggested that the interventive measure implemented prepared the primiparous mothers and strengthened their lack of breastfeeding experience. This observation underscores the need for counseling sessions to be organized and provided for the pregnant and nursing mothers as feasible on a regular basis during ANC, and early post-natal period.

CONCLUSION

It was concluded that:

1. EBFing practice was high among mothers delivered at JUTH, other forms of infant feeding practices being rare.
2. Employed mothers can practice EBFing up to 6 months when given aqeuate support. Such support should be planned and extended to student and business mothers as well as some privately employed and multiparous women.

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