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BARRIERS TO TIMELY INITIATION OF BREASTFEEDING AMONG MOTHERS OF HEALTHY FULL-TERM BABIES WHO DELIVER AT THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL

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SUMMARY

Objectives: (1) To determine the barriers to timely initiation of breastfeeding in mothers who Hospital. (2). To determine if there is any statistical association between the time of initiation of breastfeeding and certain socio-demographic, obstetric, psychosocial and environmental factors in the mother-baby pairs.

Methodological: A prospective, hospital- based study of 500 consecutive health mother- infant pairs delivered at UPTH (both vaginally and by Caesarian section). Information was obtained using a structured questionnaire, medical record review and direct observation. Early initiation, i.e. mothers who initiated breastfeeding within 30 minutes of delivery (in the case of the vaginally delivered (VD) mothers) or within 30 minutes of recovery of post- operative consciousness (in the case of those delivered by Caesarian section) were compared with those who initiated breastfeeding after 30 minutes (Late initiator) in the VD and C/S groups. The association between time of breastfeeding initiation and factors under consideration were determine using the x^2 test.

Results: Approximately 34% of the VD mother initiated breastfeeding early while no mother with Caesarean section had early initiation of breastfeeding. The mean time of breastfeeding initiation was 3. 35± 2. 6 hours in mother who had vaginal delivery, 6. 50± 3. 4 hours and 5. 9± 1.9 hours in those who had Caesarean section with general or spinal anaesthesia respectively. Among those with vaginal delivery, mothers younger than 25 years and of high socio-economic class were found to practice early breastfeeding initiation. Delay in the time of repair of episiotomy and labour duration less than 12 hours were associated with early breastfeeding initiation. Early contact between baby and mother, help received on the delivery table and the presence of more than one delivery assistant also positively influenced breastfeeding initiation. Similarly, the presence of a breastfeeding- trained delivery assistant enhanced the mother' practice of early initiation of breastfeeding. Observation of routine labour ward practices such as cleaning of the newborn and weight/ length measurement had negative impact on the practice of early initiation of breastfeeding. Early contact between the mother and her newborn on the delivery table with assistance to initate breastfeeding was the most important predictor of early breastfeeding initiation. Parity, attendance at the antenatal clinic, receipt of breastfeeding information and use of analgesics during labour did not show any statistical association with time of initiation of breastfeeding.

Conclusion/ Recommendation: There was a low prevalence of early initiation of breastfeeding in mothers delivered at the University of Port Harcourt Teaching Hospital. This low prevalence was due to delay in helping the newly delivered mother, especially those with Caesarean delivery. Routine labour ward practices interfere with the time of breastfeeding initiation. Routine labour ward and delivery table, specific assignment to the staff in the delivery/ labour rooms help newly delivered mothers initiate breastfeeding early, and empowering the to request for babies are recommended.

Key words: Breastfeeding, Initiation, Barriers

INTRODUCTION:

Early initiation of breastfeeding within thirty minutes of delivery is one of the steps initiated by the WHO/ UNICEF's Baby friendly Hospital Initiative (BFHI) to achieve a successful breastfeeding of the newborn baby[1] Experimental studies have shown that babies who are left with their mothers start breastfeeding within the first half hour after delivery [2-4] it has been infant- maternal bonding [2,5,6] prolongs the breastfeeding periods [7-10] establishes early lactation [11] and prevents post- partum haemorrhage [12, 13] Other advantages shown include significantly higher core temperatures and less temperature instability [14, 15] higher glucose levels at 90 minutes [15] and marked reduction in the rate of diarrhea throughout the first six months of life [16] It has also been found that when the infant suckles from the breast, there is an outpouring of 19 different gastrointestinal hormones in both the mother and the infant, including cholecystokinin and gastrin,

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which stimulate growth of the baby's and mother's intestinal villi, increasing the surface area and absorption of calories with each feeding. [17, 18] The advantage of breastfeeding for the infant and mother are enhanced if breastfeeding starts earlier and last longer. Several studies, however, show that only a small percentage of the babies initiate breastfeeding within the recommended time of thirty minutes after delivery. [19, 20] It many traditional societies where the prevalence of exclusive breastfeeding remains low, the initiation of breastfeeding is usually delayed and this is more so in the developing world.[19] It has been shown that the timing of certain hospital routines such as gastric lavage and routine measurements in all newborns, sedatives and analgesic drugs given during labour, socio- cultural factors and a number of other factors can affect this early mother-infant interaction.[4,21-24] Reports from the population Reference Bureau on breastfeeding patterns in the developing world between 1990 and 1998 showed 33% of Nigerian mothers initiate breastfeeding within one hour of birth and % practice exclusive breastfeeding up to 6 months of age.[20] There are no published reports on this subject in Port Harcourt to the authors' knowledge. With the designation of the University of Port Harcourt Teaching Hospital (UPTH) as Baby-Friendly, It is expected that an impact would be made on the breastfeeding practices in the State. However, anecdotal evidence shows a faulty pattern in time of initiation of breastfeeding among newly delivered mothers in this Hospital. There has been no study done to determine those factors that may pose as impediments timely initiation of breastfeeding to the best of the investigators' knowledge. Knowledge of these factors is essential in planning intervention aimed at improving the time of initiation of breastfeeding.

This study seeks to explore those factors that influence early breastfeeding initiation and make recommendations on how to remove those barriers to timely initiation of breastfeeding

METHODOLOGY

The study was carried out over a 9-month period (February 1ST –October 31st 2001), in the delivery rooms and postnatal wards of the University of Port Harcourt Teaching Hospital (UPTH), which is the only tertiary institution located in the metropolis of Port Harcourt, Nigeria. Mothers with vaginal delivery or Caesarean section and their singleton, full-term newborn babies who were in stable clinical State during the immediate post –Partum period were recruited consecutively into the study until a total of 500 mother- baby pairs was reached. The minimum sample size was determined using the one sample situation for estimating population proportion with the specific absolute precision of 5 percent. Those mothers whose babies were low birth weight, had oral anatomical abnormalities, required intensive care after delivery, or mothers who required intensive care or had other contraindications to breastfeeding were excluded. A standardized questionnaire with its contents adapted to meet the hospital self-appraisal tool for the WHO/UNICEF BEHI was administered to the eligible mothers within 24 hours of delivery by one of the investigator and four trained house officers taking rotations in obstetrics department. The following information were retrieved: age of mother, ethnicity, parity, socio-economic status (based on mother's level of education and father's occupation according to the method described by Olusanya et al.[25]), place of antenatal care/booking status, attendance at the antennal classes and breastfeeding information. Information on the time/mode of delivery, Apgar score of the babies, time of the first contact between mother and baby pairs, time and place of initiation of breastfeeding, help received to initiate breastfeeding, routine labour ward procedures and episiotomy repair were obtained by direct observation of the mother-baby pairs and from hospital records by one of the investigators and four trained assistants. The assistant s were House Officers on rotation in obstetrics and were not involved in such routine practices in the labour ward as cleaning of baby, taking measurements and putting child to mother's breast.

Information was obtained from the hospital records on the same on the same mother- baby Paris of the sex, birth weight and gestational age of the babies, duration of labour, time of recovery from the effects of anesthesia (in the mothers who were delivery by C/ S) and drugs received during labour and delivery. Information on the breastfeeding- education training status of the attending labour ward nurse was obtained from the training records of the hospital. The health care staff in the delivery units/ postnatal wards involved in the routine care of mother and child including putting the baby to breast were blind to the objective s of the study.

Ethical considerations: Approval for the study was obtained from the Ethical Committee of UPTH. The hospital and department heads also authorized the study. The informed consent of each mother was also obtained.

Data analysis: The Statistical Package for Social Sciences (SPSS) software version 7.5 was used for statistical analysis. Mother- baby pairs were divided into two groups viz: those who initiated breastfeeding within the first 30 minutes of delivery in case of the VD mothers or within 30 minutes of recovery of consciousness post- operatively, in the case of the C/S mother. These were Early Initiators. The second group consisted of those who initiated breastfeeding after 30 minutes of delivery or after 30 minutes of recovery of consciousness post- operatively in the case of the C/S mothers, (Late initiators). A mother was regarded as having fully recovered consciousness after surgery when she is fully awake and has scored≥ 9 using the Modified

Aldrete Scoring System for determining when patients are ready for discharge from the postanaestheisa care unit (PACU) [26]. Chi- square test was used to test the statistical association between the time of initiation of breastfeeding and the factor under consideration, with Yate's correction were applicable. The level of statistical significance was set at $p< 0.05$. In addition, multiple logistic regression analysis was carried out to identify the significant factors that are predictive of the time of breastfeeding initiation using ANOVA procedure.

RESULTS

Over 9- month study period there were 1203 delivers; 1179 of them were singletons and 24 were multiple deliveries., Out of this number, 500 (41. 6%0 mother- baby pairs were used for the study. Thirty six (2.9%) mother who had pregnancy related complications and 336 (27.9%) mothers whose babies failed to meet the inclusion criteria were excluded (181 of these babies were admitted into the special baby care unit for asphyxia, meconium aspiration and risk for sepsis, 150 were low birth weight babies and 5 had congenital malformations). Three hundred and seven (25.5%) mother- baby pair were not recruited for the study because they were delivery while nurses were strike i.e. midway through the study. Of the 500 babies in the study, 244 (48. 8%) were boys and 256 (51.2%) were girls, giving a male: female ratio of 1:1.1 The mean gestational age was 38.8± 1.60 weeks, with a range of 38 to 42 weeks. The mean birth weight was 3.34 ± 0.44 kg, with a range of 2. 5kg- 4. 5kg. Two hundred and fifty (50%) of the babies were born by spontaneous vertex delivery (SVD), 12(2.4%) by assisted vaginal delivery (AVD), and 238 (47. 6%) by Caesarean section (c/S). All the newborns had an Apgar score of 7 or greater at 1 minute. Table 1 shows the characteristics of mothers in the study population. Of the 262 mothers who had vaginal delivery (VD), 88 (33.6 %) commenced breastfeeding within thirty minutes of delivery and were classified as having practiced early initiation of breastfeeding. The mean time of breastfeeding initiation in these VD mothers 3.35 ± 2.6 hours. None of the 238 mother had Caesarean section (CS) commenced breastfeeding within thirty minutes of being conscious post- operatively. One hundred and seventy eight of the CS mothers had general anesthesia while 60 had anesthesia. With general anaestheia the mean time of breastfeeding initiation was 6.5 ± 3.4 hours, which was the time baby first suckled at the breast after the mother regained consciousness. With spinal anasethesia the mean time of breastfeeding initiation was 5.9 ± 1.9 hours. Thus, there was a statistically significant difference between the mode of delivery and the time of initiation of breastfeeding, (p, 0. 00000001).

Among the mothers with VD, the relationship between various material factors and time of initiation of breastfeeding are practiced in Table II and III. Early initiation of breastfeeding was practiced by younger mothers, 25 years and those of high socio- economic status than their older and poorer counterparts respectively, ($p< 0. 0000001$ and $p < o. 0433572$ respectively). Parity did not influence the time of breastfeeding initiation, ($p < 0.08822171$). Early breastfeeding was not significantly associated with the place of antenatal care ($p< 0.185573$) nor receipt of breastfeeding information ($p < 0.0963621$). More mother whose labour last less than 12 hours initiated breastfeeding early compared with those in whom it lasted longer than 12 hours in the VD group ($p <0. 0172045$). Although in these same group of mothers the time of breastfeeding initiation was not significantly influenced by whether or not the mother received episiotomy, ($p > 0.317180$), among those who had episiotomy, early repair of the episiotomy (i.e. within thirty minutes of delivery) was associated with late initiation of breastfeeding, ($p< 0.0000001$).Early contact between mother and her baby within thirty minutes of delivery on the delivery table was associated with early initiation of breastfeeding. All the CS mothers had late contact with their babies. Assistance in the initiation of breastfeeding training nurse during delivery and numbers of delivery assistants on duty in the labour ward are significantly associated with time of breastfeeding initiation. Mother babies were cleaned and those whose babies had routine measurements done prior to breastfeeding initiation commenced breastfeeding late.

The result of the multiple and stepwise regression analysis for the time of initiation breastfeeding and some variables are presented in Table IV and V respectively. Table IV shows that entire variables studied socio-economic class, time of contact, routine cleaning and measurement of baby, delivery mode, presence of breastfeeding- trained nurse and help received were the major significant predictors of the time of breastfeeding initiation and accounted for 97. 9% of the variance in the time of breastfeeding initiation. Table V shows that time of contract alone accounted for 92% of the variance while the presence of a breastfeeding- trained nurse accounted for 0. 2%.

Table I **Characteristics of mothers in the study Population**

Mother's characteristics		No	%
Age (years):	<20	6	1.2
	20 –24	91	18.2
	25 –29	163	32.6
	30 –34	160	32.0
	35 -39	78	15.6
	≥ 40	2	0.4
Marital status:	Married	496	99.2
	Single	3	0.6
	Separated	0	0
	Widow	1	0.2
Parity:	Primipara	230	46.0
	Multipara	270	54.0
Social Class:	High	270	54.0
	Middle	154	30.8
	Low	76	15.2

Table II: **The relationship between the various maternal variables and time of initiation of breastfeeding in both VD and CS Groups**

Maternal variables	No.	EI (%) VD	LI (%)	P Value	CS	EI LI (%)
Maternal Age	(Years)					
<25	97	26 (74.3)	9(25.7)	0.000	0	62 (100)
≥ 25	403	62 (27.3)	165 (72.7)		0	176 (100)
Parity						
Primip	230	42 (39.6)	64 (60.4)	0.088	0	124 (100)
Multip	270	46 (29.5)	110 (70.5)		0	114 (100)
Socio-economic status						
High	270	58 (40.3)	86 (59.7)	0.043	0	126 (1000
Middle	154	20 (25.6)	58 (74.4)		0	76 (100)
Low	76	10 (25.0)	30 (75.0)		0	36 (100)
Place of antenatal care						
UPTH*	436	86 (35.8)	154 (64.2)	0.185	0	196 (100.0)
HC*	36	2 (12.5)	14 (87.5)		0	20 (100.0)
PH*	14	0	6 (100.0)		0	8 (100.0)
MH*	14	0	0		0	14 (100.0)
Breastfeeding information						
Yes	470	88 (34.6)	166 (65.4)	0.096	0	216(100.0)
No	30	0	8 (100.0)		0	22(100.0)
Duration of labour (hours)						
<12	202	76 (37.6)	126 (62.4)	0.017	-	-
≥12	60	12 (20.0)	48 (80.00		-	-
Episiotmy						
Yes	120	36 (30.0)	84 (70.0)	0.318	-	-
No	142	52 (36.6)	90 (63.40		-	-

EI = Early Initiators LI=Late MH = Maternity hospital
HC =Health center UPTH + HC = government facilities initiators
SVD =Spontaneous Vaginal delivery; AVD = Assisted Vaginal Delivery
CS = Caesarean section PH = Private hospital

Table IV **Relationship between the time of breastfeeding initiation and selected variables using multiple regression**

Variable	Regression Coefficient	P value
(Constant =4.673)		
Age of mother	0.072	0.296
Parity	-0.014	0.657
Social class	0.059	0.047*
Place of ANC	0.048	0.530
Delivery mode	0.725	0.000*
Contact	0.848	0.000*
Breastfeeding-trained nurse	-0.808	0.037*
Help received	-1.402	0.000*
Baby cleaned	-1.665	0.000*
Baby measured	-0.216	0.048*

Coefficient of multiple determination (r^2) is 0.983
* Statistically significant

Table V **Stepwise regression analysis for breastfeeding initiation showing change in multiple regression coefficient of determination of (r^2) with addition of different variables**

Stage of analysis	*(R^2)*	*R2 Change*	*P*
Contact	0.922	0.920	0.000
Contact + Baby cleaned	0.956	0.955	0.000
Contact + Baby cleaned + Delivery mode	0.963	0.961	0.000
Contact + Baby cleaned + Delivery mode + help	0.977	0.975	0.000
Contact + Baby cleaned + Delivery mode + Help received + Breastfeeding-trained nurse	0.979	0.977	0.000

DISCUSSION

The finding in this study that 33. 6% of the mother who had vaginal delivery and none of those delivered by Caesarean section practiced early breastfeeding initiation are comparable to reports by Rajan [27] and perez Escamilla [28]. The differences between the two group could be explained by factors that independently influence the time of breastfeeding initiation: the morbidity associated with the mother who have Caesarean section and the infant's age at the of time of first contact with the mother. For mother who have Caesarean section, factors which have been shown to affect of anesthesia, the emotional adjustment to the fact that she was unable to deliver normally and the exhaustion from a difficult labour that may have including many other interventions before the delivery [28, 29]. In the present study, there was delayed mother-infant contact in the CS group which may be as a the result of the erroneous practice of regarding a mother with CS as too ill to start breastfeeding. Such a practice is detrimental to the establishment of bonding between the mother and her infant, which is crucial for their relationship in general and for successful breastfeeding in particular. The rate of timely breastfeeding initiation found among the VD mothers is very low considering that these subjects were healthy mother- baby pairs and the current efforts being made in breastfeeding of the baby through education of the mother and health- care personnel in this regard. However, it has been reported that even among mother with normally delivery who are physiological capable of initiating early breastfeeding, a wide variety of factors can either foster or jeopardize the successful accomplishment of these objectives [30, 31] he finding that younger mothers in the VD group initiated

breastfeeding earlier than the older mothers contrasts with that in other studies. [31, 32] It has suggested that older mother initiate breastfeeding early because of the breastfeeding experience they acquire. In the present study, early initiation of breastfeeding was practiced more by the younger mothers (,25 years) that the older mothers (≥ 25years). The reason this observation is not readily apparent. It is the younger mother, because of their inexperience and younger age, received more attention and assistance from the staff to initiate breastfeeding early. The older mother may be less likely to receive assistance on the assumption that, owing to their better experience, they know what to do. The younger mothers may also be eager and willing to learn.

The lack of association between parity and breastfeeding initiation found in this study contrasts with report by Scott and Binns [31] which showed that precipitous mother fail to initiate breastfeeding early because of their lack of breastfeeding experience may be that the " baby friendly environment" which encourages breastfeeding compensated for the absence of lactation experience in the primiparous mother in the VD group found in this study. On the other hand, the result accords with observations in Northern Thailand, [33] where the cultural pattern of breastfeeding on demand, strong family support and the traditional practices that encouraged close contact between mother and her newborn were more likely to encourage positive breastfeeding practices, whether or not the mother had previous breastfeeding experience. The finding that mothers of high socio- economic status practiced early initiation of breastfeeding compared to those of middle and low socio- economic status has been reported in other studies. [22, 32] It has been suggested that poorer, less educated, uniformed and unaware people are more likely to allow negative cultural beliefs such as discarding of colostrums to influence their practices of breastfeeding initiation. [22, 24] In the present study however, most of the mothers were of high socio-economic class, which probably reflects the ability to afford the relatively high cost of medical care in this facility. The more educated mothers are also more likely to supplement antenatal classes with further reading of health education literature. More of them may therefore have taken steps to initiate breastfeeding early compared to those of middle and low socio- economic status. Nevertheless, the result of this study further shows that socio-demographic factors are less important determinants of breastfeeding initiation when compared to factors such as, routine labour ward practices, help received to initiate breastfeeding, etc. Attendance at the antenatal clinic and class has been reported to be associated with appropriate breastfeeding practices, including early initiation of breastfeeding. [11, 34] In these former studies, the mother's preparedness and access to breastfeeding information, acquired during the antenatal care, were significantly associated with early initiation of breastfeeding amongst other factors. The small and insufficient number of mothers who did not receive difficult. Be that as it may, it would have been expected that more mothers who had breastfeeding education would practice timely initiation of breastfeeding or be motivated to seek early assistance to initiate breastfeeding. A study specifically designed to explore the effect of breastfeeding information and knowledge acquired by these mothers during antenatal classes on time of breastfeeding initiation would better address this issue. Mothers with long duration of labour have been found to defer breastfeeding initiation when compared to those with shorter labour duration [27, 35] The result of this study agrees with this observation. This is probably mediated through maternal exhaustion in the period immediately after birth making breastfeeding difficult to initiate. The finding in the present study suggests that mothers who receive episiotomy can successfully initiate breastfeeding early, if their babies were brought to them early. It was noted that for those who initiated breastfeeding early, the babies were handed over to their mothers before the episiotomy repair./ furthermore , with effective pain control during suturing, these mothers will be more compliant to breastfeed their babies early. The importance of early mother- infant contact as a significant predictor of early breastfeeding initiation is demonstrated in this study. Thus, to early breastfeeding initiation, mothers should be given their babies even while on the delivery table as demonstrated among majority of those who were successful early initiators. This confirms the finding that early nursing was the composite of a mother who was given her baby on the delivery table and of hospital practice that allows such a routine [4,11] the role of assisting mother initiate breastfeeding early cannot be overemphasized. Since most mothers are exhausted after the birth process, it is important that they receive assistance to initiate breastfeeding as recommended by the ten steps to successful breastfeeding. Reports from New Zealand [36] showing under- staffing and over- worked health-care staff as factors for delayed breastfeeding initiation supports this view. The effect of performing some routine labour ward procedures on breastfeeding initiation has been shown by other workers [4, 21] These routine could have been postponed until the initial early contact between the mother and her baby has been achieved. The modification of labour- ward procedures in favour of timely initiation of breastfeeding recommended. Notably, most of the barriers to early initiation of breastfeeding found in this study are potential modifiable. The need to initiate and / or strength programs to promote the practice of early breastfeeding initiation and emphasized. Further research on the relationship between the time of initiation of breastfeeding should be done.

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