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Breastfeeding Patterns of Postnatal Mothers and the Effects on the Health Status of their Infants.

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Abstract

This study investigated the breastfeeding patterns of postnatal mothers and the effects on the health status of their infants. 299 postnatal mothers who visited infant welfare clinics in the South-East zone of Nigeria along with their infants were selected for the study using convenient sampling technique. One research question and two null hypotheses were formulated to guide the study. Questionnaire on patterns of Breastfeeding by postnatal mothers (QPBF) and Checklist on Health status of infants with varied breastfeeding patterns (CHSIVBP) were used for data collection in the study. Frequency distribution and percentages were used to answer the research question while chi-square test and Spearman Rank correlation coefficient were adopted in testing the null hypotheses at 0.05 level of significance. The result revealed that infants of most of the postnatal mothers with varied breastfeeding patterns had normal nutritional status and general body system with low rates of malnutrition. Time of commencement of breastfeeding was found not to significantly influence the health status of the infants, and there was no significant relationship between the breastfeeding patterns of the postnatal mothers and the health status of their infants.

Keywords: Breastfeeding patterns, Health status, Infants, Postnatal mothers.

Introduction.

Breast milk is nature's most precious gift to the newborn, an equivalent of which is yet to be innovated by the scientific community despite tremendous advances in science and technology (Faridi, 2008). Scientific research studies have clearly proved that breastfeeding provides the most suitable nutrition for infants and protects them against infections, allergies and asthma (WHO, 2001). Other documented benefits of breastfeeding to the mother include emotional wellbeing, economic benefits, spacing of pregnancies, protection against breast cancer and reduced incidence of type 1 diabetes mellitus (Sadauskaite-kuehne et al, 2004; WHO, 2001).

In the context of Millennium Development Goal 4, scientific evidences have highlighted initiation of breastfeeding immediately after birth without squeezing out clolostrum, and exclusive breastfeeding for the first six months as the key to tackle infant nutrition and also survival of infants (WHO and UNICEF, 2003). Studies on accelerating child survival published in the Breastfeeding

Promotion Network of India (BPN) Lancet clearly established that universalization of early initiation of breastfeeding within half an hour after birth has tremendous potential in reducing 31% of neonatal deaths which is about 10% of total child deaths (Gupta, 2007). WHO(2001) warned that early introduction of supplementary feeding usually has a negative effect on the return to exclusive breastfeeding. Piwoz et al (1994) observed that supplements may not be given daily but they are unlikely to be withdrawn once they are introduced. According to Wilmoth and Elder (1995), supplemental feeding exposes infants to foreign contaminants and infection at a very vulnerable stage of life. Brown, Dewey and Allen (1998) added that this may likely explain the higher infant mortality rate of partially bottle-fed infants compared with exclusively breastfed infants.

Researchers have shown that exclusive breastfeeding is associated with increased weight gain among babies of normal birth weight (Scarlett et al, 1996). Despite this observed benefit, studies have also shown that early introduction of infant formula and other foods have remained a problem among postnatal mothers (Almroth and Lathan, 1982). Hence this study intends to determine the breastfeeding patterns of postnatal mothers and the effects on the health status of their infants.

Research Question.

- How is the health status of the infants of postnatal mothers with varied breastfeeding patterns?

Hypotheses.

- Time of commencement of breastfeeding by postnatal mothers does not significantly influence the health status of their infants.
- Significant relationship does not exist between the breastfeeding patterns of postnatal mothers and the health status of their infants.

Materials and Methods

Design and sampling.

This study was a cross-sectional research design. A convenient sample of 299 postnatal mothers who visited infant welfare clinics along with their infants in three levels of Health care institutions (two Health centres, two General Hospitals and two Teaching Hospitals) were used for the study. Ethical approval was obtained for the study and informed consent was obtained from the mothers. Inclusion criteria for the study were all healthy postnatal mothers irrespective of parity who were

breastfeeding their infants, and all infants born at term aged 0-12months who were breastfed irrespective of the pattern of breastfeeding. Exclusion criteria were preterm babies and babies with any other underlying disorder (organic and non-organic) and mothers with medical disorders that could interfere with breastfeeding. Also mothers who indicated not to participate were excluded from the study, and also their infants were not used. The mothers were approached by the researchers at the time of their visits to the infant welfare clinics along with their infants. Interview method was adopted by the researchers to obtain data from the respondents at that time as well. Confidentiality was ensured by not including names of the respondents in the data collection.

Instrument.

Two instruments (Questionnaire and Checklist) were used among the mother-infant pair for data collection. Questionnaire on Patterns of breastfeeding by postnatal mothers (QPBF) was used to obtain data on the characteristics of the postnatal mothers. Section A of the instrument elicited information on the demographic characteristics of the respondents (eg age, marital status, educational level, parity and employment status, etc). Section B of the questionnaire elicited information on the breastfeeding patterns adopted by the postnatal mothers (eg time of commencement of breastfeeding, duration of exclusive breastfeeding, time of commencement of partial breastfeeding, frequency of Breastfeeding, additional feeds with breastfeeding, etc). The responses to section B of QPBF were scored on a 4-point scale ranging from I point for poor pattern of breastfeeding, 2 points for fair pattern of breastfeeding, 3 points for good pattern of breastfeeding, and 4 points for normal/ideal breastfeeding pattern.

Checklist on the Health Status of infants with varied breastfeeding patterns (CHSIVBP) was developed for the study by the researchers to obtain information on the responses of the infants to the breastfeeding patterns adopted by their mothers. These data were obtained confidentially from the medical records of the infants, and included such information as the infant's birth weight, age, weight gain pattern, height, nutritional status, vulnerability to infection, etc.

The instruments (QPBF) and CHSIVBP) were tested for reliability, and a test-retest reliability coefficient of 0.72 and 0.75 respectively were obtained over a one month interval.

Data analysis.

Standard descriptive statistics of means and standard deviation were used to summarize the variables. Frequencies and percentages were used to answer the research question while chi-square test and Spearman Rank correlation coefficient were adopted in testing the null hypotheses at 0.05 level of significance. SPSS version 21 was used for the data analysis.

Table 1. Descriptive statistics of the measured variables

	N	Mean	Std. Deviation
Age of Mother	297	27.5926	5.81171
Level of health institution	299	1.9967	.81717
Level of Health institution 2	299	1.9967	.81717
MS	299	1.0301	.17115
Edu	299	3.3344	.60909
Parity	299	1.5886	.49291
Employment Status	299	1.3746	.48483
Family Type	299	1.0100	.09983
Religion	299	1.0100	.09983
Place of Residence	299	1.3378	.47375
Time of Commencing Breastfeeding	281	3.7331	.70958
EBF Duration	197	2.6447	1.17179
Commencement of Partial BF	241	2.0415	1.26423
Breastfeeding Frequency	296	3.6892	.71641
Breast Sucking Duration	299	3.0602	.94641
Additional Food	230	2.7522	1.44003
Breastfeeding Pattern	299	2.6210	.70112
Sex of Infant	299	1.5619	.49699
Birth Weight	296	3.3274	.49365
Present Weight	89	5.3719	2.14391
Weight Gain Pattern	288	1.0556	.22946
Height Pattern	298	1.0470	.22728
Nutritional Status	299	1.0635	.24435
General Body System	299	1.1271	.36255
Vulnerability of the Infant to infection	299	1.1204	.32598
Thriving of Infant	299	1.0870	.28224
Health Status	299	1.0797	.24013

Table 1 shows the descriptive statistics of the measured variables. The mean age of the postnatal mothers was 27.5926 with standard deviation (SD) of 5.81171, mean for the levels of health care institutions 1.9967 with SD of 0.81717; for marital status (MS) of

the mothers, the mean was 1.0301 with SD of 0.17115, mean for educational level of the mothers 3.3344 with SD 0.60909, mean for parity of the mothers was 1.5886 with SD of 0.49291; mean for employment status of the mothers was 1.3746 with SD of 0.48483. Family type of the mothers had mean score of 1.0100 with SD of 0.09983; religion had mean score of 1.0100 with SD of 0.09983; place of residence of the mothers had mean of 1.3378 with SD 0.47375. For time of commencement of breastfeeding the mean was 3.7331 with SD 0.70958; mean for exclusive breastfeeding (EBF) duration was 2.6447 with SD 1.17179; mean for time of commencement of partial BF was 2.0415 with SD of 1.26423; breastfeeding frequency had mean of 3.6892 with SD of 0.71641; breast suckling duration had mean of 3.0602 with SD 0.94641; mean for additional food was 2.7522 with SD 1.44003; for breastfeeding patterns the mean was 2.6210 with SD 0.70112; mean for sex of the infants was 1.5619 with SD of 0.49699; birth weight of the infants had mean of 3.3274 with SD of 0.49365; mean of the present weights of the infants at time of data collection was 5.3719 with SD of 2.14391. Weight-gain pattern of the infants had mean of 1.0556 with SD of 0.22946; mean height for the infants was 1.0470 with SD 0.22728; mean for the infants nutritional status 1.0635 with SD 0.24435; for infants' general body system the mean was 1.1271 with SD of 0.36255. For vulnerability of the infants to infection, the mean was 1.1204 with SD 0.32598; mean for thriving of the infants was 1.0870 with SD of 0.28224 while the health status of the infants had mean of 1.0797 with SD of 0.24013.

Table 2. Health status of the infants of postnatal mothers with varied breastfeeding patterns.

Variable		N	%
Health Status	Nutritional status		
	- Normal	280	93.6
	- Malnourished	19	6.4
	Total	299	100.0
	General Body System:		
	- Normal	264	88.3
	- Anaemia	32	10.7
	- GIT disturbance	3	1.0
	Total	299	100.0
	Vulnerability to infection:		
	- Nil	263	88.0
	- Vulnerable	36	12.0
	Total	299	100.0
	Thriving of the infants:-		
	- Normal	273	91.3
	- Failure to thrive	26	8.7
	Total	299	100.0

In table 2, the nutritional aspect of the infants' health status shows that out of the 299 postnatal mothers, 280 (93.6%) of their infants had normal nutritional status while

19(6.4%) of their infants were malnourished. For general body system, the infants of 264 (88.3%) postnatal mothers were normal, 32 (10.7%) were anaemic while the infants of 3 (1.0%) postnatal mothers had gastrointestinal (GIT) disturbances. The result also indicates that the infants of 36 (12%) postnatal mothers were vulnerable to infection while the infants of 263 (88%) mothers were not. The table also shows that infants of 273 (91.3%) postnatal mothers were thriving while the infants of 26 (8.7%) postnatal mothers had failure to thrive.

Table 3. Chi-square test of the influence of time of commencement of breastfeeding on the health status of the infant.

Variable	Time of commencement of Breastfeeding	N	Means Rank	df	X^2-cal	P-Value	Level of Significance
Health status of infant	Later than 1st week after birth	12	136.58	3	0.110	0.991	0.05
	First week after birth	7	143.86				
	A day after birth	25	140.90				
	Day of birth	237	141.15				
	Total	281					

In table 3, the chi-square test result of the influence of time of commencement of breastfeeding on the health status of the infant was 0.110 (p>0.991). The null hypothesis is accepted. Time of commencement of breastfeeding by postnatal mothers does not significantly influence the health status of the infant.

Table 4. Relationship between breastfeeding patterns of postnatal mothers and the health status of their infants.

Variables	N	$\overline{X}$	SD	rho	P-Value	Level of Significance
Breast feeding pattern	299	2.6210	0.70112	0.038	0.512	0.05
Health Status of infant	299	1.0797	0.24013			

In table 4, the rho correlation value for the relationship between the breastfeeding pattern of postnatal mothers and the health status of their infants was rho= 0.038 (p>0.512). The null hypothesis is accepted. Significant relationship does not exist between the breastfeeding pattern of postnatal mothers and the health status of their infants.

Discussion

Findings from the study indicate that most of the infants of the postnatal mothers had normal nutritional status (93.6%) and normal general body system (88.3%). Few infants had low rates of malnutrition, generally disordered body system (like anemia, gastrointestinal disturbance, etc)

and failure to thrive (table 2). Studies have revealed that inappropriate breastfeeding practices are associated with severe malnutrition in the under-five children, lack of any advantage in terms of weight-gain, and growth faltering (Onayade, Abiona, Abiyomi, and Makanjiola, 2004). The low vulnerability to infection among the infants (12%) (table 2) still needs to be addressed. Infants who are not breastfed or who are breasted for short period or at low intensity have higher risk for infection and illness than those who are breastfed optimally. Bachrach, Schwarz and Bachrach (2003) observed that breastfed infants had a 72% lower risk of hospitalization for respiratory infections. Chien and Howie (2001) also reported that the protective effects of breastfeeding persists even after cessation, although they diminish overtime.

Findings from the study indicate that time of commencement of breastfeeding by postnatal mothers does not significantly influence the health status of their infants (table 3). Subbiah and Jeganathan (2012) observed that culturally, postnatal primiparous mothers in the urban slum area of Delhi wait for rituals to initiate breastfeeding. Littleton & Engebretson (2007) stated that clients from some cultures reject attempts to begin breastfeeding in the immediate postnatal period. The question one would ask is: "does this delay in initiation of breastfeeding by some postnatal mothers affect the health status of their infants?" Gueri, Justsum and Moyce (1978) warned that it is better to start breastfeeding early since lack of breastfeeding in the first week of life is an indicator of poor future feeding patterns. WHO (1989) had warned that it is essential to initiate breastfeeding within half an hour after birth. Iarukov et al (1992) observed that early initiation of breastfeeding helps to ensure proper nutrition and first defense for the infant, and helps to secret milk. Also Himani, Kaur and kumar (2011) noted that early initiation promotes a positive bonding between mother and infant.

Also, the result of the study revealed non-significant relationship (rho=0.38, p-value =0.512) between breastfeeding patterns of postnatal mothers and the health status of their infants (table 4) Mihrshahi et al (2011) found that formula feeding and feeding on a schedule rather than on demand were associated with rapid infant weight gain. Also, researchers calculated that if 90% of infants were exclusively breastfed for six months, 911 deaths would be prevented (Bartick and Reinhold, 2010).

Conclusion.

This study indicates normal health status for the infants of most of the postnatal mothers despite the varied breastfeeding patterns of the mothers. The study also indicates that time of commencement of breastfeeding by postnatal mothers does not have significant influence on the health status of their infants, and that there is no significant relationship between breastfeeding pattern and the health status of the infant.

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