

Original Article

Breastfeeding practices: Positioning, attachment (latch-on) and effective suckling – A hospital-based study in Libya

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ABSTRACT

Purpose/Objective: To assess the correct position, attachment and effective suckling in the breastfeeding of infants as practiced by mothers attending hospitals at Benghazi. **Materials and Methods :** An observational, descriptive, cross-sectional study was done at AlJamahiriya and AlFateh Hospital in Benghazi, Libya, from November 2009 to February 2010. One hundred ninety-two mother-neonate units were observed for mother's and baby's position, attachment and effective suckling using WHO B-R-E-A-S-T- Feed observation form. Grading of positioning, attachment and suckling was done according to the score of various characteristics. Data thus collected were analyzed using software SPSS 11.5 version. **Results:** About 15% of the infants were about a week old (early neonatal period) and 85% were in the late neonatal period. There was poorer positioning among primipara (24.0%) than multipara (8.9–12.5%) mothers. Poorer attachment was also more evident among primipara (30.0%) compared to multipara (20.9%) mothers. Parity was significantly associated with poor position ($P = 0.028$) and attachment ($P = 0.002$). Poor attachment was related to cracked nipples and mastitis. Preterm and low birth weight were significantly associated with poor attachment and poor effective suckling. Poor suckling was more (42.8%) in the early neonatal period than late neonatal period (32.9%). **Conclusions and Recommendations:** Young (<20 years) and primipara mothers were more in need of support and guidance for appropriate breastfeeding techniques. It is recommended that each mother should be observed for mother's and infant's positioning and attachment at the onset of breastfeeding and if needed subsequent counseling should be given on correct positioning and attachment.

Key words: Attachment (latch-on), breastfeeding practices, effective suckling, positioning

INTRODUCTION

Breastfeeding is one of the oldest practices, recommended in the ancient Hindu scriptures, Holy Quran and Biblical records.^[1]

Breastfeeding confers short-term and long-term benefits on both child and mother, including helping to protect children against a variety of acute and chronic disorders.

The review of studies from developing countries shows that infants who are not breastfed are 6–10 times more likely to die in the first few months of life than infants who are breastfed. Diarrhea and pneumonia are more common and more severe in children who are artificially fed, and are responsible for many of these deaths. Other acute infections, including otitis media, *Haemophilus influenzae* meningitis and urinary tract infection are less common and less severe in breastfed infants.^[2]

Artificially fed children have an increased risk of longterm diseases with an immunological basis, including asthma and other atopic conditions, type 1 diabetes, celiac disease, ulcerative colitis and Crohn's disease.^[2]

There has been an increasing concern in the recent years about the changing pattern of breastfeeding, particularly

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in societies in rapid transition. An earlier study in Benghazi in 1981 showed that only 54.8% of mothers breastfed for more than 6 months.^[3] Regarding feeding practices, the rates of ever and exclusive breastfeeders till 4 months per 100 women were 83.2 and 49.1, respectively. The rate of breastfeeding for 6 or more months was 24.8 per 100 women.^[4]

An interview survey of 200 mothers attending the emergency service of Al-Fateh Paediatric Hospital, Benghazi, showed that prelacteal feed was given to 18.5% of babies and breastfeeding was ever initiated in 90.5% (it also includes some cases from prelacteal fed babies who were breastfed). After 3 months, exclusive breastfeeding was continued in less than 30%, mixed feeding in 44–71% and supplementary feeding (with and without breastfeeding) in 65–97%.^[1] At 3 months of age, 46.4% of the infants were exclusively breastfed, 27.0% were exclusively bottlefed, and 26.5% were fed by mixed methods.^[5,6]

Effective breastfeeding is a function of the proper positioning of mother and baby and attachment of child to the mother's breast.^[7] Studies conducted in North India reveal that there was "good attachment" in 42% mother–infant pairs and infants were held in "correct position" by 60% mothers.^[8] A study in Bangladesh reported that correct breastfeeding position (74%) and good attachment (72.3%) as assessed by CHWs at late visits (67 days after delivery) were practiced by mothers.^[9]

Positioning of the baby's body is important for good attachment and successful breastfeeding. Most difficulties can be avoided altogether if good attachment and positioning are achieved at the first and early feeds.^[10] An effective sucking technique is considered important to establish breastfeeding, to ensure milk transfer, and to prevent breastfeeding problems.^[7,11–16]

The baby's positioning and attachment to the breast during breastfeeding are fundamental toward the occurrence of different sorts of nipple trauma. A study conducted in Brazil showed that a greater proportion of primigests (first time pregnant) displayed nipple lesion (57.4%) followed by 54.9% of primipara (with one live birth) and 45.1% of multipara. Many studies indicate a statistically significant association between position and holding variables for causing nipple lesions, where newborns whose necks were bent, whose chins were held away from the breast and where lips were turned inward.^[17] Improper suction is also described as a source of trauma which if corrected can become a protective factor.^[7,14,15,17–21]

After review of literature it was found that, there is no documented study conducted in Benghazi on breastfeeding

positioning of mother and baby, baby's attachment to breast and effective sucking. This study was, therefore, conducted with the objective of assessing the correct position, attachment and effective suckling in infant breastfeeding as practiced by mothers attending hospitals at Benghazi, Libya.

MATERIALS AND METHODS

This observational, cross-sectional study was conducted at AlJamahiriya and AlFateh hospitals in Benghazi, Libya, from November 2009 to February 2010. These two hospitals were selected since the majority of deliveries take place there and also for their proximity.

Two hundred fifteen mother–neonate (preterm and full-term) units were admitted to these hospitals during the study period. Fifteen mother–neonate units who had serious illnesses and/or neonatal malformations of palate/tongue were excluded from the study. A total of 200 mother–neonate units were included for the study, eight of which refused to participate. The remaining 192 mother–neonate units were observed for mother and baby's position, infant's mouth attachment and effective suckling during breastfeeding using WHO B-R-E-A-S-T-Feed observation form.^[22] Informed verbal consent was obtained before data collection.

Six female medical interns were trained by the investigators to collect data and observe the positions of the mother and baby, infant's mouth attachment to breast and effective suckling by using video clips and hands on training and demonstration in the hospital. The information on the maternal characteristics like age, occupation, parity, breast problems, and baby's age, preterm/full term, birth weight, and any malformations was obtained using pre-designed and pre-tested questionnaire.

All six female medical interns also observed the breastfeeding process for 5 minutes and recorded the mother and infant's positioning, attachment to the breast and effective suckling as per WHO B-R-E-A-S-T-Feed observation form. It was done by asking the mother to put her infant to the breast, if the infant had not been fed in the previous hour. If the infant had been fed during the last 1 hour, then the mother was asked when the infant would have the next feed and the observation assessment was planned accordingly.

The following arbitrary scoring and grading system was developed and adopted to grade positioning (mother and infant), infant's mouth attachment and effective suckling during breastfeeding based on WHO criteria. Each criterion was assigned 1 point [Table 1].

Table 1: Grading system for infant’s mouth attachment and effective suckling during breastfeeding

Correct body position		
<ul style="list-style-type: none"> • Mother relaxed and comfortable • Mother sit straight and well-supported back • Trunk facing forward and lap flat • Baby neck straight or bent slightly back and body straight • Baby body turned toward mother • Baby body close to mother body and facing breast • Baby whole body supported 		
Criteria for grading for correct body position	Grade	Score
One criterion from mother’s position and one criterion from infant’s position or both from mother’s position	Poor	0–2
At least one criterion from mother’s position and two or three criteria from infant’s position	Average	3–4
At least two criteria from mother’s position and three or four criteria from infant’s position or all criteria	Good	5–7
Correctness of attachment		
<ul style="list-style-type: none"> • Chin touching breast • Mouth wide and open • Lower lip turned outward • More areola seen above baby mouth 		
Criteria for grading for correctness of attachment	Grade	Score
Any one of the four criteria	Poor	1
Any two of the four criteria	Average	2
Any three or all the four criteria	Good	3–4
Correctness of effective suckling		
<ul style="list-style-type: none"> • Slow sucks • Deep sucks • Sometimes pausing 		
Criteria for grading for effective suckling	Grade	Score
Any one of the three criteria	Poor	1
Any two or all the three criteria	Good	2

The data were analyzed using software SPSS (11.5 version). The categorical variables are presented as percentages. Chi-squared test was used as test of significance and *P* value less than 0.05 was considered for the statistical significance.

RESULTS

Maternal characteristics

The present study revealed that the majority of the mothers were between 20 and 30 years of age (55.7%), followed by those who were more than 30 years (39.6%) and below 20 years (4.7%). Poor position (22.2%) and poor attachment (33.3%) were high among mothers aged less than 20 years as compared to other age groups (7.6–15.8% and 19.7–23.4%, respectively). However, there was no statistically significant association between the mother’s age and poor position (*P* = 0.238) and attachment (*P* = 0.662) of babies to the breast during feeding [Table 2].

The majority of mothers were multipara (74.0%) and 26.0% were primipara. Among mothers with parity two or more low percentages of poor position (8.9–12.5%) and attachment (0–20.9%) were observed. A statistically significant association was found between parity and position (*P* = 0.028) and attachment (*P* = 0.002).

Only 30.2% were working mothers and 69.8% were nonworking. Although there was poorer positioning among nonworking (14.2%) than working mothers

(10.3%), poor attachment was more in working (24.1%) than nonworking (21.6%) mothers. However, there was no significant association between maternal occupation and position (*P* = 0.238) and attachment (*P* = 0.903).

Breast diseases such as cracked nipples, mastitis, and sore nipples were more associated with poor position (57.1%) and attachment (71.4%). The findings were highly significant at *P* = 0.002 for position and *P* = 0.006 for attachment.

Infant characteristics

A total of 14.6% infants were less than 1 week old (early neonatal period) and 85.4% were between 7 and 28 days (late neonatal period) of age. All infants were observed for attachment to the breast and effective suckling [Table 3].

Suckling was poorer (42.8%) in the early neonatal period than the late neonatal period (32.9%). There was no statistically significant association between the age of the babies and attachment (*P* = 0.175) and effective suckling (*P* = 0.419) during breastfeeding.

Most of the neonates were full term (94.7%) and only 5.3% were preterm. Only 22% of total full-term babies had poorer attachment as compared to preterm babies (60.0%). The figures for poor suckling were 20.3% among full-term babies and 50.0% in preterm babies. These findings were statistically significant for attachment (*P* = 0.023) and effective suckling (*P* = 0.027).

Table 2: Maternal characteristics and position of mother and infant and attachment (latch-on) to breast during feeding

Characteristics	Position grade			Attachment (latch-on) grade		
	Poor No. (%)	Average No. (%)	Good No. (%)	Poor No. (%)	Average No. (%)	Good No. (%)
Maternal (age in years)						
<20 [n = 9 (4.7%)]	2 (22.2)	2 (22.2)	5 (55.6)	3 (33.3)	2 (22.2)	4 (44.7)
20–30 [n = 107 (55.7%)]	17 (15.8)	45 (42.1)	45 (42.1)	25 (23.4)	32 (29.9)	50 (46.7)
>30 [n = 76 (39.6%)]	6 (7.6)	28 (36.8)	42 (55.3)	15 (19.7)	18 (23.7)	43 (56.6)
Total (n = 192)	$\chi^2 = 5.52$ and $P = 0.238$			$\chi^2 = 2.41$ and $P = 0.662$		
Parity						
1 [n = 50 (26.0%)]	12 (24.0)	20 (40.0)	18 (36.0)	15 (30.0)	12 (24.0)	23 (46.0)
2–5 [n = 134 (69.8%)]	12 (8.9)	50 (37.4)	72 (53.7)	28 (20.9)	33 (24.6)	73 (54.5)
>5 [n = 8 (4.2%)]	1 (12.5)	5 (6.7)	2 (62.5)	0 (0)	7 (87.5)	1 (12.5)
Total (n = 192)	$\chi^2 = 10.88$ and $P = 0.028^*$			$\chi^2 = 17.38$ and $P = 0.002^*$		
Maternal occupation						
Working [n = 58 (30.2%)]	6 (10.3)	23 (39.7)	29 (50.0)	14 (24.1)	16 (27.6)	28 (48.3)
Not working [n = 134 (69.8%)]	19 (14.2)	52 (38.8)	63 (47.0)	29 (21.6)	36 (26.9)	69 (51.5)
Total (n = 192)	$\chi^2 = 5.522$ and $P = 0.238$			$\chi^2 = 0.203$ and $P = 0.903$		
Breast diseases						
Present [n = 07 (3.6%)]	4 (57.1)	3 (42.9)	0 (00)	5 (71.4)	2 (28.6)	0 (00)
Absent [n = 185 (96.4%)]	25 (13.5)	70 (37.8)	90 (48.7)	42 (22.7)	51 (27.6)	92 (49.7)
Total (n = 192)	$\chi^2 = 11.95$, $P = 0.0025^*$			$\chi^2 = 10.02$, $P = 0.006^*$		

n = number of mothers, *Significant

Table 3: Attachment (latch-on) and effective suckling as per infant characteristics

Characteristics/Grade → ↓	Attachment (latch-on)			Effective suckling	
	Poor No. (%)	Average No. (%)	Good No. (%)	Poor No. (%)	Good No. (%)
Age (in days)					
<7 [n = 28 (14.6%)]	6 (21.4)	4 (14.3)	18 (64.3)	12 (42.8)	16 (57.2)
7–28 [n = 164 (85.4%)]	42 (25.6)	46 (28.1)	76 (46.3)	54 (32.9)	110 (67.1)
Total (n = 192),	$\chi^2 = 3.48$ and $P = 0.175$			$\chi^2 = 0.65$ and $P = 0.419$	
Gestation					
Preterm [n = 10 (5.3%)]	6 (60.0)	2 (20.0)	2 (20.0)	5 (50.0)	5 (50.0)
Full term [n = 182 (94.7%)]	40 (22.0)	65 (35.7)	77 (42.3)	37 (20.3)	145 (79.7)
Total (n = 192)	$\chi^2 = 7.53$ and $P = 0.0231^*$			$\chi^2 = 4.88$ and $P = 0.0271^*$	
Birth weight					
<2.5 kg [n = 12 (6.6%)]	6 (50.0)	2 (17.0)	4 (33.0)	7 (58.3)	5 (41.7)
≥2.5 kg [n = 180 (93.4%)]	45 (25.0)	66 (36.7)	69 (38.3)	44 (24.4)	136 (75.6)
Total (n = 192)	$\chi^2 = 3.99$ and $P = 0.136$			$\chi^2 = 5.00$ and $P = 0.0253^*$	

n = number of infants, *Significant

Only 12 (6.6%) babies had birth weight less of than 2.5 kg (low birth weight as per WHO for developing countries) and the remaining 93.6% babies weighed more than 2.5 kg. Poor attachment (50.0%) and poor suckling (58.3%) were more in babies with low birth weight as compared to other groups (25.0% and 24.4%, respectively). There was no significant difference between the birth weight of infant and attachment ($P = 0.136$) to the breast, but statistically significant difference was observed for effective suckling ($P = 0.025$).

DISCUSSION

In the present study, younger mothers (<20 years) had poorer attachment as compared to older mothers,

but age *per se* was not associated with position and attachment, which is primarily required for effective breastfeeding. Similar findings were also reported by Kronborg *et al.* (western Denmark) and Gupta *et al.* (North India).^[23,24] Santo *et al* from Brazil also reported that adolescent mothers had poorer position[hazard ratio (HR) = 1.48, 95% CI 1.01-2.17] and poorer latch-on [HR = 1.29, 95% CI 1.06-1.58 for each unfavorable parameter].^[25]

Our study results indicate that a majority (74.0%) of multiparous mothers had good position and attachment, which could be the result of their previous experience. Studies conducted by Coca *et al.* (Sao Paulo, Brazil) and Kronborg *et al.* (western Denmark) also reported

that parity was significantly associated with effective breastfeeding (position and attachment).^[17,23] However, Gupta *et al.* from North India did not find any statistically significant association.^[24]

Our findings reveal that breast problems like cracked nipples, mastitis, and sore nipples were significantly associated with poor positioning and attachment which are essential for effective breastfeeding. Coca *et al.* (Sao Paulo, Brazil) reported that women whose infants were incorrectly positioned were 1.94 times at risk (95% CI 1006–3749) of developing nipple trauma compared with women whose infants were correctly positioned.^[17]

Another study conducted at Brazil by Coca *et al.* confirmed that nursing mothers with turgid and/or engorged breasts were more likely to develop nipple injury (95% CI 4.48–33.78).^[26] In their studies from Porto Alegre, Brazil, Tait *et al.* also identified nipple trauma as a disorder that resulted from incorrect positioning and latching-on in breastfeeding.^[27,28] A study conducted by Carvalhaes from Brazil reported that breast engorgement makes it more difficult for newborn infants to latch-on correctly because of distension and edema of the nipple and areolar region.^[29] Another study from Brazil reported that as per parity, the highest incidence of nipple trauma was found in primiparous women, which may be explained by inexperience in the breastfeeding technique.^[30]

The present study indicates that preterm infants (<37 weeks of gestation) had poor attachment and suckling. Coca *et al.* did not find any association between weeks of gestation and strength of suckling.^[26]

We observed that infants with low birth weight had poor attachment and poor effective suckling. Kronborg *et al.* and Coca *et al.* did not find any association between birth weight and nipple trauma ($P = 0.41$ and $P = 0.22$, respectively).^[23,26]

Our study was able to demonstrate the association between mother–neonate characteristics and positioning, attachment and effective suckling in breastfeeding. Nevertheless, the use of a larger sample size may make it possible to identify the other risk factors.

CONCLUSION AND RECOMMENDATION

Young (<20 years) and primipara mothers need more support and guidance for appropriate breastfeeding techniques. It is recommended that each mother should be observed for mother’s and infant’s positioning and attachment at the onset of breastfeeding and if needed given counseling on correct positioning and attachment.

All Maternal and Child Health (MCH) care agencies should highlight and formulate a policy for successful and effective initiation of breastfeeding as a part of an integrated neonatal care.

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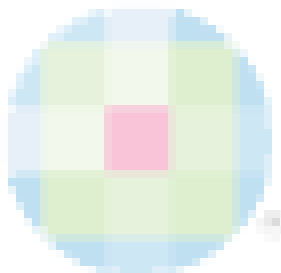
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