

Awareness of feeding patterns in first-time mothers

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ABSTRACT

Background: Feeding is a vital source of energy and a necessity for survival. It is pivotal that mothers of new-born are aware of correct feeding patterns as it may impact the feed and health of the infant. The present study aimed to explore the awareness of various breastfeeding and bottle-feeding patterns in first-time mothers of infants up to 6 months of age. **Materials and Methods:** The participants in the study were 56 first-time mothers with infants <6-month old who had no medical history. The study design was exploratory and duration of study was 3 months. A questionnaire was used in the study to elicit information about feeding pattern awareness. The questionnaire consisted of eight Marathi-language questions based on eight feeding variables. Data were not normally distributed hence non-parametric test, Chi-square analysis was used for statistical analysis. **Results:** Results revealed in both the groups, the cradle position was employed for feeding. In certain mother-infant pairings, the mouth of the new-born was found to be well latched to the breast. In both groups, there was a lot of parent-child interaction when feeding. In general, 100% of infants acquire weight gradually. **Conclusion:** Overall, mothers in both the groups had a strong understanding of breastfeeding and bottle-feeding, which is very empirical for safe and efficient feeding.

Key words: Bottle-feeding, Breastfeeding, Infants, Mothers, Parent-child relations

The art of feeding involves different aspects of eating and drinking in, namely, accumulating and mixing food and liquid for intake, sucking or chewing, and swallowing. Feeding offers an environment for communication and social experiences for children and caregivers that form the basis for their social bonding [1]. Two types of feeding patterns are seen in infants: Breastfeeding and bottle-feeding. Breastfeeding is a process by which human breast milk is fed either directly from the breast or pumped and fed to the infants. It is one of the most efficient strategies to determine an infant's wellbeing. The American Academy of Pediatrics [2] advocate exclusive breastfeeding for nearly 6 months, with breastfeeding continuing for a year or beyond if both mother and infant agree, a suggestion corroborated by the World Health Organization [3]. Mother's milk has several benefits including nutritional content, a greater capacity for internal absorption, prevention of allergies and respiratory problems, psychological development, improved immunological defenses, a role in lowering infant mortality rates, and emotional bonding between mother and child [4-7]. Breastfeeding exclusively is associated with decreased irritability/colic and a tendency toward longer nocturnal sleep [8].

Breastfeeding can provide a sense of well-being, security, and warmth, reducing the likelihood of children resorting to non-nutritive sucking habits to meet their needs [9].

Breastfeeding infants are done in a variety of positions, including the cradle position, the cross-cradle position, and the football position. All three positions are recommended for breastfeeding. Breastfeeding encourages nasal breathing in newborns by necessitating the use of adequate suction. During breastfeeding, the lips stay totally in contact with the breast, and the nose is stimulated to begin inspiration and expiration. This could be the reason why many children who were not breastfed or were breastfed only briefly exhibit mouth breathing [10].

Whereas bottle-feeding is the practice of feeding a substitute of breast milk to an infant, some studies have concluded 45° is the perfect angle to hold a baby for a feed [11].

The present study aimed to identify a variety of breastfeeding and bottle-feeding patterns in first-time mothers with infants aged 0–6 months. In addition, an assessment of their feeding knowledge and identification of the variables influencing the different patterns of breastfeeding and bottle-feeding knowledge was also carried out in the same.

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MATERIALS AND METHODS

The present study was conducted in Pune, Maharashtra, India. A questionnaire-based study was conducted on a group of 56 mothers in 2021 to elicit information about awareness of feeding patterns in first-time mothers of all infants between the ages of 0–6 months. These participants were grouped into two groups, that is, 0–3 months, that is, Group 1 and 4–6 months age, that is, Group 2 each containing 28 subjects, respectively. The study was approved by Ethical committee of Departmental Committee of School of Audiology and Speech Language Pathology. Consent of parents was taken before administering the Google form. The study was carried out online using a Google Form, in the vernacular language, that is, Marathi with a total of eight questions (three of which were multiple choice and five of which were dichotomous, that is, Yes/No). The resulting multiple-choice questions had two pictorial formats.

The data sampling was based on the following criteria:

Inclusion Criteria

First-time mothers and those with infants aged <6 months, having no medical history, having “Appearance, Pulse, Grimace, Activity and Respiration” (APGAR) score above 7 were included in the study.

Exclusion Criteria

Mothers who refused to give consent, infants with any kind of medical history or low birth weight, poor APGAR score (<7), having a second/third child, and infants older than 6 months were excluded from the study.

The variables assessed were “Position of infants during breastfeeding,” “Duration of breastfeeding,” “Attachment of infant’s mouth to the breast,” “Complete lip closure while breastfeeding,” “Gradual increase in weight,” “Positions of infants during bottle-feeding,” “Parent-child interaction while feeding,” and “Infants opening their mouth in anticipation of food/touch.”

Statistical Analysis

Statistical analysis of the data was carried out using SPSS 16.0 statistics software. Non-parametric tests were carried out to investigate the aims of the study.

RESULTS

The sample was analyzed for normality using the Shapiro–Wilk Test of Normality. Results of Shapiro–Wilk’s test showed that data were not normally distributed. Hence, a non-parametric test was used to investigate the objectives of the study. On Chi-square analysis, *P*-value was observed to be >0.05 which means statistically there was no significant difference seen between the two groups.

Our findings revealed that out of 56 mothers, 48.3% of 28 mothers preferred the cradle position for breastfeeding their infants until they were 0–3-months-old, and 59.3% used the cradle position for breastfeeding their infants until they were 4–6-month old. In Group 1, 96.6% of mother-infant pairings had a “good attachment of the baby’s mouth to the breast,” while Group 2 had 74.15%. In Group 1, 82.8% of new-born open their mouths in anticipation of food/touch, while 74.1% in Group 2 do so. Out of 56 mothers, 55.2% of Group 1 mothers bottle-feed their infants, while 96.3% of Group 2 mothers bottle-feed their infants. In Group 1, 82.8% of parent-child interaction were reported when feeding the infant, while 92.6% in Group 2 were reported. In Group 1, 89.7% have proper lip closure, whereas 92.6% have good lip closure. About 100% of new-born gain weight progressively. In both groups, the average duration of feeding the child is 15–20 min. In Group 1, 96.6% of mothers had good knowledge of breastfeeding and bottle-feeding, and 96.3% of mothers in Group 2 had good knowledge of breastfeeding and bottle-feeding.

DISCUSSION

Out of 29 mothers in Group 1 – 55.2% bottle-feed their infant till 0–3 months, 96.3% bottle-feed their infant till 4–6 months. A study in 2013 was done to evaluate association of breastfeeding and development of breathing patterns in children revealed exclusive breastfeeding is recommended for the first 6 months, whereas non-exclusive breastfeeding should continue for at least 24 months [10].

In 2020, a study was conducted on biomechanical analysis of three recommended feeding positions: Cradle, cross-cradle, and football position, with the cradle position, significantly eliciting the highest activities in the Left Erector Spinae and External Oblique muscles. In comparison to the cradle and cross-cradle breastfeeding positions, the football breastfeeding position has been reported to pose a lower risk of breastfeeding related musculoskeletal disorders in nursing mothers [12]. The study found that first-time mothers had a high level of awareness of feeding patterns. The present study, which included 56 mothers, discovered that 48.3% used the cradle position to breastfeed their infant in Group 1 and 59.3% used the cradle position to breastfeed their infant in Group 2 [10].

A study was done in 2019 by Glodowski *et al.* on rooting reflex as an infant feeding cue. The study documented that rooting, crying, palmar grasp reflex occurred most frequently before, after, and during feeding. Out of these three reflexes, rooting reflex was more prominent prior feeds. Thus, rooting reflex is important for life and growth, because it helps the baby reach the breast or bottle and initiate feeding [13]. In our study, 82.8% of infants in Group 1 opened their mouths in anticipation of food or touch. Group 2, on the other hand, had 74.1% infants.

Proper lip closure while breastfeeding was observed by 89.7% of infants in Group 1 and 92.6% in Group 2. In a study by Silveira *et al.*, in 2013, investigated, the influence of oral habits and breastfeeding on oral skills of children. Results concluded that

breastfeeding was identified as contributing to mature orofacial development by improving the ability of oral suction [14].

In our study, 96.6% of mother-infant pairs in Group 1 and 74.1% of mother-infant pairs in Group 2 had “good attachment of baby’s mouth to the breast.” In addition, 96.6% of mothers in Group 1 had good awareness about breastfeeding and bottle-feeding, while 96.3% of mothers in Group 2 were knowledgeable about breastfeeding and bottle-feeding. A similar study was conducted in North India, and the results revealed that approximately 30% of mothers exclusively breastfeed their infants until 4–6 months, with good attachment seen in 42% of mother-infant pairs and overall 39% of mothers having satisfactory knowledge about breastfeeding [15].

According to our findings, correct feeding position was observed in 48.3% of mothers in Group 1 and 59.3% of mothers in Group 2. A study conducted in North India found similar results, with 60% of mothers reporting correct feeding positions [15]. This indicates that our findings are comparable to those of the North Indian study.

Parent-child interaction was noted at 82.8% in Group 1 and 92.6% in Group 2. From infancy, the primary social learning context is provided by parent-child interactions. In parent-child interaction, a variety of social-cognitive and socioemotional processes, such as emotion regulation and recognition, referencing, gaze following, gesturing, and communication, become apparent [16].

Feeding time was observed to be 15–20 min in both groups. An average feeding time of 20–30 minutes helps to ensure that the baby receives enough breast milk, according to a 2009 study on breastfeeding rates and hospital breastfeeding practices in Canada. It allows sufficient time for the mother’s body to be stimulated to increase her milk supply [17].

Overall weight increase in both groups was 100%, indicating that first-time mothers have a good understanding of proper feeding patterns, which, in addition, leads to improved feed intake.

CONCLUSION

The study focused on first-time mother’s awareness of feeding patterns, which is critical for proper nutrition and growth. Malnutrition in new-born, as well as life-threatening illnesses, can be caused by a lack of understanding about proper feeding practices.

To encapsulate, our results indicate that first-time mothers have a satisfactory knowledge of feeding patterns, which is critical because the key to safe feeding is being aware of optimal feeding patterns and having a significant amount of feeding information. However, the study might be expanded to a larger scale to gather more evidence on the subject.

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