

ASSOCIATION BETWEEN MODE OF DELIVERY AND BREASTFEEDING PRACTICES: A PROSPECTIVE STUDY IN A TERTIARY CARE HOSPITAL

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(Received, 09th January 2024, Revised 06th March 2024, Published 3rd May 2024)

Abstract: Breastfeeding is widely recognised to have numerous health benefits for the infant and child health later, such as lowering the risk of gastrointestinal tract infections, respiratory tract infections, allergies, asthma, obesity, type 1 and type 2 diabetes mellitus (DM), and sudden infant mortality syndrome. It also protects mothers against conditions like obesity, type 2 DM, and breast and ovarian cancers. **Objective:** To assess the association between mode of delivery and breastfeeding practices. **Methodology:** This cross-sectional study was carried out in the obstetrics department of Lady Reading Hospital after approval from the hospital's ethical committee. The study duration was three months, from 1st November 2023 to 31st January 2024. Postnatal mothers were interviewed, and information was collected on a specifically designed proforma 24 hours after the birth of the baby and then on the day of discharge from the hospital. Using openepi software, keeping anticipated frequency 18%, confidence level 95%, power of study 80%, sample size calculated is 227. Data was entered into SPSS version 20. **Results:** In the current study, 227 patients were enrolled. Based on age-wise distribution, 125 (55.07%) patients were 16-25 years old, 67 (29.52%) were 26-35 years old, and 35 (15.42%) patients were more than 35 years of age. Amongst 227 women, 109 (48.02%) delivered vaginally while caesarean section was done in 118 (51.98%) patients. Based on the initiation of breastfeeding, amongst 109 women who delivered vaginally, breastfeeding within one hour was initiated in 79 (72.48%) patients. In comparison, amongst 118 women with caesarean section within one hour, breastfeeding initiation was observed in 74 (62.71%) patients. The association between breastfeeding initiation and mode of delivery was statistically significant ($p=0.001$). **Conclusion:** Our study concludes that the chance of delayed breastfeeding initiation was higher in women who had caesarean delivery. Hence, Counseling regarding the initiation and maintenance of breastfeeding should be a mandatory part of prenatal care provided to women by hospitals. Adequate professional support must be available in the postnatal wards, especially for women who delivered by caesarean section, and should be tailored according to the individual needs.

Keywords: Association; Mode of Delivery; Breastfeeding Practices

Introduction

Breastfeeding is widely recognised to have numerous health benefits for the infant and child health later, such as lowering the risk of gastrointestinal tract infections, respiratory tract infections, allergies, asthma, obesity, type 1 and type 2 diabetes, and sudden infant mortality syndrome (1, 2). It also protects mothers against conditions like obesity, type 2 diabetes, and breast and ovarian cancers (3, 4). The United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO) recommend "early initiation of breastfeeding," which is defined as starting breastfeeding the baby within the first hour of birth. To ensure long-term nursing practices and baby survival, it is imperative to begin breastfeeding at an early age. Delayed breastfeeding after delivery can have potentially fatal implications; the longer babies are not breastfed, the higher the risks (5). However, according to the WHO, three out of every five newborns, or around 78 million, are not breastfed during the first hour of life, which increases their risk of illness or death and decreases their likelihood of continuing to breastfeed (6). In contrast to infants who started breastfeeding within one hour of birth, infants who started breastfeeding after two to 23 hours of birth had a 33% higher risk of neonatal mortality and infants who started breastfeeding ≥ 24 hours after birth had a roughly

two-fold higher risk of neonatal mortality, according to a current meta-analysis and systematic review of the evidence on breastfeeding initiation time and infant outcomes (7).

There was a higher likelihood of discontinuing exclusive breastfeeding among women who started nursing more than an hour after birth and those who experienced more difficulty in initiating breastfeeding (8). Ten steps, "helping mothers to initiate breastfeeding within a half-hour of birth," were suggested in the 2009 WHO and UNICEF recommendations on the Baby-Friendly Hospital Initiative (BFHI) to facilitate effective breastfeeding. Launched by UNICEF and WHO in 1991–1992, the BFHI has expanded over the previous 15 years to include > 20,000 hospitals in 156 countries worldwide (9). By 2025, the World Health Assembly (WHA) approved a goal to raise the percentage of exclusive breastfeeding to 50% during the first six months following birth (10). Still, only a small percentage of infants globally are exclusively breastfed (11, 12).

Over the past several decades, Caesarean delivery (CD) rates have been a global surge. International research revealed that from 2007 to 2008, the general rate of caesarean sections performed in nine Asian nations was 27.3%, far greater than the WHO objective of 15% (13).

[Citation: Fatima, S.S., Sultan, S. (2024). Association between mode of delivery and breastfeeding practices: a prospective study in a tertiary care hospital. *Biol. Clin. Sci. Res. J.*, 2024: 825. doi: <https://doi.org/10.54112/bcsrj.v2024i1.825>]

Apart from other morbidities related to this mode of delivery, CD may have an impact on starting and continuing breastfeeding, according to growing data. It has been linked to a delayed start of breastfeeding, according to several studies (14, 15). Early breastfeeding rates were shown to be lower following caesarean birth than following vaginal delivery, according to a systematic review (16). Another research found a negative correlation between breastfeeding beginning and caesarean delivery (17). There may be several reasons, e.g., side effects of anaesthesia, post-operative pain, and lack of professional support (18, 19). The obstacles to establishing breastfeeding following a caesarean birth may be tiredness on the part of the mother, the baby's apparent lack of desire and trouble latching, and lack of initial skin-to-skin contact between the mother and the newborn baby (20-22).

Our research aims to ascertain the association between the delivery mode and the ability to initiate breastfeeding. With knowledge on overcoming various barriers that may impede the introduction and maintenance of breastfeeding habits, healthcare personnel can directly provide optimal education and assistance regarding breastfeeding in the immediate postnatal period. This will result in increased breastfeeding rates among our population.

Methodology

This cross-sectional study was carried out in the obstetrics department of Lady Reading Hospital after approval from the hospital's ethical committee. Written informed consent was taken from the women who delivered in our facility (regular vaginal delivery/cesarean section) for enrollment in the study. Postnatal mothers were interviewed, and information was collected on a specifically designed proforma 24 hours after the birth of the baby and then on the day of discharge. Breastfeeding practices were classified according to WHO definitions (World Health Organization 2008a). A convenience sampling technique was used for the collection of data. Using openepi software, keeping anticipated frequency 18%, confidence level 95%, power of study 80%, sample size calculated is 227. The criteria for inclusion were all women of reproductive age group, with term pregnancy (37- 40⁺⁶), who delivered a healthy baby (Apgar score of ≥ 8 at five minutes) in our facility and intended to participate in the study willingly. The criteria for exclusion were all the women having multiple pregnancies, structurally abnormal babies, and neonates needing admission to the nursery ward within the first 24 hours were excluded from the study. Similarly, women with communicable infectious diseases, psychiatric illnesses, and medical co-morbidities requiring admission to the Intensive Care Unit were excluded. Data was entered into SPSS version 20, and results were shown as percentages, mean, graphs, and charts. The association of breastfeeding practices with the mode of delivery was determined by employing a chi-square test.

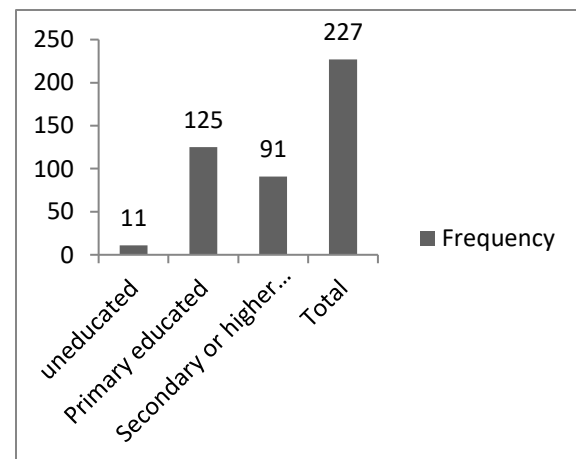
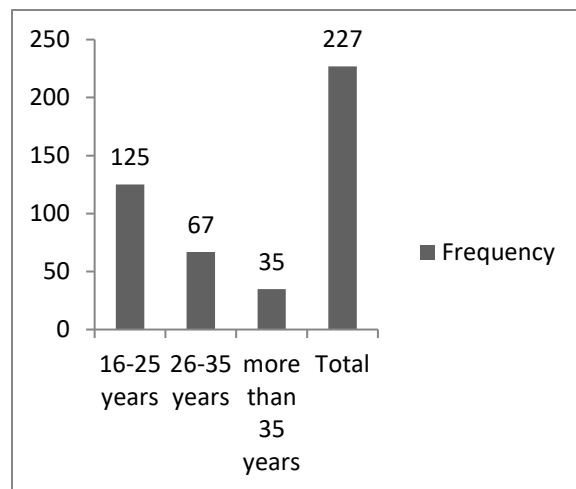
Results

In the current study, a total of 227 patients were enrolled. Based on age-wise distribution, 125 (55.07%) patients were 16-25 years old, 67 (29.52%) were 26-35 years old, and 35 (15.42%) patients were more than 35 years of age. (Figure 1) Based on education status, 11 (4.85%) patients were

uneducated, 125 (55.07%) were Primary educated, and 91 (40.09%) patients were Secondary or higher educated. (Figure 2) Similarly, 136 (59.91%) patients were from rural areas, while 91 (40.09%) were from urban areas. (Figure 3) Amongst 227 women, 109 (48.02%) delivered vaginally, while the cesarean section was done in 118 (51.98%) patients. (Figure 4) Based on the initiation of breastfeeding, amongst 109 patients who delivered vaginally, breastfeeding within one hour was initiated in 79 (72.48%) patients. In comparison, breastfeeding initiation was observed in 118 patients with cesarean section within one hour in 74 (62.71%) patients. Breastfeeding in >1 h to 23 h was initiated in 26 (23.85%) patients who delivered vaginally, whereas in >1 h to 23 h, it was initiated in 40 (33.90%) patients with caesarian section. Breastfeeding after 24 h of birth was instituted in 4 (3.67%) patients who delivered vaginally. Similarly, it was initiated 24 hours after delivery in 4 (3.38%) patients with cesarean section. The association between the Breastfeeding initiation and mode of delivery was significant statistically (p=0.001) (Table 1)

Figure 1: Patient distribution based on age

Figure 2: Patient distribution based on education status



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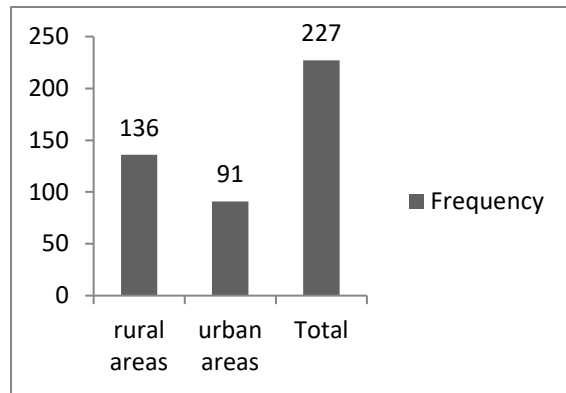


Figure 3: Patient distribution based on residential status

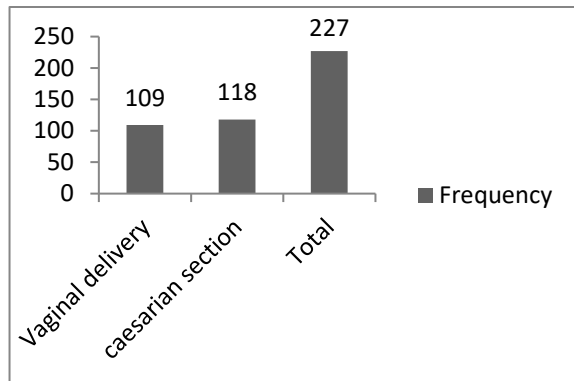


Figure 4: Patient distribution based on the mode of delivery

Table 1: Association between the Breastfeeding initiation and mode of delivery

Breastfeeding Initiation	Mode Of Delivery		P Value
	Vaginal delivery N (%)	caesarian section N (%)	
within one hour	79 (72.48%)	74 (62.71%)	0.001
>1 h to 23 h	26 (23.85%)	40 (33.90%)	
totto	4 (3.67%)	4 (3.38%)	

Discussion

One of the key elements influencing breastfeeding practices is the delivery mode. Cesarean section can hurt the physiological processes of lactation and the initial bonding between the mother and her baby. This may be due to post-operative pain for the mother and the high level of intensive care that infants require, which can hurt the early initiation of breastfeeding (23-27). This study was conducted to assess the association of breastfeeding practices with the mode of delivery. In the current study, a total of 227 patients were enrolled. Based on age-wise distribution, 125 (55.07%) patients were 16-25 years old, 67 (29.52%) were

26-35 years old, and 35 (15.42%) patients were more than 35 years of age. Eleven women (4.85%) were uneducated, 125 (55.07%) were primarily educated, and 91 (40.09%) patients were Secondary or higher educated. Based on residential status, 136 (59.91%) patients were from rural areas, while 91 (40.09%) were from urban areas. These findings were from the previous study by Bhati R et al., who reported that most patients were 18-30 years old. Most enrolled patients were poorly educated and from rural areas (28). Another study done by Shahla A B also reported comparable results to our findings (29). Amongst 227 women, 109 (48.02%) delivered vaginally, while the cesarean section was done in 118 (51.98%) patients. One of the reasons for the higher rate of CD in our setup is that being the largest tertiary care hospital in the province; we have a high-risk obstetric population with associated comorbidities and cases handled by traditional dai. A study by Shahla A B reported that a cesarean section was done in most of their patients, which is comparable with our findings (29). Another study done by Nüket P E et al. reported that women with cesarean section in their study were more as compared to women with vaginal delivery 30. Breastfeeding was initiated within one hour of birth in 79 (72.48%) who delivered vaginally. However, among 118 patients with cesarean section, initiation of breastfeeding within one hour was observed in 74 (62.71%) patients. Breastfeeding in >1 h to 23 h was initiated in 26 (23.85%) patients who delivered vaginally, whereas; it was initiated in 40 (33.90%) patients who underwent cesarean section. Breastfeeding was initiated twenty-four hours after birth in 4 (3.67%) patients who delivered vaginally; it was instituted in 4 (3.38%) patients with cesarean delivery. The association between breastfeeding initiation and mode of delivery was statistically significant (p=0.001). A previous study by Shahla A B et al. also reported a significant association between breastfeeding initiation and mode of delivery (29). Another survey by Nüket P E et al. also reported a significant association between breastfeeding initiation and mode of delivery (30). According to the current study, women who delivered vaginally were more motivated to start breastfeeding earlier rather than later. It concurs with the findings of Johar et al. (31). Our percentage of early breastfeeding initiation within an hour was much higher than that of the "Malaysian National Health and Morbidity Survey" of 2016, which showed that only 49% of mothers who gave birth via cesarean section began nursing within an hour after giving birth (32). Whereas Canadian women commenced a considerably more significant proportion (97.5%) of nursing during their hospital stay after cesarean birth, Puerto Rican women started breastfeeding at a lower rate (61.5%) (33). In 2018, according to the UNICEF report, 42% of newborns began breastfeeding during the first hour of their lives. There is an opportunity for development, even though our study's (74%) rate of initial breastfeeding amongst women who had vaginal deliveries within the first hour of delivery is far more than the worldwide average. A previous systematic review and meta-analysis reported the association of the mode of delivery with breastfeeding initiation. They reported that the rate of mortality increased by 85% in infants who started breastfeeding within > 24 hours as compared to infants who began breastfeeding within one hour of delivery (34). There is a need to intensify measures to increase the frequency of breastfeeding initiation within

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the first hour of life since it may save lives and have long-lasting advantages for a child's health and well-being (35).

Conclusion

Our study concludes that the chance of delayed initiation of breastfeeding was higher in women who had caesarean delivery. Hence, Counseling regarding the initiation and maintenance of breastfeeding should be a mandatory part of prenatal care provided to women by hospitals. Adequate professional support must be available in the postnatal wards, especially for women who delivered by cesarean section, and should be tailored according to the individual needs.

Hospitals should train medical personnel in breastfeeding and educate them on the adverse effects of cesarean birth. The study's limitations were the small sample size and the inability to follow up on breastfeeding behaviors after discharge from the hospital.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared absence of conflict of interest.

Author Contribution

SYEDA SITWAT FATIMA (Assistant Professor)

Study Design, Review of Literature.

Conception of Study, Development of Research Methodology Design, Study Design,, Review of manuscript, final approval of manuscript.

Conception of Study, Final approval of manuscript.

SHAHIDA SULTAN (Assistant Professor)

Manuscript revisions, critical input.

Coordination of collaborative efforts.

Manuscript drafting.

Data entry and Data analysis, drafting article.

Coordination of collaborative efforts.

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