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Research Article

# Impact of A Prenatal Education Intervention on Breastfeeding Initiation and Neonatal Glycemic Control in Gestational Diabetes: A Diverse Cohort Study

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**Abstract**

**Objectives:** This study evaluated the impact of a structured, nurse-led prenatal breastfeeding education program on breastfeeding initiation rates and neonatal glycemic outcomes among women with gestational diabetes mellitus (GDM), with a focus on addressing health disparities in a diverse population. **Methods:** A retrospective cohort study was conducted using clinical data from 1,689 women with GDM (2018–2024). The intervention group (n = 146) received a 20–30-minute structured session focused on breastfeeding benefits and neonatal metabolic regulation. The reference group (n = 1,543) received standard care. Primary outcomes were breastfeeding initiation and neonatal hypoglycemia. Subgroup analysis by ethnicity (Jewish and Arab) was performed to evaluate health equity.**Results:** Breastfeeding initiation was significantly higher in the intervention group (74% vs. 61%, p = 0.005). Despite a higher proportion of large-for-gestational-age (LGA) infants in the intervention group (18% vs. 11%, p = 0.008), neonatal hypoglycemia rates remained similar (9.6% vs. 9.3%, p = 0.9), suggesting a protective metabolic buffer. Arab women exhibited higher initiation rates than Jewish women (67% vs. 56%, p < 0.001) but experienced a higher incidence of neonatal hypoglycemia (11% vs. 7.7%, p = 0.036), correlating with lower socio-economic status.**Conclusions:** A brief, scalable prenatal session significantly improves breastfeeding initiation in GDM patients. Integrating this low-cost, nurse-led intervention into routine care is vital for optimizing neonatal outcomes and promoting health equity across diverse populations.

**Keywords:** Breastfeeding initiation; Gestational Diabetes Mellitus (GDM); Nurse-led intervention; Prenatal education; Neonatal hypoglycemia; Health equity.

**Significance**

What is already known on this topic? Women with GDM face significant physiological and psychological barriers to breastfeeding, leading to lower initiation rates and increased risks of neonatal hypoglycemia.

- What this study adds? A brief (20-30 min), nurse-led prenatal intervention effectively increases breastfeeding initiation. Notably, it acts as a "metabolic buffer" for high-risk LGA infants, stabilizing glucose levels despite their inherent risks.

- How this study impacts maternal and child health practice? This scalable, low-cost intervention can be integrated into outpatient settings to mitigate health disparities and improve both immediate neonatal stability and long-term maternal health.

**Introduction**

Gestational Diabetes Mellitus (GDM) represents a growing global public health challenge, characterized by hyperglycemia first recognized during pregnancy [1-21]. The prevalence of GDM is rising, affecting approximately 14% of pregnancies worldwide and posing significant short- and long-term metabolic risks for both mothers and infants [2-17]. Women with a history of GDM face a substantially elevated risk up to seven times higher of developing type 2 diabetes mellitus (T2DM) later in life [8-15]. For the neonate, in utero exposure to hyperglycemia increases susceptibility to neonatal hypoglycemia, obesity, and cardiovascular diseases in adulthood [4-13]. Given these multifaceted risks, identifying effective, scalable strategies to optimize neonatal glucose homeostasis and maternal metabolic health is of paramount importance for maternal and child health practice. Breastfeeding is widely recognized as a critical preventative strategy for this high risk population. For infants of diabetic mothers, breastfeeding reduces the risk of neonatal hypoglycemia and stabilizes glucose concentrations more effectively than formula feeding [5-14]. Immediate skin to skin contact and early, frequent breastfeeding act as essential non pharmacological interventions for metabolic stability [6]. Furthermore, breastfeeding offers a low-cost strategy to mitigate long-term metabolic risks for the mother, including improved postpartum glucose regulation [4-19]. Despite these documented benefits, women with GDM exhibit lower rates of exclusive breastfeeding initiation and are prone to premature cessation compared to the general population [1-16]. These women face unique physiological challenges, including a delayed onset of lactogenesis II (secretory activation) and reduced milk supply [8]. These difficulties are often exacerbated by clinical factors such as higher rates of cesarean delivery and mother-infant separation due to neonatal complications [7-12]. Beyond physiological hurdles, psychosocial barriers-including psychological distress and reduced self-efficacy-further hinder success. As highlighted in recent research published in the Maternal and Child Health Journal, early breastfeeding difficulties can have profound implications, negatively predicting mothers' bonding with their infants in the first six months postpartum [18].

Furthermore, the burden of GDM and breastfeeding barriers is not distributed equally. Recent evidence indicates that women often perceive a GDM diagnosis as a significant "burden," where the medical focus on glycemic control overshadows personal lactation goals [2] As healthcare systems strive to promote health equity, it is essential to understand how interventions perform across diverse cultural and ethnic backgrounds [22].In multicultural settings, such as Israel, addressing disparities between diverse populations (e.g., Jewish and Arab women) is critical for ensuring that clinical benefits reach all high-risk subgroups. Consistent with recommendations from the World Health Organization (2025) and the American Diabetes Association (2025), care plans must be person centered. Effective strategies should integrate psychological support with targeted education, addressing specific GDM related concerns such as antenatal milk expression (AME) and delayed lactogenesis [25]. However, there is a gap in evidence regarding the effectiveness of brief, structured prenatal interventions provided in outpatient settings. Therefore, this study aims to evaluate the effectiveness of a brief, nurse-led prenatal breastfeeding education program in improving breastfeeding initiation rates and neonatal glycemic outcomes among a culturally diverse population of women with GDM.

**Methods**

**Study Design and Setting**

A retrospective cohort study was conducted at a large tertiary medical center. The reporting of this study conforms to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cohort studies. The study analyzed clinical data from women with diabetes who received care at the Obstetric Outpatient Clinic between 2018 and 2024. The facility serves a culturally and ethnically diverse population, providing a unique opportunity to examine health disparities and the impact of educational interventions across different subgroups. As part of a nurse - led quality improvement initiative, eligible women were consecutively offered a structured breastfeeding education session. The reference group consisted of all other eligible women with GDM who received standard care at the same facility during the study period without participating in the educational session.

**Participants**

The study population included women aged 18-45 years with a singleton pregnancy and a documented diagnosis of Gestational

Diabetes Mellitus (GDM) or pre gestational diabetes. Exclusion criteria consisted of multiple gestations and pregnancies complicated by suspected intrauterine growth restriction (IUGR). A total of 1,689 patients were identified as eligible and met the inclusion criteria, representing a diverse clinical spectrum of diabetes management. Of these, 146 women were enrolled in the intervention group and 1,543 comprised the reference group.

### The Nurse-Led Breastfeeding Intervention

The intervention was designed as a scalable, low-resource, structured, brief, one-time group breastfeeding education session conducted starting from the 32nd week of gestation as part of routine prenatal care. Each session, lasting 20–30 minutes, was facilitated by specialized maternity nurses within the Obstetric Day Care Unit. To enhance maternal health literacy and ensure cultural accessibility for the clinic's diverse population, the nurses utilized various visual aids, including multimedia presentations, dolls, and anatomical models. The curriculum was designed to address both general and GDM-specific needs, covering the physiological benefits of breastfeeding, the critical role of colostrum in neonatal metabolic regulation, and practical skills such as identifying infant hunger cues and ensuring proper latching. Aligned with nursing practice standards for high-risk pregnancies, specific emphasis was placed on diabetes-related guidance. This included the importance of early breastfeeding to prevent neonatal hypoglycemia and tailored glucose monitoring strategies for mothers receiving pharmacological treatment (insulin or oral hypoglycemics). By focusing on these high-yield topics within a brief timeframe, the intervention was optimized for integration into busy outpatient settings.

### Data Collection

Data were extracted retrospectively from the hospital's electronic health records (EHR) and a specialized research database. The dataset encompassed comprehensive demographic information, including maternal age, ethnicity, education level, and socio-economic status (SES). Clinical obstetric and neonatal parameters included the gestational week of GDM diagnosis, the specific treatment modality (stratified by diet-controlled versus pharmacological intervention), mode of delivery, and neonatal birth weight. The primary breastfeeding outcome focused on the initiation of breastfeeding, while biochemical outcomes specifically included neonatal blood glucose levels recorded during the first 48 hours of life. To maintain the study's focus, maternal postpartum glucose levels and long-term breastfeeding duration were not evaluated. The use of standardized EHR data ensured consistency in outcome measurement across the diverse study population.

### Outcome Measures

The primary outcome was the initiation of postpartum breastfeeding (defined as the first successful feed during the hospital stay). Secondary outcomes included neonatal blood glucose levels, the incidence of neonatal hypoglycemia events upon admission, and hospital length of stay (LOS). Reflecting the study's focus on health equity, a subgroup analysis was performed to evaluate whether the intervention's reach and effectiveness differed across ethnic groups (Jewish and Arab populations), aiming to identify and address potential disparities in maternal and neonatal outcomes.

### Ethical Considerations

The study was approved by the Institutional Ethics Committee of a large tertiary medical center (Protocol No. 0388-24-SOR) and was conducted in accordance with the Declaration of Helsinki. Due to the retrospective nature of the study, the requirement for informed consent was waived by the ethics committee. All patient data were handled anonymously and de identified prior to analysis to ensure strict confidentiality and privacy.

### Statistical Analysis

Descriptive statistics were calculated using means and standard deviations (SD) or medians with interquartile ranges (IQR) for continuous variables, and proportions for categorical variables. Group comparisons for continuous variables were performed using the Wilcoxon rank-sum test, while categorical variables were compared using Pearson's Chi squared test or Fisher's exact test. Subgroup analyses were conducted to evaluate potential disparities in outcomes across ethnic groups. Statistical significance was defined as a two sided p-value $< 0.05$. All analyses were performed using R software, version 4.3.2.

## Results

A total of 1,689 patients were included in the study, comprising 146 patients in the intervention group and 1,543 in the reference group. Baseline demographic and obstetric characteristics are presented in (Table 1).

| Characteristic | No Intervention, N = 1,543[1] | Intervention, N = 146[1] | p-value[2] |
|---|---|---|---|
| Maternal age at delivery (years) | 33.9 (5.8); 34.0 (29.9, 37.9) | 34.1 (6.0); 34.5 (29.0, 38.9) | 0.7 |
| SES* | 2.97 (2.78); 2.00 (0.00, 5.00) | 2.93 (2.85); 2.00 (0.00, 5.00) | 0.8 |
| Sector (Arab) | 831 (54%) | 78 (53%) | >0.9 |
| Charlson Score Index | 1.20 (0.91); 1.00 (1.00, 1.00) | 1.21 (0.78); 1.00 (1.00, 1.00) | 0.8 |
| Pregnant Age (days) | 265 (11); 266 (259, 273) | 265 (8); 266 (259, 269) | 0.13 |
| Pregnant N. | 4.45 (3.05); 4.00 (2.00, 6.00) | 4.43 (3.33); 3.50 (2.00, 6.00) | 0.6 |
| Birth N. | 3.55 (2.55); 3.00 (1.00, 5.00) | 3.44 (2.68); 2.00 (1.00, 5.00) | 0.4 |
| Normal Delivery | 820 (53%) | 92 (63%) | 0.022 |
| Infant Weight (g) | 3,282 (570); 3,295 (2,940, 3,625) | 3,328 (568); 3,210 (2,941, 3,695) | 0.7 |
| **Weight for gestational age** | | | 0.008 |
| AGA | 1,271 (87%) | 112 (82%) | |
| LGA | 159 (11%) | 25 (18%) | |
| SGA | 34 (2.3%) | 0 (0%) | |
| Unknown | 79 | 9 | |

*Socio-economic status
[1]Mean (SD); Median (IQR); n (%)
[2] Wilcoxon rank sum test; Pearson's Chi-squared test; Fisher's exact test

Table 1: Baseline characteristics of the intervention and reference groups.

Maternal age at delivery was similar between the intervention and reference groups (34.1 ± 6.0 vs. 33.9 ± 5.8 years, p = 0.7). Socio economic status did not differ between groups (mean SES 2.93 ± 2.85 vs. 2.97 ± 2.78, p = 0.8), nor did ethnicity, with Arab sector representation of 53% in the intervention group and 54% in the reference group (p > 0.9). Comorbidity burden, assessed by the Charlson Comorbidity Index, was comparable between groups (1.21 ± 0.78 vs. 1.20 ± 0.91, p = 0.8). Gestational age at delivery was similar (265 ± 8 vs. 265 ± 11 days, p = 0.13). Gravidity (4.43 ± 3.33 vs. 4.45 ± 3.05, p = 0.6) and parity (3.44 ± 2.68 vs. 3.55 ± 2.55, p = 0.4) did not differ significantly between groups. Mode of delivery differed significantly, with a higher rate of normal vaginal delivery in the intervention group compared with the reference group (63% [92/146] vs. 53% [820/1,543], p = 0.022). Mean infant birth weight was similar between groups (3,328 ± 568 g vs. 3,282 ± 570 g, p = 0.7). However, weight for gestational-age distribution differed significantly (p = 0.008), with a higher proportion of large for gestational age (LGA) infants in the intervention group (18% [25/137] vs. 11% [159/1,464]), no small-for-gestational-age infants in the intervention group (0% vs. 2.3% [34/1,464]), and similar proportions of appropriate-for-gestational-age infants (82% vs. 87%).Clinical outcomes are shown in (Table 2).

| **Characteristic** | **No intervention,** N = 1,543[1] | **Intervention,** N = 146[1] | **p-value**[2] |
|---|---|---|---|
| Breastfeeding | 839 (61%) | 92 (74%) | 0.005 |
| Unknown | 165 | 21 | |
| First fetal glucose | 67 (20); 65 (54, 78) | 66 (18); 66 (55, 75) | >0.9 |
| First maternal glucose | 103 (24); 99 (89, 114) | 103 (22); 102 (90, 116) | 0.4 |
| Unknown | 563 | 34 | |
| Hypoglycemia on admission | 143 (9.3%) | 14 (9.6%) | 0.9 |
| Hospital length of stay (days) | 5.71 (3.84); 5.00 (4.00, 6.00) | 5.42 (1.96); 5.00 (4.00, 6.00) | 0.6 |

[1] Mean (SD); Median (IQR); n (%)
[2] Wilcoxon rank sum test; Pearson's Chi-squared test; Fisher's exact test

Table 2: Comparison of maternal and neonatal clinical outcomes between intervention and reference groups.

Breastfeeding rates were significantly higher in the intervention group compared with the reference group (74% [92/125] vs. 61% [839/1,378], p = 0.005). Neonatal glucose levels did not differ between groups (66 ± 18 vs. 67 ± 20 mg/dL, p > 0.9), nor did maternal glucose levels (103 ± 22 vs. 103 ± 24 mg/dL, p = 0.4). Rates of neonatal hypoglycemia on admission were similar between groups (9.6% [14/146] vs. 9.3% [143/1,543], p = 0.9). Length of hospital stay did not differ significantly between the intervention and reference groups (5.42 ± 1.96 vs. 5.71 ± 3.84 days, p = 0.6).Baseline and obstetric characteristics stratified by ethnicity are presented in (Table S1).

| **Characteristic** | **Jews, N = 780**[1] | **Arabs, N = 909**[1] | **p-value**[2] |
|---|---|---|---|
| Maternal age at delivery (years) | 34.4 (5.7); 34.2 (30.6, 38.3) | 33.5 (5.9); 34.0 (29.0, 37.9) | 0.015 |
| SES* | 4.73 (2.23); 5.00 (4.00, 6.00) | 1.49 (2.31); 1.00 (0.00, 2.00) | <0.001 |
| Charlson score index | 1.18 (0.96); 1.00 (1.00, 1.00) | 1.22 (0.84); 1.00 (1.00, 1.00) | 0.053 |
| Normal Delivery | 428 (55%) | 484 (53%) | 0.5 |
| Pregnant Age (days) | 265 (11); 266 (261, 273) | 265 (10); 266 (259, 272) | 0.009 |
| Pregnant N. | 3.25 (2.23); 3.00 (2.00, 4.00) | 5.47 (3.32); 5.00 (3.00, 8.00) | <0.001 |
| Birth N. | 2.41 (1.60); 2.00 (1.00, 3.00) | 4.50 (2.83); 4.00 (2.00, 6.00) | <0.001 |
| Infant Weight (g) | 3,222 (554); 3,215 (2,919, 3,581) | 3,341 (578); 3,340 (2,980, 3,700) | <0.001 |

| | | | |
|---|---|---|---|
| Weight for gestational age | | | <0.001 |
| AGA | 669 (90%) | 714 (84%) | |
| LGA | 62 (8.3%) | 122 (14%) | |
| SGA | 16 (2.1%) | 18 (2.1%) | |
| Unknown | 33 | 55 | |
| *Socio-economic status;<br>[1]n (%); Mean (SD); Median (IQR)<br>[2]Pearson's Chi-squared tests; Wilcoxon rank sum test; Fisher's exact test | | | |

Table S1: Comparison of baseline and obstetric characteristics between Jews and Arabs.

Arab patients were slightly younger at delivery compared with Jewish patients (33.5 ± 5.9 vs. 34.4 ± 5.7 years, p = 0.015) and had substantially lower socio-economic status (mean SES 1.49 ± 2.31 vs. 4.73 ± 2.23, p < 0.001). Charlson Comorbidity Index was similar between groups, with a trend toward higher scores among Arab patients (1.22 ± 0.84 vs. 1.18 ± 0.96, p = 0.053). Rates of normal vaginal delivery did not differ between Arab and Jewish patients (53% vs. 55%, p = 0.5). Gestational age at delivery was marginally shorter among Arab patients (265 ± 10 vs. 265 ± 11 days, p = 0.009). Gravidity and parity were significantly higher among Arab patients (gravidity: 5.47 ± 3.32 vs. 3.25 ± 2.23; parity: 4.50 ± 2.83 vs. 2.41 ± 1.60; both p < 0.001). Mean infant birth weight was higher among Arab patients compared with Jewish patients (3,341 ± 578 g vs. 3,222 ± 554 g, p < 0.001). Weight-for-gestational-age distribution also differed significantly (p < 0.001), with a higher proportion of large-for-gestational-age infants among Arab patients (14% vs. 8.3%). In comparison, rates of small-for-gestational-age infants were similar (2.1% in both groups). Clinical outcomes by ethnicity are summarized in (Table S2). Breastfeeding rates were significantly higher among Arab patients compared with Jewish patients (67% vs. 56%, p < 0.001). Neonatal glucose levels were similar between groups (67 ± 21 vs. 67 ± 19 mg/dL, p > 0.9), as were maternal glucose levels (104 ± 25 vs. 103 ± 22 mg/dL, p = 0.4). However, Arab neonates had a higher rate of hypoglycemia on admission compared with Jewish neonates (11% vs. 7.7%, p = 0.036). Length of hospital stay was slightly longer among Arab patients (5.74 ± 3.43 vs. 5.63 ± 4.03 days, p < 0.001).

## Discussion

The significant increase in breastfeeding initiation rates observed in the intervention group (74% vs. 61%, p = 0.005) directly validates the effectiveness of our structured education program. This finding is particularly noteworthy given that women with GDM face unique physiological and psychological barriers, such as delayed lactogenesis II and reduced maternal self efficacy, which typically hinder breastfeeding success [8-24]. These results are consistent with the systematic review and meta-analysis by [23]. Which demonstrated that structured educational and supportive interventions are highly effective in increasing breastfeeding rates and enhancing breastfeeding self efficacy, particularly when delivered during the prenatal period. Furthermore, as highlighted in research published in the Maternal and Child Health Journal, early breastfeeding success is a critical determinant of long-term outcomes; for instance, difficulties in the early postpartum period can negatively predict maternal-infant bonding [18].By providing targeted, diabetes-specific guidance before delivery, our intervention appears to have effectively mitigated these challenges. Recent evidence highlights that women often experience a GDM diagnosis as a significant "burden," where the intensive focus on glycemic management can overshadow their personal goals for lactation [2] Our findings suggest that a brief, nurse-led intervention can successfully address this burden by refocusing clinical attention on breastfeeding as a achievable health goal.

Furthermore, considering the well-established 7 fold increased risk of future type 2 diabetes in this population [8-17] achieving higher breastfeeding rates is not merely a clinical success in the short term, but a vital public health strategy for long-term maternal metabolic protection [20]. A notable finding of this study is that despite a significantly higher rate of Large-for-Gestational-Age (LGA) infants in the intervention group (18% vs. 11%, p = 0.008), the incidence of neonatal hypoglycemia remained statistically equivalent to the reference group (9.6% vs. 9.3%, p = 0.9). Neonates exposed to gestational diabetes mellitus (GDM) in utero, particularly those classified as macrosomic or LGA, are intrinsically predisposed to metabolic instability and hypoglycemia due to continued postnatal hyperinsulinism in response to maternal hyperglycemia [8]. The observation that these high-risk infants did not experience the expected surge in hypoglycemic events

suggests that prenatal breastfeeding education and the emphasis on early colostrum initiation acted as a critical non-pharmacological protective buffer [8-11]. As emphasized by [23], combining prenatal education with nursing support is essential for translating maternal knowledge into positive clinical outcomes, such as neonatal glucose stabilization. By prioritizing immediate skin to skin contact and frequent breastfeeding, mothers in the intervention group successfully navigated the physiological barriers that typically lead to formula supplementation and subsequent metabolic fluctuations in LGA infants [6]. Consequently, these findings underscore the role of structured prenatal guidance in empowering mothers to utilize early colostrum as an effective clinical strategy to mitigate the metabolic risks inherent in LGA births [21-24].

Regarding ethnic disparities, the observation that Arab women exhibited significantly higher breastfeeding initiation rates (67% vs. 56%, $p < 0.001$) is consistent with cultural frameworks that prioritize breastfeeding. The success of this intervention across diverse groups aligns with the focus of the Maternal and Child Health Journal on health equity. As noted by [22], nurse-led interventions are pivotal in promoting health equity by delivering accessible, evidence-based care to diverse and vulnerable populations. Within many Muslim communities, breastfeeding is perceived as a spiritual mandate, often reinforced by multi generational family support structures including mothers and mothers in law that prioritize breast milk as the optimal nutritional source [14]. However, the concurrent finding of higher rates of neonatal hypoglycemia (11% vs. 7.7%, $p = 0.036$) and prolonged hospitalizations among this cohort likely reflects the impact of the socio-demographic profile identified in our data. Arab participants presented with significantly lower socio-economic status (SES) and higher parity, both of which are documented independent predictors of more severe metabolic dysregulation. Integrating nurse-led programs into routine prenatal care is therefore a vital strategy for addressing health disparities and ensuring clinical benefits reach all high-risk subgroups [22]. Despite these insights, several limitations of the current study must be acknowledged. First, its retrospective nature limits the ability to establish definitive causal relationships between the prenatal education intervention and the observed outcomes [8,9]. Second, the lack of long-term breastfeeding follow-up after hospital discharge represents a significant constraint. While the intervention successfully boosted initial breastfeeding rates, the absence of data regarding the duration and exclusivity of breastfeeding in the months following discharge prevents an assessment of whether these early gains translate into the sustained metabolic protection required to reduce the lifelong risk of type 2 diabetes for both the mother and the infant [8]. In conclusion, our findings demonstrate that a brief, structured prenatal breastfeeding education session significantly improves breastfeeding initiation among women with GDM. Given that nurse-led initiatives are both cost-effective and scalable [22-23].This intervention should be integrated into standard prenatal care to optimize maternal and neonatal outcomes. Future research should prioritize investigating long-term breastfeeding persistence and its specific impact on the prevention of Type 2 Diabetes later in life for this high risk population [8-10].

| Characteristic | Jews, N = 780[1] | Arabs, N = 909[1] | p-value[2] |
|---|---|---|---|
| Breastfeeding | 387 (56%) | 544 (67%) | <0.001 |
| Unknown | 89 | 97 | |
| First fetal glucose | 67 (19); 65 (55, 76) | 67 (21); 65 (53, 78) | >0.9 |
| Unknown | 2 | 0 | |
| First maternal glucose | 103 (22); 99 (88, 113) | 104 (25); 99 (89, 115) | 0.4 |
| Unknown | 329 | 268 | |
| Hypoglycemia on admission | 60 (7.7%) | 97 (11%) | 0.036 |
| Hospital length of stay (days) | 5.63 (4.03); 5.00 (4.00, 6.00) | 5.74 (3.43); 5.00 (4.00, 6.00) | <0.001 |

[1]n (%); Mean (SD); Median (IQR)
[2]Pearson's Chi-squared tests; Wilcoxon rank sum test; Fisher's exact test

Table S2: Comparison of clinical outcomes between Jews and Arabs

## Relevance for Clinical Practice

The findings of this study underscore the pivotal role of obstetric and endocrine nurses in improving health outcomes for women with GDM through targeted education. By implementing a concise, 20-30 minute structured breastfeeding session during routine prenatal visits, healthcare facilities can effectively enhance maternal breastfeeding self efficacy and overcome the unique physiological and psychosocial barriers to lactation in this high risk population. This evidence based, low-cost intervention provides a scalable model for clinical practice that not only promotes early neonatal glycemic stability especially in LGA infants but also serves as a long term public health strategy to promote health equity and reduce future metabolic complications for both mothers and their children.

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