



# Examining The Impact Of Breastfeeding Promotion Intervention On Breastfeeding Intentions And Duration Among Black Mothers in Cincinnati, Ohio

## Abstract

Breastfeeding (BF) offers many benefits for maternal and child health; therefore, it is a gold standard feeding method. The primary goal of this practicum is to assess the effectiveness of the BF educational sessions on BF intention and duration by using quantitative statistical analyses. Most women were African-American low-income Black mothers with a total of participants [n=356] between 2021-2023 in the educational sessions (pre-and post) with postpartum groups (BF duration-follow-up) response [n=60] between the years 2022-2023 within Cincinnati, Ohio. The study design used was a secondary analysis method. The statistical findings were analyzed using the Kruskal-Wallis Test (median score, 95% CI) in R-studio, and BF duration data was measured using frequency percentile. The graphs were designed using GraphPad Prism. The data result demonstrates the effectiveness of BF educational sessions that raised mothers' awareness significantly regarding their BF intentions (pre- vs post) and increased BF duration [>2 months] showing a high prevalence of initiation rate.

## Introduction

- Human milk has a distinctive composition and contains a variety of bioactive factors.
- Black mothers in the United States have shorter breastfeeding durations compared to other racial groups durations (16-27% less) and have the lowest percentage of exclusively breastfed babies (19.8%) at six months of age.
- Black mothers are less likely to be offered lactation care and medical advice or support regarding BF from healthcare providers.
- 36,051 mothers and 27 randomized controlled trials discovered that mothers who received BF promotion interventions were 2.77 times more likely to sustain EBF for six months.
- Indeed, the BF educational sessions of the Black-led non-profit organization [BOOBS] within Cincinnati, Ohio indicates around 90% of Black mothers have initiated BF after attending the BF educational sessions.
- The aim was to compare the breastfeeding patterns between pre- and post-educational intervention groups of mothers who attended breastfeeding educational sessions and its effectiveness within the low-income Black population.**

## Methods

- The mothers were invited to enroll in BF educational sessions (pre-and post) and reached out BOOBS: Facebook, Instagram and website ([boobs-contact@breastfeeding.com](mailto:boobs-contact@breastfeeding.com)).
- Eligibility criteria: pregnant woman with a maternal age  $\geq 18$  years.
- Data analysis was performed comprising two data sets firstly, the pre-and post-survey responses of the participants (2021-2023), and secondly, the BF duration data set (2022-2023) follow-up feeding duration according to the baby's age: 4 or 5 days, 2-3 weeks, 1-2 months, and > 2 months.
- The questions for BF intention (Pre and Post) were 1) Planning to BF or at least try; 2) Planning to only formula feed my baby; 3) Intention to BF at 1 month of age; 4) Intention to BF at 3 months of age; 5) Intention to BF at 6 months of age.
- Likert Scale used: 5=Strongly agree, 4=Agree, 3=Neither agree nor disagree, 2=Disagree, 1=Strongly disagree).
- Questions for BF duration were 1) Are you BF?; 2) Are you ONLY giving the baby breast milk?; 3) Is the baby sometimes receiving formula?
- Dichotomous scale used: Yes/No.
- The study design used was a secondary analysis method.
- The statistical findings were analyzed using the Kruskal-Wallis Test with a median score [95% CI] of pre- and post-educational intervention and a frequency percentile was used to evaluate the BF duration in R-Studio.
- The graphs were designed using GraphPad Prism.

## Results

- Our findings indicates that after attending the BF educational sessions (post-educational intervention) at BOOBS the participants' agreement with their intentions to BF their infants has a strong evidence of percentile increase, compared to pre-educational intervention (Figure 1).

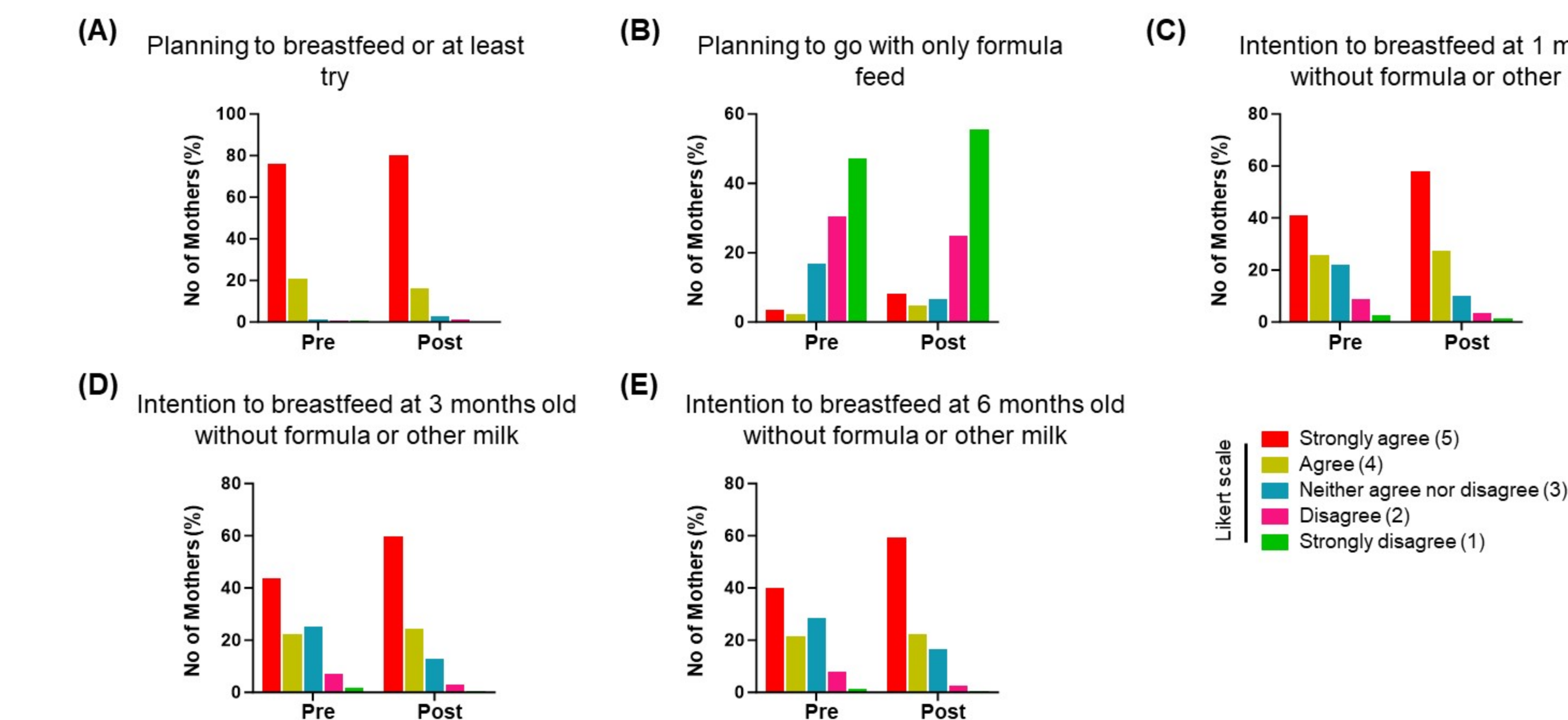


**FIGURE 1.** Overall percentile [%] of BF intention in pre- and post-educational intervention between the years 2021-2023 Response to every question pre- and post-educational intervention has been plotted. Matched sample only (N=356).

- Pre- and post-educational intervention (year 2021-2023) matched data demonstrates a significant change in mothers' intention towards BF ( $p < 0.0001$ ; Figure 2).
- Null hypothesis is rejected as the p-value  $< 0.05$  (Figure 2 C, D, and E; median score with 95% CI).

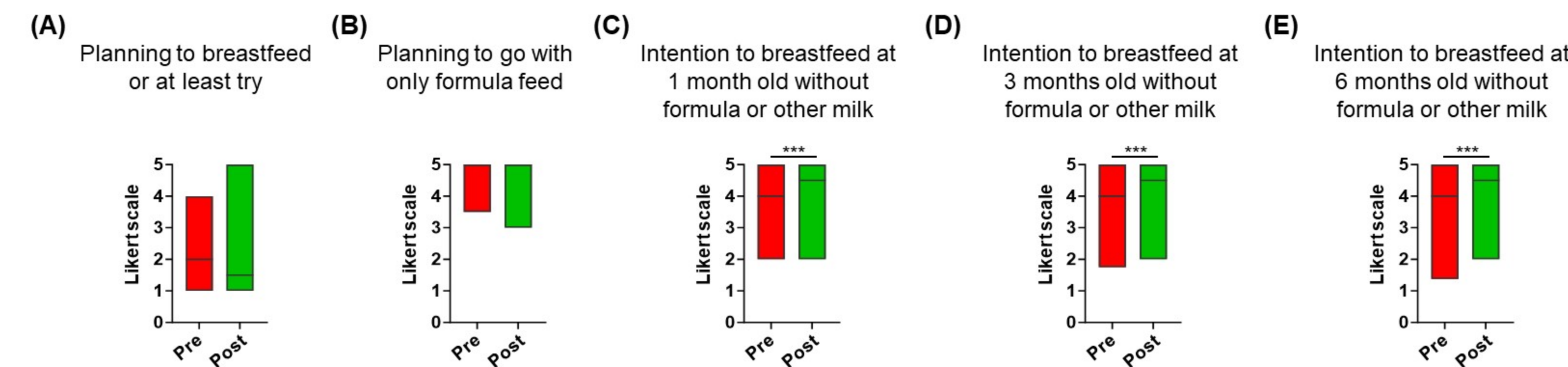


**FIGURE 2.** Likert scale response score for BF intention pre- and post-educational intervention of years 2021-2023. Boxplot with Kruskal-Wallis Test (median score, 95% CI). Matched sample only, N=356. \*\*\* $p < 0.0001$

- Mothers' questionnaire survey demonstrating patterns of nursing in infants at various points after delivery between the years 2022-2023

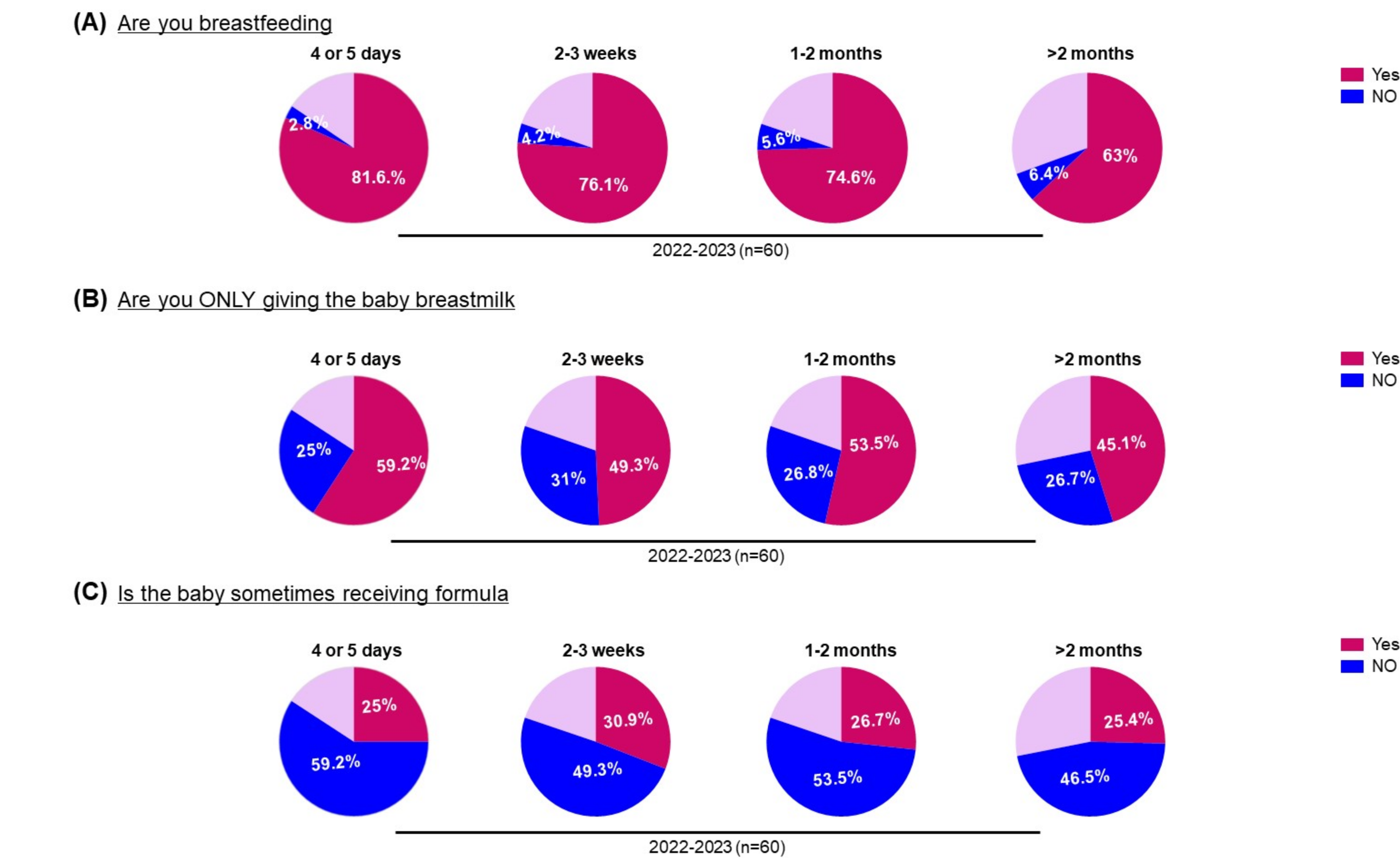


**FIGURE 3.** Pie chart showing the mother's response frequency as a function of BF duration. Data from 2022-2023 are displayed. Only the matched samples of BF duration were included. The pie chart's pink region represents mothers who did not respond.

- Combining questionnaire survey results from postpartum groups of 2022 and 2023 showed that the prevalence rate of follow-up feeding was higher in 4 or 5 days (initiation rate) than in 2-3 weeks, 1-2 months, and >2 months.

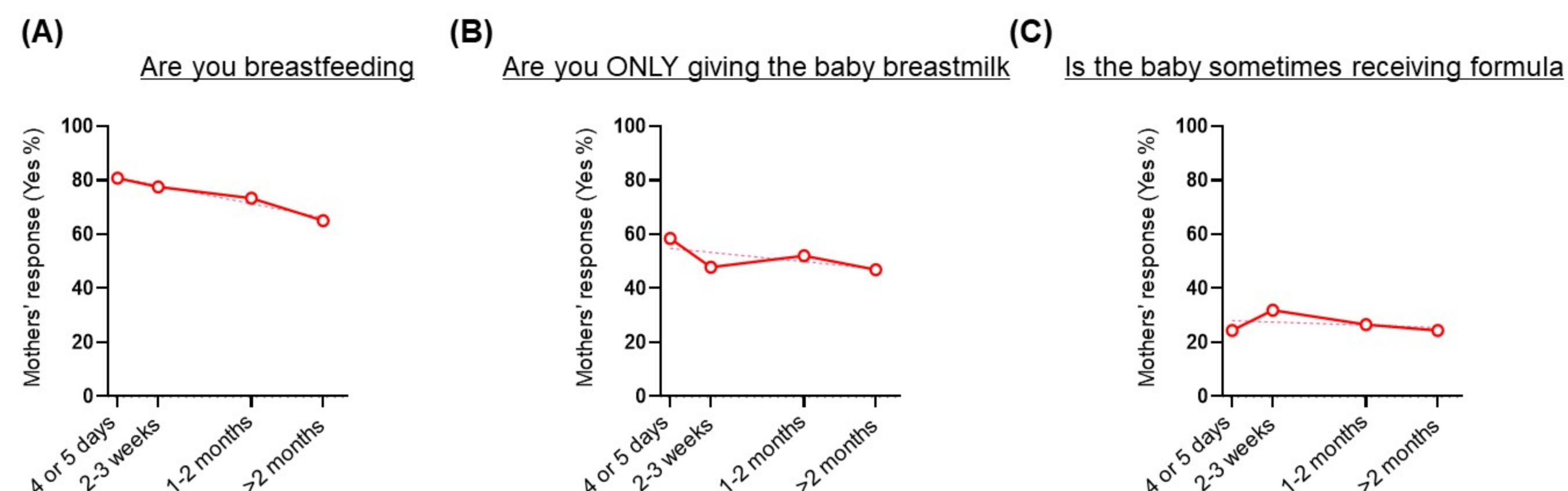


**FIGURE 4.** The year 2022-2023 combined total percentile [%] of the mother's questionnaire survey responses about the length of breastfeeding. The dotted line represents simple regression.

## Discussion

- The observed mothers' intentions increased from 40% to 80% in agreement level, demonstrating the efficacy of BF educational sessions and their positive influence on mothers' behavior.
- The post-educational intervention group outperformed better than the pre-educational intervention group; this difference was statistically significant ( $p < 0.0001$ ), [FIGURE 2 (C) – (E)].
- 70–80% of postpartum mothers initiated BF at a higher rate during the 4- or 5-day postpartum period compared to the other periods (2–3 weeks, 1-2 months, and > 2 months).
- The plot [FIGURE 4 (A) (B)] shows that the drop-off is not very high in this group and over 50% were still BF at 2+ months.
- The BOOBS educational program lays the groundwork for future interventions that emphasize community-driven policies and consistently evidence-based methods to promote public health benefits.

## Conclusions

- The BOOBS educational program (pre and post) has the potential to yield trustworthy findings that benefited minority communities. This multimodal strategy which included assistance, advocacy for policies, and education has resulted in improved BF intentions and behaviors.
- The project's limitations: The sample size of BF duration follow-up (60 participants) is low. The mother's feeding pattern for a maximum of >2 months of the baby's age was analyzed, therefore, a complete picture of the benefits of the BF educational sessions on duration cannot be estimated with this.

## Acknowledgements

I want to express my sincere gratitude to the following people for their support and contribution to this project:

- Dr. Janelle McClain, Ph.D., (Director/CEO), of Breastfeeding Outreach for Our Beautiful Sisters, is the practicum supervisor
- Dr. Ardythe Morrow (Professor), and Hatice Cetinkaya (Research Associate), Department of Environmental and Public Health Sciences, University of Cincinnati
- Dr. Rachael D. Nolan (Director), Graduate Public Health Program, University of Cincinnati.

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