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# Pacifier Use and Breastfeeding: A Qualitative Study of Postpartum Mothers

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## Abstract

**Objective:** Due to the inconclusive evidence supporting the traditional recommendation to avoid early pacifier use among breastfeeding newborns, this study aims to understand what information mothers are receiving from hospital based care providers and their perspectives about pacifier use in the newborn period.

**Methods:** Interviews with mothers of healthy, term newborns during the postpartum hospitalization were conducted in this qualitative study.

**Results:** Qualitative data analysis yielded several major themes that included the following: (1) pacifiers are beneficial for the maternal/infant experience, (2) concerns that pacifiers may interfere with breastfeeding, and (3) concerns about long-term use (including reliance and effect on teeth).

**Conclusion:** Given the maternal perception of benefit and the paucity of high-quality evidence showing harm, further research on the effects of early pacifier use is needed.

**Keywords:** pacifiers, clinical protocols, breastfeeding, postpartum mothers

## Introduction

**B**REASTFEEDING IS WELL KNOWN to benefit mothers and infants. Although guidance from the Baby Friendly Hospital Initiative (BFHI) and the American Academy of Pediatrics has traditionally discouraged early pacifier use among breastfeeding newborns, evidence supporting such recommendations is inconclusive. As a result, the World Health Organization (WHO)/UNICEF Ten Steps to Successful Breastfeeding, which form the basis of the BFHI, modified their stance on strict avoidance of pacifiers in 2018. The recommendation (step 9) now states to “counsel mothers on the use and risks of feeding bottles, teats, and pacifiers.”<sup>1</sup> Given this, and because pacifier use is associated with sudden infant death syndrome (SIDS) risk reduction,<sup>2,3</sup> it is prudent to understand what information mothers are receiving from hospital-based care providers, and their perspectives about pacifier use in the newborn period.

## Materials and Methods

### Study design

We performed a qualitative study, examining the perspectives of postpartum mothers. We conducted individual

interviews with mothers of healthy, term newborns during the postpartum hospitalization. The study was approved by the UC Davis IRB, and all participants provided informed consent.

### Setting and participants

Participants were recruited by study investigators during their postpartum hospitalization at the UC Davis Medical Center, an acute-care teaching hospital with ~1,600 deliveries per year that serves patients across Northern and Central California. Inclusion criteria included mothers staying in the mother/baby postpartum care unit who had given birth to a healthy newborn, who was rooming in, and breastfeeding. Exclusion criteria included incarceration and maternal age <18 years. Twenty-nine mothers were approached for the study; six mothers declined to participate because it was not a convenient time for them to participate in the interview.

### Data collection

Two investigators (C.R.R. and K.E.V.) conducted the interviews using an interview guide (Table 1). Participants who met the eligibility criteria were approached by an investigator in their private hospital room. After informed consent,

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TABLE 1. INTERVIEW GUIDE

Breastfeeding	While you were pregnant, did you think you would breastfeed? Have you ever breastfed a child before? (if yes) How was your previous breastfeeding experience?
Pacifiers	What are your thoughts about pacifiers? (1) Have you given your new baby a pacifier? (1a) (if yes) What does your baby think of the pacifier? (2) (if no) Do you plan to use a pacifier? (2a) (if yes) When do you plan to start using a pacifier and why? (3) Did you bring a pacifier with you to the hospital? (4) Has your baby been given a pacifier by hospital staff? (5) (if multiparous) How old are your older kids? (6) (if multiparous) Did your older kids use pacifiers? (7) (if yes) Please describe how often your last baby used a pacifier? (8) (if yes) At what age did you first give your last baby a pacifier? (9) What did your baby think of the pacifier? (10) Did you have any concerns about using a pacifier? (11) When did you stop using a pacifier? (12) Why did you stop using a pacifier? (13) Have any health care providers voiced any opinions about pacifier use to you? (13a) (if yes) What did they say? (14) Has anyone else talked with you about pacifiers? (If she asks for clarification “such as family, friends, and Internet contacts?”) (14a) (if yes) What did they say? (15) (if more than one older child) Did you have a different experience with pacifiers for your other older child(ren)? (16) Do you have any other thoughts about pacifiers that you would like to share with us?

participants were asked a series of questions regarding their thoughts about pacifier use, experiences with both breastfeeding and pacifiers, and the information they had received about pacifier use. The interviews were audio recorded and transcribed verbatim for analysis.

*Data analysis*

Data were gathered to saturation and analyzed using qualitative, thematic analysis with a constant comparative approach. Five investigators (C.R.R., H.L.S., I.A.L., C.A.P., and L.R.K.) conducted data analysis and at least two investigators coded each transcript. Emerging themes were compared between primiparous and multiparous mothers.

**Results**

*Demographics*

Twenty-three women participated in the study. The average age of participants was 30.5 years, and 48% were primiparous. Detailed characteristics of participants are shown in Table 2.

*Themes*

Qualitative data analysis yielded three themes and seven subthemes. Major themes included the following: (1) pacifiers are beneficial for the maternal/infant experience, (2) concerns that pacifiers may interfere with breastfeeding, and (3) concerns about long-term use (including reliance and effect on teeth). Subthemes and example quotations are shown in Table 3. Themes did not differ between primiparous and multiparous mothers.

*Theme 1: pacifiers are beneficial for the maternal/infant experience*

Many mothers communicated positive thoughts and experiences about pacifiers. Mothers described pacifiers as comfort for their child, stating that they were soothing and calming and found them to be helpful in different aspects of caring for a newborn. Many mothers found pacifiers were helpful for their child to get sleep, and some mentioned SIDS risk reduction as a benefit as well. In addition, some stated

TABLE 2. DEMOGRAPHIC CHARACTERISTICS

<i>Characteristic</i>	<i>n (%)</i>
Maternal age	—
18–24	5 (22)
25–30	6 (26)
31–35	8 (35)
36+	4 (17)
Household income	—
<\$40,000	8 (35)
\$40,000–110,000	7 (30)
>\$110,000	6 (26)
Unknown/no response	2 (9)
Race	—
Asian	3 (13)
Black	3 (13)
White	9 (39)
Other	3 (13)
Unknown/no response	4 (17)
Hispanic ethnicity	7 (30)
Vaginal delivery	9 (39)
Primiparous	11 (48)

TABLE 3. THEMES, SUBTHEMES, AND EXAMPLE QUOTATIONS

<i>Theme</i>	<i>Subtheme</i>	<i>Quotations</i>
(1) Pacifiers are beneficial for the maternal/infant experience	Comfort the infant	<p>“They just need that sucking sensation and they will not be content, you know, if they don’t have something to suck on.” (participant 3)</p> <p>“...Trying to get the colostrum to come out and get her to latch, it’s very frustrating for her, so she just wants to be soothed. And [the pacifier] helped a lot. And I was able to relax a little bit more, to get [colostrum] going.” (participant 9)</p> <p>“They’re soothing, you know, if the baby eats a lot and still wants to suck on something, it is nice to have that, you know, just so that they are not crying the whole time.” (participant 22)</p>
	Helpful for sleep	<p>“I feel like they’re really useful when baby is trying to sleep, but they still want to latch on to the moms nipple, if the mom is breastfeeding.” (participant 7)</p> <p>“Sometimes we used it at night too like if she was not falling asleep with breastfeeding and my husband was trying to get her to fall asleep he’d put a pacifier in.” “I remember hearing that pacifier use is going to help prevent SIDS. Like if you put the pacifier in when they’re in their crib, I don’t know what it is, something about sucking.” (participant 4)</p>
(2) Concern that pacifier may interfere with breastfeeding	Potential for nipple confusion	<p>“The only thought that I have is that when I was looking for pacifiers I was looking for ones that would kind of like mimic a nipple, because you know they have breastfeeding bottles that mimic a nipple. That would be my only concern, so it doesn’t get him all confused.” (participant 18)</p> <p>“Here, I was told they don’t like to give them a pacifier right away because it can cause nipple confusion with breastfeeding, if breastfeeding is your option or what you wanted to do.” (participant 23)</p>
	Wait to start until breastfeeding is established	<p>“Not for a couple of weeks at least, just because I want to make sure breastfeeding is like really going well.” (participant 4)</p> <p>“Maybe when he is all settled with breastfeeding, like when I’m more good at it. Maybe that’s when I’ll use it.” (participant 19)</p>
	Experience contrary to health care provider advice	<p>“I asked, they don’t allow it. They said for the first 30 days because if you’re breastfeeding there’s confusion, which I don’t think so, because my [older] son did well in determining which is which.” (participant 1)</p> <p>“So we asked for a pacifier, and of course the nurse was like “oh we don’t recommend it, but we can’t tell you no.” I go, can we just try, just to get her soothed and calmed down? And it helped a lot.” (participant 9)</p>
(3) Concern regarding long-term use	Concern for infant becoming reliant on pacifier	<p>“Um, well I used a pacifier when I was little and I think it was fine, but I do see what he (child’s father) is saying when you see older children crying about their pacifiers and they have a full set of teeth in their mouth and they still want a pacifier. I just don’t know, I guess you would have to figure out how to get them off of it once they do become reliant on a pacifier.” (participant 2)</p> <p>“Just that I hope to not become reliant on them, because I think they can be... too much of a good thing is bad.” (participant 11)</p>
	Concern that pacifiers are not good for teeth	<p>“The only thing that I would be concerned about is the fact that um.. a child using a pacifier longer than maybe two years old.. that it can cause dental issues, mainly.” (participant 23)</p> <p>“From what I noticed from my niece, her teeth grew differently... she was on the pacifier for a few years.” (participant 21)</p>

that pacifiers were helpful in comforting the child while traveling. These opinions were informed by both their own personal experiences and experiences of their family members.

Some mothers shared that they had started using a pacifier already or were going to start immediately after discharge because of these benefits. One mother shared that the pacifier was helpful for her frustrated newborn to self-soothe, while she was waiting for more copious milk production.

#### *Theme II: concerns that pacifiers may interfere with breastfeeding*

While the majority of mothers felt that pacifiers were helpful for the maternal/infant experience, mothers also expressed thoughts and concerns about pacifiers having the potential to negatively impact breastfeeding. Many of those mothers shared that nipple confusion was the concern with

breastfeeding. Some mothers discussed their plan to wait to introduce a pacifier until after breastfeeding was established. Mothers shared that they were given advice from nurses to delay pacifier use to avoid nipple confusion and to establish breastfeeding.

While some mothers accepted the advice of nurses and lactation consultants regarding early pacifier use, others had concerns with the advice. One mother shared that based on her older child's positive experience with early pacifier use, she attempted to get a pacifier during her hospital stay, but her nurse recommended against it. Another mother shared that she was given advice against early pacifier use by the nurses in the hospital. One mother shared her uncertainty about information she had heard about nipple confusion and shared that she did not understand how a baby would choose a pacifier over a nipple that gives food.

### *Theme III: concerns about long-term use*

In addition to concerns about the effect of early pacifier use on breastfeeding, mothers shared their concerns about the consequences of long-term pacifier use. Specifically, they expressed concerns about reliance on pacifiers, difficulty weaning their child off a pacifier, and the potential effects on dental health.

## **Discussion**

This qualitative study of postpartum mothers demonstrates that breastfeeding mothers perceive benefits to pacifier use, including improved maternal/infant experience and reduced risk of SIDS. Although many mothers perceive benefits from pacifier use, others are delaying pacifier use or are wary of pacifiers due to concerns about potential effects on breastfeeding, longer term reliance on pacifiers, and effects on dentition.

Some mothers were uncertain about the validity of these concerns. Mothers in the study received advice from health care providers recommending against early pacifier use; furthermore, some reported personal experience that contradicted that advice. Comparison of data from primiparous and multiparous mothers was done to investigate if the results were influenced by prior experience, as with multiparous mothers, but there was no difference found among the groups.

Although the recommendation to delay pacifier use until after breastfeeding is established continues to be shared with postpartum mothers, evidence supporting this recommendation is inconclusive. A 2009 meta-analysis by Karabulut et al. found that the use of pacifiers was associated with shortened duration of exclusive and any breastfeeding.<sup>4</sup> That same year, a systematic review by O'Connor et al. concluded that evidence does not support an adverse relationship between pacifier use and breastfeeding duration or exclusivity.<sup>5</sup>

In 2016, Jaafar et al. completed a Cochrane analysis of two trials involving 1,302 infants, which showed that pacifier use in healthy term breastfeeding infants, started from birth or after lactation is established, did not significantly affect the prevalence or duration of exclusive and partial breastfeeding up to 4 months of age.<sup>6</sup> In a systematic review with meta-analysis published in 2017, Buccini et al. found a positive association between pacifier use and exclusive breastfeeding interruption in 44 observational studies, and no

association in the two randomized control trials, and based on their findings in observational studies, supported the original WHO recommendation.<sup>7</sup> One prior study in 2013 by Kair et al., examining pacifier restriction in the mother/baby population during the birth hospitalization found increased rates of formula supplementation when a restrictive pacifier policy was adopted,<sup>8</sup> and a more recent study in 2019 by Ekambaram et al. found a Baby-Friendly™-aligned pacifier policy delayed pacifier adoption but did not impact overall pacifier use.<sup>9</sup> The original recommendation to avoid early pacifier use by the WHO/UNICEF<sup>10</sup> was modified in 2018<sup>1</sup> to reflect the inconclusive evidence; however, advice from hospital providers wishing to maintain or achieve Baby-Friendly hospital designation<sup>11</sup> may not reflect this modification.

There is considerable evidence supporting the association of pacifier use and reduced SIDS risk. In a meta-analysis published in 2005, Hauck et al. found a significant reduction in SIDS risk with pacifier use.<sup>2</sup> In a population based case/control study published in 2012, Moon et al. found that pacifier use was associated with a reduced risk for SIDS.<sup>12</sup> After a literature review in 2016, Alm et al. concluded that there was scientific evidence supporting the risk-reducing effect on SIDS with breastfeeding and dummy use.<sup>13</sup>

Given this and the inconclusive evidence regarding detrimental effects of pacifiers, the American Academy of Pediatrics Task Force on SIDS recommends consideration of pacifier use during sleep for infants once breastfeeding is fully established.<sup>3</sup> Some mothers in our study mentioned SIDS risk reduction as a benefit they have considered when deciding on pacifier use. Thus, this topic warrants inclusion in patient education.

Mothers in our study were concerned about reliance on pacifiers and effects on dental health. Mothers may be allowing the anticipation of the potential harm to influence their decisions about pacifier use. There is lack of data regarding the issue of reliance on pacifiers, but there is evidence discussing effects on dentition.

In 2001, the *Journal of the American Dental Association* published a study looking at the effects of oral habits' duration on dental characteristics in the primary dentition. Findings suggested potential harm in continuing habits beyond 24 months of age, with greater risk of developing occlusal problems with longer sucking-habit duration, particularly 48 months of age or beyond.<sup>14</sup> A meta-analysis published in the *International Journal of Orthodontics* in 2006 showed that pacifier use beyond the age of 3 years has a harmful effect on developing dentition.<sup>15</sup> Specific education regarding these data would allow mothers to feel confident in making educated and informed decisions about pacifier use.

## **Conclusions**

Given the maternal perception of benefit and the paucity of high-quality evidence showing harm, further research on the effects of early pacifier use is needed. Specific areas of inquiry should include effects of early pacifier use on breastfeeding duration and exclusivity and the maternal postpartum experience. In addition, further research is needed investigating reliance on pacifiers, including ideal age of weaning. Postpartum patient counseling should include information both on the potential benefits of pacifiers for infant comfort,

safe sleep, and maternal postpartum experience, and the potential risks for breastfeeding and dental development.

#### Disclaimer

The contents of this publication are solely the responsibility of the authors and do not represent the official views of the National Institutes of Health.

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