



EDITORIAL

Routine pacifier use in infants: pros and cons^{☆,☆☆}

Uso rotineiro de chupeta por bebês: prós e contras

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Webster's dictionary of American English¹ defines the "pacifier" as an object that makes one "quiet or peaceful," surely a welcome behavioral outcome that mothers routinely report from its use with their infants. The current form of the pacifier (e.g., a soft teat, a guard, and a handle) dates back to design patents from the early 1900s. However, it is notable that soothing hard rings, teats made from linen rags stuffed with sugar, or various foodstuffs have been documented in the medical literature from the 15th century and depicted in classical art from the 16th century. Capitalizing on the inherent non-nutritive sucking physiology of infants, the use of these objects leads to enhancing a form of the infant's behavior that stabilizes breathing, stimulates oral motor function, and modifies autonomic functioning and sleep patterns.² Thus, it is not surprising that the positive value of its routine use is captured by the American usage of the term "pacifier."

In turn, such an object is labeled in British English as a "dummy," with its implicit pejorative connotation. In this context, a dummy is defined as an imitation or a sham, a substitute or even an actual competitor of the real maternal nipple. As we know, the mother's own nipple is the vehicle for the provision of both breast milk with its attendant

nutritive and other health benefits, and the act of breastfeeding and its non-nutritive benefits, which by definition are dependent on the warm and comforting physical presence and contact of the mother.

Conceptualizing the pacifier as a "dummy," i.e., a negative object, is reinforced by the reports of the association of pacifier use with decreased breastfeeding exclusivity and duration,³ increased risk of developing otitis media,⁴ and a variety of dental malocclusions and long term oral abnormalities.⁵ These supposed negative effects of pacifier use on breastfeeding rates presumably reflects a phenomenon labeled as "nipple confusion," which results in the reluctance of the infant to take to the breast as opposed to preferentially sucking on an artificial rubberized or silicone dummy.

Given this concern, it is not surprising that Giugliani et al. have happily reported in this issue of the *Jornal de Pediatria*⁶ on their success in reducing pacifier use as result of a novel intervention program that focused on both the mother and the maternal grandmother. The positive end point of the study was in a reduction in both the actual rate of pacifier use and in a delay in the age of introducing pacifier use. These results ostensibly had a positive effect on increasing breast-feeding rates, but, unfortunately, such data were not included in the study, so at best this was a speculative outcome. There is no doubt, however, that the hidden agenda of the authors was that reduced or delayed pacifier use would be a net benefit to the infant.

In fact, equating a reduction in pacifier use with increased breastfeeding rates is not only speculative, but also has not been substantiated, neither in the few existing

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prospective controlled studies, nor in the qualitative review of the existing observational studies that have studied this relationship. O'Connor et al., in 2009,⁷ reviewed the four then-existing randomized controlled trials that evaluated the impact of pacifier use on breastfeeding rates, duration, and exclusivity. Their results revealed no difference in breastfeeding outcome. In contrast, they did note that most of the observational studies did report an association between pacifier use and shortened duration of breastfeeding. However, they concluded that this association most likely reflected complex factors of association as opposed to causation, methodological problems such as selection bias, and inherent differences in maternal breastfeeding practices and attitude and intent. Thus, their conclusion was that "the highest level of evidence does not support an adverse relationship between pacifier use and breastfeeding duration or exclusivity."

In a 2016 Cochrane Database Systematic Review, Jaafar et al.⁸ reached a similar conclusion. The focus of their review was mothers who had initiated breastfeeding with the intent to breastfeed exclusively. The review included an analysis of both randomized and quasi-randomized trials that compared restricted vs. unrestricted pacifier use. Their conclusion was as follows: "pacifier use in healthy term breastfeeding infants started from birth or after lactation is established did not significantly affect the prevalence or duration of exclusivity and partial breastfeeding up to four months of age."

This concern that pacifiers could impact breastfeeding rates is best reflected in the World Health Organization/United Nations Children's Fund (WHO/UNICEF) Ten Steps for Successful Breastfeeding statement published by the World Health Organization.⁹ Most importantly, the Ten Steps served in turn as the basis of the clinical administrative guidelines that must be met by a hospital to become certified as a Baby-Friendly Hospital. In a sense, this set a standard of practice for many hospitals worldwide. Germane to our discussion is item number 9, categorically states: "Give no artificial teats or pacifiers to breastfeeding infants."

Of particular significance is the fact that the American Academy of Pediatrics (AAP) has endorsed the Ten Steps, but with the exception of item 9, as it "does not support a categorical ban on pacifiers due to their role in Sudden Infant Death Syndrome (SIDS) risk."¹⁰ While the AAP has not requested the WHO and UNICEF to revise the Ten Steps to include a statement as to the benefits of routine pacifier use, they have indicated that this caveat will be included in all AAP publications and comments regarding the Ten Steps. Furthermore, the recent publication by the AAP Task Force on Sudden Infant Death Syndrome explicitly recommends routine use of a pacifier at nap or sleep times once breastfeeding is established, *i.e.*, at 3–4 weeks of age, as a mechanism to reduce the risk of SIDS.¹¹

What evidence is there that pacifier use reduces the risk of SIDS? Hauck,¹² in 2005, performed a meta-analysis of the then-published case-control studies, while pointing out that no prospective observational nor randomized trials evaluating the role of pacifiers existed. The conclusion of that analysis was that despite the inherent methodological limitations of case-control studies, there was evidence of a significant reduced risk of SIDS with pacifier use. This conclusion in turn served as the basis of

the final recommendation of the AAP Task Force that pacifiers should be used for up to one year from birth, in all sleep episodes, with the qualification that in infants who are breastfeeding, the pacifiers should be introduced after breastfeeding has been well established; *i.e.*, at 3–4 weeks of age.¹¹ In 2017, Psaila¹³ presented a Cochrane Systematic Review and noted that still, to date, there had been no published randomized controlled trials examining pacifiers as potential agents for reducing the risk of SIDS. Given this reality, they concluded that there was no controlled trial evidence to support or refute the use of pacifiers, and thus that no specific recommendation could be made.

Continued pacifier use beyond a year is not recommended, as it is associated with increased rates of otitis media,¹⁴ and varying degrees of dental malocclusions.⁵ These complications apparently occur only with persistent use of pacifiers well beyond the first year of life. In fact, the American Academy of Pediatric Dentistry has stated¹⁵ that sucking behaviors, whether finger sucking or use of pacifiers in children up to 3 years of age, are unlikely to cause any long-term problems.

Given the above, what can we learn from the newly published study by Giugliani et al.? Unfortunately, the absence of data on breastfeeding rates, sleep patterns, infant behavior, or SIDS incidence, let alone data as to the long term negative effect use, such as increased incidence of otitis media or dental malocclusions, minimizes the potential for any meaningful conclusion as to the clinical value of this interventional study. However, what can be gleaned from their results is the importance of including members of the mother's extended family, particularly the maternal grandmother, in any breastfeeding support educational program. This is particularly true in those communities where the social dynamic includes an involvement of the grandparents in transmitting the traditional beliefs and practices of childcare to the next generation.

As to the bottom line regarding the use of pacifier in the first year of life, the available data supports the conclusion that the benefits of its use in reducing the risk of SIDS and its general soothing and calming affect outweigh the non-substantiated risks of it interfering with breastfeeding. On the other hand, continued use beyond one year should be actively discouraged. Simply put: pacifiers pacify and its users are not dummies!

Conflicts of interest

The author declares no conflicts of interest.

References

1. Webster's New World Dictionary of the American Language. College Edition. Cleveland, USA: World Publishing Company; 1966.
2. Franco P, Chabanski S, Scaillet S, Grosswasser J, Kahn A. Pacifier use modifies infant's cardiac autonomic controls during sleep. *Early Hum Dev.* 2004;77:99–108.
3. Howard CR, Howard FM, Lanphear B, deBlieck EA, Eberly S, Lawrence RA. The effects of early pacifier use on breastfeeding duration. *Pediatrics.* 1999;103:E33.

4. Rovers M, Numans ME, Langenbach E, Grobbee DE, Verheij TJ, Schilde AG. Is pacifier use a risk factor for acute otitis media? A dynamic cohort study. *Fam Pract*. 2008;25:233–6.
5. Larsson E. The effect of dummy sucking on the inclusion: a review. *Eur J Orthodont*. 1986;8:127–30.
6. Giugliani ER, Nunes LM, Issler RM, Santo LC, Oliveira LD. Involvement of maternal grandmother and teenage mother in intervention to reduce pacifier use: a randomized clinical trial. *J Pediatr (Rio J)*. 2019;65:168–74.
7. O'Connor NR, Tanabe KO, Siadaty MS, Hauck FR. Pacifiers and breastfeeding: a systematic review. *Arch Pediatr Adolesc Med*. 2009;163:378–82.
8. Jaafar SH, Ho JJ, Jahanfar S, Angolkar M. Effect of restricted pacifier use in breastfeeding term infants for increasing duration of breastfeeding. *Cochrane Database Syst Rev*. 2016:CD007202.
9. Saadeh R, Akre J. Ten steps to successful breastfeeding: a summary of the rationale and scientific evidence. *Birth*. 1996;23:154–60.
10. O'Keefe L. Do you know the "Ten Steps" to successful breastfeeding. *AAP News*. 2010;31. Available from: www.aapnews.org [cited 20.03.18].
11. Moon RY. Task force on sudden infant death syndrome. SIDS and other sleep-related infant deaths: evidence base for 2016 updated recommendations for a safe infant sleeping environment. *Pediatrics*. 2016;138, pii:e20162940.
12. Hauck FR, Omojokun OO, Siadaty MS. Do pacifiers reduce the risk of sudden infant death syndrome? A meta-analysis. *Pediatrics*. 2005;116:e716–23.
13. Psaila K, Foster JP, Pulbrook N, Jeffery HE. Infant pacifiers for reduction in risk of sudden infant death. *Cochrane Database Syst Rev*. 2017;4:CD011147.
14. Niemelä M, Uhari M, Möttönen M. A pacifier increases the risk of recurrent acute otitis media in children in day care centers. *Pediatrics*. 1995;96:884–8.
15. American Academy of Pediatric Dentistry. Council of Clinical Affairs Policy statement on oral habits; 2000. Available from: www.aapd.org/media/Policies_Guidelines/P_OralHabits.pdf [cited 17.03.18].