Reviewer's report

Title: The Relationship of Bottle Feeding and Other Sucking Behaviors with Speech disorder in Patagonian Preschoolers

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Reviewer: Arend F. Bos

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The relationship of bottle feeding and other sucking behaviors with speech disorder in Patagonian Preschoolers,
Barbosa et al
Biomed Central Pediatrics

The aim of this study was to evaluate the effect of feeding-sucking patterns on speech development in a group of 128 3-to-5-year-old children. The primary outcome was TEPROSIF to evaluate phonological processes. The authors found that delayed use of a bottle until after 9 months appeared to be protective for subsequent speech disorders. Use of a pacifier for longer than 3 years and finger-sucking behaviour was associated with an increase of speech disorders. The authors pose a relevant research question, on the relationship of early sucking behaviour on speech development several years later.

There are some comments to be made.

Major compulsory revisions

1. The authors used the TEPROSIF to evaluate phonological processes. In this preschool population tested, nearly 50% scored below normal on this test. The validity and clinical value of this test is not described. (ref. 16 is in Spanish and not accessible via Pubmed). Is it possible that these children are still too young, and that we are facing a developmental phenomenon on speech development with considerable typical variation? The fact that the outcome parameter might not be valid, and such a large part of this population scored below normal values, makes one wonder whether the results of this study are valid. The authors should provide more data on the validity and clinical value of the outcome parameter, especially in preschool children, or explain the low scores in this population otherwise. The authors should also relate to this topic in the discussion.

2. Another test described in the methods is oral-facial examination. The introduction focuses a lot on this part. However, the oral facial examination is not mentioned in the results, and also not part of the research question. The authors should explain the purpose of the physical exam described in the methods and if there is one, its results and association with the outcome parameter. Also the association between ‘oral cavity architecture’ and phonology should be described, if the authors think it is appropriate to answer the research question.
3. In the results and discussion, the authors do not mention their main results appropriately. They emphasize on the fact that longer sucking behaviour may lead to suboptimal speech development, while table 4 suggests that that starting bottle feeding at older age (>9 months) is only just significantly protective (p=.05). The only three significant associations are low gestational age, pacifier use > 3 years (however, 95% CI state it is 0.41-14.7, is that significant? Is this perhaps a typing error, and should p-value be .3, as in the unadjusted OR?), and finger sucking. The authors should describe these findings in their results and discussion appropriately. Gestational age is not mentioned as a significant factor anymore in discussion or abstract. The ORs on pacifier use are inconsistent between the table and the results/abstract.

4. What is lacking is an appropriate explanation for the findings. There have been associations sought in 10 different relations, and one or two came out with p-value around 0.05. This could be an association by chance (with 10 relationships it is a chance of around 10% to find any association). It would help if the authors could provide an explanation, why the associations they have found would be meaningful, and how they could explain the negative impact on the TERPROSIF? An association does not signify a causal relationship.

5. It is unclear which statistical test was used exactly, mainly in table 2. The fact that means and SD’s were used, suggests normal distribution of all variables, is this true? In table 3 it is unclear whether a stepwise procedure was followed; whether the various variables were corrected among each other. For instance, are the children born after a GA of less than 38 weeks the same ones who suck their fingers and started bottle feeding early?

6. It is unclear which variables were used to adjust, in table 4, marked with superscript 1.

7. The authors show many data on socio-economic status but fail to mention them in the results or discussion sections.

8. The discussion in the first para is not specific enough. ‘Some sucking behaviors’ should be specified more precisely. ‘Habits of longer duration’ refers to?

9. The design is retrospective, and may have led to recall bias, especially in the parents of children that performed less well on the TERPROSIF. The authors should discuss this.

Minor essential revisions

10. There is inconsequent use of punctuation, use of spaces. Incoherent sentences (i.e. …were more likely to use of pacifiers…, that my impair communication and literacy and possibility being influenced early feeding and sucking pattern;…) Wrong use of words (birth occurred in less than 38 weeks, …a child is breast or bottle feed…). Editing by a native speaker is strongly suggested.
11. Why is it important to ask if a security blanket was used, in relation to this study?

Discretionary revisions

12. In the introduction, para starting with ‘Fox et al. in their study… the point the authors want to make is not clear. Higher rates of breast feeding are seen in western countries in particular in mothers of higher education. This could also explain e.g. the fact that German children fed by bottle had more speech disorders. Is this also the case in Punta Arenas, thus in the study under review? The data contain educational status of the mother, but it is not investigated (or clearly reported that it was) in relation to sucking behaviour and speech problems.

13. Shorten the introduction and focus more on the relevant studies for the research question posed in this study.

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests