Pacifier Use is associated with reduced word comprehension in early childhood

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This study investigates the effect of pacifier use on infants' vocabulary development. Bruderer et al. (2015) showed that infants having a teething toy in their mouth displayed a temporary reduction in their perception of non-native speech sound contrasts. Building upon this idea, we further explored whether sustained (rather than momentary) pacifier use (instead of teething toys) may affect vocabulary development. We first evaluated associations between retrospective reports of pacifier use and vocabulary sizes, as assessed via parental reports (CDIs). We found that greater and later pacifier use is linked to smaller vocabulary sizes, potentially due to the disruptions in somatosensory feedback affecting the establishment of phonetic representations (Muñoz et al., 2024). We addressed the study limitations (reliance on retrospective pacifier usage reports and indirect parental assessments of vocabulary size), by running a second, pre-registered (https://osf.io/3gh5z) study, where we used eye-tracking to directly measure vocabulary comprehension in 64 infants aged 9-18 months, and measured whether it was associated with concurrent reports of pacifier use. We adopted a mixed-effects model, controlling for maternal education and sex, and found that infants with higher pacifier use showed reduced proportion of looking time towards named targets ($z=3.33$, $SE=0.03$, $p < .001$; Figure 1.a). We also observed that older children had higher looking times at target images ($z=-2.92$, $SE=0.06$, $p = .003$; Figure 1.b). Our findings, measuring vocabulary comprehension directly and using concurrent measures of pacifier use, confirmed and extended findings that increased pacifier use associates with lower vocabulary size, as reported in Muñoz et al. (2024). The research underscores the importance of considering infant pacifier use and the potential association with early language development.