Exploring Opportunities for Parent-Child Math-Related Guided Play at Home

Ashli-Ann Douglas, Erica Zippert & Bethany Rittle-Johnson

Word Limit: 350

Math skills before school entry relate to parent-child math exploration (e.g. Dearing et al., 2012). Parent-child guided math exploration may be particularly important to children's early math development since it may enable children to benefit from aspects of play and formal instruction (Weisberg et al., 2016). The current study examines two questions about parent-child guided math exploration:

1. How frequently do parent-child dyads engage in activities that provide opportunities for guided math exploration at home?
2. How does this frequency relate to parents' child-specific math beliefs and parent-child demographics?

Sixty-three parents (86% mothers) rated the frequency of parent-preschooler math-related activities at home on a 6-point survey scale where 0 = never, 3= 1- to 2-times a week, and 5 = daily. Each activity was coded as a guided play or parent-driven activity depending on whether it likely provided opportunities for guided math exploration. For example, "build with construction toys" was coded as a guided play activity since preschoolers could lead math exploration during this activity. Conversely, "read books that show and talk about numbers" was coded as a parent-driven activity. Parents also reported their child-specific math beliefs and parent-child demographics.

Parents reported significantly less frequent guided play (M = 2.31, SD = .79; n = 13) than parent-driven activities (M = 3.04, SD = .71; n = 11) at home, $t(63) = 11.59$. The frequency of guided play was significantly related to parents' beliefs about their child's math ability, $r(63)$ = .34, and interest, $r(63)$ = .28, but not the importance of math for their child, $r(63)$ = -.01. Additionally, the frequency of guided play differed by home language ($M_{bilingual}$ = 1.53, SD = .79; $M_{\text{monolingual-English}}$ = 2.38, SD = .75; $t(61) = 2.40$) but did not relate to other demographic factors.

In sum, parent-child dyads engage in activities that may facilitate guided math exploration a few times per month but engage in parent-driven activities about twice per week. Additionally, parent-child guided math exploration is related to parents' child-specific math beliefs and home language. The study highlights the need for research on how parent-child guided math exploration relates to children's math skills.