NEWS | POSTED DECEMBER 6, 2016

Mothers' Early Support Boosts Children's Later Math Achievement

PRESS RELEASE / CHILD DEVELOPMENT: Embargoed for Release on December 6, 2016

PRESS RELEASE

Published

Tuesday, December 6, 2016

12:01am

Maternal Support of Children's Early Numerical Concept Learning Predicts Preschool and First-Grade Math Achievement

Read the Child Development article:

WILEY ONLINE LIBRARY

Contact:

Jessica Efstathiou, Senior Media Relations and Communications Associate

E-MAIL

Early math knowledge is as important as early literacy for children's subsequent achievement. In fact, research has shown that early math skills predict later school success better than early reading skills, and can even predict income in adulthood. Yet little research has directly examined how parents' support of early math learning affects children's development of later math skills. Now a new longitudinal study has found that young children whose mothers supported them during play, specifically in their labeling of object quantities, had better math achievement at ages 4-½ and 5 years.

The study, conducted by researchers at Boston College, is published in the journal *Child Development*.

Researchers developed ways to assess mothers' support of their children's math skills by examining how moms supported and guided their 3-year-olds' learning as they played with a toy cash register and blocks. They applied their new assessments to previously videotaped 10-minute free-play interactions between 140 mothers and children in Boston who were part of the longitudinal NICHD Study of Early Child Care and Youth Development. The participants were economically and ethnically diverse.

Mothers supported their children's math skills in a variety of ways, helping their children count objects, identify written numbers, or label the size of sets of objects. Children whose parents supported them in labeling quantities of small sets performed better on math tests in preschool than children whose parents didn't support them in this way. These children also did better on addition and subtraction problems as late as first grade.

"Many young children can count from 1 to 10 without understanding the meaning of the numbers they're counting," says Beth Casey, professor emeritus of applied developmental and educational psychology at the Lynch School of Education at Boston College, who led the study. "What may be particularly important at around age 3 is for parents to present their children with small groups of one, two, or three objects, and tell them how many objects there are—for example, by saying at the grocery store, 'See, there are two apples in

our bag.' It's also important for parents to encourage and help children label how many objects there are, for example, by asking, 'Can you give me three cups?' or 'Now that you've counted them, can you tell me how many flowers there are?'"

The authors suggest that helping children learn how to label set sizes may support their development of a crucial concept in math knowledge—understanding that the last number stated when counting a set of objects represents the quantity of the whole set. Such understanding may provide a foundation for developing more complex number skills.

"Our results suggest that early maternal support of numerical skills may have lasting and strong connections to children's math achievement, at least through first grade, which is three years after mothers were observed," explains Eric Dearing, professor of applied developmental and educational psychology at the Lynch School of Education at Boston College, who was also part of the study. "These connections were strong and persisted even when we ruled out the potential role of demographics—including mothers' education—the more general level of learning stimulation mothers provided, and both mothers' and children's intelligence."

The study was funded by the Heising-Simons Foundation.

###

Summarized from *Child Development*, Maternal Support of Children's Early Numerical Concept Learning Predicts Preschool and First-Grade Math Achievement by Casey, BM, Lombardi, CM, Thomson, D, Nguyen, HN, Paz, M, Theriault, C, and Dearing, E (Boston College). Copyright 2016 The Society for Research in Child Development, Inc. All rights reserved.