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Formal and informal home learning activities in relation to children's early numeracy and literacy skills: the development of a home numeracy model.

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Summary: The purpose of this study was to propose and test a model of children's home numeracy experience based on *M. Sénéchal* and *J.-A. LeFevre's* home literacy model ["Parental involvement in the development of children's reading skill: a five-year longitudinal study", *Child Dev.* 73, No. 2, 445–460 (2002)]. Parents of 183 children starting kindergarten in the fall (median child age = 58 months) completed an early home learning experiences questionnaire. Most of the children whose parents completed the questionnaire were recruited for numeracy and literacy testing 1 year later (along with 32 children from the inner city). Confirmatory factor analyses were used to reduce survey items, and hierarchical regression analyses were used to predict the relation among parents' attitudes, academic expectations for their children, reports of formal and informal numeracy, and literacy home practices on children's test scores. Parental reports of formal home numeracy practices (e.g., practicing simple sums) predicted children's symbolic number system knowledge, whereas reports of informal exposure to games with numerical content (measured indirectly through parents' knowledge of children's games) predicted children's non-symbolic arithmetic, as did numeracy attitudes (e.g., parents' enjoyment of numeracy). The home literacy results replicated past findings; parental reports of formal literacy practices (e.g., helping their children to read words) predicted children's word reading, whereas reports of informal experiences (i.e., frequency of shared reading measured indirectly through parents' storybook knowledge) predicted children's vocabulary. These findings support a multifaceted model of children's early numeracy environment, with different types of early home experiences (formal and informal) predicting different numeracy outcomes.

Classification: C31 F21 C61 C20

Keywords: early numeracy; early literacy; home environment; kindergarten readiness skills; parental involvement; parent attitudes

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