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Each year, many children transition from preschool to more formal schooling environments. Although many children navigate this transition easily, it can be challenging for children who have not developed strong self-regulation (working memory, attentional flexibility, and inhibitory control). There is also a lack of research examining how to improve self-regulation prior to kindergarten entry especially for disadvantaged children. The present study examined a self-regulation intervention utilizing an exclusively low-income sample. The two primary objectives were to examine: 1) if children in an intervention group demonstrated greater gains in self-regulation over the prekindergarten year compared to children in the control group, and (2) if children in an intervention group demonstrated higher academic achievement scores at the end of the prekindergarten year compared to children in the control group. We hypothesized that children in an intervention group would have stronger self-regulation and academic achievement relative to a control group.

The sample consisted of 276 children (49% boys), enrolled in 14 Head Start classrooms located in a Pacific Northwestern city. Participants ranged in age from 37.98 to 66.04 months ($M = 51.69, SD = 6.55$), and 33% were English Language Learners. Maternal education ranged from 2 to 16 years ($M = 11.15, SD = 2.70$).

In the fall and spring of the prekindergarten year, children’s self-regulation was directly assessed using the Head-Toes-Knees-Shoulders Task (HTKS; Ponitz, McClelland, Matthews, & Morrison, 2009) and the Three-Dimensional Change Card Sort (3 DCCS; Hongwanishkul, Happaney, Lee, & Zelazo, 2005), and math, literacy, and vocabulary were assessed using the Woodcock-Johnson Tests of Achievement (Woodcock & Mather, 2000) or the The Bateria III Woodcock- Muñoz (Muñoz-Sandoval, Woodcock, McGrew, & Mather, 2005). In the winter, classrooms were randomly assigned to either a control ($n = 7; 150$ children) or treatment group ($n = 7; 126$ children). Over 8 weeks, children in the treatment group participated in two 30-minute playgroups per week consisting of circle time games that help children practice self-regulation.

There were no significant differences between control and treatment groups in time 1 self-regulation or achievement scores, or on demographic characteristics (e.g., parent education). Multivariate regressions revealed that children in the intervention group demonstrated greater gains in self-regulation on the HTKS ($\beta = .18, p < .01$) and DCCS ($\beta = .14, p < .05$) relative to the control group. In addition, path models indicated significant and positive indirect effects (through self-regulation) of intervention participation on math ($\beta = .04, p < .05$) and vocabulary ($\beta = .04, p < .01$) at the end of the prekindergarten year. In other words, children who participated in the intervention demonstrated stronger self-regulation, which was related to higher scores in math and vocabulary at the end of prekindergarten. The intervention was also indirectly related to higher early literacy skills (through self-regulation) at the end of prekindergarten, although this was a trend ($\beta = .03, p = .08$).
The present study provides preliminary support for the efficacy of a school readiness intervention in promoting behavioral self-regulation and achievement in young children.