

The Impact of Mindfulness-based Programming on Young Children's Cognitive and Academic Skills

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Mindfulness-based programming is increasingly being implemented in preschool settings. Most studies focus on the impact on children's social-emotional skills (e.g., Kim et al., 2020), however some also explore how mindfulness training affects cognitive skills and early academic performance (e.g., Flook et al., 2015). This study extends Flook et al.'s (2015) work with the Kindness Curriculum (KC) by looking at cognitive impact for even younger children (3 years), and inclusion of both direct and teacher-reported measures of cognitive and executive function skills. We also test whether classroom teachers, rather than mindfulness experts, can be trained to implement mindfulness programming.

Children ($n = 259$) were randomly-assigned to either the KC enrichment group (10 classrooms) or the control group (6 classrooms). Participants were ethnically diverse: Black (13.5%), Latinx (23.6%), Asian (11.6%), White (42.9%); mostly low-income (65.3%); gender balanced (female = 54%); and 36.3% were less than 4 years, 63.7% were 4-5 years old.

Teachers in the KC group received 26 hours of summer training focused on personal mindfulness practices and teaching the KC, about four months prior to implementing the KC, allowing them to practice their skills with support from mindfulness coaches. The KC involves 24 lessons, taught over 12 weeks.

At the beginning of the school year and again in spring, all children were assessed on three executive function measures, one teacher-rated (BRIEF-P) and two direct measures (Card Sort & Flanker Task), as well as developmental assessments (TS Gold). Report cards were obtained at the end of the 1st and 2nd semesters.

The KC group did marginally better overall ($F(1, 222) = 3.39, p = .067$) and on the harder mixed trials of the Card Sort Task ($F(1, 220) = 2.89, p = .091$) than the control group, with older children showing the strongest performance (Age: $F(1, 220) = 13.05, p < .001$). Higher SES children who received KC enrichment did better on the Flanker task ($F(1, 212) = 6.17, p = .014$); there were no significant condition differences among lower SES children. The KC group improved significantly in working memory scores, with the effect for younger children most striking ($F(1, 226) = 4.01, p = .047$; Figure 1). Patterns were similar for the emergent metacognition index, which measures ability to use working memory in tandem with planning. The KC group also had better language ($F(1, 192) = 20.41, p < .001$) and cognitive ($F(1, 192) = 5.55, p = .004$) development scores while receiving the curriculum compared to the control group. The KC group also received better report card grades, e.g., in language, math, and social-emotional skills, and the advantage held for lower SES children and into spring grades, 3 months after completing the KC (e.g., Figure 2 - language). The impact of mindfulness training on cognitive and academic skills was most evident on language skills, teacher-reported executive function skills, and report card grades. The training benefitted younger and lower-SES children in key areas. The results support the use of a train-the-teacher model, providing teachers with more tools to support all young learners.

Figure 1. Age comparisons for working memory scores. Note: Lower scores are better on the Behavior Rating Inventory of Executive Functioning-Preschool Version (BRIEF-P).

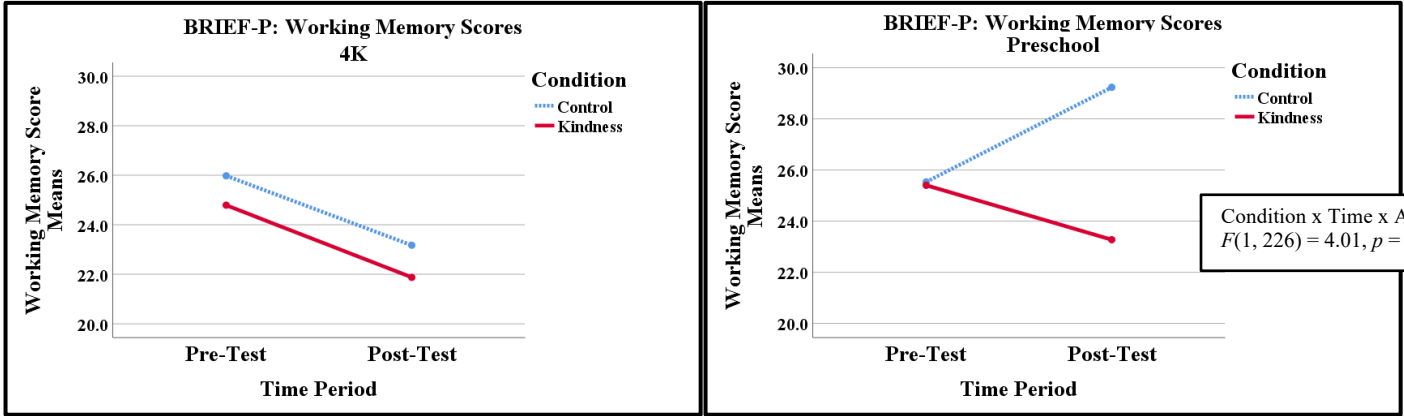


Figure 2. Socioeconomic comparisons for language scores on report cards.

