Background

• Playtime in schools is decreasing in favor of increased instructional time (Hofferth & Sandberg, 2001)
• There is a relation between individual differences in play and stronger executive function (e.g., Carlson, White, & Davis-Unger, 2014)
  • Prefrontal cortex function
  • Improved cognitive flexibility
  • Increased creativity
• Guided recess program has been developed to promote these activities
  • Full-time coaches
  • Encourage organized and energetic play at recess
  • Multiple games to choose from
  • Conflict resolution
  • Student leadership
• Low-income elementary schools
• Reported increased self-esteem and school attendance and decreased bullying (Bleeker et al., 2012)

Hypothesis

• Possible benefit of guided recess is to promote EF through increased physical activity and adult scaffolding of play
• We hypothesized that children who were exposed to guided recess would show improved EF abilities

Methods

Participants

<table>
<thead>
<tr>
<th>Kindergarten</th>
<th>2nd Grade</th>
<th>Free/Reduced Lunch</th>
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<tr>
<td>Guided Recess</td>
<td>17</td>
<td>12</td>
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<tr>
<td>Typical Recess</td>
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Dependent Measures

• NIH Toolbox Vocabulary Test
• NIH Toolbox Dimensional Change Card Sort (DCCS)
• Head, Toes, Knees, and Shoulders (HTKS)
• Walking Subtest - Movement Assessment Battery for Children

Results

• Significant main effects of Time across grades
  • HTKS: $F(1, 48) = 6.49, p = .01$
  • Walking: $F(1, 48) = 6.78, p = .01$
• No significant main effects of Recess type were found for either grade
• Among the 2nd graders there was a trending significant Time x Recess interaction
  • $F(1, 21) = 4.087, p = .056$ (Fig. 2).

Discussion

• Children across grades in both recess programs improved over the study period
• Second graders showed greater improvement on the DCCS among children receiving guided recess
  • This could indicate that a certain dosage of guided recess must be reached before its impact is seen since the older children had increased exposure
• This also suggests that the skills promoted in the guided recess program seem to specifically target children’s flexible thinking such as task and rule switching
  • This may be especially true for the older children engaging in the guided recess program