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The impact of Playworks on students' physical activity during recess: Findings from a randomized controlled trial

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ABSTRACT

Objective. To evaluate the impact of Playworks on students' physical activity during recess.

Method. Twenty-seven elementary schools from six U.S. cities were grouped into blocks and randomly assigned to implement Playworks (treatment) or not (control) during an entire school year (either 2010–2011 or 2011–2012). Study data were collected at the end of the school year only. Fourth- and 5th-grade students (n = 2278) reported on their physical activity during recess, and a subset (n = 1537) wore accelerometers during recess. Teachers (n = 111) also reported on their students' physical activity during recess.

Results. A significantly higher percentage of teachers in treatment schools reported that their students engaged in an intense physical activity during recess ($p = 0.01$). Marginally significant differences between treatment and control groups were found for the mean number of accelerometer intensity counts recorded per minute during recess ($p = 0.10$) and the mean percentage of time spent in vigorous physical activity during recess ($p = 0.07$). No significant differences were found for student reports about their physical activity during recess ($p = 0.92$).

Conclusion. Teachers in Playworks schools reported that students were more active during recess, but accelerometer and student survey measures showed either no impacts or marginally significant impacts.

Introduction

Regular physical activity in youth has been linked to health and academic benefits (Active Living Research, 2009; Coe et al., 2006; Taras, 2005), yet many school-age children in the United States do not meet the current *Physical Activity Guidelines for Americans*, which call for at least 60 min of moderate or vigorously-intense physical activity each day (Institute of Medicine, 2013). In the school environment, recess offers students unique opportunities to engage in higher levels of physical activity (Ridgers et al., 2005), however schools do not always provide students with enough recess time (Turner et al., 2010), especially in lower-income schools (Murray et al., 2013). Moreover, when recess is available, the recess environment is not always adequate for safe and constructive play (Murray et al., 2013; Sallis et al., 2001).

School-based interventions targeting recess often attempt to provide students with more opportunities for physical activity. A considerable body of research has been dedicated to evaluating the effectiveness of school-based recess interventions on increasing students' physical activity (Brown and Summerbell, 2009; Erwin et al., 2014; Ickes et al., 2013; Murray et al., 2013; Ridgers et al., 2005) and findings suggest that interventions that focus on adult supervision during recess, training of recess staff to organize games during recess, provision of additional equipment, or addition of colored markings to the play area are effective for increasing physical activity during recess. Even with this abundance of research, additional, high-quality evaluations are still needed to evaluate other school-based interventions that have not been tested using rigorous experimental procedures (Parrish et al., 2013).

Playworks is a school-based program that places full-time coaches in low-income schools to organize games and activities during recess, work with teachers to engage students in physical activity during class game time, and coordinate a junior coach program where older students help monitor recess periods. Playworks has been implemented in hundreds of schools across the United States but, to date, no studies have evaluated the effectiveness of Playworks using a rigorous study design to determine if the program has positive impacts on students. A quasi-experimental study of Playworks showed that with each additional year of exposure, students reported significantly higher levels of physical activity (Madsen et al., 2011). In the current study, we investigate the impact of the Playworks program on students'

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physical activity during recess using data from the first-ever randomized controlled trial of the program.

Methods

Program

Playworks is a school-based program that places full-time coaches in low-income schools to engage students in physical activity, foster their social skills related to cooperation and conflict resolution, improve their ability to focus on class work, decrease their behavioral problems and improve the school climate. Coaches tend to be young adults who have interest or experience in the fields of education, youth development, or sports. Playworks staff members train the coaches and then supervise them once they are stationed at schools (see Table 1 for a description of each program component and more information about coach training and supervision). The organization operates through independent regional hubs, with direction provided by the Playworks central office in Oakland, California. For the schools in the current study, the average cost of the Playworks program was $24,353 per school. This amount does not reflect the total cost of the program, which is subsidized through donations and grants; according to Playworks, the total cost of providing Playworks to a single school was $61,200 in the 2010–2011 school year and $64,600 in the 2011–2012 school year, based on national estimates (Fortson et al., 2013).

Random assignment design

We recruited 29 schools (17 treatment schools and 12 control schools) for the study from six cities in multiple geographic areas across the United States; 25 of these schools (14 treatment and 11 control schools) were recruited from five cities and participated in the study during the 2010–2011 school year. Four additional schools (3 treatment schools and one control school) from one additional city participated in the study during the 2011–2012 school year. Playworks works with low-income schools in urban areas, in which at least 50% of students qualify for free or reduced-price lunch. The schools that participated in the study met those criteria and their students were racially and ethnically diverse (Table 2). The study schools had not previously implemented Playworks (prior to the study) but were interested in doing so. The New England Institutional Review Board provided IRB approval for the study and the study was also registered with ClinicalTrials.gov (NCT02192281).

We used a random assignment program written using the R statistical software package (www.r-project.org) to determine which study schools would implement Playworks during the study year and which would not be eligible to implement it until the following school year. Prior to random assignment, schools were matched into blocks within each city, with the goals of reducing the probability of chance differences between groups and improving the precision of the impact estimates. We used data from the U.S. Department of Education's Common Core of Data (CCD) from 2007–2008 to create the blocks. The CCD variables used for matching included the highest grade in the school; school size (number of students); the percentages of Black, Hispanic, and White students in the school; and the percentage of students eligible for free or reduced-price lunch. In total, there were 12 blocks of schools; one block included 4 schools, 3 blocks were trios, and 8 were pairs. For each block, one school was randomly assigned to the control group and the rest to the treatment group. Under this design, 17 schools were randomly assigned to the treatment group and 12 schools to the control group. We assigned more schools to the treatment than the control group to match the number of openings Playworks had available for the study.

Outcomes, data sources, and sample sizes

To evaluate the impact of Playworks on physical activity during recess, we collected follow-up data, at the end of the study only, from 4th- and 5th-grade students and teachers at 27 of the 29 study schools (16 treatment and 11 control schools) roughly seven months after Playworks was first implemented in treatment schools. We excluded 2 schools (one treatment and one control school) because they were from a matched pair in which one of the schools in the pair did not have any 4th- or 5th-grade classrooms. We collected data using student surveys, accelerometers, and teacher surveys. The sample sizes for these data collection methods are provided below and also summarized in the CONSORT diagram (Figure 1).

We asked all students from 117 randomly selected classrooms (69 in the treatment and 48 in the control schools) in the 27 study schools to complete a 30-minute student survey in the spring of their study year about their experiences at school. Experienced survey administration staff administered the survey in the students' classrooms. To sample students for the survey, we randomly selected 5 classrooms from most schools, balanced across 4th and 5th grades. In schools with 5 or fewer 4th- and 5th-grade classrooms, we selected all 4th- and 5th-grade classrooms. One question from the student survey asked about physical activity at recess. Students were asked how often they participated in recess activities that made them sweat or breathe hard. We created a binary outcome of 1 if a student responded “Sometimes” or “A lot” and 0 if a student responded “Never” or “Not often.” We asked 2793 students to respond to the survey (1589 treatment group and 1204 control group students); of these, 2278 provided a response to the question on physical activity (1285 treatment group and 993 control group students) for a response rate of 82%. These students also reported their own race/ethnicity when completing the student survey, choosing one or more options from the following: White, Black or

Table 1
Components of the Playworks program.

Services provided to students	
Organized recess activities	During recess, the Playworks coach engages students in physical activity by encouraging their involvement in organized and inclusive activities, such as four-square, Simon Says, wall ball, and basketball. The coach also introduces a common set of rules for each game and models conflict resolution tools such as ro-sham-bo (rock–paper–scissors) with the goal of reducing the number of conflicts that arise, enabling youth to resolve their own disputes quickly, and creating an environment of positive play.
Junior coach program	The junior coach program engages 4th- and 5th-grade students (and some older students in K-8 schools) as role models and facilitators during recess. Coaches provide monthly training in leadership and conflict resolution skills to junior coaches, so that they can lead other students in games and help resolve student conflicts.
Class game time	During class game time, the coach meets with individual classes to lead games such as Four Corners, Hot Potato, and Red Light–Green Light with the students, with the goal of fostering team work and positive play while teaching students the rules so they can play the games at recess. Teachers are required to be present and are encouraged to play alongside their students.
After-school activities	Playworks also includes an after-school program, sports leagues and school staff trainings. This component was not a focus of this study.
Coach training and supervision	
Training	New coaches receive 109–120 h of training each year and returning coaches receive 65–80 h of training each year. Roughly 30 h of training are provided before the school year, and an additional 16–24 h are provided within the first two weeks of the school year. The remaining hours are spread throughout the rest of the year (Personal Communication with Playworks staff on September 8, 2014).
Supervision	Coaches are supervised by program managers who spend time on-site at schools, observing the coaches and providing feedback. Coaches usually receive at least one 2–3 hour visit from their program manager each week (Personal Communication with Playworks staff on September 8, 2014).

Table 2
Characteristics of students and teachers in the analytic samples.

Outcome	Sample size (Data source)	Treatment	Control	Difference[a]	*p*-Value
Characteristics of students in the student survey sample[b]					
Percentage of students who were female	2278 (Student survey)	52.4	50.6	1.8	0.17
Percentage of students in 4th grade	2277 (Administrative records)	53.4	52.1	1.3	0.80
Percentage of students of the following race/ethnicity:[c]	2237 (Student survey)				
Black or African American		31.5	30.5	1.0	0.88
Hispanic or Latino		33.0	47.4	−14.4	0.10
White		27.2	21.9	5.3	0.08
Asian, Native Hawaiian, or Pacific Islander		23.7	12.9	10.8	0.09
American Indian or Alaskan Native		9.0	6.4	2.6	0.13
Characteristics of students in the accelerometer sample[b]					
Percentage of students who were female	1537 (Accelerometers)	53.3	51.3	2.0	0.58
Percentage of students in 4th grade	1580 (Administrative records)	54.5	54.8	−0.3	0.97
Percentage of students of the following race/ethnicity:[c]	1489 (Student survey)				
Black or African American		30.9	29.5	1.4	0.85
Hispanic or Latino		35.7	47.0	−11.2	0.30
White		26.3	21.9	4.4	0.18
Asian, Native Hawaiian, or Pacific Islander		24.0	14.8	9.3	0.21
American Indian or Alaskan Native		8.4	5.8	2.6	0.24
Number of minutes students wore the accelerometers during recess, mean (SD)		32.6 (12.2)	34.7 (15.9)	−2.1	0.82
Characteristics of teachers in the teacher survey sample[b]					
Percentage of teachers who were female	111 (Teacher survey)	83.6	80.4	3.2	0.57
Percentage of teachers who were Hispanic or Latino	109 (Teacher survey)	6.7	15.0	−8.3	0.06
Percentage of teachers of the following race:[d]	103 (Teacher survey)				
White		84.2	74.8	9.4	0.35
African American		10.1	20.5	−10.4	0.22
Other race[e]		5.7	8.0	−2.3	0.63
Percentage of teachers with the following highest level of education:	110 (Teacher survey)				
Bachelor's degree		23.4	30.1	−6.7	0.33[f]
Master's degree		62.6	63.9	−1.3	
Other degree		13.9	5.7	8.2	
Number of years of teaching experience, mean (SD)	110 (Teacher survey)	11.4 (9.9)	11.8 (7.8)	−0.5	0.85
Number of years teaching at the current school, mean (SD)	110 (Teacher survey)	5.0 (6.1)	6.3 (5.5)	−1.3	0.42

Data were collected from 27 U.S. elementary schools during the 2010–2011 and 2011–2012 school years.
[a] The treatment minus control mean does not always equal the number shown in the difference column, due to rounding.
[b] Sample sizes within each panel of the table are not always the same for all outcomes because of item nonresponse.
[c] These percentages can sum to more than 100 because students could report more than one race/ethnicity.
[d] These percentages can sum to more than 100 because teachers could report more than one race.
[e] This includes Asian, Native Hawaiian, Other Pacific Islander, American Indian, and Alaskan Native.
[f] Since teachers could report only one highest education level; we tested for differences across all education levels using a Chi-Squared test, which produced a single *p*-value.

African American, Hispanic or Latino, Asian, American Indian or Alaskan Native, and Native Hawaiian or other Pacific Islander.

We also asked a subsample of the students who were administered the student survey to wear ActiGraph GT3X accelerometers during one or two school days. Accelerometers are monitoring devices worn on the body to capture intensity of movement, allowing researchers to objectively measure physical activity intensity during everyday activities. Within most schools, we selected a random sample of four classrooms from those selected for the student survey, balanced across 4th and 5th grades; we asked all students in those classrooms to participate in the accelerometer data collection. In schools with four or fewer 4th- and 5th-grade classrooms, we asked students from all such classrooms to participate in the accelerometer data collection. From the four (or fewer) classrooms selected from each school, we randomly selected an additional classroom, and students in that classroom wore the accelerometers for an additional school day. Parents were required to sign consent forms before their children were allowed to participate in the accelerometer data collection. We sampled 2389 students (1368 treatment group and 1021 control group students) and asked them to wear accelerometers. Of those students who also reported their gender, 1537 received parental consent and wore the accelerometers for 10 or more minutes during recess on one or two school days (905 treatment group and 675 control group students) for a response rate of 64%. Of these 1537 students, 365 wore accelerometers for two school days (187 treatment group and 178 control group students). The average amount of time students spent at recess for the accelerometer data collection was about 33 min and ranged from a minimum of 16 min to a maximum of 61 min.

During the data collection period, the research team arrived at participating classrooms at the beginning of the school day. Team members described the function of the accelerometer and then attached one to each consented student's hip, using an elastic belt. The team identified students' recess periods, which were the focus of our analyses, based on recess schedules provided by the schools prior to data collection visits. Once the team was on site in treatment and control schools, they confirmed, and when necessary corrected, the recess schedules, based on when recess actually occurred during the week of data collection, providing us with an accurate record of the recess schedule for each school. We used the ActiLife 5 software package (ActiLife 5 User's Manual, 2011) to create measures of vertical movement (recorded as accelerometer

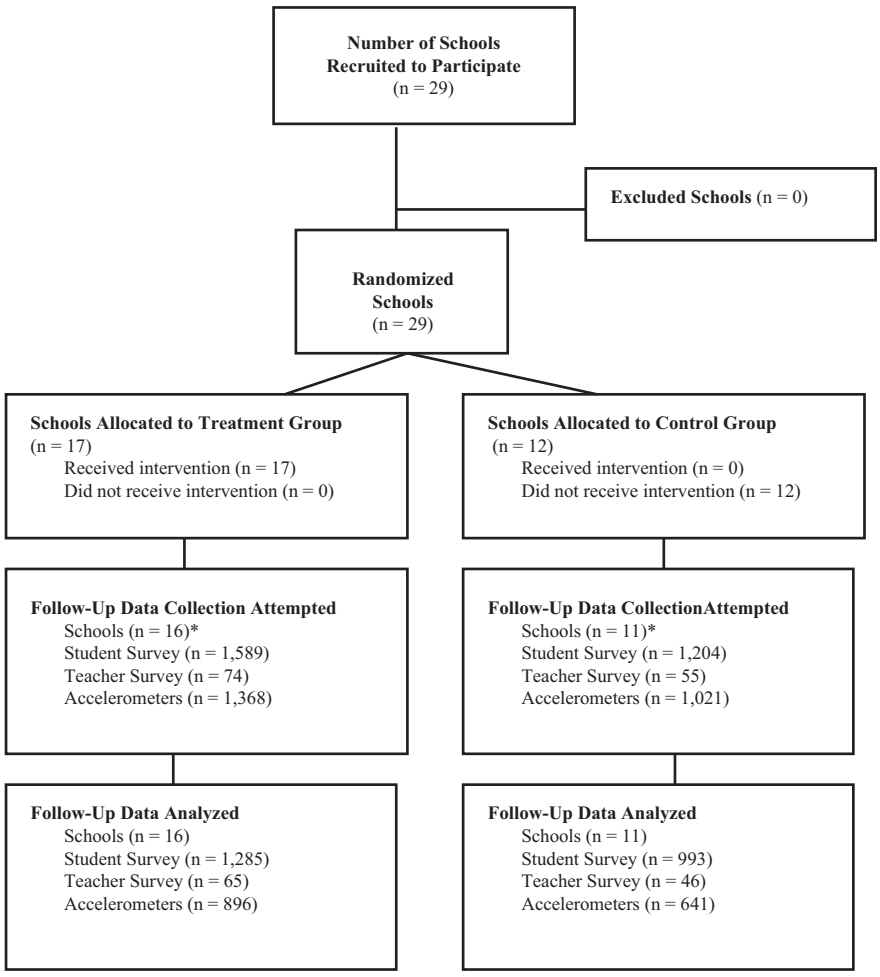

Fig. 1. CONSORT (Consolidated Standards of Reporting Trials) Diagram. Data were collected from 27 U.S. elementary schools during the 2010–2011 and 2011–2012 school years.

intensity counts) and the number of steps taken. Outcomes constructed from these measures were the mean number of accelerometer intensity counts recorded per minute during recess and the mean number of steps taken per minute during recess. We also used cut points in intensity to measure the amount of time students spent in moderate or vigorous activity during recess. In particular, students' accelerometer wear time was divided into five-second epochs, and each epoch was identified as time spent in moderate or vigorous activity if the intensity counts recorded during that epoch were greater than or equal to 191 or 334, respectively. The five-second epochs were accumulated for each activity group to create outcomes for the percentages of time spent in moderate or vigorous activity and vigorous activity only. We used five-second epochs instead of the more commonly used one-minute epochs because recent research suggests that shorter epochs should be considered for studies of child populations (Edwardson and Gorely, 2010; McClain et al., 2008). The five-second epoch cut points of 191 and 334 for moderate and vigorous activity, respectively, are based on the Evenson cut points that were recommended by Trost et al. (2011) for measuring physical activity in youth.

We asked 129 4th- and 5th-grade teachers from the 27 study schools (74 treatment and 55 control group teachers) to complete a teacher survey that asked about their students' experiences at school. In larger schools, we randomly selected 3 4th-grade and 3 5th-grade teachers for the teacher survey. If there were 3 or fewer teachers in either grade in a school, we selected all teachers in that grade. One question from the teacher survey asked about students' physical activity at recess. Teachers were asked if their students participate in physical activities during recess that make the students sweat and breathe hard. We created a binary outcome—1 if a teacher responded "Agree" or "Strongly agree" and 0 if a teacher responded "Neither agree nor disagree," "Disagree," or "Strongly disagree." A total of 111 teachers provided a response to this question (65 treatment group and 46 control group teachers) for a response rate of 86%.

Statistical analyses

We estimated the impact of Playworks by comparing the average outcomes in treatment and control schools using regression models customized to the unit of analysis (teacher or student). We used a similar approach for estimating differences in demographic characteristics between the treatment and control group samples (Table 2). A priori, we specified for our analyses that p-values less than 0.05 represent statistically significant impacts and that p-values between 0.05 and 0.10 represent marginally significant impacts.

The regression models used for analysis included indicators for random assignment blocks to account for the blocked design and school-specific random error terms to account for school-specific effects not attributable to the treatment. We also included covariates in some models to account for differences between treatment and control groups in demographic characteristics. For the student survey outcome, we included indicators for students' race/ethnicity as model covariates to account for marginally significant differences between treatment and control group students based on race and ethnicity (Table 2). Although there were no significant differences between treatment and control groups in demographic characteristics or the amount of time students wore accelerometers during recess (Table 2), we included accelerometer wear time and gender as covariates in the accelerometer-based outcome models, because of the large range in accelerometer wear time (16 to 61 min across students) and because previous research suggests that interventions may impact boys and girls differently (Brown and Summerbell, 2009). In the teacher survey

outcome model, we included an indicator for whether the teacher was Hispanic as a model covariate to account for a marginally significant difference between treatment and control group teachers for this variable (Table 2).

We fit models for continuous and binary outcome variables using least-squares estimation and logistic regression estimation, respectively. Standard errors for the estimated impacts on teacher- and student-level outcomes accounted for clustering at the school level using generalized estimating equations. We calculated model-based *p*-values and effect sizes based on the estimated impacts and corresponding standard errors. In Tables 2 and 3, we present *p*-values that do not account for multiple comparison adjustments. In a separate analysis of these data, however, we confirmed that the results are the same (in sign and significance) when multiple comparison adjustments are made (results not shown). We used multiple comparison adjustments that accounted for correlations among the multiple tests, thereby increasing statistical power while still controlling for the probability of a false impact (Hothorn et al., 2008). We used sampling weights when estimating impacts to account for both the selection probabilities of students and teachers into the sample and nonresponse.

Results

We present the impacts of Playworks on students' physical activity during recess in three separate panels in Table 3. We provide regression-adjusted means for the treatment and control groups, along with estimated impacts (the differences in the means), estimated model-based effect sizes, and the corresponding *p*-values. The first set of findings, in the first panel, focuses on the accelerometer intensity counts and number of steps taken. The second panel presents findings for time spent in activity intensity categories (moderate or vigorous activity and vigorous activity only), and the third panel presents the student and teacher survey findings.

There was a marginally significant difference (defined as a *p*-value between 0.05 and 0.10) between treatment and control group students in the mean number of accelerometer intensity counts recorded per minute during recess. Students in treatment schools registered, on average, 300 more accelerometer intensity counts per minute during recess than their counterparts in control schools. Although students in treatment schools also took, on average, about four more steps per minute during recess than students in control schools, this difference was not significant (Table 3).

There was also a marginally significant difference between treatment and control group students in the time spent in vigorous activity during recess. The average amount of time students spent in vigorous activity during recess was about 4 percentage points higher in treatment schools compared to control schools. We observed no significant differences for time spent in moderate or vigorous activity (Table 3).

Playworks had a significant impact on teacher-reported levels of student physical activity during recess, but not on student reports about their own physical activity during recess. In particular, a significantly higher percentage of teachers in treatment schools (about 32 percentage points more), compared to control schools, agreed or strongly agreed that their students participated in physical activities that made them sweat and breathe hard during recess. However, students in both treatment and control schools were equally likely to report that they participated in recess activities that made them sweat and breathe hard either sometimes or a lot (Table 3).

Discussion

The study findings provided mixed evidence of the impact of Playworks on students' physical activity during recess. We found only one significant impact on teachers' reports of their students' physical activity during recess—teachers in Playworks schools, compared to control schools, agreed more often that their students participated in intense physical activity during recess. We found some marginally significant impacts (*p*-values between 0.05 and 0.10) based on the accelerometer data—on average, there was a trend towards more intensity counts recorded per minute and a greater share of time spent in vigorous activity during recess for treatment group students compared to control group students. However, there were no significant impacts for other outcomes, i.e., the number of steps taken per minute during recess, the time collectively spent in moderate or vigorous activity during recess (as measured by accelerometer), and student reports about their physical activity during recess.

The mixed findings could be attributable to a variety of factors. The only significant impact was based on teacher reports about their students' physical activity during recess. Reports on physical activity like the teacher-report are less objective measures of students' physical activity than those based on accelerometer data (Troiano, 2005; Troiano et al., 2008). The fact that we found either no impacts or marginally significant impacts on the accelerometer-based outcomes suggests that the significant impact found on the teacher-report outcome could be attributed to reporting biases by the teachers (Adams et al., 2005; Matthews, 2002; Sallis and Saelens, 2000).

Table 3
Impacts on students' physical activity at recess, based on accelerometers, student surveys, and teacher surveys.

Outcome	Sample size (Data source)	Treatment	Control	Difference (Effect size[a])	*p*-Value
Accelerometer intensity counts and number of steps taken					
Number of accelerometer intensity counts recorded per minute during recess, Mean (SD)	1537 (Accelerometers)	1314.8 (1019.1)	1016.3 (781.5)	298.5 (0.32)	0.10
Number of steps taken per minute during recess as measured by accelerometer, Mean (SD)	1537 (Accelerometers)	29.7 (16.9)	25.4 (13.7)	4.3 (0.27)	0.19
Time spent in activity intensity categories (as measured by accelerometer)					
Mean (SD) for percentage of accelerometer wear time during recess spent in:	1537 (Accelerometers)				
Moderate or vigorous activity		21.4 (14.5)	16.4 (11.8)	4.9 (0.36)	0.12
Vigorous activity		11.1 (9.7)	7.5 (8.0)	3.6 (0.39)	0.07
Reports from student and teacher surveys					
Percentage of students who report participating in recess activities that make them sweat and breathe hard sometimes or a lot	2278 (Student survey)	76.8	77.0	−0.2 (−0.01)	0.92
Percentage of teachers who agree or strongly agree that their students participate in physical activity that makes them sweat and breathe hard during recess	111 (Teacher survey)	75.8	43.4	32.4 (0.85)	0.01

Data were collected from 27 U.S. elementary schools during the 2010–2011 and 2011–2012 school years.

[a] For continuous outcomes, effect sizes are computed by taking the ratio of the estimated difference and the pooled standard deviation of the outcome measure; for binary outcomes, effect sizes are computed using the Cox index by dividing the log-odds ratio by a factor of 1.65.

Future research that builds upon our study findings would be beneficial. In particular, future research could examine why there were only marginally significant impacts on the accelerometer-based outcomes given that larger effects have been found in other evaluations of recess interventions that are less costly to implement (Erwin et al., 2014). The full effects of Playworks may not be fully realized after a single school year, so follow-up data collection and impact analyses could be conducted in existing study schools to determine if there are larger long-term impacts of Playworks on students' physical activity during recess after multiple years of implementation. Future research could also study the impact of any future changes to the program. For example, if the Playworks program increased its promotion of physical activity in the future, a revised program with more emphasis on maximizing physical activity during recess could be evaluated.

The strengths of this study include the use of a randomized controlled trial design and multiple data collection methods, including objective accelerometer-based data collection, and the inclusion of study schools from multiple cities across the U.S. There are study limitations to consider as well. We were unable to collect baseline measures of physical activity from students. Although having baseline measures is not necessary to obtain unbiased impact estimates given the random assignment design, it would have provided even more power to detect impacts. Also, we were able to collect data only after one year of implementation—additional follow-up data collection periods would have allowed us to investigate possible improvements in Playworks implementation across time, as well as track longer-term student outcomes. On the surface, a third study limitation appears to be that our accelerometer data collection focused on recess periods only. This was intentional because Playworks is designed to primarily target students' physical activity during recess. In a separate analysis (results not shown) we examined the impacts of Playworks on student's physical activity for the entire school day using accelerometers and found no significant differences between treatment and control group students.

Conclusion

Successful school-based interventions that promote increased physical activity during recess and other periods during the school day can help improve student outcomes (Centers for Disease Control and Prevention, 2010). The findings from this study offer an important contribution to the existing literature on physical activity interventions that target recess during the school day (Biddle et al., 2014; Brown and Summerbell, 2009; Erwin et al., 2014; Escalante et al., 2014; Ickes et al., 2013). In the first ever randomized controlled trial of the Playworks program, we found only one significant impact based on teacher reports about their students' physical activity during recess and two positive (marginally significant) impacts based on accelerometer data; students in the treatment group wearing accelerometers recorded more intensity counts per minute, on average, and more time spent in vigorous activity during recess, compared to the students wearing accelerometers in the control group. The Playworks program had no impact on time spent in moderate to vigorous activity during recess (as measured by accelerometers) or on students' reports about their physical activity during recess. Future efforts could concentrate on increasing the Playworks program's focus on physical activity so that future impact evaluations might find larger impacts of the program on students' physical activity during recess.

Author contributions

Beyler prepared the manuscript. Beyler, Bleeker, James-Burdumy, and Fortson designed the study. Bleeker led the data collection activities and James-Burdumy directed the study. Beyler and Benjamin prepared the data for analyses and conducted the analyses. All authors contributed to, read, and approved the final version of this manuscript.

Conflict of interest statement

The authors declare that they have no conflicts of interest.

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