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# Program Evaluation of Healthy Moves™: A Community-Based Trainer in Residence Professional Development Program to Support Generalist Teachers With Physical Education Instruction

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**Background**: Elementary school teachers are often responsible for teaching physical education to their students, with little formal training in that instruction. This study evaluates a trainer in residence professional development program designed to improve physical education instructional attitudes and practices in elementary school generalist teachers. **Methods**: Participants were 139 teachers and 3577 first to fifth grade students at 11 public elementary schools in Oregon. Program evaluation measures included pre- and postteacher surveys on teacher attitudes and practices toward teaching physical education for fidelity, postprogram lesson observations for sustainability, and teacher-reported program barriers to and facilitators of feasibility. A multivariate repeated-measures analysis of covariance test assessed changes in teacher attitudes and practices related to physical education instruction. **Results**: There were main effects of time observed for teacher encouragement and enthusiasm and physical education teaching practices ($F_{2,127} = 9.68$, $P < .001$, $\eta_p^2 = .132$). Postprogram observations indicated sustained use of activity components and an average of 86% of physical education class time spent with students engaged in moderate to vigorous levels of physical activity. **Conclusions**: The trainer in residence community-based approach shows promise as an appropriate professional development strategy for generalist teachers responsible for physical education instruction. However, a longer duration, randomized control trial is needed to determine the efficacy of these programs in promoting student physical education outcomes.

**Keywords**: children, social cognitive theory, physical activity, feasibility, teaching skills, health equity

Inadequate physical activity (PA) and excessive sedentary behaviors are major contributors to health inequities among American children.[1–3] Only 18% of children with household incomes of 0% to 99% of the Federal Poverty Level achieve the recommended 60 minutes of daily moderate- to vigorous-intensity physical activity (MVPA) at least 4 to 6 days per week, compared with 35% of children with household incomes ≥400% Federal Poverty Level.[4] Providing health-enhancing physical education (PE) in elementary schools, which promotes public health objectives and PA health benefits,[5] has increasingly become a primary focus for quality PA for school-aged children.[2,6] With recent studies indicating a greater decrease in children's PA levels as a result of the COVID-19 pandemic,[7,8] promoting school-based PA is more crucial now than in prepandemic years. Children exposed to higher amounts of PE are more likely to achieve the recommended 150 minutes a week of MVPA needed to produce health benefits for physical and psychosocial development.[9] Studies consistently indicate that health-enhancing PE could substantially increase PA opportunity with related benefits over typical levels experienced in underrepresented populations.[2]

Currently, PE mandates are in place for elementary schools in 40 states,[10] yet only 4% of schools report providing daily PE for at least half of the school year.[11] In addition, schools vary significantly in the quality of PE provided for students.[11] These factors contribute to disparate health outcomes, as minority and lower income children obtain a greater proportion of PA via school activities compared with other children.[10] Due to school budget constraints and shifting academic priorities, classroom teachers have increasingly assumed the role of teaching PE to elementary school students.[2] Currently, 68% of elementary schools allow classroom teachers (generalists) to teach PE, even though they typically have little to no training in how to instruct or manage PE classrooms.[2,12]

Teachers encounter significant barriers to conducting effective, evidence-based, and standards-based PE, particularly among schools serving underresourced communities, which are often rural, lower income, and include more students of color.[2,13,14] Common barriers include: difficulties reaching 150 minutes of standards-based PE per week; difficulties getting students adequate amounts of MVPA; a lack of access to adequate physical space, time, and equipment; varying skill levels among students; and lack of teacher knowledge, training, and confidence in teaching movement and activity skills.[13] To address these barriers, effective programming must integrate teacher training with PE curriculum to provide educators with the fundamental knowledge, skills, and strategies they need as a foundation for introducing organized PE curriculum into their classrooms. There is a dearth of existing empirically developed training available for elementary school teachers on how to teach students basic developmentally sequenced movement and equipment handling skills, and how to conduct effective behavioral classroom management conducive to an active PE environment.

It is likely that generalist teachers require hands-on professional learning opportunities to successfully execute evidence-based PE lessons with their students.[15] Therefore, one approach is to implement a community-based PE trainer in residence (TIR) professional development program that provides generalist teachers with one-on-one mentoring and scenario-based training for an extended length of time. The TIR model is based on tenants of the social cognitive theory (SCT)[16] in that individuals' behaviors, such as a choice to engage (or not engage) in PA, are influenced

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both by the environment in which they live and their personal characteristics. Based on SCT, teachers' changes in knowledge, attitudes, and behaviors may occur through observational learning; through direct instruction or vicarious reinforcement, either extrinsic or intrinsic; and through changing expectations and expectancies. By using this framework to guide TIR program components, including (1) physical skill instruction training in age-appropriate child movement and use of manipulate equipment, (2) physical fitness training for fitness instruction, training in fitness assessments and individual goal setting with students, and (3) classroom management techniques to be used in the PE classroom, TIR programs may be implemented to align teachers' attitudes and practices to those recommended by the National Association of Sports and Physical Education's (NASPE) to promote the quality of PE instruction among classroom teachers.

The purpose of this study was to perform a program evaluation for the Healthy Moves™ TIR professional development PE program. We hypothesized that the Healthy Moves™ program would demonstrate strong fidelity, with teachers improving their PE attitudes and practices following the TIR program, which is measured with a survey assessing the nationally recommended Appropriate Instructional Practice Guidelines for Elementary School PE.[17] We also hypothesized that the TIR program would demonstrate high feasibility and favorable program acceptability, as well as sustainability, with teachers demonstrating higher quality of PE teaching practices following the program.

# Methods

## The Healthy Moves™ TIR Program

Healthy Moves™ is a 501 (c) (3) community-based organization formed in 2011 to assist schools and communities in promoting PA with elementary school-aged youth. The organization's TIR program provides professional development to generalist elementary school teachers responsible for conducting PE instruction with their students, funded by the Oregon Department of Education as a PE Expansion K–8 (PEEK-8) Professional Development program. The Healthy Moves™ PE TIR Program has been conducted in Oregon elementary schools for more than 8 years as a means of responding to school needs for conducting fun, developmentally sequenced, and active, standards-based PE instruction for students. The program engages professional and community-based PA trainers (eg, fitness instructors, retired PE teachers, dancers, recreation and sports leaders, university student athletes, dancers, yoga instructors, and gymnasts) from the local community to present lessons in classrooms for a 8-week period, one session per week, with additional lesson plans provided to teachers. The professional development program is guided by the NASPE's list of appropriate practices for PE teachers,[17] shown in Table 1. Also outlined in Table 1 are the activities of the Healthy Moves™ TIR program that align with these goals, and the assessments used to evaluate the program, each described in more detail below.

**Table 1 Professional Development Program Goals, Program Activities, and Assessments for the Healthy Moves™ Trainer in Residence Physical Education Program**

| Appropriate NASPE practice (program goal) | TIR program activities | Assessment(s) |
|---|---|---|
| 2.3.1 The PE classes begin with an instant activity, anticipatory set, and physical warm-up; proceed to the instructional focus and fitness activities; and close with a physiological cool down and a review of instruction objectives. | 1) Two-hour in-service training for Healthy Moves™ trainers<br>2) Two-hour preprogram in-service with teachers and trainers<br>3) Weekly mentored PE lessons where trainers focus on instructional strategies consistent across grades for age-appropriate and evidence-based healthy fitness activities for students | Observation of teacher's PE classroom conducted 2-mo postprogram<br>Pre–post program survey on teacher PE practices<br>Feasibility and acceptability of program with teacher-reported barriers and facilitators |
| 2.5.1 Teachers organize their classes to maximize opportunities for all children to learn and be physically active. Enough equipment is provided so that children spend virtually no time waiting for turns or standing in lines. At least half of class time is spent in moderate to vigorous activity. | 1) Two-hour preprogram in-service with teachers and trainers<br>2) Standards-based lesson plan curriculum is made available to teachers each week | Observation of teacher's PE classroom conducted 2-mo postprogram<br>Pre–post program survey on teacher PE practices<br>Feasibility and acceptability of program with teacher-reported barriers and facilitators |
| 2.7.1 The teacher shows enthusiasm for an active, healthy lifestyle. | 1) Two-hour preprogram in-service with teachers and trainers<br>2) Weekly mentored PE lessons where trainers focus on instructional strategies consistent across grades for age-appropriate and evidence-based healthy fitness activities for students | Pre–post program survey on teacher attitudes toward teaching PE (teacher encouragement and enthusiasm subscale) |
| 4.2.2 Assessments include clearly defined criteria that are articulated to students as part of instruction before the assessment (eg, a rubric is provided and explained during instruction). | 1) Two-hour in-service training for Healthy Moves™ trainers<br>2) Two-hour preprogram in-service with teachers and trainers<br>3) Trainers and the Oregon Research Institute integrate student fitness assessments at pre- and postprogram timepoints | Feasibility and acceptability of conducting fitness assessments with teacher-reported barriers and facilitators |

Abbreviations: NASPE, National Association of Sports and Physical Education; PE, physical education; TIR, trainer in residence.

The Healthy Moves™ program focuses on developing easy instructional strategies that are consistent across grades for age-appropriate and evidence-based healthy fitness activities for students; the approaches will boost time spent in MVPA during PE classes. During the program, classroom teachers collaborate with the trainers to plan one weekly lesson on a selected activity (eg, gymnastics, track and field, dance, locomotor skill development, station activity drills). Lessons are typically 25 to 30 minutes, beginning with the Healthy Moves™ warm-up activity—a set of cardiovascular activities, locomotor drills, and stretching exercises. The curriculum developed for the Healthy Moves™ program, in collaboration with PA researchers from the Oregon Research Institute, is available to teachers at the beginning of each week prior to lesson day. The aim of these lessons is to provide a template of instruction plans that are easy for teachers to use and address the skill areas specified in the Oregon State Department of Education PE Standards,[18] with a suggested sequence of lessons for the year. Sections of this curriculum will address specific adaptive activities, cultural diverse activities, and the creation of safe learning environments.

Prior to the start of the program, all Healthy Moves™ volunteer trainers completed a 2-hour in-service training with Oregon Research Institute staff to review evidence-based practices for elementary school PE. Topics covered during the training included how to establish an autonomy-supportive environment during PE,[19,20] activities that promote adherence to PE standards (ie, student motor competence and fitness development),[18,21] classroom organizational strategies, and a review of fitness assessment procedures. Subsequently, another 2-hour in-service training was conducted with teachers and trainers at each participating school. This training covered: (1) guidelines for elementary school PE using the Appropriate Instructional Practice Guidelines for Elementary School Physical Education by NASPE[17] and standards for PE identified by the Oregon Department of Education,[18] and the required minimum number of minutes outlined in ORS 329.496,[22] (2) instruction on the Healthy Moves™ warm-up and cool down exercises, and (3) demonstration of classroom-based physical fitness assessments. At the end of the training, teachers and trainers discussed the logistics of the program, including teacher preferences for the content of classroom instruction and how teachers and trainers would work together with PE instruction and classroom management over the 8-week program. Finally, the Healthy Moves™ program incorporated Fitnessgram student fitness assessments into the TIR program to address the district-implemented student performance standard for PE. Oregon Research Institute staff assisted teachers in conducting Fitnessgram assessments pre- and postprogram, explaining fitness results to students, and discussed fitness goal-setting with students prior to the second Fitnessgram assessment.

## Participants

Eleven schools participated in the program, selected via convenience sampling. Schools were divided into 3 cohorts, with 4 schools receiving the program in the fall of 2014, 4 schools in the winter of 2015, and 3 schools in the fall of 2015. Participants were 3577 students in grades 1 to 5 (ages 6–11 y) and 139 classroom teachers. All schools were located in a town in western Oregon with a population of 63,000 and a household poverty rate of 21.7%.[22] Among participating schools, 64.0% of the students were eligible for free or reduced lunch, ranging from 42.5% to 82.7% of the student population. Teacher demographics and professional characteristics along with student demographic and body mass index (BMI) data are displayed in Tables 2 and 3, respectively. This research study was deemed as a program evaluation for the Healthy Moves™ Program by the Oregon Research Institute Institutional Review Board.

## Study Design

This community-based study used a pre and post within-subject design to assess program fidelity. Preprogram assessments included teacher surveys completed at the start of the in-service training workshop and again 2-month postprogram completion. At the postprogram timepoint, teachers also reported barriers to, and facilitators of, the TIR program. Two months after the TIR program ended, Oregon Research Institute staff observed 1 to 2 teacher-led PE classes to assess the quality of PE instruction and measure sustainability of the TIR program.

## Baseline Characteristics

***Teacher Demographics and Professional Characteristics.*** Teachers provided demographics and information on their professional history and training in the preprogram survey.

**Table 2 Demographic and Professional Characteristics of Teachers**

| | Total sample (N = 139) | |
|---|---|---|
| | Percentage | n |
| Sex | | |
| Male | 20 | 28 |
| Female | 80 | 111 |
| Ethnicity[a] | | |
| Latinx | 3 | 4 |
| Non-Latinx | 97 | 130 |
| Grades taught | | |
| Grade 1 | 26 | 36 |
| Grade 2 | 20 | 28 |
| Grade 3 | 15 | 21 |
| Grade 4 | 22 | 31 |
| Grade 5 | 12 | 17 |
| Combination of 3 and 4 | 5 | 6 |
| Years teaching,[a] y | | |
| <1 | 4 | 5 |
| 2–5 | 13 | 18 |
| 6–10 | 25 | 35 |
| ≥11 | 58 | 80 |
| PE training | | |
| No training | 4 | 6 |
| 1–2 teacher ed. courses | 77 | 107 |
| PE workshops | 53 | 74 |
| Cont. ed. PE courses | 27 | 38 |
| Cert. fitness training | 2 | 3 |
| Completed PE licensure | 1 | 2 |

Abbreviation: PE, physical education.
[a]n = 1 missing for years teaching, n = 5 missing for ethnicity (chose not to disclose information).

**Table 3 Demographic Characteristics of Students**

| | Total sample (N = 3577) |
|---|---|
| | Percentage of sample |
| Sex | |
| Male | 52.8 |
| Female | 47.2 |
| Ethnicity | |
| Latinx | 19.8 |
| Non-Latinx | 80.2 |
| **Body mass index (pre-only)** | **Overweight/obese Percentage of sample** |
| All students | 36.2 |
| By sex | |
| Male | 31.9 |
| Female | 32.2 |
| By ethnicity | |
| Latinx | 39.6 |
| Non-Latinx | 30.2 |

***Student Demographics.*** Students self-reported sex and ethnicity (Latinx or non-Latinx) during the preprogram physical fitness assessments.

***Student BMI.*** Children's height and weight were measured using the SECA 213 portable stadiometer (Seca, Chino, CA) and Tanita HD-314 W digital weight scale (Tanita, Arlington Heights, IL). The BMI was determined by the Center for Disease Control's age- and sex-specific percentiles.[23] While there are race/ethnic differences in BMI, the Center for Disease Control BMI for age is accurate for Latinx children.[24] A percentile of 85 to <95 is considered overweight, and a percentile of ≥95 is considered obese.[25]

## Program Evaluation

***Fidelity.*** *Teacher PE attitudes and practices:* Participating teachers completed a pre- and postprogram survey on their attitudes toward teaching PE and their current PE teaching practices. Survey items measured the appropriate NASPE practices this program aimed to promote (see Table 1), including an 8-item subscale on teacher encouragement and enthusiasm for PE (eg, "I like to introduce new PE activities to my students"), and a 6-item subscale on teacher PE practices (eg, "In my PE class, we spend at least half of the class time being active"). Responses were on a 4-point Likert scale, ranging from 1 (hardly ever) to 4 (almost always). Reponses for the 2 subscales were averaged separately.

***Sustainability.*** *Quality of PE teaching practices:* Observers rated PE teaching practices (ie, quality of PE) and the sustainability of the program (ie, PA intensity) using a novel observational rating tool created by the Oregon Research Institute. A nonstandardized measure was adapted for use for this evaluation given that previously validated measures, including the System for Observing Fitness Instruction Time,[26] are primarily designed to assess student behaviors, not that of teachers, and does not specifically measure the primary professional development goals of this TIR program. Therefore, this novel observational rating tool was created primarily to evaluate teachers' PE class activity, learning environments, instructional strategies, and curriculum components, and secondarily to obtain subjective observation of students' PA level and intensity. Raters were trained by researchers from the Oregon Research Institute and conducted observations until they consistently reached consensus on scoring, with the expert trainer as the guide.

Part I of the observational rating tool consisted of recording the start and end time for PE classes (eg, time students came to the gym and time they left); the total active minutes of PE class time were measured using a stopwatch. Total minutes of PE time divided by total active PE class time provided the percentage of class time in which students were engaged in PA. Part II of the observational rating tool included an 8-item scale evaluating the amount of teacher-provided encouragement, student engagement and participation, level of skill modeling, individual and group instruction, how often the teacher emphasized the importance of PA, the amount of developmentally appropriate activities provided during the PE class, and the perceived level of enjoyment among students. Response options were on a 5-point Likert scale, ranging from 1 (never) to 5 (most of the time). Items were averaged to create a PE quality score, with a greater score indicating higher quality of PE instruction. Part III of the observational rating tool was a program sustainability measure that includes the percentage of teachers who used a Healthy Moves™ warm-up and/or a cool down activity, as well as PA-intensity ratings for the primary class activity. Intensity was coded as "sedentary," "moderate," or "vigorous," with examples given for each intensity for reference. For classrooms with more than one observation, scores were averaged.

***Feasibility and Acceptability.*** *Barriers to, and facilitators of, the Healthy Moves™ TIR program:* Open-ended items on the teacher survey were used to identify barriers and facilitators (ie, supportive factors) teachers encountered during the Healthy Moves™ TIR program, to inform future program implementation. The feasibility and acceptability of conducting fitness assessments during participating teachers' PE classes in the future were also assessed.

## Statistical Analysis

Descriptive statistics are reported as mean (SD) unless otherwise noted. Data were analyzed using SPSS (version 24.0; IBM Corp, Armonk, NY) with significance set a priori at $P < .05$. Participants with complete data were included in the current analysis. A within-subjects multivariate repeated-measures analysis of covariance test was performed to assess preprogram to postprogram changes in teacher encouragement and enthusiasm and teacher PE practices, while controlling for school. For program sustainability outcomes, descriptive statistics are reported.

The postprogram qualitative data were derived from the prespecified open-ended teacher survey items on perceived barriers to and facilitators of the TIR program. By specifying preidentified questions, we initiated an approach designed to yield a fixed array of responses.[27] In the first phase of the analysis, open-ended responses from teachers were organized by teacher for data reduction of nonrelevant content. These data then were developed into response categories that matched the questions contained in the survey. These, in turn, were further refined based on the literature we reviewed on barriers to and facilitators of standards-based PE. Data were then organized categorically into themes for reporting results.

# Results

## Change in Teacher PE Attitudes and Practices

Cronbach alphas for the teacher encouragement and enthusiasm and teacher PE practices subscales were .85 (pre) and .87 (post) and .70 (pre) and .62 (post), respectively. A main effect of time was observed for the teacher encouragement and enthusiasm and PE teaching practices subscales ($F_{(2,127)} = 9.68$, $P < .001$, $\eta_p^2 = .132$). School-adjusted means for teacher encouragement and enthusiasm (min = 1 and max = 4) scores were 2.7 (0.5) prior to the Healthy Moves™ TIR program and significantly improved to 2.9 (0.5) ($P < .001$) following the program. There were no significant changes in teacher PE practices (min = 1 and max = 4) following the program (pre = 2.2 [0.5]; post = 2.3 [0.4]).

## Quality of PE Teaching Practices

For postprogram PE class observations, 90% of teachers had at least one observation. Observers found that the average total active PE class time was 23.9 (4.4) minutes, equating to 86% of class time. Furthermore, the observed average quality of classrooms was 4.2 (0.5) on a 5-point scale with 1% of classrooms averaging 2 or lower (never or seldom), 3% averaging between 2 and 3 (sometimes), and 96% averaging above 3 (a lot to most of the time). The primary intensity recorded for the main class activity was at least moderate for 100% of classrooms (ie, 0% were classified as either sedentary or vigorous). Finally, 92% of observed classes did a Healthy Moves™ warm-up and 83% did a Healthy Moves™ cool down.

## Barriers to and Facilitators of the Healthy Moves™ TIR Program

Major themes emerging from the program feasibility open-ended questions with teachers are presented in Table 4. Overall, 84% of teachers said they would be capable of conducting fitness assessments during their regular PE class with more instruction and support. Teachers also highlighted several supportive factors, including having a wide selection of PE equipment during the program, as well as barriers to program implementation, such as not enough class time or space to conduct PE lessons.

# Discussion

This "in situ" within-subjects evaluation of the Healthy Moves™ TIR program, implemented in 11 elementary schools and delivered to 139 teachers, confirmed our hypotheses of high program fidelity, sustainability, and feasibility. While previous PE interventions have reported similar program evaluation results with trained physical educators and/or with researcher-implemented interventions,[28] this was one of the first studies to rigorously evaluate a community-based PE program provided specifically to generalist classroom teachers by a nongovernmental organization.[29] Participating teachers indicated that the program was successful in promoting their enthusiasm for teaching PE, aligning with NASPE appropriate practice 2.7.1 (see Table 1).[17] Importantly, PE class observations conducted 2 months postprogram found that the PE teaching practices modeled by the resident trainers were sustained, with the majority of classroom teachers leading highly active, quality PE lessons, including the Healthy Moves™ warm-up. Finally, feedback from teachers responding to open-ended survey questions also showed positive indicators of feasibility and acceptability of the TIR model. Our findings suggest that a community-based TIR program guided by tenants of the SCT (ref; ie, observational learning) may be a practical, sustainable, and effective PE resource for elementary schools lacking certified physical educators.

Given that this program was implemented with classroom teachers with minimal to no previous training for instructing PE, a primary program goal was to align teachers' attitudes and practices to the guidelines provided in the nationally recommended Appropriate Instructional Practice Guidelines for Elementary School PE.[17] To reach this goal, the Healthy Moves™ TIR professional development program was designed to promote teachers' PE instructional behaviors through observational learning guided by the SCT. Trainers assisted classroom teachers with delivering one PE class per week, and classroom teachers were then encouraged to lead additional PE lessons on their own. While we found a medium effect size for improvements in teacher enthusiasm and encouragement toward PE instruction, contrary to our hypothesis, there was no self-reported improvement in teacher PE practices. However, these teacher survey results did not align with objective measures of PE instructional quality at 2 months postprogram completion. In fact, PE class observations indicated sustained positive outcomes following the program, including students spending 86% of PE time engaged in MVPA,

**Table 4 Themes Emerging From Post-Program Open-Ended Feasibility Questions From Teacher Survey Regarding Program Facilitators and Barriers (N = 139 Teachers)**

| Feasibility of continuing | Program facilitators | Program barriers |
|---|---|---|
| • More support required (ie, 3-4 adults per class) | • Providing PE workshops/ seminars/programs | • Lack of scheduled PE time |
| • Instructors/assessors needed more experience with teaching assessments | • Having scheduled time for PE | • Not enough time to plan PE |
| • More teacher training required | • Having a good selection of equipment | • Set-up time required |
| | • Adequate space for PE activities | • Large class sizes |
| • Too difficult for generalist teachers to conduct fitness assessments | • Having support of the school principal | • Lack of knowledge and formal PE training |
| • Would be possible with several volunteers using a station-based approach | • Student enjoyment during PE | • No set curriculum based on student age level |
| | • Having technology and sound system in the gymnasium | • Challenges of high-need students |

Abbreviation: PE, physical education.

and observed lesson quality of 4.2 on a 5-point scale. These discrepant results may be due to the dose of observational learning sessions. It is possible that once-weekly lesson for 8 weeks is not adequate to promote long-term improvements in teacher-perceived PE practices.[30] A previous SCT-based intervention designed to promote teacher self-efficacy in PE practices included once monthly workshops for an entire academic year, and resulted in favorable self-reported improvements,[31] supporting the possibility that longer duration programs may be required to promote teachers outcomes.

Although this study demonstrated initial indicators of program sustainability, teachers reported barriers to conducting effective PE classes. First, teachers reported a lack of adequate PE facilities. Most schools had only one gym and frequently the "gym" was a multipurpose space, also serving as a cafeteria and performance space. Second, teachers reported that time needed for PE class preparation, set up, and take down was burdensome. Third, while teachers expressed strong interest in continuing student physical fitness assessments—a key PE performance standard measure—they stated they would need additional support to do so. Finally, teachers expressed a need for more structured, age- and standards-based PE curriculum for trainers to deliver to teachers. While there were barriers to implementing the Healthy Moves™ TIR program, teachers also reported many supportive features, displayed in Table 4. Teachers reported that the PE workshop and observational lesson components were supportive factors in program implementation, supporting the potential for low burden SCT-based professional development programs for generalist teachers responsible for PE instruction.

These barriers align with those previously published.[13] To address these barriers, future TIR programs could incorporate school wide classroom-based activity breaks, eliminating the need to use the gym.[32] Future TIR programs could also utilize easy-to-implement activities, such as body weight exercises,[33] to reduce time needed for preparation/take down. Community-based programs can also assist with student physical fitness assessments, or assessments can be incorporated into existing TIR programs, as they are in Healthy Moves™. Finally, although all trainers attended an in-service training and had previous experience in child PA programming, they collaborated with participating teachers to deliver programming, resulting in a variety of PE activities in the various classes. Trainers varied in their knowledge of age-appropriate developmental needs of children for physical skill acquisition and progression. Therefore, future TIR programming may need to incorporate a structured curriculum of evidence- and age-based activities.

## Strengths and Limitations

This was one of the first studies to evaluate a community-based TIR program for classroom teachers responsible for PE instruction. A strength of this study was the sample of participating schools; the schools largely served low income, and a significant number of Latinx students. Another study strength was the inclusion of a variety of process evaluation measures, including PE class observations and teacher surveys. There were also some limitations of this study. First, this study did not include a comparison/control group of schools, due to this program being implemented in a convenience sample of schools willing to participate in a state-funded professional development opportunity. Furthermore, we did not include the assessment of student outcomes, including motor competence and PE knowledge, due to the short duration of this pilot program and the program's focus on teachers.

# Conclusions

While schools continue to eliminate trained physical educators, it is essential to find a feasible and sustainable generalist teacher PE training solution to promote the health and well-being of students.[2] This program evaluation supports the preliminary fidelity, sustainability, and feasibility in implementing an 8-week TIR program to promote classroom teachers' perceptions and practices for instructing PE in their classrooms. The TIR programs provided by nonprofit, community-based organizations may be an effective, low resource solution for PE in schools. Overall, based on these preliminary findings, there is a need for a randomized control trial, to rigorously evaluate the program and determine the efficacy of the community-based Healthy Moves™ TIR professional development model. A longer randomized control trial could also examine student PE outcomes and physical fitness. Ultimately, providing students with opportunities to learn standards-based PE has the potential to improve their physical and mental health,[34] improve academic success,[35] reduce chronic disease risk,[36] and promote habitual PA outside of the school setting.[37]

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