

Title of Intervention and Website: Sports, Play, and Active Recreation for Kids (SPARK)

Intervention Strategies: Group Education, Individual Education, Supportive Relationships

Purpose of the Intervention: To increase physical activity during physical education classes and outside of school

Population: 4th and 5th graders

Setting: 7 elementary schools in a Southern California school district, Poway, California, a suburb of San Diego; school-based

Partners: school district and participating principals

Intervention Description: Elementary schools were assigned to one of three physical education conditions: specialist-led, teacher-led or usual physical education.

- Group Education: SPARK physical education classes were designed to promote high levels of physical activity, teach movement skills, and be enjoyable. Recommended class frequency was 3 days a week for 30 minutes, with 15 minutes spent on health-fitness activities and 15 minutes spent on skill-fitness activities.
- Individual Education: Children were taught behavior change skills in weekly 30-minute classroom sessions (self-monitoring, goal setting, stimulus control, self-reinforcement, self-instruction, and problem solving)
- Supportive Relationships: Homework and monthly newsletters were intended to stimulate parent-child interaction and support for physical activity.

Theory: Not mentioned

Resources Required:

- Staff/Volunteers: not mentioned
- Training: Physical Education Specialists required certification
- Technology: not mentioned
- Space: space for physical education classes
- Budget: not mentioned
- Intervention: Physical Education Specialists, Trained Classroom Teachers, scripted self-management curricula for fourth and fifth grades, homework, monthly newsletters, prizes for meeting goals, ongoing training and supervision for physical education specialists and teachers, video equipment to record physical education classes, money for substitute teachers to allow classroom teachers to attend training, physical education equipment, curriculum books
- Evaluation: checklist for self-reported activity, Caltrac accelerometer, stopwatch, pull up bar, sit and reach test, scale, measuring tape, calibrated Lange calipers

Evaluation:

- Design: Randomized control trial
- Methods and Measures:
 - Quantity and quality of physical education classes was assessed using the System for Observing Fitness Instruction Time (SOFIT) instrument.
 - Out of school physical activity was assessed with a 1-day recall in a checklist format which had previously been validated.
 - The Caltrac accelerometer is a small electronic instrument that gives a practical, objective measure of physical activity.
 - A one-mile run test, sit ups in 60 seconds, number of pull ups, sit and reach, height, weight and calf and triceps skin folds assessed fitness and anthropomorphic measurements.

Outcomes:

- Short Term Impact:

- Students in the two intervention conditions spent more time in physical activity in school than students in the control condition. Specialist-led students participated in twice as much moderate to vigorous physical activity and expended twice as many calories during physical education each week as control students, with teacher-led students in between.
- There was a moderate effect size difference for girls in the mile-run time and sit-ups.
- There were no significant group differences on any accelerometer measure or on physical activity performed outside the school.
- Trained classroom teachers maintained average lessons per week and total weekly minutes of physical education during follow-up.
- Trained classroom teachers significantly reduced the minutes of classroom lessons during the follow-up.
- After the withdrawal of specialists, there were significant reductions in both the frequency of lessons and total minutes of physical education per week. Significantly fewer minutes per week were spent promoting fitness, demonstrating fitness, and providing general instruction.
- After 2 years, girls in the specialist-led condition were superior to girls in the control condition on abdominal strength and endurance and cardiorespiratory endurance
- Long Term Impact: not mentioned

Maintenance: Results indicate that the curriculum and professional development program produced maintenance of effects in student physical activity levels and teacher behavior.

Lessons Learned: A health-related physical education curriculum can provide students with substantially more physical activity during physical education classes. Improved physical education classes can potentially benefit 97% of elementary school students. Further work is needed to promote generalization of physical activity throughout the child's day and to evaluate similar programs in more ethnically and socioeconomically diverse schools.

Citation(s):

Sallis, J. F., T. L. McKenzie, et al. (1997). "The effects of a 2-year physical education program (SPARK) on physical activity and fitness in elementary school students. Sports, Play and Active Recreation for Kids." *Am J Public Health* 87(8): 1328-34.

McKenzie, T. L., J. F. Sallis, et al. (1997). "Long-term effects of a physical education curriculum and staff development program: SPARK." *Res Q Exerc Sport* 68(4): 280-91.