Afterschool Programs to Improve Social-Emotional, Behavioral, and Physical Health in Middle Childhood

A Targeted Review of the Literature

Afterschool Programs to Improve Social-Emotional, Behavioral, and Physical Health in Middle Childhood

A Targeted Review of the Literature

Authors

Mariel Sparr, Colleen Morrison, Kassandra Miller, and W. Todd Bartko, James Bell Associates
Stacy Frazier, Florida International University

Disclaimer

The views expressed in this publication do not necessarily reflect the views or policies of the Office of the Assistant Secretary for Planning and Evaluation, Office on Women's Health, Office of the Assistant Secretary for Health, or the U.S. Department of Health and Human Services. This report and other reports sponsored by the Office of the Assistant Secretary for Planning and Evaluation are available at www.aspe.hhs.gov.

Contents

Exhibits

Introduction

Middle childhood, defined here as 6 to 12 years of age, is an important developmental period as children transition toward formal schooling and greater autonomy. The literature defines domains of child development, including social-emotional, behavioral, and physical health and documents how they interrelate and influence one another.[1] Children's well-being across domains often correlates, and improvements in one domain may influence improvements in others. Unfortunately, economically vulnerable children often face caregiving situations and adverse environments that threaten optimal healthy development.[2] [3]

Greater cognitive capacities during middle childhood also bring greater awareness of gender-specific social expectations and pressures to adhere to gender norms.[4] Gender differences in physical activity emerge during this time, especially among low-income minority girls who tend to engage in less physical activity during late childhood and early adolescence.[5] Decreased physical activity predicts later health and behavioral health disparities, including obesity and higher rates of behavioral health issues.[6]

Afterschool programs provide an opportunity to mitigate these risk factors and support equitable healthy development during middle childhood for both boys and girls.[7] This targeted literature review sought to identify afterschool programs serving children 6 to 12 years of age that report positive social-emotional, behavioral, and physical health outcomes and to determine if there is any differential programming or impact by gender.[i] This review focuses on research analyzing the experiences of boys and girls using a gender perspective,[ii] rather than biological sex.

1. What afterschool programs[iii] report positive outcomes in social-emotional,[iv] behavioral,[v] and physical health[vi] during middle childhood?

---

[i] Gender refers to the socially constructed roles, behaviors, and identities of people, while sex refers to a set of biological attributes that are associated with physical characteristics. Definitions for these terms are adapted from Heidari, S., Babor, T. F., De Castro, P., Tort, S., & Curno, M. (2016). Sex and gender equity in research: Rationale for the SAGER guidelines and recommended use. *Research Integrity and Peer Review*, *1*(1), https://doi.org/10.1186/s41073-016-0007-6

[ii] For this review, we focused on research analyzing the experiences of boys and girls using a gender perspective rather than a focus on biological sex

[iii] The term program is used to refer to programs, interventions, models, or curricula.

[iv] Social-emotional health refers to the skills children need to recognize and manage emotions, form positive relationships, resolve relationship conflicts, exercise executive functioning and control, and engage in responsible decision making. The Collaborative for Academic, Social, and Emotional Learning (CASEL) (http://casel.org) defines social and emotional learning competencies as the cognitive, affective, and behavioral abilities necessary to be successful in school, work, and life. CASEL's competencies include skills related to self-awareness, self-management, social awareness, responsible decision making, and relationship skills.

[v] Behavioral health is a general term that encompasses the promotion of emotional health and the prevention of mental illness and symptoms of behavioral health disorders (such as anxiety, depression, disruptive behavior, impulsivity, or hyperactivity). See https://www.samhsa.gov/grants/grants-glossary#B

[vi] Physical health includes overall health and lifestyle behaviors, such as nutrition and physical activity.

2. What evidence is there for differential impacts by gender, particularly in programming and interventions, that promote physical activity?

3. What are the characteristics of programs, participants, and families for afterschool programs reporting positive outcomes in social-emotional, behavioral, and physical health?

4. What routines, content, and activities are included in programs reporting positive outcomes?

Afterschool-program research and documentation that reports beneficial social-emotional, behavioral, and physical health outcomes often argues that such programs are uniquely situated to promote healthy development during middle childhood and include evidence for positive correlations between programs and healthy outcomes. As background, we summarize and synthesize the claims made and data offered in each domain.

Background

Social-Emotional, Behavioral, and Physical Health During Middle Childhood

Middle childhood coincides with some of the biggest changes in contextual and social expectations faced by children.[8] [9] The transition to formal schooling, changes in relationships with caregivers, and increasing social responsibilities, along with more complex cognitive functioning are just some of the major changes occurring during these years. Children's thinking transitions from one-dimensional, highly differentiated thought processes toward multidimensional, integrated cognitive functioning. This brings about more realistic perceptions of the self, others, and emotions; middle childhood is marked by the important developmental task of mastering more adult-like understandings.

Through peer relationships, children practice and develop important social-emotional and behavioral skills, such as perspective taking, problem solving, self-regulation, and empathy development.[10] These noncognitive factors encompass a variety of skills, behaviors, and attitudes that arm children with social and emotional competencies to perform well in school and function in society.[11] [12] For example, children are more likely to be successful in school if they can (1) develop healthy relationships, (2) demonstrate confidence, (3) concentrate and persist at difficult tasks, and (4) communicate their emotions effectively.[13] As children move toward greater autonomy, the development of these competencies becomes increasingly important for not only academic success, but also for making good decisions and assuming personal responsibilities.[14] Skills developed during this time are foundational for the more complex skills children need as they move into adolescence.[15] There is also evidence that increasing children's social competencies and skills and attachment to school during middle childhood prevents risky health behaviors in later childhood and adolescence, such as criminal behavior, drinking, and pregnancy.[16]

In addition to developing social-emotional and behavioral competencies, children are learning about healthy eating habits and developing preferences for physical activities and how they spend their free time, often modeling behaviors of parents and peers.[17] Exposure to healthy foods during this time can help children develop healthy food preferences and overcome food aversions. Likewise, opportunities for engaging in enriching physical activities can influence later behaviors and foster habits related to healthy and active living. Such habits are not only important for preventing later diseases and adult obesity, but they may also improve social-emotional development, mental health, and cognitive development.

Promoting healthy eating habits and behavioral choices during middle childhood may be especially beneficial for preventing later health disparities among adolescent girls. During middle childhood and throughout adolescence, girls tend to be less physically active than boys.[18] [19] Historically, there are many stereotypes, assumptions, and expectations surrounding gender and the behaviors, interests, and attitudes that are considered more appropriate for females.[20] Awareness of how these cultural gender norms influence girls' decisions to engage or not engage in physical activities can inform the development of more gender-informed and gender-specific programs (such as Girls on the Run).[21] [22]

It is important to note that the aspects of social-emotional, behavioral, and physical health we examine do not operate in isolation from one another. Specifically, children's well-being across the three domains often correlates; improvements in one domain may influence improvements in other domains.[23] For example, improvements in social-emotional competencies such as self-regulation may contribute to improved behavioral health by reducing problem behaviors.[24] Additionally, prior studies found more physically fit children exhibit improved cognitive functioning and greater attention and decision-making skills.[25]

Afterschool Programs: An Opportunity to Promote Social-Emotional, Behavioral, and Physical Health During Middle Childhood

Organized afterschool programs[vii] serve millions of children.[26] According to the Afterschool Alliance report *America After 3PM: Demand Grows Opportunity Shrinks*, in 2020—

- 7.8 million children (fourteen percent) participated in an afterschool program
- More than 20 percent of elementary age children participate in an afterschool program
- Elementary-age children represented approximately 60 percent of children in afterschool programs

A child's entry into elementary school is the key social event that distinguishes middle childhood from the preschool period and is perhaps the most critical institution for development during this period. Sustained encounters with formal organizations and programs outside the family contribute to shaping a child's future.[27] [28] However, the traditional school day often does not afford teachers sufficient time to implement formal models or curricula to promote social-emotional and behavioral development or provide opportunities for physical activity. This is especially true as children

---

vii Often defined as programs (1) occurring in afterschool settings and (2) occurring during at least part of the school year, (3) happening outside regular school hours, and (4) being supervised by adults.

transition from lower to upper elementary ages. For example, a 2016 School Health Policies and Practices Study found only 10.7 percent of elementary schools provided regular classroom physical activity breaks during the school day.[29] Programming provided in afterschool settings offers a unique and invaluable opportunity to fill gaps from the school day and promote good health and developmental outcomes for children aged 6 to 12. Social-emotional and behavioral development are often a central goal of afterschool programs, where routines and activities are specifically designed to support building social skills and positive peer relationships.[30]

Moreover, the traditional school day does not always support or align with parent work schedules. Parents often need their children to be in some form of supervised care during the afterschool hours. This is especially true for younger children. Specifically, Afterschool Alliance[31] [32] reported more than 850,000 elementary aged children are unsupervised during afterschool hours, an increase from the 2014 administration of this survey. Unsupervised time raises concerns about safety and is associated with a greater likelihood of engaging in risky behaviors. Having to rely on unsupervised care also correlates with higher levels of stress for working parents.[33] Afterschool programs are an opportunity to better support working parents by providing supervised care beyond the traditional school day.

Children in families facing multiple stressors, such as food or housing instability, economic insecurity, or poor access to resources, may have fewer opportunities for positive relationships and supportive peer interactions,[34] less access to nutrient-rich food options and physical activity,[35] and fewer opportunities to participate in programs that build resilience or mitigate risk from adversity.[36] While afterschool programs provide a unique opportunity to promote healthy development, many children who could most benefit from participation lack access to quality programs in their communities.[37]

In terms of the impact of gender on afterschool programming, these studies indicate the highest quality programs recognize that girls and boys have their own distinct needs, and successful programs include strategies that are gender sensitive.[38] [39]

Evidence for Improved Outcomes in Social-Emotional, Behavioral, and Physical Health Associated with Afterschool Programs

Prior studies of afterschool programs show mixed results in short-term academic achievement and long-term benefits of reduced juvenile crime. Positive associations are relatively consistent when examining shorter-term benefits of school participation and behavior, motivation to learn, and social-

emotional and physical development.[40] [41] [42] [43] A meta-analysis of afterschool programs serving children 5 to 18 years of age found children attending afterschool programs when compared to nonparticipating children had higher levels of self-confidence and self-esteem, school bonding (positive feelings and attitudes toward school), and positive social behaviors.[44] The review also found that attending afterschool programs was associated with reduced problem behaviors (e.g., aggression, noncompliance, conduct problems) and drug use. Parents also report the programs help their children to develop social skills and provide opportunities to be physically active.[45]

Studies demonstrate that attendance correlates positively with children's physical health.[46] [47] For instance, one longitudinal study assessed the role of program participation in the development of childhood obesity within a sample of mostly low-income Hispanic and African American elementary aged children. Those who participated in afterschool programs were significantly less likely to be obese at follow-up than nonparticipants.[48] Similarly, a three-year afterschool physical activity program consisting of 80 minutes of moderate-to-vigorous daily physical activity was implemented in 18 programs with 573 third grade children. Those who participated at least three days per week exhibited reduced body fat and improved cardiovascular fitness.[49]

Literature Review: Phase One

This literature review sought to—

- Supplement and update existing literature and meta-analytic reviews of social-emotional and behavioral health outcomes achieved in afterschool programs, with a specific focus on those serving children 6 to 12 years of age

- Identify afterschool programs demonstrating positive outcomes in the area of physical health

- Provide practical implications for further promoting healthy middle childhood development across genders through afterschool programs

This targeted literature review identifies studies of afterschool programs reporting positive outcomes in one or more social-emotional, behavioral, or physical health outcomes. Studies conducted in the United States of programs serving children aged 6 to 12 were prioritized, and 52 studies meeting these criteria were selected. Fifteen studies were evaluations of annual reports from particular programs, 14 were reviews of several afterschool programs or existing databases, and 23 were published in peer-reviewed journals.[viii] Each study was reviewed and coded for information about program implementation; participants; and outcomes in the areas of social-emotional, behavioral, and physical health. The appendix provides additional details about the literature review process.

[viii] Study types are mutually exclusive. For ease of discussion, all study types will be referred to as studies throughout the remainder of the report.

Research Question 1: What Afterschool Programs Report Positive Outcomes in Social-Emotional, Behavioral, and Physical Health During Middle Childhood?

Thirteen programs reported outcomes in more than one of the priority outcome areas. Programs reporting positive outcomes in social-emotional, behavioral, and physical health ranged from citywide initiatives and 21st Century Community Learning Centers (CCLC) to more specific models and curricula, like WINGS for Kids and Promoting Alternate Thinking Strategies (PATHS). Only one program, Youth Fit for Life, reported outcomes across all three areas (see table 1). The most commonly reported outcomes included improved social skills and increased self-confidence, reduced problem behaviors, improved overall physical health, and increased healthy eating behaviors and daily physical activity. A snapshot of findings for each of the three outcome areas is provided below.

We note that examining study rigor, methodology, or strength of outcomes reported in the included studies is beyond the scope of this review. Instead, the following discussion reflects all reports of statistically significant positive outcomes in the three target outcome domains as reflected in the published literature. For example, there are many instances where studies rely on correlational methods and cannot make causal claims or conclusions. Additionally, whether or not a study reports a positive outcome in a particular domain, it was often difficult to assess specific outcomes targeted by programs, given the broad descriptions of program goals.

Table 1. Programs[ix] Reporting Outcomes in Social-Emotional, Behavioral, and Physical Health[x]

Afterschool program	Social-emotional	Behavioral	Physical
4-H	●		
Arkansas, Rhode Island, and Michigan 21st CCLC	●		
Bienestar			●
Boys & Girls Club	●	●	
California Afterschool Education and Safety Program and 21st CCLC			●
Community Based Afterschool Program[xi]		●	
Curriculum to Improve Executive Functioning[xii]	●	●	
Extended Services School Initiative	●	●	
Fit-2-Play			●
FITKids	●		●
Food and Fitness Fun Education Program (FFFEP)			●
Georgia's FitKid Project			●
Girls in the Game	●		●
Girls on the Run	●		●
GoKids			●
Leaders at Play	●	●	
New York Out of School Time Initiative	●		
Oakland Afterschool Programs	●		●
PATHS Curriculum	●	●	

[ix] Table includes specific programs included in a study. Table does not include studies reporting outcomes across a sample of multiple afterschool programs. See table A5 in the appendix for additional studies reporting outcomes in social-emotional, behavioral, and physical health.
[x] For a list of specific outcomes reported by each program and references, see table A5 in the appendix.
[xi] Reported by a community-based afterschool program. See Fite, P. J., Vitulano, M. L., & Preddy, T. M. (2011). The positive impact of attending a community-based youth program on child depressive symptoms. *Journal of Community Psychology*, 39(7), 804-814.
[xii] Brock et al. reported implementation of an afterschool program designed to improve executive functioning and visuospatial skills to improve classroom behavior. Curriculum was developed using the collective expertise of professionals with varied knowledge of foundational skills, including occupational therapists, teachers trained in the Waldorf and Montessori traditions, and teachers experienced in curriculum development and implementation.

Afterschool program	Social-emotional	Behavioral	Physical
Providence Citywide Afterschool System	●		●
San Francisco Beacon Program	●	●	
Strategies-To-Enhance-Practice (STEPs) Intervention			●
Texas 21st CCLC		●	
WINGS for Kids	●	●	
Youth Fit for Life	●	●	●

Social-Emotional Health

Of the 52 studies reviewed, 26 (50 percent) reported at least one social-emotional outcome, reflecting a variety of specific outcomes (see table 2) such as social skills and prosocial behaviors, self-confidence, self-efficacy, growth mindset, executive functioning, and physical and emotional safety.

Table 2. Examples of Social-Emotional Health Outcomes

Outcome area	Examples of outcomes reported
Social skills and prosocial behaviors	• Communication skills • Conflict resolution and problem-solving skills • Emotional regulation and self-control • Emotional understanding • Empathy • Teamwork and cooperation • Contributing to community • Helping others • Sharing with peers
Self-confidence	• Global self-worth, self-esteem, and self-concept • Physical appearance self-concept and body image • Sense of mastery • Social acceptance self-concept

Outcome area	Examples of outcomes reported
Self-efficacy	• Belief in ability to depend on themselves • Belief in ability to overcome barriers to exercise and physical activity • Belief in ability to take on new challenges
Growth mindset	• Expectation of success • Intrinsic pleasure in solving difficult problems • Motivation to learn
Executive functioning	• Cognitive flexibility • Cognitive performance during challenging tasks (attention and working memory) • Inhibition control (self-control)
Physical and emotional safety	• Access to positive staff-child and peer relationships • Feeling emotionally safe during out-of-school time • Feeling physically safe during out-of-school time • School belonging and connectedness

Social-emotional outcomes were most commonly measured through the child's teacher (during the school day), parent(s), or participant reports (e.g., surveys, standardized assessment tools); a few studies used direct measures to assess improvements in executive functioning and emotional understanding.[50] [51] [52] For example, to assess executive functioning, Hillman et al. (2014) tested a child's cognitive performance on computer-based tasks requiring greater executive control.

Studies reporting social-emotional outcomes included multiple types of afterschool programs, ranging from citywide initiatives spanning multiple afterschool programs to individual programs implementing specific curricula or models (see table 3 for a list of specific programs). For example, some studies (*n* = 10) examined outcomes for children attending a selection of afterschool programs within a particular region or state.[53] [54] [55] Others (*n* = 12) examined outcomes in programs funded through citywide initiatives or programs within a state receiving federal funding through 21st CCLC programs.[56] [57] [58] [59] [60] The Extended Services School Initiative, Afterschool Oakland programs, and the San Francisco Beacon program all reported positive social-emotional outcomes. An evaluation of the Michigan 21st CCLC also reported positive social-emotional outcomes.[61] In contrast, other studies reported outcomes for specific programs, models, or curricula, including Leaders at Play, PATHS curriculum, WINGS for kids, Girls on the Run, Youth Fit for Life, and FIT Kids.[62] [63] [64] [65] [66] [67] [68]

Table 3. Programs Reporting Outcomes in Social-Emotional Health

Afterschool program	Social-emotional outcomes					
	Social skills and prosocial behaviors	Self-confidence	Self-efficacy	Growth mindset	Executive functioning	Physical and emotional safety
4-H	●					
Arkansas 21st CCLC	●					
Boys & Girls Club	●	●				
Curriculum to Improve Executive Functioning[xiii]					●	
Extended Services School Initiative	●	●				●
FITKids					●	
Girls in the Game		●				
Girls on the Run		●				
Leaders at Play	●					
Michigan 21st CCLC	●			●		
New York Out of School Time Initiative						●
Oakland Afterschool Programs	●	●				●
PATHS Curriculum	●					
Providence Citywide Afterschool System	●					●
Rhode Island 21st CCLC	●					
San Francisco Beacon Program			●			●
WINGS for Kids		●			●	
Youth Fit for Life			●			

[xiii] Brock et al. (2017) reported implementation of an afterschool program designed to improve executive functioning and visuospatial skills to improve classroom behavior. Curriculum was developed using the collective expertise of professionals with varied knowledge of foundational skills, including occupational therapists, teachers trained in the Waldorf and Montessori traditions, and teachers experienced in curriculum development and implementation.

Behavioral Health

Of the 52 studies reviewed, 14 (27 percent) reported behavioral health outcomes. These were concentrated within three main outcomes of reducing disruptive behaviors, preventing risk behaviors, and improving mental health (see table 4). As with social-emotional health, behavioral health outcomes were most commonly measured through participant and teacher reports. A few studies (*n* = 2) used academic records to report school-day discipline incidents.[69][70]

Table 4. Examples of Behavioral Health Outcomes

Outcome area	Examples of outcomes reported
Disruptive behaviors	• Aggressive behavior (getting into fights or arguing with peers) • Hyperactivity and inattention • Impulsive behavior • School day discipline incidents
Misconduct	• Abstaining from drug or alcohol use • Gang involvement • Staying out of trouble
Mental health	• Depressive symptoms • Positive mood

In some instances, programs or models demonstrating outcomes in behavioral health focused on reducing problem behaviors as a function of improving social-emotional skills (see table 5 for a list of programs). For example, the PATHS curriculum focuses on improving skills in self-control and emotional regulation, attention, communication, and problem solving as a means for reducing problem behaviors.[71][72] This curriculum highlights the interconnected and often interdependent nature of social-emotional and behavioral health. One striking example predicated on such interconnectedness was an afterschool intervention designed to reduce problem behaviors by improving executive function.[73]

Table 5. Programs Reporting Outcomes in Behavioral Health

Afterschool program	Behavioral health outcomes		
	Disruptive behaviors	**Misconduct**	**Mental health**
Boys & Girls Club		●	
Community Based Afterschool Program[xiv]			●
Curriculum to Improve Executive Functioning[xv]	●		
Extended Services School Initiative	●	●	
Leaders at Play	●		
PATHS Curriculum	●		
San Francisco Beacon Program	●		
Texas 21st CCLC	●		
WINGS for Kids	●		
Youth Fit for Life			●

Physical Health

Of the 52 studies reviewed, 19 (37 percent) reported physical health outcomes. These mainly measured three areas: overall physical health, eating attitudes and behaviors, and physical activity (see table 6). Measures of overall physical health relied on direct measures, such as physical fitness tests, body fat percentage testing, and weight; whereas measures of physical activity and eating attitudes/behavior relied mostly on participant reports. Studies reporting physical health outcomes tended to focus on defined programs, models, or curricula specifically designed to improve physical health outcomes (see table 7 for a list of programs).

[xiv] Community based afterschool program reported by Fite, Vitulano, & Preddy (2011).
[xv] Brock et al. (2017) reported implementation of an afterschool program designed to improve executive functioning and visuospatial skills to improve classroom behavior. Curriculum was developed using the collective expertise of professionals with varied knowledge of foundational skills, including occupational therapists, teachers trained in the Waldorf and Montessori traditions, and teachers experienced in curriculum development and implementation.

Table 6. Examples of Physical Health Outcomes

Outcome area	Examples of outcomes reported
Overall physical health	• Blood pressure • Body Mass Index (BMI) • Cardiovascular fitness and aerobic fitness • Muscular strength • Obesity
Eating attitudes and behavior	• Nutritional knowledge • Healthy eating habits
Physical activity	• Daily physical activity • Participation in sports or exercise afterschool • Time spent in sedentary activities

Table 7. Programs Reporting Outcomes in Physical Health

Afterschool program	Physical health outcomes		
	Overall physical health	Eating attitudes and behavior	Physical activity
Bienestar	●	●	
California Afterschool Education and Safety Program and 21st CCLC	●		
Fit-2-Play	●		
FITKids	●		
Food and Fitness Fun Education Program (FFFEP)		●	●
Georgia's FitKid Project	●		
Girls in the Game		●	
Girls on the Run		●	
GoKids			●
Oakland Afterschool Programs			●
Providence Citywide Afterschool System			●
Strategies-To-Enhance-Practice (STEPs) Intervention			●
Youth Fit for Life	●		

Research Question 2: What Is the Evidence for Differential Impacts by Gender, Particularly in Programming and Interventions That Promote Physical Activity?

For social-emotional and behavioral health outcomes, a few studies reported greater benefits for girls. For example, Lerner & Lerner (2013) found 4-H girls tended to demonstrate higher rates of academic competence and school engagement, were more likely to endorse healthy habits, and were less likely to engage in risk/problem behaviors as compared to 4-H boys.[74] Additionally, a national evaluation of 21st CCLCs found increases in negative behavior among 21st CCLC participants were largely concentrated among boys participating in 21st CCLC programs.[75] However, other studies reported greater improvements in social skills[76] and greater reductions in disruptive behaviors[77] for boys as compared to girls.

For physical health outcomes, studies generally found greater benefits for boys as compared to girls. For example, the Bienestar program found the intervention to be more effective at improving aerobic capacity for boys.[78] The Oakland Afterschool program also found boys improved in physical wellbeing more than girls.[79] Other studies found increases in daily physical activity[80] and improved body weight[81] were greater for boys.

A few studies mentioned the greater benefits for boys may be due to limited attention to strategies tailored to girls with respect to the goal of increasing daily physical activity,[82] and to the fact that girls tend to exhibit larger increases in BMI than boys during adolescence.[83] For example, Beets et al. (2016) discussed how afterschool programs typically struggle to increase girls' participation in moderate-to-vigorous physical activity and additional work is needed to identify more salient "girl specific" strategies that program providers can use to promote girls' involvement in physical activities. Four of the reviewed studies reported outcomes for physical health programs specifically targeting girls, including Girls on the Run and Girls in the Game (see box 1). Overall, these programs found positive impacts on body image, self-esteem, and eating attitudes/behaviors.[84] [85] [86]

Example of Afterschool Programs Targeting Girls

Girls in the Game

Program goals. The goals of Girls in the Game (GIG) are to enhance health literacy, empower girls to believe they can make healthy choices, and promote self-control around healthy life choices.

Program content. The program follows a 30-week curriculum with 10 three-week modules, each covering a different sport, health, and leadership topic. Each 90-minute session is divided into two focus areas: sports and fitness activities and topics of health education, nutrition education, and leadership and life skills.

Evaluation findings. A randomized controlled trial of the effectiveness of GIG in promoting social-emotional and physical health in a diverse sample of low-income 8 to 12-year-old girls found small but significant improvements in body image and nutrition knowledge, but no impact on self-esteem or body mass index.

Girls on the Run

Program goals. The goals of Girls on the Run (GOTR) are to educate and prepare girls for a lifetime of healthy living and to improve self-esteem, body image, and healthy eating attitudes.

Program content. The program follows a 12-week curriculum that combines running (training for a 5K running event) with curriculum-based activities to encourage emotional, social, mental, and physical health in addition to character development.

Evaluation findings. Two quasi-experimental studies that examined the impact of GOTR on social, emotional, and physical health in samples of predominately White, 8 to 13-year-old girls found the program had positive impacts on self-esteem, body-size satisfaction, and eating attitudes/behaviors and on physical and running self-concept and fear of becoming fat.

Research indicates program components associated with positive outcomes for boys and girls include staff who interact in positive ways and expanded opportunities for communication by negotiation, sharing, and play between children and staff. For girls, studies indicate the highest quality programs recognize them as having their own distinct needs, and successful programs are characterized by strategies that are gender sensitive and support their unique needs, interests, and skills.[87] [88]

Research Question 3: What are the Characteristics of Programs, Participants, and Families in Studies Reporting Positive Outcomes in Social-Emotional, Behavioral, and Physical Health?

This review identified common characteristics of programs and participants in the literature. A wide variety of afterschool settings shared some predominant features: most programs served low-income, ethnically diverse, elementary-school-aged children in urban locales. A summary of program and participant characteristics follows.

Program Location, Partnerships, and Funding Sources

Eighty percent of studies (*n* = 42) specified a program location; and of the studies that specified, nearly half (48 percent) were in exclusively urban locales as compared to five percent in exclusively rural. Two-fifths were nationwide (19 percent) and somewhat fewer statewide (17 percent). These included a mix of programs in both urban and rural locations. Some studies reported on city- or nationwide initiatives that involved collaboration across multiple stakeholders and partners.

Some program models specifically targeted students in urban or rural communities based on the goals. For instance, Leaders @ Play[89] focused on students living in urban communities with high poverty rates who were perceived to be at highest risk for academic failure, risky behaviors, and gang recruitment. In contrast, a physical activity and nutrition education program was developed for rural U.S. community youth because they are more likely to be overweight or obese compared to those who live in urban communities.[90]

Staff Characteristics

Just over half of the studies (n = 27) reported on staff characteristics. Among these, the proportion of female program staff ranged from 44 to 81 percent. Of the studies (n = 8) reporting staff race and/or ethnicity, White was the predominately reported racial category, with six of the eight studies reporting 43 to 67 percent White staff.[xvi] For the five studies reporting staff education level, 56 to 86 percent of staff had a four-year college degree. Typically, a college-educated lead teacher directed activities with assistance from additional adult staff, youth workers, and volunteers (often college students).

Models with targeted outcomes often hired staff with more specialized qualifications. For instance, a health promotion program for Hispanic elementary school children[91] hired bilingual community health workers to teach the health education curriculum. A few models targeting social-emotional outcomes hired psychologists and/or social workers to deliver the mental health curricula.[92] [93]

A quarter of the studies (n = 13) reported on staff training and professional development. Of those, 54 percent were studies in which an intervention was being implemented, and the article described how regular afterschool program staff were trained to deliver the intervention. For instance, prior to implementation of the social-emotional learning program Promoting Alternate Thinking Strategies (PATHS), intervention teachers attended a two-day training workshop. During the school year, teachers received weekly consultation from an experienced PATHS Coordinator that included classroom observations four times a year and ongoing meetings as needed.[94]

Participant and Family Characteristics

Of the studies (n = 47) reporting participant age or grade level, most reported serving children in elementary schools (55 percent); over a third served a mix of elementary, middle, and/or high schools (36 percent); and under a fifth served only middle schools (9 percent). Of the studies reporting family income, some three out of four (74 percent) served a majority of low-income students (50 percent or more, typically defined by free and reduced-price meals status). Unless specifically targeting participants of one sex (e.g., Girls on the Run) or race/ethnicity (e.g., Generacion Diez), most studies reported an even split between males and females (of the 49 studies that reported sex/gender, programs ranged from 44 to 81 percent female) and were ethnically diverse. Specifically, 42 studies (81 percent) reported student race and/or ethnicity. Of these studies, the following categories and ranges were reported: White (5 to 81 percent); Black (8 to 95 percent); Asian (2 to 57 percent); American Indian (2.5 to 19 percent); Hispanic/Latino (9 to 100 percent). Note that not all studies reported on each of these categories.

[xvi] Two studies reported a mix of Latino and non-Latino staff.

Research Question 4: What Routines, Content, and Activities Are Included in Programs Reporting Positive Outcomes?

Programs with demonstrated outcomes varied widely in the routine, content, and activities offered. While most programs had goals that overlapped several outcomes, few utilized a model or curriculum directly targeting the relevant skills. Common routines, content, and activities are summarized below.

Program Goals

Eighty-five percent of studies (*n* = 44) stated program goals. Of these studies, over four out of five (82 percent) included goals that overlapped several outcome areas, such as academic, social-emotional, and physical health. For example, one study states, "The broad goals of the programs are (1) to provide a safe and supportive environment afterschool and (2) to promote the academic and social competence and physical health of the participants."[95]

Fostering social-emotional health was identified as a specific goal by 45 percent of studies and included helping students to develop social and emotional competency, self-worth, positive relationships, and positive social skills. Enhancing behavioral health was identified as a specific goal by 23 percent of the studies and included reducing problem behaviors and preventing at-risk activities and/or depressive symptoms. Improving physical health was identified as a specific goal by 45 percent of studies and included improving physical health, increasing physical activity, increasing health and wellness knowledge, encouraging healthy eating behaviors, and reducing body mass index. However, the broad nature of stated program goals across the studies often made it difficult to determine if programs intended to specifically target outcomes in social-emotional, behavioral, and physical health.

Providing academic support was identified as a goal by 30 percent of studies, and 14 percent identified other goals. These included providing safe and welcoming settings, fostering positive youth development, promoting community engagement, and supporting the needs of working families. Four of the reviewed studies identified goals specific to promoting girls' development. For example,

Girls in the Game and Girls on the Run reported goals related to promoting healthy life choices, self-esteem, and positive body image.

Curricula, Content, and Activities

Curricula

Sixty-three percent of the studies (*n* = 33) identified specific models or curricula used by the programs. Those not identifying a specific model or curriculum tended to focus on enhancement of academic skills, rather than focusing on one of the priority outcome areas.

Although 45 percent of studies identified fostering social-emotional development as a goal, about a quarter of those (12 percent) reported using a model or curriculum designed specifically to teach or practice social-emotional skills. Twenty-three percent identified improving behavioral health as a goal, but only a few reported following a specific model or curriculum focused on behavioral health. Lastly, 45 percent identified improving physical health as a goal, and 25 percent of those reported using a model or curriculum that specialized in improving physical health. Table 8 provides examples of the models or curricula used to promote social-emotional, behavioral, and physical health.

Content and Activities

About seven out of ten studies (*n* = 37) described content and activities, which varied widely according to program goals and the age range of participants. Common activities across all programs included a welcome/introductory period and a snack. Those not following a specific model or curriculum, including many 21st CCLC programs, typically had time for snacks, homework and/or tutoring, and free choice of enrichment activities (e.g., basketball, computers, art, board games, visitors, musical instruments). Other common activities included community service and leadership opportunities.

Programs aiming to foster social-emotional health included problem solving, emotion regulation, and communication skills, but the delivery of these topics varied according to the age of participants. For instance, the social-emotional learning program Promoting Alternate Thinking Strategies (PATHS), which was implemented with kindergartners, utilized direct instruction; puppet presentations; and stories to help children learn cognitive and behavioral strategies for problem solving, calming down, and labeling emotions.[96] In contrast, the social-emotional learning program Leaders @ Play, which was implemented with middle school children, utilized didactic instruction; skills demonstration and discussion; role play; and sports and recreation to promote social problem solving, emotion regulation, and effective communication.[97]

Following an unspecified curriculum, one program promoted executive function, visuospatial skills, and ultimately classroom behavior with kindergarten and first-grade children from low-income communities.[98] Program activities, such as arts and crafts and games (e.g., "Red Light, Green Light," "Simon Says") were intended to develop fine and gross motor skills, sustained attention, working memory, and impulse control. Another program, FITKids, targeted executive control in 8 to 9-year-olds through physical activities that were simultaneously aerobically demanding and provided opportunities to refine motor skills.[99]

Common activities in physical health programs included 30 to 70 minutes of daily moderate-to-vigorous physical activity through organized games and/or sports and age-appropriate health and nutrition education. Programs like Youth Fit 4 Life fostered internal competition based on setting and tracking personal long-term goals, such as "improve my endurance to be better at basketball."[100] Many physical health programs, such as Girls on the Run[101] and Teaching Personal and Social Responsibility Model,[102] also incorporated lessons on social-emotional development, such as friendship, conflict resolution, and team building.

Frequency and Length of Services

About three out of five studies (n = 31) reported either intended and/or actual frequency or length of services. The 26 studies reporting intended length of services were split evenly between programs offering services for the duration of the school year, and models offering a short-term intervention (often taking place within the wider scope of a year-long program). The programs meeting for the duration of the school year most often reported services were 4 or 5 days per week and the length of the programs ranged from 2 to 5.5 hours. The duration of the short-term interventions varied from 10 weeks to 30 weeks and the number of days per week that services were offered from 1 to 5. Sessions were intended to last anywhere from 20 to 90 minutes at a time. Five studies reported actual program attendance. In these programs, students attended, on average, 1 to 2 days per week.

Plans for Family Outreach and Involvement

Just under a quarter of studies (n = 12) reported plans for family outreach or involvement. Of those, half facilitated family groups, parent meetings, or other in-person activities. In-person activities ranged from a single meeting to inform parents and/or receive parent feedback about the program[103] to regular programming for parents such as GED preparation.[104] The other half provided students with take-home materials to share with parents to reinforce program messages and encourage parents to support specific behaviors at home, such as healthy eating.

Table 8. Description of Programs Reporting Positive Outcomes in Social-Emotional, Behavioral, and Physical Health

Outcome	Program name	Goals	Content/Activities	Frequency and length of services
Social-emotional health	WINGS for Kids	Promote positive behavior, responsible decision making, and healthy relationships through cognitive regulation, emotional processes, and interpersonal skills.	Community building activities, community service activities, discussions of the weekly learning objective, free play integrating electives of interest with lessons about social and emotional objectives, and academic support time.	30 weeks; 5 days/week; 180 minutes/day
	Leaders at Play	Reduce emotional distress through training; practice; and peer modeling in problem solving, emotion regulation, and effective communication to prevent the emergence of behavioral, social, or emotional difficulties.	Didactic instruction, skills demonstration and discussion, role play, and sports and recreation to provide practice with feedback. Intervention content emphasized social problem solving, emotion regulation, and effective communication.	10 weeks; 2 days/week; 90 minutes/day
Behavioral health	PATHS	Improve skills in four domains: self-control/emotion regulation, attention, communication, and problem solving.	Direct instruction, puppet presentations, and stories to help children learn cognitive/behavioral strategies for calming down (e.g., the Turtle Technique), labeling emotions (e.g., Feeling Faces), and problem-solving (e.g., The Control Signal).	21 weeks; 1 day/week; 30 minutes/day
	Brock et al. (2017)	Improve executive function and visuospatial skills to ultimately improve classroom behavior.	Activities, such as arts and crafts and games (e.g., "Red Light, Green Light," "Simon Says") designed to develop fine and gross motor skills, sustained attention, working memory, and impulse control.	24 weeks; 4 days/week; 45 minutes/day
Physical health	FFFEP	Increase knowledge of healthy eating and physical activity; increase healthy eating behaviors and physical activity.	30 minutes of physical activity, healthy eating lessons, staff reading books about healthy eating and physical activity, games with food cards, food pyramid bingo, Glo Germ kits to demonstrate handwashing, and food guide pyramid felt board.	16 weeks; 5 days/week; 30 to 60 minutes/day
	FITKids	Involve children in moderate-to-vigorous physical activity; refine motor skills; enhance self-efficacy toward making healthy food choices and self-monitoring of physical activity engagement.	70 minutes of moderate-to-vigorous physical activity, a healthy snack and educational component, games to refine motor skills.	9 months; 5 days/week; 70 to 90 minutes/day
	Youth Fit for Life	Increase physical activity and exercise self-efficacy.	30 minutes of moderate-to-vigorous physical activity, cognitive-behavioral methods that emphasized the development and use of self-regulatory skills.	Two 12-week sessions; 4 days/week; 45 minutes/day

Summary

The studies reviewed indicate that afterschool programs are a promising avenue for supporting social-emotional, behavioral, and physical health during middle childhood. The approach to promoting outcomes in these areas varied across programs. For example, 21st CCLCs and citywide afterschool initiatives tended to focus on promoting outcomes in our domains of interest in addition to focusing on other program goals (e.g., promoting academic outcomes, providing a safe space afterschool).

While a majority of studies included the promotion of social-emotional, behavioral, and physical health among their program goals, only 33 studies (63 percent) reported use of specific models, interventions, or curricula designed to improve outcomes in these areas through explicit instruction and interactive activities. Other studies relied more on leveraging the benefits of afterschool routines, such as safety and supervision during out-of-school time and engagement in healthy and positive relationships.

Commonalities of Programs Reporting Outcomes

While identifying elements that can be causally linked to the promotion of social-emotional, behavioral, and physical health is beyond the scope of this review, our initial observations of common elements of programs reporting outcomes are summarized below.

Many of the programs reporting positive outcomes had clearly defined goals that aligned with a targeted, age-appropriate curriculum or intervention specifically designed to achieve the stated goals. These programs also tended to rely on existing theories (e.g., social cognitive theory) to inform the development of program activities and content. Others reporting positive outcomes without a single curriculum or intervention used an extensive menu of intentionally designed and interactive program offerings that incorporated opportunities to promote social-emotional, behavioral, and physical health and emphasized core program guiding principles (e.g., participant choice, positive and supportive staff-participant interactions, opportunities for large and small group activities).

Practice Implications

Key findings with implications for related practice are summarized below.

Assuring program offerings are intentionally designed. While reporting outcomes in the areas of social-emotional, behavioral, and physical health, many of the programs did not describe specific activities or content designed to achieve outcomes in these areas. Our experience suggests these programs can learn from research on implementation science, which stresses the importance of intentional program design and of assuring that needed program inputs and implementation supports are in place to achieve desired outcomes.[105] From this review, the number of programs that are theory-based or have logic models based in rigorous theory showing the connection between program goals and expected outcomes is also unclear. Additionally, broader afterschool programs (such as 21st CCLCs and citywide initiatives) may benefit from adding specific program offerings, curricula, or lesson plans explicitly designed to promote social-emotional, behavioral, and physical health.

Tailoring to individual child's needs. Although studies provided limited reporting on variations in outcomes and programming by participant characteristics, a few studies alluded to the importance of tailoring afterschool programs to the individual child's needs. For example, Gibson et al. (2015) found stronger outcomes for children with low levels as compared to those with high levels of initial problem behaviors. There is also a need to recognize that boys and girls have their own unique needs and interests. For example, successfully engaging girls in physical activities may require "girl-specific" strategies. This might include offering physical activities that are more collaborative in nature or offering girls-only sports, games, and activities. Afterschool programs should consider identifying and employing gender-sensitive strategies that support the unique needs, interests, and skills of girls and boys.

Conclusion

This targeted literature review confirms that afterschool programs have the potential to promote the social-emotional, behavioral, and physical health of economically vulnerable children aged 6 to 12 years old. Our review documents how such promotion is done by purposefully leveraging common afterschool routines and activities and through the use of program models, curricula, and interventions designed to produce beneficial outcomes in these developmental domains. Future research should explore more in-depth descriptions of how successful programs are implemented to identify the conditions and resources necessary to successfully implement program success on a wider scale.

Appendix

Search Methods and Inclusion Criteria for Literature Review

The study search included—

- *Existing reviews and seminal or exemplary studies.* These included existing meta-analyses and literature reviews focused on promoting social-emotional development and behavioral and physical health in afterschool settings. References from these target reviews and articles were further searched to identify additional, potentially relevant published and unpublished reports.

- *Additional program registers and internet sites.* These included sites—Afterschool Alliance, Harvard Family Research Project, National Institute on Out-of-School Time, What Works Clearinghouse—to capture relevant program evaluations that might not be included in journal publications.

- *Databases.* PsycINFO, PubMed, and Google Scholar databases were used to supplement the known research with which more recent studies were begun.

Specific search terms and strings were developed using the PICO (population, intervention, comparison, outcome) framework.[xvii] Search terms were populated with additional synonyms to capture use of different terminology (for example, middle childhood versus elementary age) and variations in the specific outcomes measured under the broad outcome domains of social-emotional, behavioral, and physical health and development.

Tables A1-A3 provide search terms for the domains of social-emotional, behavioral, and physical health.

[xvii] Davies (2011). Formulating the Evidence Based Practice Question: A Review of the Frameworks. *Evidence Based Library and Information Practice, 6.2.*

Table A1. Search Terms for Social-Emotional Health

Population	Intervention	Outcome
Children ages 6 to 12 OR Elementary age children OR School age children OR Middle childhood	Afterschool program OR Out of school time OR Afterschool activities OR Extracurricular activities OR Extended Services Schools OR 4-H OR Boys and Girls Club OR Maryland Afterschool OR Michigan 21st CCLC OR NYC Beacon Program OR PATHS OR WINGS OR YMCA Virtual Y Program	Social-emotional learning OR Social-emotional development OR Social emotional

Table A2. Search Terms for Behavioral Health

Population	Intervention	Outcome
Children ages 6 to 12 OR Elementary age children OR School age children OR Middle childhood	Afterschool program OR Out of school time OR Afterschool activities OR Extracurricular activities OR Extended Services Schools OR 4-H OR Boys and Girls Club OR Maryland Afterschool OR Michigan 21st CCLC OR NYC Beacon Program OR PATHS OR WINGS OR YMCA Virtual Y Program	Internalizing OR externalizing OR disruptive behavior OR anxiety OR depression

Table A3. Search Terms for Physical Health

Population	Intervention	Outcome
Children ages 6 to 12 OR Elementary age children OR School age children OR Middle childhood	Afterschool program OR Out of school time OR Afterschool activities OR Extracurricular activities OR Extended Services Schools OR 4-H OR Boys and Girls Club OR Maryland Afterschool OR Michigan 21st CCLC OR NYC Beacon Program OR PATHS OR WINGS OR YMCA Virtual Y Program	Healthy eating habits OR physical activities OR physical health OR exercise OR healthy weight OR reduced obesity OR body image OR nutrition OR health OR physical activity

Abstracts from studies found were then screened using the inclusion criteria listed below.

1. Intervention or program/model is implemented in an "afterschool setting," defined by three features:

    o   Occurs during at least part of the school year

    o   Takes place outside of regular school hours

    o   Is supervised by adults

Our definition allows for including various settings, such as community-based and school-based.

Intervention or program/model is implemented in the United States.

One of the goals of the intervention/program/model must be the development of one or more social-emotional, behavioral, or physical health and development outcomes/skills.

Program targets or includes children aged 6 to 12 years old.

Report includes discussion of demonstration of outcomes in one or more social-emotional, behavioral, or physical health and development outcomes/skills among children aged 6 to 12 years old (or describes programs, models, and interventions known to measure such outcomes).

This process yielded an initial list of 35 studies. Expert consultants and the federal project officer assisted in identifying additional studies and search terms, such as names of specific interventions, models, or curricula (see tables A1-A3). This process resulted in a final list of 52 studies.

Coding Approach for Identified References

The 52 studies meeting the specific inclusion criteria were reviewed and coded to extract and abstract the necessary information as codified in table A4.

Table A4. Article Review and Coding

Methodological information	• Study design
	• Number of participants included in study
	• Data collection methods
	• Data collection instruments
	• Effect sizes demonstrated
	• Study limitations
Intended service model	• Targeted outcome domains/goals
	• Intended curricula or model
	• Intended content and activities included (focused on social-emotional, behavioral, and physical health and development)

	• Intended frequency and length of services (focused on social-emotional, behavioral, and physical health and development) • Plans for family outreach and involvement • Program location (urban, rural) • Program funding
Staff and participant characteristics	• Staff characteristics (number of staff, part-time versus full-time, education and experience, training, age, gender, race) • Student characteristics (number of children served, family income, family structure, family work status, child age, gender, race/ethnicity, disability status)
Actual services delivered	• Curricula or model used • Use of evidence-based or promising practices • Actual content and activities included (focused on social-emotional, behavioral, and physical health and development) • Actual frequency and length of services (focused on social-emotional, behavioral, and physical health and development) • Family outreach and involvement activities
Demonstrated outcomes	• Demonstration of child outcomes in social-emotional, behavioral, and physical health • Variations in outcomes by subgroups (for example, child gender, age, identified developmental needs, race, and ethnicity) • Outcomes in family engagement and involvement • Outcomes in parental work and employment

Common Study Limitations and Missing Study Information

Common study limitations included the use of nonexperimental designs and small sample sizes, making it impossible to generalize results to other populations. Dosage and fidelity information was most often unreported or limited. Most studies did not collect detailed information on how children spent their time outside of the afterschool program (e.g., on nonattendance days for children in a treatment group or in general for children in a waitlist control group). Since most programs did not preclude children from attending other afterschool activities or extracurricular programs on their own time, to what the reported program participation is being compared is unknown (e.g., unsupervised time at home versus participation in organized sports). Finally, within the context of many programs targeting social-emotional and behavioral health, determining which intervention components map onto specific outcomes, especially when the program did not follow a targeted curriculum, is not possible.

Limitations of Our Review

This review focused on three priority outcome areas—social-emotional, behavioral, and physical health—resulting in only a selection of studies measuring outcomes in one of these areas. As such, we were not able to report detailed information on program implementation. For example, following the methods described in a previous meta-analysis of after-school programs,[106] the presence of four recommended practices for skill training was coded dichotomously on a yes/no basis using the acronym SAFE (Sequenced, Active, Focused and Explicit). However, most studies did not provide enough information about program content and activities to assess program quality using this method. About one out of eight studies (n = 7) measured program quality using program observations. One model, Girls in the Game, used the Youth Program Quality Assessment to measure program quality[107] and reported high levels of program quality. Apart from lack of detailed information about implementation of selected programs for review, we acknowledge that other types of afterschool programs—such as arts or STEM programs—that hold potential for demonstrating positive outcomes in the developmental domains examined were not selected.

The common lack of dosage data made it impossible to analyze how much exposure to (and engagement in) the intervention is necessary to promote outcomes. Most studies did not report treatment fidelity; when measured, it was often in the context of small-scale interventions where careful attention to training and implementation was possible. Large-scale intervention replication would likely experience greater variation in training and implementation quality. Given the smaller sample sizes, reporting much variation in outcomes by participant characteristics was not possible.

Table A5. List of Outcomes Reported in Social-Emotional, Behavioral, and Physical Health

Afterschool program and citation	Social-emotional	Behavioral	Physical
4-H. Lerner, R. M., & Lerner, J. V. (2013). *The positive development of youth: Comprehensive findings from the 4-H Study of Positive Youth Development*. Institute for Applied Research in Youth Development.	Contribute to community and be civically active		
Arkansas 21st CCLC. *Arkansas 21st century community learning centers statewide evaluation 2014–2015 annual report, center for youth program quality. (2014). Arkansas 21st Century Community Learning Centers statewide evaluation 2012–2013 annual report.* Retrieved from http://www.arkansased.gov/public/userfiles/Learning_Services/Federal%20Programs/21%20CCLC/2012_2013_Arkansas_21st_CCLC_Statewide_Evaluation_Report.pdf	Work well with peers, solve disagreements with peers		
Rhode Island 21st CCLC. *Rhode Island 21st Century Community Learning Center Program Evaluation: Descriptive report, American Institutes for Research. (2014). Rhode Island 21st Century Community Learning Center program evaluation: Descriptive report.* Retrieved from http://www.ride.ri.gov/Portals/0/Uploads/Documents/Students-and-Families-Great-Schools/Educational-Programming/21stCCLCs/RI21CCLC-Evaluation-Descriptive-Report-2014.pdf	Getting along with peers, feeling liked by others, ability to join new group of kids		
Michigan 21st CCLC. Wu, H. C., Van Egeren, L. A., Bates, L. V., & The MSU Evaluation Team (2016). *Michigan 21st Century Community Learning Centers Evaluation 2014–2015 Annual Report.* Michigan State University, East Lansing, MI.	Motivation to learn		
Bienestar, de Heer, H. D., Koehly, L., Pederson, R., & Morera, O. (2011). Effectiveness and spillover of an after-school health promotion program for Hispanic elementary school children. *American Journal of Public Health*, 101(10), 1907–1913. doi:10.2105/AJPH.2011.300177			BMI, aerobic capacity, intention to eat healthy

Afterschool program and citation	Social-emotional	Behavioral	Physical
Boys & Girls Club. Measuring the Impact of Boys & Girls Clubs: 2016 National Outcomes Report; Anderson-Butcher, D., & Cash, S. J. (2010). Participation in Boys & Girls Clubs, Vulnerability, and Problem Behaviors. *Children and Youth Services Review*, 32, 672–678. doi:10.1016/j.childyouth.2010.01.002	Peer interactions, teamwork, empathy, self-concept	Reduced gang involvement	
California Afterschool Education and Safety (ASES) Program and 21st CCLC. Huang, D., & Wang, J. (2012). Independent statewide evaluation of ASES and 21st CCLC afterschool programs May 1, 2008–December 31, 2011. http://www.impacts.afterschoolalliance.org/details.cfm?ID=a0E3900000NaMw4EAF&start=1			Aerobic capacity, body composition, abdominal strength, trunk strength, upper body strength, flexibility
Community Based Afterschool Program. Fite, P. J., Vitulano, M. L., & Preddy, T. M. (2011). The positive impact of attending a community-based youth program on child depressive symptoms. *Journal of Community Psychology*, 39(7), 804–814.		Depressive symptoms, problem behaviors	
Curriculum to Improve Executive Functioning. Brock, L. L., Murrah, W. M., Cottone, E. A., Mashburn, A. J., & Grissmer, D. W. (2017). An after-school intervention targeting executive function and visuospatial skills also improves classroom behavior. *International Journal of Behavioral Development*, 1–11.	Executive functioning	Problem behaviors	
Extended Services School Initiative. Grossman, J. B., Price, M. L., Fellerath, V., Jucovy, L. Z., Kotloff, L. J., Raley, R., & Walker, K. E. (2002). *Multiple Choices Afterschool: Findings from the Extended-Services School Initiative.*	Getting along with peers and ability to make friends, school belonging	Handling anger, staying out of trouble, not drinking alcohol	

Afterschool program and citation	Social-emotional	Behavioral	Physical
Fit-2-Play. Messiah, S. E., Diego, A., Kardys, J., Kirwin, K., Hanson, E., Nottage, R., & ... Arheart, K. L. (2015). Effect of a park-based after-school program on participant obesity-related health outcomes. *American Journal of Health Promotion*, 29(4), 217–225. doi:10.4278/ajhp.120705-QUAN-327			BMI, fitness levels, cardiovascular health, health and wellness knowledge
FITKids. Hillman, C. H., Pontifex, M. B., Castelli, D. M., Khan, N. A., Raine, L. B., Scudder, M. R., Drolette, E. S., Moore, R. D., Wu, C.T., & Kamijo, K. (2014). Effects of the FITKids randomized controlled trial on executive control and brain function. *Pediatrics*, 134, e1036-e1071.	Inhibition and cognitive flexibility, executive control		Aerobic fitness, BMI
Food and Fitness Fun Education Program (FFFEP). Carson, D. E., & Reiboldt, W. (2011). An after-school program on nutrition and physical activity for elementary school children. *Family and Consumer Sciences Research Journal*, 39(3), 267–278. doi:10.1111/j.1552-3934.2010.02065.x			Healthy eating habits, daily physical activity
Georgia's FitKid Project. Yin, Z., Moore, J. B., Johnson, M. H., Barbeau, P., Cavnar, M., Thornburg, J., & Gutin, B. (2005). The Medical College of Georgia FitKid Project: The relations between program attendance and changes in outcomes in year 1. *International Journal of Obesity*, 29, S40–S45.			Body fat percentage, cardiovascular fitness
Girls in the Game. Bohnert, A. M., & Ward, A. K. (2013). Making a difference: Evaluating the Girls in the Game (GIG) after-school program. *The Journal of Early Adolescence,* 33(1), 104–130. doi:10.1177/0272431612466174	Body image		Nutrition knowledge

Afterschool program and citation	Social-emotional	Behavioral	Physical
Girls on the Run. Sifers, S. K., & Shea, D. N. (2013). Evaluations of Girls on the Run/Girls on track to enhance self-esteem and well-being. *Journal of Clinical Sport Psychology*, 7(1), 77–85; Martin, J. J., Waldron, J. J., McCabe, A., & Choi, Y. S. (2009). The impact of 'Girls on the Run' on self-concept and fat attitudes. *Journal of Clinical Sport Psychology*, 3(2), 127–138. DeBate, R. D., & Thompson, S. H. (2005). Girls on the Run: Improvements in self-esteem, body size satisfaction and eating attitudes/behaviors. *Eating and Weight Disorders*, 10(1), 25–32. doi:10.1007/BF03353416	Self-esteem, self-worth, physical self-concept, body size satisfaction		Eating attitudes and behaviors
GoKids. Crouter, S. E., de Ferranti, S. D., Whiteley, J., Steltz, S. K., Osganian, S. K., Feldman H. A., et al. (2015). Effect on Physical Activity of a Randomized Afterschool Intervention for Inner City Children in 3rd to 5th Grade. *PLoS ONE*, 10(10): e0141584.doi:10.1371/journal.pone.0141584			Daily physical activity
Leaders at Play. Frazier, S. L., Dinizulu, S. M., Rusch, D., Boustani, M. M., Mehta, T. G., & Reitz, K. (2015). Building resilience afterschool for early adolescents in urban poverty: Open trial of Leaders @ Play. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(6), 723–736. doi:10.1007/s10488-014-0608-7	Communication, cooperation, assertion, responsibility, empathy, engagement, and self-control	Externalizing, bullying, hyperactivity/inattention, internalizing, autism spectrum	
New York Department of Youth and Community Development Out of School Time Initiative. Russell, C. A., Reisner, E. R., Pearson, L. M., Afolabi, K. P., Miller, T. D., & Mielke, M. B. (2006). *Evaluation of the Out-Of-School Time Initiative*. Report on the first year. Note. Report is for NY Department of Youth and Community Development OST Initiative	Physical and emotional safety		

Afterschool program and citation	Social-emotional	Behavioral	Physical
Oakland Afterschool Programs. Newhouse, C., Vance, F., Lo, J., & Willis, S. (2015). *Oakland school-based afterschool programs evaluation: 2014–2015 findings report*. http://afterschoolalliance.org/impacts_testing/details.cfm?ID=a0E3900000NRLurEAH&start=1	Getting along with adults and peers, listening to others, talking about feelings, sense of mastery, self-confidence, school belonging		Knowledge of how to be healthy, daily physical activity
PATHS Curriculum. Fishbein, D. H., Domitrovich, C., Williams, J., Gitukui, S., Guthrie, C., Shapiro, D., & Greenberg, M. (2016). Short-term intervention effects of the PATHS curriculum in young low-income children: Capitalizing on plasticity. *The Journal of Primary Prevention*, 37(6), 493–511. doi:10.1007/s10935-016-0452-5; Gibson, J. E., Werner, S. S., & Sweeney, A. (2015). Evaluating an abbreviated version of the PATHS Curriculum implemented by school mental health clinicians. *Psychology in The Schools*, 52(6), 549–561. doi:10.1002/pits.21844	Peer relations, pro-social behaviors, emotional understanding, and self-control	Aggression, internalizing behaviors, impulsivity, hyperactivity	
Providence Citywide Afterschool System. Kauh, T.J. (2011). *After zone: Outcomes for youth participating in Providence's citywide after-school system.*	Social skills, physical and emotional safety		Daily physical activity
San Francisco Beacon Program, Walker, K. E. & Arbreton, A. J. A. (2004). *After-School Pursuits: An Examination of Outcomes in the San Francisco Beacon Initiative.*	Self-confidence, self-efficacy, physical and emotional safety	Positive responses to social challenges	
Strategies-To-Enhance-Practice (STEPs) Intervention. Beets, M. W., Weaver, R. G., Turner-McGrievy, G., Huberty, J., Ward, D.S., Pate, R. R., Freedman, D., Hutto, B., Moore, J. B., Bottai, M., Chandler, J., Brazendale, K., & Beighle, A. (2016). Physical activity outcomes in afterschool programs: A group randomized control trial. *Preventive Medicine*, 90, 207–215.			Daily physical activity

Afterschool program and citation	Social-emotional	Behavioral	Physical
Texas 21st CCLC. Texas 21st Century Community Learning Centers 2014–15 Evaluation Report, American Institutes for Research. (2016). *Texas 21st Century Community Learning Centers 2014–2015 annual report.* Retrieved from https://tea.texas.gov/Reports_and_Data/Program_Evaluations/Out-of-School_Learning_Opportunities/Program_Evaluation__Out-of-School_Learning_Opportunities/		School day disciplinary incidents, school absences	
WINGS for Kids. Jones, S., Brush, K., Bailey, R., Brion-Meisels, G., McIntyre, J., Kahn, J., Nelson, B., & Stickle, L. (2017). *Navigating SEL from the inside out: Looking inside & across 25 leading SEL Programs: A practical resource for schools and OST providers.*	Self-esteem, executive functioning	Adherence to classroom and school rules	
Youth Fit for Life. Annesi, J. J., Smith, A. E., Walsh, S. M., Mareno, N., & Smith, K. R. (2016). Effects of an after-school care-administered physical activity and nutrition protocol on body mass index, fitness levels, and targeted psychological factors in 5- to 8-year-olds. *Translational Behavioral Medicine*, 6(3), 347–357. doi:10.1007/s13142-015-0372-6; Annesi, J. J., Walsh, S. M., Greenwood, B. L., Mareno, N., & Unruh-Rewkowski, J. L. (2017). Effects of the Youth Fit 4 Life physical activity/nutrition protocol on body mass index, fitness and targeted social cognitive theory variables in 9- to 12-year-olds during after-school care. *Journal of Pediatrics and Child Health*, 53(4), 365–373. doi:10.1111/jpc.13447	Exercise self-efficacy	Negative mood	Muscular strength, cardiovascular fitness, body composition, BMI
Citations for Reviews of Multiple or Unspecified Programs			
Kamijo, K., Pontifex, M. B., O'Leary, K. C., Scudder, M. R., Wu, C., Castelli, D. M., & Hillman, C. H. (2011). The effects of an afterschool physical activity program on working memory in preadolescent children. *Developmental Science*, 14(5), 1046–1058. doi:10.1111/j.1467-7687.2011.01054.x			Fitness level
London, R. A., & Gurantz, O. (2013). Afterschool program participation, youth physical fitness, and overweight. *American Journal of Preventive Medicine*, 44(3, Suppl 3), S200-S207. doi:10.1016/j.amepre.2012.11.009			Physical fitness test

Afterschool program and citation	Social-emotional	Behavioral	Physical
Mahoney, J. L., Lord, H., & Carryl, E. (2005). An ecological analysis of after-school program participation and the development of academic performance and motivational attributes for disadvantaged children. *Child Development*, 76(4), 811–825. doi:10.1111/j.1467-8624.2005.00879.x			Obesity
Mahoney, J. L., Parente, M. E., & Lord, H. (2007). After-school program engagement: Links to child competence and program quality and content. *The Elementary School Journal*, 107(4), 385–404. doi:10.1086/516670	Social competence, growth mindset		
Pierce, K. M, Bolt, D. M., & Vandell, D. L. (2010). Specific features of after-school program quality: Associations with children's functioning in middle childhood. *American Journal of Community Psychology*, 45(3–4), 381–393.	Social skills		
Robles, J., Gutierrez, A., & Seifert, C.F. (2014). Impact of a pilot pharmacy health-care professional out-of-school time physical activity and nutrition education program with exercise on fourth and fifth graders in a rural Texas community. *SAGE Open Med*. 2014 Aug 25;2:2050312114547956. doi: 10.1177/2050312114547956			BMI, blood pressure, making healthy food choices, daily physical activity
Shernoff, D. J. (2010). Engagement in after-school programs as a predictor of social competence and academic performance. *American Journal of Community Psychology*, 45(3–4), 325–337.	Social competence		
Vandell, D. L., Reisner, E. R., & Pierce, K. M. (2007). *Outcomes linked to high-quality afterschool programs: Longitudinal findings from the study of promising afterschool programs* (Report to the Charles Stewart Mott Foundation) (p. 9). Irvine, CA: University of California, Irvine.	Social skills, prosocial behaviors	Misconduct, drug use, aggressive behaviors	
James-Burdumy, S., Dynarski, M., & Deke, J. (2007). When elementary schools stay open late: Results from the national evaluation of the 21st Century Community Learning Centers program. *Educational Evaluation and Policy Analysis*, 29(4), 296–318. doi:10.3102/0162373707309077	Physical safety		

Afterschool program and citation	Social-emotional	Behavioral	Physical
Mahatmya, D., & Lohman, B. (2011). Predictors of late adolescent delinquency: The protective role of after-school activities in low-income families. *Children and Youth Services Review*, 33(7), 1309–1317. doi:10.1016/j.childyouth.2011.03.005		Delinquency	

References

[1] Diamond, A. (2007). Interrelated and interdependent. *Developmental Science*, 10(1), 152-158.

[2] Dutko, P., Ver Ploeg, M., & Farrigan, T. L. (2012). *Characteristics and influential factors of food deserts*. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[3] Pinderhughes, E. E., Nix, R., Foster, E. M., & Jones, D. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and family*, 63(4), 941-953.

[4] Carver, P. R., L. Yunger, J. L., & Perry, D. G. (2003). Gender identity and adjustment in middle childhood. *Sex Roles*, 49, 95-109. doi:10.1023/A:1024423012063.

[5] Bohnert, A. M., & Ward, A. K. (2013). Making a difference: Evaluating the Girls in the Game (GIG) after-school program. *The Journal of Early Adolescence*, 33(1), 104-130. doi:10.1177/0272431612466174

[6] Sifers, S. K., & Shea, D. N. (2013). Evaluations of Girls on the Run/Girls on Track to enhance self-esteem and well-being. *Journal of Clinical Sport Psychology*, 7(1), 77-85

[7] Afterschool Alliance. (2016). *America After 3PM special report: Afterschool in communities of concentrated poverty*. Washington, DC: Afterschool Alliance. Retrieved from http://www.afterschoolalliance.org/AA3PM/Concentrated_Poverty.pdf.

[8] DeHart, G. B., Sroufe, L. A., & Cooper, R. G. (2004). *Child development: Its nature and course* (5th ed., pp. 411-441). New York, NY: McGraw-Hill.

[9] Harter, S. (1996). Developmental changes in self-understanding across the 5 to 7 shift. In A. Sameroff & M. Haith (Eds.), *The five to seven-year shift: The age of reason and responsibility* (pp. 207- 236). Chicago, IL: University of Chicago Press.

[10] DeHart et al, 2004.

[11] American Institutes for Research. (2015). *Supporting social and emotional development through quality afterschool programs*. Chicago, IL: American Institutes for Research. Retrieved from http:// https://www.air.org/sites/default/files/downloads/report/Social-and-Emotional-Development-Afterschool-Programs.pdf

[12] Heckman, J. J., & Rubinstein, Y. (2001). The importance of noncognitive skills: Lessons from the GED testing program. *American Economic Review*, 91(2), 145–149.

[13] Greenspan, S., & Lodish, R. (1991). School literacy: The real ABCs. *Phi Delta Kappan*, 73(4), 300-308.

[14] Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432.

[15] Jones, S., Brush, K., Bailey, R., Brion-Meisels, G., McIntyre, J., Kahn, J., Nelson, B., & Stickle, L. (2017). *Navigating SEL from the inside out: Looking inside & across 25 leading SEL programs: A practical resource for schools and OST providers*.

[16] Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K.G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatrics and Adolescent Medicine*, 153, 226-234.

[17] Sahoo, K., Sahoo, B., Choundhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: Causes and consequences. *Journal of Family Medicine and Primary Care*, 42(2), 187-192.

[18] Boyle, D. E., Marshall, N. L., & Robeson, W. W. (2003). Gender at play: Fourth-grade girls and boys on the playground. *American Behavioral Scientist*, 46(10), 1326-1345.

[19] Telford, R. M., Telford, R. D., Olive, L. S., Cochrane, T., & Davey, R. (2016). Why are girls less physically active than boys? Findings from the LOOK Longitudinal Study. *PloS one, 11*(3), e0150041.

[20] Scraton, S. J. (2017). Images of femininity and the teaching of girls' physical education. In *Physical education, sport and schooling* (pp. 71-94). Routledge.

[21] Dzewaltowski, D. A., & Rosenkranz, R. R. (2014). Youth development: An approach for physical activity behavioral science. *Kinesiology Review*, 3(1), 92-100.

[22] Iachini, A. L., Bell, B. A., Lohman, M., Beets, M. W., & Reynolds, J. F. (2016). Maximizing the contribution of after-school programs to positive youth development: Exploring leadership and implementation within Girls on the Run. *Children & Schools*, 39(1), 43-52.

[23] Diamond, 2007.

[24] Brock, L. L., Murrah, W. M., Cottone, E. A., Mashburn, A. J., & Grissmer, D. W. (2017). An after-school intervention targeting executive function and visuospatial skills also improves classroom behavior. *International Journal of Behavioral Development*, 1-11.

[25] Hillman, C. H., Pontifex, M. B., Castelli, D. M., Khan, N. A., Raine, L. B., Scudder, M. R., Drolette, E. S., Moore, R. D., Wu, C. T., & Kamijo, K. (2014). Effects of the FITKids randomized controlled trial on executive control and brain function. *Pediatrics*, 134, e1036-e1071.

[26] Mahoney, J. L., Lord, H., & Carryl, E. (2005). An Ecological Analysis of After-School Program Participation and the Development of Academic Performance and Motivational Attributes for Disadvantaged Children. *Child Development*, 76(4), 811-825. doi:10.1111/j.1467-8624.2005.00879.x

[27] Collins, W. A. (Ed.). (1984). *Development during middle childhood: The years from six to twelve*. Washington, DC: National Academy Press.

[28] Garcia Coll, C. G., & Szalacha, L. (2004). The multiple contexts of middle childhood. *Future of Children*, 14(2), 81-97.

[29] U.S. Department of Health and Human Services. (2016). School health policies and practices study (SHPPS) 2016: Results from the School Health Policies and Practices Study. Retrieved from https://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-results_2016.pdf#page=26

[30] Frazier, S. L., Cappella, E., & Atkins, M. S. (2007). Linking mental health and afterschool systems for children in urban poverty. Preventing problems, promoting possibilities. *Administration and Policy in Mental Health and Mental Health Services Research*, 34, 389-399. doi:10.1007/s10488-007-0118-y

[31] Afterschool Alliance. (2014). *Evaluations backgrounder: A summary of formal evaluations of afterschool programs' impact on academics, behavior, safety and family life*. Retrieved from http://www.afterschoolalliance.org/documents/challenge2014/EvaluationBackgrounder-FINAL.pdf.

[32] Afterschool Alliance. (2020). *America after 3PM: Demand grows, opportunity shrinks*. Afterschool Alliance. http://www.afterschoolalliance.org/AA3PM/

[33] Barnett, R. C., & Gareis, K. C. (2006). Parental after-school stress and psychological well-being. *Journal of Marriage and the Family*, 68, 101-108.

[34] Pinderhughes et al, 2001.

[35] Dutko, P., Ver Ploeg, M., & Farrigan, T. L. (2012). *Characteristics and influential factors of food deserts*. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[36] Afterschool Alliance, 2016.

[37] Afterschool Alliance, 2014.

[38] Dzewaltowski et al, 2014.

[39] Weiss, M. R., Kipp, L. E., & Bolter, N. D. (2012). Training for life: Optimizing positive youth development through sport and physical activity. *The Oxford handbook of sport and performance psychology*, 448-475.

[40] Durlak, J., & Weissberg, R. (2007). *The impact of after-school programs that promote personal and social skills*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.

[41] Durlak et al, 2011.

[42] Harvard Family Research Project. (2008). *Afterschool programs in the 21st century: Their potential and what it takes to achieve it*. Retrieved from http://www.hfrp.org/publications-resources/browse-our-E-3 publications/after-school-programs-in-the-21st-century-their-potential-and-what-it-takes-toachieve-it

[43] Redd, Z., Cochran, S., Hair, E., & Moore, K. (2002). *Academic achievement programs and youth development: A synthesis*. Bethesda, MD: Child Trends.

[44] DeHart et al, 2004.

[45] Afterschool Alliance, 2014.

[46] Beets, M. W., Beighle, A., Erwin, H. E., & Huberty, J. D. (2009). After-school program impact on physical activity and fitness: A meta-analysis. *American Journal of Preventive Medicine*, 36, 527-537.

[47] Beets, M. W., Rooney, L., Tilley, F., Beighle, A., & Webster, C. (2010). Evaluation of policies to promote physical activity in afterschool programs: Are we meeting current benchmarks? *Preventive Medicine*, 51, 299–301.

[48] Mahoney et al, 2005.

[49] Yin, Z., Moore, J. B., Johnson, M. H., Barbeau, P., Cavnar, M., Thornburg, J., & Gutin, B. (2005). The Medical College of Georgia FitKid Project: The relations between program attendance and changes in outcomes in year 1. *International Journal of Obesity*, 29, S40-S45.

[50] Brock, L. L., Murrah, W. M., Cottone, E. A., Mashburn, A. J., & Grissmer, D. W. (2017). An after-school intervention targeting executive function and visuospatial skills also improves classroom behavior. *International Journal of Behavioral Development*, 1-11.

[51] Gibson, J. E., Werner, S. S., & Sweeney, A. (2015). Evaluating an abbreviated version of the PATHS Curriculum implemented by school mental health clinicians. *Psychology in The Schools*, 52(6), 549-561. doi:10.1002/pits.21844

[52] Hillman, C. H., Pontifex, M. B., Castelli, D. M., Khan, N. A., Raine, L. B., Scudder, M. R., Drolette, E. S., Moore, R. D., Wu, C. T., & Kamijo, K. (2014). Effects of the FITKids randomized controlled trial on executive control and brain function. *Pediatrics*, 134, e1036-e1071.

[53] Pierce, K. M, Bolt, D. M., & Vandell, D. L. (2010). Specific features of after-school program quality: Associations with children's functioning in middle childhood. *American Journal of Community Psychology*, 45(3-4), 381-393.

[54] Shernoff, D. J. (2010). Engagement in after-school programs as a predictor of social competence and academic performance. *American Journal of Community Psychology*, 45(3-4), 325-337.

[55] Vandell, D. L., Reisner, E. R., & Pierce, K. M. (2007). *Outcomes linked to high-quality afterschool programs: Longitudinal findings from the study of promising afterschool programs* (Report to the Charles Stewart Mott Foundation) (p. 9). Irvine, CA: University of California, Irvine.

[56] American Institutes for Research. (2014). *Rhode Island 21st Century Community Learning Center program evaluation: Descriptive report*. Retrieved from http://www.ride.ri.gov/Portals/0/Uploads/Documents/Students-and-Families-Great-Schools/Educational-Programming/21stCCLCs/RI21CCLC-Evaluation-Descriptive-Report-2014.pdf

[57] Center for Youth Program Quality. (2014). *Arkansas 21st Century Community Learning Centers statewide evaluation 2012-2013 annual report*. Retrieved from http://www.arkansased.gov/public/userfiles/Learning_Services/Federal%20Programs/21%20CCLC/2012_2013_Arkansas_21st_CCLC_Statewide_Evaluation_Report.pdf

[58] Grossman, J. B., Price, M. L., Fellerath, V., Jucovy, L. Z., Kotloff, L. J., Raley, R. & Walker, K. E. (2002). Multiple choices afterschool: *Findings from the Extended-Services School Initiative*.

[59] Kauh, T. J. (2011). AfterZone: Outcomes for youth participating in Providence's citywide after-school system*. Philadelphia, PA: Public/Private Ventures*, 1-109.

[60] Newhouse, C., Vance, F., Lo, J., & Willis, S. (2015). *Oakland school-based afterschool programs evaluation: 2014-2015 findings report*. http://afterschoolalliance.org/impacts_testing/details.cfm?ID=a0E3900000NRLurEAH&start=1

[61] Wu, H. C., Van Egeren, L. A., Bates, L. V., & The Michigan State University Evaluation Team (2016). *Michigan 21st Century Community Learning Centers Evaluation 2014-2015 Annual Report*. Michigan State University, East Lansing, MI.

[62] Annesi, J. J., Smith, A. E., Walsh, S. M., Mareno, N., & Smith, K. R. (2016). Effects of an after-school care-administered physical activity and nutrition protocol on body mass index, fitness levels, and targeted psychological factors in 5- to 8-year-olds. *Translational Behavioral Medicine*, 6(3), 347–357. doi:10.1007/s13142-015-0372-6

[63] DeBate, R. D., & Thompson, S. H. (2005). Girls on the Run: Improvements in self-esteem, body size satisfaction and eating attitudes/behaviors. *Eating and Weight Disorders*, 10(1), 25-32. doi:10.1007/BF03353416

[64] Fishbein, D. H., Domitrovich, C., Williams, J., Gitukui, S., Guthrie, C., Shapiro, D., & Greenberg, M. (2016). Short-term intervention effects of the PATHS curriculum in young low-income children: Capitalizing on plasticity. *The Journal of Primary Prevention*, 37(6), 493-511. doi:10.1007/s10935-016-0452-5

[65] Frazier, S. L., Dinizulu, S. M., Rusch, D., Boustani, M. M., Mehta, T. G., & Reitz, K. (2015). Building resilience afterschool for early adolescents in urban poverty: Open trial of Leaders @ Play. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(6), 723-736. doi:10.1007/s10488-014-0608-7

[66] Gibson et al, 2015.

[67] Greenspan et al, 1991.

[68] Walker, K. E., & Arbreton, A. J. A. (2004). After-School Pursuits: An Examination of Outcomes in the San Francisco Beacon Initiative.

[69] American Institutes for Research. (2016). *Texas 21st Century Community Learning Centers 2014–2015 annual report.* Retrieved from https://tea.texas.gov/Reports_and_Data/Program_Evaluations/Out-of-School_Learning_Opportunities/Program_Evaluation__Out-of-School_Learning_Opportunities/

70 Huang, D., & Wang, J. (2012). *Independent statewide evaluation of ASES and 21st CCLC afterschool programs May 1, 2008-December 31, 2011*. http://www.impacts.afterschoolalliance.org/details.cfm?ID=a0E3900000NaMw4EAF&start=1

71 Fishbein et al, 2016.

72 Gibson et al, 2015.

73 Brock et al, 2017.

74 Lerner, R. M., & Lerner, J. V. (2013). *The positive development of youth: Comprehensive findings from the 4-H Study of Positive Youth Development*. Institute for Applied Research in Youth Development.

75 James-Burdumy, S., Dynarski, M., & Deke, J. (2007). When elementary schools stay open late: Results from the national evaluation of the 21st Century Community Learning Centers program. *Educational Evaluation and Policy Analysis*, 29(4), 296-318. doi:10.3102/0162373707309077

76 Pierce, K. M, Bolt, D. M., & Vandell, D. L. (2010). Specific features of after-school program quality: Associations with children's functioning in middle childhood. *American Journal of Community Psychology*, 45(3-4), 381-393.

77 James-Burdumy et al, 2007.

78 de Heer, H. D., Koehly, L., Pederson, R., & Morera, O. (2011). Effectiveness and spillover of an after-school health promotion program for Hispanic elementary school children. *American Journal of Public Health*, 101(10), 1907-1913. doi:10.2105/AJPH.2011.300177

79 Newhouse, C., Vance, F., Lo, J., & Willis, S. (2015). *Oakland school-based afterschool programs evaluation: 2014-2015 findings report*. http://afterschoolalliance.org/impacts_testing/details.cfm?ID=a0E3900000NRLurEAH&start=1

80 Beets, M. W., Weaver, R. G., Turner-McGrievy, G., Huberty, J., Ward, D. S., Pate, R. R., Freedman, D., Hutto, B., Moore, J. B., Bottai, M., Chandler, J., Brazendale, K., & Beighle, A. (2016). Physical activity outcomes in afterschool programs: A group randomized control trial. *Preventive Medicine*, 90, 207-215.

81 London, R. A., & Gurantz, O. (2013). Afterschool program participation, youth physical fitness, and overweight. *American Journal of Preventive Medicine*, 44(3, Suppl 3), S200-S207. doi:10.1016/j.amepre.2012.11.009

82 Beets et al, 2016.

83 London et al, 2013.

84 Bohnert et al, 2013.

85 DeBate et al, 2005.

86 Martin, J. J., Waldron, J. J., McCabe, A., & Choi, Y. S. (2009). The impact of 'Girls on the Run' on self-concept and fat attitudes. *Journal of Clinical Sport Psychology*, 3(2), 127-138.

87 Weiss, M. R., Kipp, L. E., & Bolter, N. D. (2012). Training for life: Optimizing positive youth development through sport and physical activity. *The Oxford handbook of sport and performance psychology*, 448-475.

88 Dzewaltowski et al, 2014.

89 Frazier et al, 2015.

90 Robles, J., Gutierrez, A., & Seifert, C. F. (2014). Impact of a pilot pharmacy health-care professional out-of-school time physical activity and nutrition education program with exercise on fourth and fifth graders in a rural Texas community. *SAGE Open Medicine*, 2, 2050312114547956.

[91] de Heer et al, 2011.

[92] Frazier et al, 2015.

[93] Gibson et al, 2015.

[94] Fishbein et al, 2016.

[95] Mahoney, J. L., Parente, M. E., & Lord, H. (2007). After-school program engagement: Links to child competence and program quality and content. *The Elementary School Journal*, 107(4), 385-404. doi:10.1086/516670

[96] Fishbein et al, 2016.

[97] Frazier et al, 2015.

[98] Brock et al, 2017.

[99] Hillman et al, 2014.

[100] Annesi, J. J., Walsh, S. M., Greenwood, B. L., Mareno, N., & Unruh-Rewkowski, J. L. (2017). Effects of the Youth Fit 4 Life physical activity/nutrition protocol on body mass index, fitness and targeted social cognitive theory variables in 9- to 12-year-olds during after-school care. *Journal of Pediatrics and Child Health*, 53(4), 365-373. doi:10.1111/jpc.13447

[101] Sifers et al, 2013.

[102] Gordon, B., Jacobs, J. M., & Wright, P. M. (2016). Social and emotional learning through a teaching personal and social responsibility based after-school program for disengaged middle-school boys. *Journal of Teaching in Physical Education*, 35(4), 358-369.

[103] Carson, D. E., & Reiboldt, W. (2011). An after-school program on nutrition and physical activity for elementary school children. *Family and Consumer Sciences Research Journal*, 39(3), 267-278. doi:10.1111/j.1552-3934.2010.02065.x

[104] Grossman et al, 2002.

[105] Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, National Implementation Research Network. (FMHI Publication No. 231).

[106] Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*, 45(3-4), 294-309.

[107] Bohnert et al, 2013.