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The Grow parenting program: demonstrating proof of concept

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Abstract

Purpose – Parent-focused interventions (PFIs) are a promising method for supporting parents and promoting children's well-being. Few PFIs in the USA, however, include physical health promotion content and are universal programs. The purpose of this paper is to describe a universal health-promoting PFI for parents of elementary school-aged children and demonstrate proof of concept.

Design/methodology/approach – The program emphasizes positive parenting practices, stress management skills and physical health promotion strategies and recommendations, and is part of a larger initiative that includes a continuum of universal, developmentally appropriate, health-promoting PFIs for civilian and military parents. The program was implemented at two community sites in rural Pennsylvania with 20 civilian parents completing pretests and posttests. Study measures assessed parenting, stress and stress management and physical health promotion related outcomes.

Findings – Parents reported decreases in suboptimal discipline and feeding practices, stress and child internalizing behavior. They also reported increases in their sense of control in managing child behavior, coping socialization, child's outdoor playtime and health recommendations met.

Research limitations/implications – While these preliminary findings may not be generalizable, they serve as proof of concept, which suggests that more rigorous research on the program is warranted.

Practical implications – Implementing a universal, health-promoting PFI within the USA is viable and has the potential to impact multiple short-term outcomes.

Originality/value – Parents are among their child's earliest and most influential educators, and this study lends further support to their role as health educators. Given the significant public health benefits of holistically promoting child health, the time has come for universal PFIs to begin including physical health promotion content.

Keywords Health promotion, Behaviour change, Physical activity, Community-based interventions, Parenting, Eating behaviour

Paper type Research paper

Introduction

Promoting the well-being of children, from birth through adolescence, is a significant public health priority (US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). The role parents play in supporting their children's positive development is well established (Donelan-McCall, 2017). Parent-focused interventions (PFIs) have been identified as one potentially promising avenue for helping parents support their child's well-being (Prinz, 2016). Multiple PFIs exist but vary in aspects, such as theoretical orientation, age of target child and delivery modality. For example, the Parent Management Training—Oregon Model program, which has an extensive evidence base (see Forgatch and Kjobli, 2016, for a review), is based on Patterson's social interaction learning theory (Forgatch *et al.*, 2004); targets parents of children 3–16 years old; and can be delivered in individual therapy sessions, in groups or online (www.blueprintsprograms.com/factsheet/generationpmto). Conversely, the Nurse–Family Partnership program, which has also been

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researched extensively (see Olds, 2006, for a review), is founded upon the theoretical frameworks of human ecology, self-efficacy and attachment (Olds, 2006) and is intended for pregnant, first-time mothers. The program is implemented through home visits that occur during pregnancy and the first two years of the child's life (www.blueprintsprograms.com/factsheet/nurse-family-partnership). Despite these differences, however, PFIs share the common goals of strengthening parenting skills and enhancing parent–child interactions (Prinz, 2016). The accumulating evidence-base for PFIs demonstrates their potential effectiveness for improving parent and child outcomes (Finders *et al.*, 2016).

Evidence-based PFIs have predominately been developed by professionals from mental health and clinical sciences; thus, they strongly emphasize mental health promotion (Sanders, 2008). Given the prevalence rates of diagnosable emotional and behavioral issues experienced by children in the USA (range: 2.1–6.8 percent; Perou *et al.*, 2013), the fact that many more children experience these issues at subclinical levels (Long, 2007), and the likelihood that rates of suboptimal parenting (e.g. harshness and resentment) are higher than reported by official surveillance data (Prinz, 2016), the focus of PFIs on mental health promotion is certainly warranted. However, families today also experience issues related to children's physical health promotion, such as the amount of screen time and physical activity children engage in and eating habits.

Children spend an estimated five to seven hours a day in front of screens (US National Library of Medicine, 2017). While some of this time is spent on productive screen time endeavors (e.g. schoolwork), it also includes less productive activities, like TV viewing, web surfing, social media and video games. Furthermore, available data suggest that youth are not meeting national recommendations for certain health behaviors. For example, approximately 30 percent of children between the ages of 6 and 11 did not meet the US Department of Health and Human Services 2008 recommendation for Physical Activity Guidelines for Americans of one hour of physical activity per day (Fakhouri *et al.*, 2013). A total of 60 percent of preschool and school-aged children did not meet US Department of Agriculture Food Patterns fruit intake recommendations, and 93 percent did not meet vegetable intake recommendations (National Cancer Institute, 2015). Furthermore, 63 percent of youth between the ages of 2 and 19 are not meeting the 2015–2020 Dietary Guidelines for Americans recommendation on sugar-sweetened beverage consumption (Rosinger *et al.*, 2017). These findings indicate the need for greater health-promotion efforts geared toward helping children make healthier lifestyle choices.

Parents are a natural priority population to promote healthy behaviors in children. As evidenced in research (Lindsay *et al.*, 2006), parents play a crucial role in influencing their child's health and weight-related behaviors. For instance, parents regularly engage, knowingly or unknowingly, in behaviors that directly impact their child's physical health, such as feeding practices, monitoring screen time and encouraging physical activity (Lindsay *et al.*, 2006). In addition to specific parenting practices, general parenting styles (i.e. authoritative, authoritarian, permissive and uninvolved) have been shown to be associated with child health behaviors (Sleddens *et al.*, 2011).

Given this, a logical next step for the parenting field is to develop and implement PFIs that include physical health-promotion components in addition to components that focus on general parenting practices (e.g. discipline, limit-setting, praise and encouragement). Currently, however, very few PFIs do this (Gerards *et al.*, 2011). Notable exceptions include ParentCorps (Dawson-McClure *et al.*, 2014) and Lifestyle Triple P (West *et al.*, 2010). These programs, however, are targeted, which means they are not delivered to the general population of parents. ParentCorps is intended for parents from under-resourced communities, and Lifestyle Triple P is intended for parents whose children are overweight or obese.

In order to achieve maximum public health impact, these targeted PFIs need to be complemented by universal prevention programs (Prinz, 2016). Universal prevention is focused on providing services and support to the general population as opposed to focusing on subsets of

the population identified by risk-level (Institute of Medicine, 2009). Arguably, all parents experience challenges in childrearing and could benefit from support in parenting more effectively (Long, 2007; Rodrigo *et al.*, 2012). In a survey of over 4,000 Australian parents, Sanders *et al.* (2007) found that 29 percent reported that their child had experienced at least one emotional or behavioral issue over the last six months. Research also suggests that suboptimal parenting cuts across social class (Runyan *et al.*, 2010; Waylen *et al.*, 2008), which further supports the need for offering PFIs to all parents. Moreover, many parents manage their children's daily health behaviors like monitoring screen time and managing meals, snacks and opportunities for physical activity; however, there are evidence-informed strategies and skills that can make these endeavors more effective and yield positive health outcomes for children (e.g. healthy weight gain with growth, meeting recommendations for nutrition and physical activity and reducing sedentary behaviors and minimizing nonproductive screen time). Thus, including a health-promotion component as part of PFIs aimed at universal prevention is recommended.

In addition to the evidence supporting the need for offering universal PFIs, evidence suggests that parents in the general population will participate in these efforts. For example, studies conducted in Scandinavian countries where universal PFIs are commonplace have found that parents are widely interested in these services (Thorslund *et al.*, 2017). Reasons for attending such programs are reported to be of a general, not problem-specific, nature (Alfredsson and Broberg, 2016); however, concern for children's behaviors can certainly be a motivating factor (Reedtz *et al.*, 2011).

In the USA, limited evidence exists of the feasibility or utility of implementing a universal parenting and health-promotion program. Data from 2,344 parents, who attended PFIs delivered in the Pacific Northwest between 2010 and 2012 (Finders *et al.*, 2016), demonstrated that improvements in parent- and child-related skills were experienced by participants who were not considered to be at risk. Though this finding suggests that all parents can benefit from the receipt of PFIs, only one PFI included in the study, Abriendo Puertas, contains health-promotion content, and this program is designed specifically for Latino parents (Finders *et al.*, 2016). Furthermore, the study authors' analyses did not focus on any health-promotion outcomes, so it is unclear how the programs may have impacted child health. Haines *et al.* (2012) demonstrated initial feasibility of a general parenting program, Parents and Tots Together, for parents of two- to five-year-olds that includes health-promotion content. However, parents were recruited from two health centers that primarily serve under-resourced families, which limits the generalizability of findings to a broader parenting population.

Outside of the USA, several recent efforts have been made to implement and evaluate PFIs with health-promotion content at a universal level (De Lepeleere *et al.*, 2017; Walton *et al.*, 2015; Wilson *et al.*, 2016). The results of these studies suggest that such efforts are feasible and well received. Analyses that focus on program impact demonstrated positive trends for parent and child outcomes, but evidence of a statistically significant change in health-promotion outcomes was scant. Despite this, these studies are a promising start to moving the field forward with respect to providing parenting programs that include evidence-informed strategies for promoting healthier behaviors at home.

In line with and extending upon this previous research, this paper first describes a universal PFI called Grow that was developed in the USA and is designed for parents of five- to ten-year-old children. The paper then reports on a small, uncontrolled study to demonstrate proof of concept. Following the advice of Czajkowski *et al.* (2015), a proof of concept study was undertaken as a resource-effective way to see if the program could impact relevant, short-term outcomes thereby warranting further, more rigorous evaluation research with larger samples.

The Grow parenting program

Grow is part of the THRIVE Initiative thrive.psu.edu, which is a continuum of universal, developmentally appropriate PFIs that systematically integrates health-promotion material

with general parenting content for parents of children from birth to age 18. The THRIVE Initiative was spearheaded in 2013 by social scientists at the Clearinghouse for Military Family Readiness at Penn State (Clearinghouse) in partnership with staff from the Department of Defense's (DoD) Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy (see Table I). All THRIVE programs are being developed for delivery to military and civilian families.

The Grow program curriculum is designed for parents of children who are transitioning through the elementary school years, which is a critical developmental period for providing parenting support as research has demonstrated that child functioning at this stage is predictive of later life adjustment (Jones *et al.*, 2015; Moffitt *et al.*, 2011; Wertz *et al.*, 2018). Grow consists of 5-weekly, 90-minute group sessions that are delivered to 10–15 parents/caregivers in a community setting (e.g. church, community center, YMCA) by a certified facilitator using a video-based curriculum. Weekly text messages and links to brief, online, follow-up videos are sent to parents after each session, and homework activities are assigned each week to encourage parents to practice the learned skills.

Grow, as with all THRIVE programs, focuses on three learning domains: positive parenting practices, parent and child stress management and child physical health promotion. A primary objective in the development of Grow was to integrate health-promotion materials and evidence-informed recommendations with positive parenting content. Stress management was also included because evidence indicates that incorporating such content can increase program effectiveness (e.g. Carr, 2014). The ultimate goal of Grow and all THRIVE programs is to strengthen parenting and promote positive child development.

The development of the program's content was guided by theory and the results of a common components analysis (Czymoniewicz-Klippel *et al.*, 2018). A common components analysis is a methodological technique emerging from the common components framework (Chorpita *et al.*, 2005; Morgan *et al.*, 2018). This framework assumes that the curriculums used in evidence-based programs focusing on the same topic area (e.g. parenting) share a core set of identifiable and extractable components (e.g. assertive discipline, emotion coaching). The common components analysis undertaken for Grow focused solely on content components (Morgan *et al.*, 2018), which are the topics and strategies addressed in a program. The analysis involved selecting relevant, evidence-based parenting programs using an online program registry (militaryfamilies.psu.edu/programs-review/) and engaging in an iterative coding and data reduction process to identify, refine and finalize the components. Since none of the programs included in the common components analysis contained health-promotion content, an extensive literature review was undertaken to identify content components for this aspect of the program.

As is considered best practice in program development (Wright *et al.*, 2016), a theory of change was drafted for Grow. This theory of change is informed by the following three theoretical frameworks that align with the results of the common components analysis and health-promotion literature review: social cognitive theory, positive youth development and anticipatory guidance. Social cognitive theory (Bandura, 1986) provides an overarching framework for the learning and behavior change processes that are central to the program. For example, the videos participants watch model how to use the program's specific parenting, stress management and health-promotion techniques. Positive youth development

Table I. THRIVE initiative program areas

Take Root	Sprout	Grow	Branch Out
Infants and toddlers (birth to 3 years)	Preschool (3 to 5 years)	Grades K–5 (5 to 10 years)	Grades 6–8 (10 to 14 years) Grades 9–12 (14 to 18 years)

(Lerner *et al.*, 2002) informs the program's focus on promoting healthy child development by providing parents with an understanding of resiliency and positive growth in the elementary school-age years. For instance, the Seven Cs Model of Positive Development (Ginsburg and Jablow, 2011) is used to help parents understand seven essential characteristics for positive youth adjustment and realize how to promote those characteristics in their child. Finally, anticipatory guidance (American Public Health Association, Committee on Child Health, 1955), which involves providing parents with important information on and evidence-informed advice for supporting child health and development, informs the application of the program's health-promotion strategies to everyday parenting situations. For example, parents are taught about the importance of their child developing healthy eating habits, and they are exposed to the division of responsibility in feeding method (Satter, 1986) to help them understand how to promote this behavior.

Collectively, the Grow curriculum intends to teach parents the factors that build resiliency and the behaviors that are expected for children at this age. It also intends to engage parents in using strategies that are key for healthy development at this time of growth, such as establishing routines and rules, providing praise and encouragement for newly acquired skills, using appropriate discipline and teaching emotional coping. Session 5 presents the majority of the program's health-promotion content and focuses on child-feeding practices, nutrition and physical activity recommendations for children and strategies for overcoming barriers to health promotion. Health-promotion approaches are also integrated into the earlier program sessions, such as in session 3 where successful bedtime routines and the importance of monitoring screen time are discussed (see Table II).

Method

Research design

Grow was implemented under real-world conditions in two rural, central Pennsylvania communities in the spring of 2015. A single-group, pretest and posttest design was employed, and data were collected on implementation (Proctor *et al.*, 2011) and treatment outcomes of the program. The results of the implementation data have been published elsewhere (Czymoniewicz-Klippel *et al.*, 2017). In summary, these results demonstrated that the

Session	Core concepts
1. Raising Youth to be Healthy Adults	Using praise and encouragement to reinforce positive behavior The importance of positive interactions and child-directed play Role of parenting in promoting resiliency (competence, confidence, connection, character, contribution, coping and control)
2. Coaching Children to Cope	Mindful parenting (identifying emotional triggers) Reframing negative thinking patterns in children Supporting child emotional expression through effective listening and communication
3. Readiness through Routines and Rules	Developmentally appropriate behavior expectations Listening skills Benefits of structured routines (bedtime rituals, reducing screen time for increased physical activity, school engagement, family meals and household responsibilities)
4. Discipline that Teaches and Guides	Discipline as a teaching tool Effective and positive discipline strategies (e.g. planned ignoring, precision requests, natural and logical consequences, quiet time, removing privileges) Praise, positive reinforcement and strategies that prevent/reduce misbehavior
5. Parenting for Health Promotion	Beneficial and detrimental child-feeding practices (division of responsibility in feeding, family meals, external eating cues and food control/restrictions) Nutrition and physical activity recommendations Overcoming barriers to health promotion

Table II.
Core concepts by Grow session

participants found the program to be acceptable and appropriate, and facilitators delivered the program with a high degree of fidelity and found program implementation to be feasible.

From a treatment perspective, the goal of this study was to garner preliminary evidence of the program's utility to affect change in relevant outcomes, described in the measures section, related to the program's three learning domains (i.e. demonstrate proof of concept). Participants completed a pretest, which was administered onsite prior to the start of the first program session (T1), and completed a posttest onsite one week after the completion of the fifth session (T2). The posttest was completed prior to engaging in a program graduation celebration hosted by the facilitators. Participants were instructed to respond to the pretests and posttests with their oldest child between the ages of five and ten in mind. Participants received a $25 e-gift card for each survey they completed. Ethical approval for this research was obtained from the researcher's institutional review board prior to data collection, and all participants provided consent prior to completing the pretest.

Setting and sample

Two members of the research team used previously established relationships with community stakeholders to identify the program sites. Site A was a child development center, and Site B was a local YMCA. Both sites were active in outreach efforts in their respective communities, which made them ideal locations for program implementation. At each site, program sessions were implemented by a delivery facilitator who was supported by a coordinating facilitator. Both facilitators at each site were certified by the research team prior to program implementation and received ongoing support and coaching throughout program implementation. All facilitators were female; had prior experience working with families; and received an hourly wage, paid by the research team, for their time spent working on the project.

At both sites, program sessions were held in the evening, and childcare was provided. Prior to the start of each session, families and facilitators ate a meal together. Throughout the program, the facilitators arranged for the participants to have the opportunity to receive door prizes and other small incentives. These strategies were adopted to foster participant retention.

Recruitment for the program at both sites occurred over one month and was spearheaded by the coordinating facilitators. Recruitment methods included hanging posters in the communities, distributing fliers to parents in person and via schools' e-mail listservs and airing radio commercials. Inclusion criteria included being a parent or caregiver of a five- to ten-year old child, speaking and understanding English fluently and being willing to participate in the study. A total of 36 individuals registered for the program—16 at site A and 20 at site B. Of these 36 participants, 26 attended at least the first session and completed a pretest, and 20 attended at least three sessions and completed a posttest. This represents a completion rate of 56 percent (20/36), which is typical of group-based parenting programs (Axford *et al.*, 2012). Despite this, it is encouraging that 77 percent (20/26) of those who started the program finished it.

Detailed participant demographics for those who started the program can be found in Table III. In general, participants were primarily female (80.8 percent), under 40 years old (73.1 percent), white (73.1 percent), with some college education (65.4 percent), married (69.2 percent) and part of a two-parent family (76.9 percent). The average age of the target child was 6.81 years (SD = 0.99).

Measures

Parental discipline practices were assessed with the inconsistent discipline subscale of The Alabama Parenting Questionnaire—Short Form (Elgar *et al.*, 2007) and the over-reactive discipline subscale of the Parenting Scale (Arnold *et al.*, 1993). The inconsistent discipline subscale assesses the frequency with which parents use three ineffective discipline methods (e.g. "you threaten to punish your child and then do not

Characteristic	Baseline ($n = 26$)
Gender (%)	
Female	80.8
Male	19.2
Age (%)	
< 30	26.9
30–39	46.2
40–49	23.1
50–59	3.8
Race/ethnicity (%)	
White	73.1
Non-white	26.9
Education (%)	
No high school diploma/GED	15.4
High school diploma/GED	19.2
Some college	23.1
College degree	42.3
Occupation status (%)	
Full-time (paid)	42.3
Part-time (paid)	15.4
Stay-at-home parent	26.9
Other	15.4
Marital status (%)	
Married	69.2
Living together, not married	3.8
Divorced	11.5
Single, never married	7.6
In relationship, not living together	7.6
Family arrangement (%)	
Two-parent family	76.9
Single-parent family	19.2
Step family	3.8
Target child	
Age (*M*, SD in years)	6.81 (0.99)
Male (%)	57.7
Female (%)	42.3

Table III. Participant demographics

actually punish him or her") with their child on a five-point Likert-type scale (1 = "never," 2 = "almost never," 3 = "sometimes," 4 = "often," 5 = "always"). The over-reactive discipline subscale consists of five items that measure the degree to which parents respond to their child's misbehavior in unproductive ways using a seven-point semantic differential scale with anchors naturally corresponding to each item's stem (e.g. "when my child misbehaves […] 1 = "I usually get into a long argument with my child" to 7 = "I do not get into an argument"). Prior work has shown both subscales to be reliable and valid measures of parental disciple (Elgar *et al.*, 2007; Arnold *et al.*, 1993). Cronbach's α for the inconsistent disciple subscale was 0.70 at T1 and 0.81 at T2; for the over-reactive discipline subscale, it was 0.72 at T1 and 0.92 at T2.

Parenting stress was measured using the seven-item parental stressors subscale of the Parental Stress Scale (Berry and Jones, 1995). Participants indicate their agreement with each of the items (e.g. "the major source of stress in my life is my child") using a five-point

Likert-type scale (1 = "strongly disagree," 2 = "disagree," 3 = "undecided," 4 = "agree," 5 = "strongly agree"). A study by Oronoz *et al.* (2007) found this subscale to have adequate internal reliability and good evidence of construct validity. Cronbach's α was 0.82 at T1 and 0.81 at T2.

Parents' sense of control in managing their child's behavior was assessed with the ten-item parental control subscale of the Parental Locus of Control Scale (Campis *et al.*, 1986). Participants respond to each item (e.g. "it is not too difficult to change my child's mind about something") using a five-point Likert-type scale (1 = "strongly disagree," 2 = "disagree," 3 = "undecided," 4 = "agree," 5 = "strongly agree"). Campis *et al.* (1986) reported adequate internal reliability across two independent samples and evidence of construct and discriminate validity. Cronbach's α was 0.85 at T1 and 0.87 at T2.

Parents' socialization of their child's coping capabilities was measured using the seven-item primary control and five-item cognitive restructuring subscales of the Socialization of Coping Questionnaire (Monti *et al.*, 2014). These subscales assess how much parents encourage their child to directly deal with stressful events (i.e. primary control) or reframe how they view those events (i.e. cognitive restructuring) using a five-point Likert-type scale (1 = "not at all," 2 = "a little bit," 3 = "some," 4 = "pretty much," 5 = "very much"). Parents respond to each item on the primary control (e.g. "deal with the situation head on rather than ignoring it") and cognitive restructuring (e.g. "think of ways to laugh about it so it won't seem so bad") subscales with the following stem in mind: "when my child has a problem or is upset, I encourage my child to […]." Monti *et al.* (2014) reported adequate internal reliability and evidence of construct validity for both subscales. Cronbach's α estimate for the primary control subscale was 0.75 at T1 and 0.94 at T2; for the cognitive restructuring subscale, it was 0.90 at T1 and 0.92 at T2.

Children's emotional and behavioral adjustments were measured by the parent-report version of the Strengths and Difficulties Questionnaire (Goodman *et al.*, 2010). Following the advice of Goodman *et al.* (2010) concerning using the instrument with low-risk samples, the emotional symptoms (e.g. "often complains of headaches, stomachaches, or sickness") and peer relationship problems (e.g. "rather solitary, prefers to play alone") subscales, which total ten items, were combined to form an internalizing problems subscale. The conduct problems (e.g. "often loses temper") and hyperactivity/inattention (e.g. "restless, overactive, cannot sit still long") subscales, which total ten items, were combined to form an externalizing problems subscale. Participants respond to all items by indicating how true they are of their child on a three-point Likert-type scale (0 = "not true," 1 = "somewhat true," 2 = "certainly true"). Goodman *et al.* (2010) showed the internalizing and externalizing subscales to have adequate internal reliability and construct and discriminate validity. Cronbach's α for the internalizing subscale was 0.47 at T1 and 0.28 at T2; for the externalizing subscale, it was 0.84 at T1 and 0.86 at T2. Given the very low α coefficient for the internalizing subscale at both time points, results involving this outcome should be interpreted very cautiously.

Controlling parental feeding practices were assessed with the four-item pressure to eat (e.g. "my child should always eat all of the food on his or her plate") and seven-item restriction (e.g. "if I did not guide or regulate my child's eating, he or she would eat much less than he or she should") subscales of the Child Feeding Questionnaire (Birch *et al.*, 2001). Participants rate their level of agreement with each item using a five-point Likert-type scale (1 = "disagree," 2 = "slightly disagree," 3 = "neutral," 4 = "slightly agree," 5 = "agree"). Birch *et al.* (2001) found both subscales to have adequate internal reliability coefficients and construct validity. Cronbach's α in this study for the pressure to eat subscale was 0.52 at T1 and 0.76 at T2; for the restriction subscale, it was 0.56 at T1 and 0.57 at T2. Given the low α coefficient at both time points for the restriction subscale, results involving this outcome should be interpreted cautiously.

Children's physical activity was assessed with the Outdoor Time Recall instrument (Burdette *et al.*, 2004), which is a parent-report proxy of physical activity. Participants reported the amount of time, in hours and minutes, their child spent playing outside on a typical weekday and weekend day. The measure has been shown to significantly correlate with physical activity levels measured by an accelerometer, thereby demonstrating concurrent validity (Burdette *et al.*, 2004).

Five items from the Healthy Habits Questionnaire (5210 Let's Go, 2012) were used to measure the child's attainment of the health recommendations targeted by the program. These items were modified by providing scaled-response options and adjusting item wording to have participants think about a typical day in their child's life. In particular, participants reported on the following: the number of servings (defined as the size of their child's palm) of fruit and vegetables their child consumed using a three-point Likert-type scale (1 = "0–2 servings," 2 = "3–4 servings," 3 = "5 or more servings"); the number of times their child consumed sugar-sweetened beverages using a four-point Likert-type scale (1 = "0 times," 2 = "1–2 times," 3 = "3–4 times," 4 = "5 or more times"); the amount of time their child spent in physical activity (defined as faster breathing and increased heart rate) using a three-point Likert-type scale (1 = "0–29 min," 2 = "30–59 min," 3 = "1 h or more"); and the amount of time their child spends watching television or playing video games using a five-point Likert-type scale (1 = "less than 1 h," 2 = "1–2 h," 3 = "3–4 h," 4 = "5–6 h," 5 = "7 h or more"). The screen time question was asked for a typical weekday and weekend day. No psychometric data on this questionnaire have previously been reported, and there is no theoretical justification for forming a single index with these items. They were selected because they align with the health-promotion content taught in the program, and they were treated as single items in the analysis.

To measure the use of the health-promotion skills taught in the program, parents responded to a single-frequency question at the end of session 5 (e.g. "before today's session, how often did you use health-promotion strategies like the ones that were taught") and again one week later on the posttest (e.g. "since session 5 (over this past week), how often have you used the taught health-promotion strategies"). Participants responded to both questions using a four-point Likert-type scale (1 = "never," 2 = "seldom," 3 = "sometimes," 4 = "often").

Analyses

Data were analyzed using SPSS version 24. The data were found to violate normality assumptions, so the Wilcoxon signed-rank test was used to examine differences between pretest and posttest scores. Following the advice of Field (2013), the r effect size was calculated for all outcomes, and Cohen's (1988) guidelines for interpretation were applied: 0.1 (small), 0.3 (medium) and 0.5 (large).

Differences between those who did and did not complete the posttest were examined using χ^2 analyses and Mann-Whitney U tests. No significant baseline differences between completers and non-completers were found. Little's MCAR test indicated data were missing completely at random ($\chi^2 = 25$, df $= 17$, $p > 0.05$).

Results

The descriptive statistics and results of the Wilcoxon signed-rank tests for the study outcomes are presented in Table IV. Statistically significant decreases were found for inconsistent ($z = -2.79$, $p < 0.01$, $r = -0.44$) and over-reactive ($z = -2.49$, $p < 0.05$, $r = -0.39$) discipline. Parents also reported a reduction in their child's internalizing behaviors ($z = -2.01$, $p < 0.05$, $r = -0.32$) and their own feelings of stress ($z = -2.90$, $p < 0.01$, $r = -0.46$). Furthermore, increases were found for parents' encouragement of their child's primary control ($z = 2.16$, $p < 0.05$, $r = 0.34$) and cognitive restructuring ($z = 2.16$, $p < 0.05$,

Table IV. Descriptive statistics and results of Wilcoxon signed-rank tests for study outcomes

Outcome	M (Mdn, SD) T1	T2	z	r
Inconsistent discipline	2.77 (3.00, 0.79)	2.17 (2.17, 0.72)	−2.79**	−0.44
Over-reactive discipline	3.70 (4.13, 1.34)	2.85 (2.38, 1.51)	−2.49*	−0.39
Internalizing behavior	3.90 (3.50, 2.49)	3.10 (3.50, 1.86)	−2.01*	−0.32
Externalizing behavior	6.80 (6.50, 4.29)	5.90 (5.00, 4.38)	−0.83	−0.19
Parenting stress	2.48 (2.29, 0.87)	2.04 (1.93, 0.79)	−2.90**	−0.46
Primary control	3.99 (4.00, 0.58)	4.24 (4.50, 0.83)	2.16*	0.34
Cognitive restructuring	3.59 (3.90, 1.06)	3.91 (3.90, 1.01)	2.16*	0.34
Parental sense of control	3.17 (3.25, 0.80)	3.75 (3.80, 0.71)	3.22**	0.51
Pressure to eat	3.09 (3.12, 0.98)	2.35 (2.00, 1.11)	−2.92**	−0.46
Restriction	3.34 (3.50, 0.71)	2.94 (2.93, 0.72)	−2.80**	−0.44
Child weekday outdoor playtime[a]	73.95 (60.00, 41.18)	119.21 (120.00, 84.33)	2.71**	0.44
Child weekend outdoor playtime	190.70 (180.00, 100.79)	238.00 (210.00, 122.29)	1.97*	0.31
Fruit and vegetable consumption	1.90 (2.00, 0.64)	1.75 (2.00, 0.72)	−1.00	−0.16
Sugar-sweetened beverage consumption	2.00 (2.00, 0.46)	1.75 (2.00, 0.64)	−1.67	0.26
Physical activity	2.35 (2.00, 0.59)	2.40 (3.00, 0.75)	0.28	0.04
Weekday screen time[b]	2.06 (2.00, 0.83)	2.12 (2.00, 0.60)	0.45	0.08
Weekend screen time	2.85 (3.00, 1.09)	2.60 (2.00, 0.75)	−1.07	0.17
Program health promotion skill use[c]	2.94 (3.00, 0.73)	3.44 (4.00, 0.70)	1.98*	0.33
5210 recommendations met	1.65 (2.00, 0.99)	2.50 (2.00, 1.24)	2.68**	0.42

Notes: $n = 20$. [a]$n = 19$; [b]$n = 17$; [c]$n = 18$. *$p < 0.05$; **$p < 0.01$

$r = 0.34$) coping strategies and their sense of control over managing their child's behavior ($z = 3.22$, $p < 0.01$, $r = 0.51$).

In addition to these findings, and of particular relevance to the focus of this paper, a number of health-promotion outcomes were statistically significant. One week after participating in the health-promotion session, parents reported an increase in the frequency with which they were using the taught health-promotion skills at home with their child ($z = 1.98$, $p < 0.05$, $r = 0.33$). Furthermore, parents reported increases in the amount of time their child spent playing outside on weekdays ($z = 2.71$, $p < 0.01$, $r = 0.44$) and weekends ($z = 1.97$, $p < 0.05$, $r = 0.31$) and decreases in pressure-focused ($z = -2.92$, $p < 0.01$, $r = -0.46$) and restrictive feeding practices ($z = -2.80$, $p < 0.01$, $r = -0.44$). There were no statistically significant differences in parental reports of fruit and vegetable consumption, screen time, time spent in physical activity or sugar-sweetened beverage consumption.

However, dichotomizing these variables in order to examine adherence to 5210 daily recommendations (i.e. five or more servings of fruits and vegetables, two or fewer hours of recreational screen time, one or more hours of moderate to vigorous physical activity and zero sugar-sweetened beverage consumption), which align with national recommendations (Daniels *et al.*, 2015) and are emphasized in the curriculum, revealed that there was an increase from pretest to posttest in the number of recommendations met ($z = 2.68$, $p < 0.01$, $r = 0.42$). Indeed, 55 percent of the participants reported an increase in the number of daily recommendations their child was meeting with 35 and 10 percent reporting no change or a slight decrease, respectively. While no participants reported that their child met all recommendations concurrently at the beginning of the program, 10 percent did at the program's end.

Discussion

PFIs have tremendous potential to promote the mental health of parents and children (Sanders, 2008). Moreover, parents play a key role in shaping their children's health-related lifestyle choices (Lindsay *et al.*, 2006). Few PFIs, however, focus on teaching parents general

parenting and child health-promotion skills (Gerards *et al.*, 2011). Existing evidence-based PFIs that do include health-promotion content, while few, also tend to be selective or indicated (e.g. Group Lifestyle Triple P; West *et al.*, 2010). In this paper, the case has been made that a public health approach to strengthening parenting is warranted (e.g. Prinz, 2016), and universally implemented PFIs that include health-promotion content are beginning to emerge on an international scale (e.g. Parents Working Together; Wilson *et al.*, 2016). Countries that are leading the charge on this initiative are those that operate under a more collectivistic mindset with respect to societal health and welfare. Within the USA, however, there continues to be a paucity of such programs.

The THRIVE Initiative was developed, in part, to address this disconnect between PFIs and health promotion. The DoD's Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy requested that social scientists at the Clearinghouse develop PFIs applicable to military and civilian parents of children 0–18 years old. Early in the development process, Clearinghouse scientists recognized the need for universal PFIs that included health-promotion content. At the DoD's request, the Clearinghouse first developed Grow, which focuses on parents of elementary school-aged children and then examined it in a small, uncontrolled study.

The results obtained from this study serve as a proof of concept that implementing a universal PFI with health-promotion content within the USA is viable. The Grow program's primary learning domains include positive parenting, stress management and child physical health promotion. Participants reported improvements in outcomes within each of those areas and effect size estimates suggested the impacts were medium to large in magnitude. These findings align with the extant evidence-base on mental health promotion for general PFIs and contribute to the emerging literature on universal, health-promoting PFIs, which to date has generally only found trends—as opposed to statistically significant effects—with respect to physical health outcomes (Wilson *et al.*, 2016). The results pertaining to physical health promotion, which are of particular interest to this paper, are further detailed next.

Health-promotion outcomes

Over a one-week interval during program implementation, parents reported an increase in the frequency of their use of the health-promotion skills emphasized in session 5 of the program. This result is encouraging as it suggests parents' use of health-promotion strategies within the home can be improved within a short period of time. There was no follow-up for these data, so it is unclear if these improvements were sustained; however, as it currently stands, this finding implies that the health-promotion skills taught within the program are feasible for parents to immediately put into practice.

Improvements were also noted at program end in child outdoor playtime and controlling parent feeding practices. Though child outdoor playtime was assessed through a self-report parent measure that serves as a proxy for child physical activity levels, the measure has been validated against more objective accelerometer data (Burdette *et al.*, 2004). Thus, greater confidence can be placed in interpreting this finding as reflecting an increase in children's time spent in daily physical activity. The program encourages parents to support opportunities for their child's physical activity by having them spend more time in active play, and outdoor play is one way to accomplish this goal. It is quite possible that an increase in children's outdoor playtime was mediated by increases in parents' support of physical activity. While parental support of physical activity was not measured, this construct will be assessed in future studies.

The controlling feeding practices measured in this study have been found to be associated with children's weight status (Birch *et al.*, 2001). Reducing parents' controlling feeding practices within the home may help lead to improvements in child health. That is, when parents restrict certain foods (i.e. control the intake of or limit access to food), it draws children's attention to those foods when they become available, even when they are

not hungry. This action may teach children to eat in the absence of hunger, which minimizes children's reliance on their cues of satiety and hunger (Fisher and Birch, 1999). The division of responsibility in feeding strategy taught in the program is expected to help reduce suboptimal feeding practices and increase more adaptive practices (Satter, 2014). Assessing the uptake of this strategy, along with the reduction of controlling feeding practices, is a future research direction.

No statistically significant improvements were noted for fruit and vegetable consumption, screen time, physical activity and sugar-sweetened beverage consumption as measured by the Healthy Habits Questionnaire. The lack of congruence between no improvement in physical activity on this measure and the noted improvement on the Outdoor Time Recall measure is intriguing, but, given the lack of validation research conducted on the Healthy Habits Questionnaire, the discrepancy should not be over interpreted. The Healthy Habits Questionnaire is designed to measure 5210 outcomes that align with national recommendations (Daniels *et al.*, 2015), but the items and their responses may be phrased in a such way that they lack the sensitivity necessary to detect change within an intervention context. Alternatively, perhaps the Outdoor Time Recall instrument, which assesses time spent playing outside, and the physical activity item from the Healthy Habits Questionnaire, which assesses time spent in moderate to vigorous physical activity, are measuring distinct aspects of physical activity.

When the Healthy Habits Questionnaire items were dichotomized to measure how many recommendations children were meeting, an increase was detected. Though the number of children who were reported to be meeting all recommendations at posttest remained low (i.e. 10 percent), this was higher than pretest levels, and 55 percent of parents reported that their child was meeting at least one more recommendation post-intervention compared to pre-intervention. Furthermore, when examining percent change within individual recommendations met across time, all but fruit and vegetable consumption, which remained unchanged, increased. These results would seem to suggest that the program had a positive impact on health recommendation adherence.

Limitations

This study has several limitations. First, all outcomes were assessed with self-report measures and, as such, are subject to potential social desirability effects and common method variance. Second, the subscales assessing internalizing behaviors and food restriction had very low reliability estimates, which brings into question the validity of the results obtained using them in this study. Given the prior validation work on both measures, why the reliability estimates were so low in this study is not known. Perhaps the young age of the target child could be a contributing factor. For example, prior work has shown that it can be difficult for adults to detect internalizing symptoms in young, school-age children (Dwyer *et al.*, 2006). Using a more diverse sample may help to overcome this limitation. Third, the sample is small and certainly not representative. Though this could have limited the study's statistical power, the more pressing concern, given the number of significant effects found, is the generalizability of the results beyond the study's sample. Fourth, no comparison group was utilized, which makes it difficult to account for alternative explanations for the findings, such as maturation effects. Finally, maintenance effects were not assessed, so it is unclear how durable these findings are over time.

Conclusion

This study's findings, albeit limited, indicate that universal, health-promoting PFIs are a promising path forward for strengthening parenting and child outcomes. The findings related to health-promotion outcomes are very encouraging, especially considering that none of the parents indicated that they participated in the program specifically because of

the health-promotion focus. In line with prior research (Alfredsson and Broberg, 2016), the majority of participants (69 percent) provided general reasons for attending, such as wanting to be a better parent, and a minority (23 percent) provided problem-oriented reasons (e.g. being referred by the child's physician given concern over behavioral issues). Parents' lack of emphasis on health promotion in relation to general parenting is not surprising given prior research that suggests that parents' primary interests in attending PFIs relate more to general parenting than health-promotion specific topics (Haines *et al.*, 2012). Nevertheless, the results from this study indicate that health promotion is a modifiable factor among a general parenting population where it may not be a primary concern. It has long been recognized that parents are among their child's earliest and most influential educators, and this study lends further support to their role as health educators.

Parents provide the environments and reinforcements for everyday health behaviors and, as such, should be provided with easy-to-use advice on evidence-informed strategies to help foster their children's positive health behaviors. Given the important public health benefits of promoting children's well-being (Prinz, 2016; Sanders, 2008) and the paucity of PFIs that include physical health-promotion content (Gerards *et al.*, 2011), disseminating quality, universal PFIs with physical health-promotion content is imperative. The THRIVE Initiative seeks to meet this public health need by providing communities with a series of high-quality, health-promoting PFIs for parents of children from birth through adolescence. Through this dissemination process, the goal is to foster resourceful parents, resilient children, and ready families. Grow, for parents of five- to ten-year-olds, is the first of these PFIs to be developed, and it appears to have promise for accomplishing the goals of the THRIVE Initiative.

Future research on Grow involves conducting a large-scale, quasi-experimental study to better understand the program's effect on relevant participant outcomes and the duration of those effects. This study will involve implementing Grow in communities with large populations of military families as the authors are interested in studying the efficacy of universal PFIs for this population. The study will also seek to examine mediators and moderators of program impact to better understand how, for whom and under what conditions the program works. For example, is this program more likely to positively impact parents who have a high investment in their family's health, parents who perceive their families to be at risk in terms of specific health behaviors, families who are at risk for or who are overweight or parents who perceive that their child has behavioral issues? Future research will also focus on validating parent proxy measures of child health behaviors (e.g. screen time use, fruit and vegetable consumption) against objective measures. In addition, in an effort to help increase the reach and public health impact of Grow, an online version is currently being developed. Once Grow Online is ready, a proof of concept study will be conducted to examine its feasibility and impact on participant outcomes.

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References

5210 Let's Go (2012), "Healthy habits questionnaire (ages 2–9)", available at: www.letsgo.org/wp-content/uploads/5210-Healthy-Habits-Questionnaire-Ages-2-to-91.pdf (accessed February 2, 2015).

Alfredsson, E.K. and Broberg, A.G. (2016), "Universal parent support groups for parents of adolescents: which parents participate and why?", *Scandinavian Journal of Psychology*, Vol. 57 No. 2, pp. 177-184, doi: 10.1111/sjop.12278.

American Public Health Association, Committee on Child Health (1955), *Health Supervision of Young Children: A Guide for Practicing Physicians and Child Health Conference Personnel*, American Public Health Association, New York, NY.

Arnold, D.S., O'Leary, S.G., Wolff, L.S. and Acker, M.M. (1993), "The parenting scale: a measure of dysfunctional parenting in discipline situations", *Psychological Assessment*, Vol. 5 No. 2, pp. 137-144, doi: 10.1037/1040-3590.5.2.137.

Axford, N., Lehtonen, M., Kaoukji, D., Tobin, K. and Berry, V. (2012), "Engaging parents in parenting programs: lessons learned from research and practice", *Children and Youth Services Review*, Vol. 34 No. 10, pp. 2061-2071, doi: 10.1016/j.childyouth.2012.06.011.

Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.

Berry, J.O. and Jones, W.H. (1995), "The parental stress sale: initial psychometric evidence", *Journal of Social and Personal Relationships*, Vol. 12 No. 3, pp. 463-472, doi: 10.1177/0265407595123009.

Birch, L.L., Fisher, J.O., Grimm-Thomas, K., Markey, C.N., Sawyer, R. and Johnson, S.L. (2001), "Confirmatory factor analysis of the child feeding questionnaire: a measure of parental attitudes, beliefs and practices about child feeding and obesity proneness", *Appetite*, Vol. 36 No. 3, pp. 201-210, doi: 10.1006/appe.2001.0398.

Burdette, H.L., Whitaker, R.C. and Daniels, S.R. (2004), "Parental report of outdoor playtime as measure of physical activity in preschool-aged children", *Archives of Pediatrics & Adolescent Medicine*, Vol. 158 No. 4, pp. 353-357, doi: 10.1001/archpedi.158.4.353.

Campis, L.K., Lyman, R.D. and Prentice-Dunn, S. (1986), "The parental locus of control scale: development and validation", *Journal of Clinical Child Psychology*, Vol. 15 No. 3, pp. 260-267, doi: 10.1207/s15374424jccp1503_10.

Carr, A. (2014), "The evidence base for family therapy and systemic interventions for child-focused problems", *Journal of Family Therapy*, Vol. 36 No. 2, pp. 107-157, doi: 10.1111/1467-6427.12032.

Chorpita, B.F., Daleiden, E.L. and Weisz, J.R. (2005), "Identifying and selecting the common elements of evidence based interventions: a distillation and matching model", *Mental Health Services Research*, Vol. 7 No. 1, pp. 5-20, doi: 10.1007/s11020-005-1962-6.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Erlbaum, Hillsdale, NJ.

Czajkowski, S.M., Powell, L.H., Adler, N., Naar-King, S., Reynolds, K.D., Hunter, C.M., Laraia, B., Olster, D.H., Perna, F.M., Peterson, J.C. and Epel, E. (2015), "From ideas to efficacy: the ORBIT model for developing behavioral treatments for chronic diseases", *Health Psychology*, Vol. 34 No. 10, pp. 971-982, doi: 10.1037/hea0000161.

Czymoniewicz-Klippel, M.T., Chesnut, R.P., DiNallo, J.M. and Perkins, D.F. (2017), "Understanding the implementation of the Grow! parenting program: findings from a mixed methods pilot study", *Children and Youth Services Review*, Vol. 82, pp. 99-107, doi: 10.1016/j.childyouth.2017.09.016.

Czymoniewicz-Klippel, M.T., Chesnut, R.P., DiNallo, J.M. and Perkins, D.F. (2018), "Evidence-informed program development: using a common components approach to develop universal parenting programs for U.S. military and civilian families", *Children and Youth Services Review*, Vol. 90, pp. 166-177, doi: 10.1016/j.childyouth.2018.05.023.

Daniels, S.R. and Hassink, S.G., and Committee on Nutrition (2015), "The role of the pediatrician in primary prevention of obesity", *Pediatrics*, Vol. 136 No. 1, pp. e275-e292, doi: 10.1542/peds.2015-1558.

Dawson-McClure, S., Brotman, L.M., Theise, R., Palamarr, J.J., Kamboukos, D., Barajas, R.G. and Calzada, E.J. (2014), "Early childhood obesity prevention in low-income, urban communities", *Journal of Prevention & Intervention in the Community*, Vol. 42 No. 2, pp. 152-166, doi: 10.1080/10852352.2014.881194.

De Lepeleere, S., De Bourdeaudhuij, I., Cardon, G. and Verloigne, M. (2017), "The effect of an online video intervention 'movie models' on specific parenting practices and parental self-efficacy related to children's physical activity, screen-time and healthy diet: a quasi experimental study", *BMC Public Health*, Vol. 17, doi: 10.1186/s12889-017-4264-1.

Donelan-McCall, N. (2017), "Parenting and home visiting interventions", in Votruba-Drzal, E. and Dearing, E. (Eds), *The Wiley Handbook of Early Childhood Development Programs, Practices, and Policies*, John Wiley & Sons, West Sussex, pp. 310-329.

Dwyer, S.B., Nicholson, J.M. and Battistutta, D. (2006), "Parent and teacher identification of children at risk of developing internalizing or externalizing mental health problems: a comparison of screening methods", *Prevention Science*, Vol. 7 No. 4, pp. 343-357, doi: 10.1007/s11121-006-0026-5.

Elgar, F.J., Waschbusch, D.A., Dadds, M.R. and Sigvaldason, N. (2007), "Development and validation of a short form of the Alabama parenting questionnaire", *Journal of Child and Family Studies*, Vol. 16 No. 2, pp. 243-259, doi: 10.1007/s10826-006-9082-5.

Fakhouri, T.H.I., Hughes, J.P., Brody, D.J., Kit, B.K. and Ogden, C.L. (2013), "Physical activity and screen-time viewing among elementary school-aged children in the United States from 2009 to 2010", *JAMA Pediatrics*, Vol. 167 No. 3, pp. 223-229, doi: 10.1001/2013.jamapediatrics.122.

Field, A. (2013), *Discovering Statistics Using IBM SPPSS Statistics*, 4th ed., Sage, Thousand Oaks, CA.

Finders, J.K., Diaz, G., Geldhof, G.J., Sektnan, M. and Rennekamp, D. (2016), "The impact of parenting education on parent and child behaviors: moderators by income and ethnicity", *Children and Youth Services Review*, Vol. 71, pp. 199-209, doi: 10.1016/j.childyouth.2016.11.006.

Fisher, J.O. and Birch, L.L. (1999), "Restricting access to foods and children's eating", *Appetite*, Vol. 32 No. 2, pp. 405-419, doi: 10.1006/appe.1999.0231.

Forgatch, M.S. and Kjobli, J. (2016), "Parent management training—Oregon model: adapting intervention with rigorous research", *Family Process*, Vol. 55 No. 3, pp. 500-513, doi: 10.1111/famp.12224.

Forgatch, M.S., Bullock, B.M. and Patterson, G.R. (2004), "From theory to practice: increasing effective parenting through role-play", in Steiner, H. (Ed.), *Handbook of Mental Health Interventions in Children and Adolescents: An Integrated Developmental Approach*, Jossey-Bass, San Francisco, CA, pp. 782-813.

Gerards, S.M.P.L., Sleddens, E.F.C., Dagnelie, P.C., de Vries, N.K. and Kremers, S.P.J. (2011), "Interventions addressing general parenting to prevent or treat childhood obesity", *International Journal of Pediatric Obesity*, Vol. 6 No. 2, pp. e28-e45, doi: 10.3109/17477166.2011.575147.

Ginsburg, K. and Jablow, M.M. (2011), *Building Resilience in Children and Teens: Giving Kids Roots and Wings*, 2nd ed., American Academy of Pediatrics, Elk Grove Village, IL.

Goodman, A., Lamping, D.L. and Ploubidis, G.B. (2010), "When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the strengths and difficulties questionnaire (SDQ): data from British parents, teachers and children", *Journal of Abnormal Child Psychology*, Vol. 38 No. 8, pp. 1179-1191, doi: 10.1007/s10802-010-9434-x.

Haines, J., Mayorga, A.M., McDonald, J., O'Brien, A., Gross, D., Taveras, E.M., Epee-Bounya, A. and Gillman, M.W. (2012), "Embedding weight-related messages within a general parenting programme: development and feasibility evaluation of parents and tots together", *Early Child Development and Care*, Vol. 182 No. 8, pp. 951-965, doi: 10.1080/03004430.2012.678592.

Institute of Medicine (2009), "Preventing mental, emotional, and behavioral disorders among young people", available at: www.nap.edu/catalog/12480/preventing-mental-emotional-and-behavioral-disorders-among-young-people-progress (accessed April 19, 2018).

Jones, D.J., Greenberg, M.T. and Crowley, D.M. (2015), "Early social-emotional functioning and public health: the relationship between kindergarten social competence and future wellness", *American Journal of Public Health*, Vol. 105 No. 11, pp. 2283-2290, doi: 10.2105/AJPH.2015.302630.

Lerner, R.M., Brentano, C., Dowling, E.M. and Anderson, P.M. (2002), "Positive youth development: thriving as the basis of personhood and civil society", *New Directions for Youth Development*, Vol. 95 No. 3, pp. 11-33, doi: 10.1002/yd.14.

Lindsay, A.C., Sussner, K.M., Kim, J. and Gortmaker, S. (2006), "The role of parents in preventing childhood obesity", *Future of Children*, Vol. 16 No. 1, pp. 169-186.

Long, N. (2007), "Learning from experience: shifting from clinical parent training to broader parent education", *Clinical Child Psychology and Psychiatry*, Vol. 12 No. 3, pp. 385-392, doi: 10.1177/1359104507078470.

Moffitt, T.E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R.J., Harrington, H., Houts, R., Poulton, R., Roberts, B.W., Ross, S., Sears, M.R., Thomson, M., Caspi, A. and Heckman, J.J. (2011), "A gradient of childhood self-control predicts health, wealth, and public safety", *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 108 No. 7, pp. 2693-2698, doi: 10.1073/pnas.1010076108.

Monti, J.D., Rudolph, K.D. and Abaied, J.L. (2014), "Contributions of maternal emotional functioning to socialization of coping", *Journal of Social and Personal Relationships*, Vol. 31 No. 2, pp. 247-269, doi: 10.1177/0265407513492304.

Morgan, N.R., Davis, K.D., Richardson, C.B. and Perkins, D.F. (2018), "Common components analysis: an adapted approach for evaluating programs", *Evaluation and Program Planning*, Vol. 67 No. 1, pp. 1-9, doi: 10.1016/j.evalprogplan.2017.10.009.

National Cancer Institute (2015), "Usual dietary intakes: food intakes, US population, 2007–10", available at: http://appliedresearch.cancer.gov/diet/usualintakes/pop/2007-10/#findings (accessed November 1, 2017).

Olds, D.L. (2006), "The nurse-family partnership: an evidence-based preventive intervention", *Infant Mental Health Journal*, Vol. 27 No. 1, pp. 5-25, doi: 10.1002/imhj.20077.

Oronoz, B., Alonso-Arbiol, I. and Balluerka, N. (2007), "A Spanish adaptation of the parental stress scale", *Psicothema*, Vol. 19 No. 4, pp. 687-692.

Perou, R., Bitsko, R.H., Blumberg, S.J., Pastor, P., Ghandour, R.M., Gfroerer, J.C., Hedden, S.L., Crosby, A.E., Visser, S.N., Schieve, L.A. and Parks, S.E. (2013), "Mental health surveillance among children—United States, 2005–2011", *Morbidity and Mortality Weekly Report Surveillance Summary*, Vol. 62 No. S2, pp. 1-35.

Prinz, R.J. (2016), "Parenting and family support within a broad child abuse prevention strategy", *Child Abuse and Neglect*, Vol. 51, pp. 400-406, doi: 10.1016/j.chiabu.2015.10.015.

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., Griffey, R. and Hensley, M. (2011), "Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda", *Administration and Policy in Mental Health and Mental Health Services Research*, Vol. 38 No. 2, pp. 65-76, doi: 10.1007/s10488-010-0319-7.

Reedtz, C., Martinussen, M., Jorgensen, F.W., Handegard, B.H. and Morch, W. (2011), "Parents seeking help in child rearing: who are they and how do their children behave?", *Journal of Children's Services*, Vol. 6 No. 4, pp. 264-274, doi: 10.1108/17466661111190956.

Rodrigo, M.J., Almeida, A., Spiel, C. and Koops, W. (2012), "Introduction: evidence-based parent education programmes to promote positive parenting", *European Journal of Developmental Psychology*, Vol. 9 No. 1, pp. 2-10, doi: 10.1080/17405629.2011.631282.

Rosinger, A., Herrick, K., Gahche, J. and Park, S. (2017), *Sugar-Sweetened Beverage Consumption Among US Youth, 2011–2014*, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, Hyattsville, MD.

Runyan, D.K., Shankar, V., Hassan, F., Hunter, W.M., Jain, D., Paula, C.S., Bangdiwala, S.I., Ramiro, L.S., Munoz, S.R., Vizcarra, B. and Bordin, I.A. (2010), "International variations in harsh child discipline", *Pediatrics*, Vol. 126 No. 3, pp. e1-e11, doi: 10.1542/peds.2008-2374.

Sanders, M.R. (2008), "Triple p-positive parenting program as a public health approach to strengthening parenting", *Journal of Family Psychology*, Vol. 22 No. 4, pp. 506-517, doi: 10.1037/0893-3200.22.3.506.

Sanders, M.R., Markie-Dadds, C., Rinaldis, M., Firman, D. and Baig, N. (2007), "Using household survey data to inform policy decisions regarding the delivery of evidence-based parenting interventions", *Child: Care, Health and Development*, Vol. 33 No. 6, pp. 768-783, doi: 10.1111/j.1365-2214.2006.00725.x.

Satter, E. (2014), "Testing Satter's division of responsibility in feeding in the context of restrictive snack-management practices", *American Journal of Clinical Nutrition*, Vol. 100 No. 3, pp. 986-987, doi: 10.3945/ajcn.114.091512.

Satter, E.M. (1986), "The feeding relationship", *Journal of the American Dietetic Association*, Vol. 86 No. 3, pp. 352-356.

Sleddens, E.F.C., Gerards, S.M.P.L., Thijs, C., De Vries, N.K. and Kremers, S.P.J. (2011), "General parenting, childhood overweight and obesity-inducing behaviors: a review", *International Journal of Pediatric Obesity*, Vol. 6 No. 2, pp. e12-e27, doi: 10.3109/17477166.2011.566339.

Thorslund, K., Hanse, J.J. and Axeberg, U. (2017), "Do parents of adolescents request the same universal parental support as parents of younger children?: a random sample of Swedish parents", *Scandinavian Journal of Public Health*, Vol. 45 No. 5, pp. 492-502, doi: 10.1177/1403494817705233.

US Department of Health and Human Services, Office of Disease Prevention and Health Promotion (2010), "Healthy people 2020", available at: www.healthypeople.gov/ (accessed April 4, 2017).

US National Library of Medicine (2017), "Screen time and children", available at: https://medlineplus.gov/ency/patientinstructions/000355.htm (accessed November 1, 2017).

Walton, K., Filion, A.J., Gross, D., Morrongiello, B., Darlington, G., Simpson, J.R., Hou, S. and Haines, J. (2015), "Parents and tots together: pilot randomized controlled trial of a family-based obesity prevention intervention in Canada", *Canadian Journal of Public Health*, Vol. 106 No. 8, pp. e555-e562, doi: 10.17269/CJPH.106.5224.

Waylen, A., Stallard, N. and Stewart-Brown, S. (2008), "Parenting and health in mid-childhood: a longitudinal study", *European Journal of Public Health*, Vol. 18 No. 3, pp. 300-305, doi: 10.1093/eurpub/ckm131.

Wertz, J., Agnew-Blais, J., Caspi, A., Danese, A., Fisher, H.L., Goldman-Mellor, S., Moffitt, T.E. and Arseneault, L. (2018), "From childhood conduct problems to poor functioning at age 18 years: examining explanations in a longitudinal cohort study", *Journal of the American Academy of Child & Adolescent Psychiatry*, Vol. 57 No. 1, pp. 54-60, doi: 10.1016/j.jaac.2017.09.437.

West, F., Sanders, M.R., Cleghorn, G.J. and Davies, P.S.W. (2010), "Randomised clinical trial of a family-based lifestyle intervention for childhood obesity involving parents as the exclusive agents of change", *Behaviour Research and Therapy*, Vol. 48 No. 12, pp. 1170-1179, doi: 10.1016/j.brat.2010.08.008.

Wilson, L., Lero, D., Smofsky, A., Gross, D. and Haines, J. (2016), "Parents Working Together: development and feasibility of a workplace-based program for parents that incorporates general parenting and health behaviour messages", *BMC Public Health*, Vol. 16 No. 1, available at: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3817-z

Wright, D., Wimbush, E., Jepson, R. and Doi, L. (2016), "Six steps in quality intervention development (6SQuID)", *Journal of Epidemiology and Community Health*, Vol. 70 No. 5, pp. 520-525, doi: 10.1136/jech-2015-205952.

Further reading

Rhodes, R.E., Berry, T., Craig, C.L., Faulkner, G., Latimer-Cheung, A., Spence, J.C. and Tremblay, M.S. (2013), "Understanding parental support of child physical activity behavior", *American Journal of Health Behavior*, Vol. 37 No. 4, pp. 469-477, doi: 10.5993/AJHB.37.4.5.

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