Patterns of participation in the Grow parenting program

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(Information about the authors can be found at the end of this article.)

Abstract

Purpose – *Employing brief, low-intensity, face-to-face parenting programs can result in improvements in parenting and child behavior; however, their usefulness is often limited by low participation rates. Online technologies are increasingly presented as a panacea for promoting program reach in a cost-effective way. The extant literature, however, provides limited guidance on issues around the implementation of online parenting programs. Grow is a universal, health-promoting parenting program that targets families with 5–10 year olds and was developed for face-to-face delivery and then adapted for a web-based format. The purpose of this paper is to present implementation results from feasibility proof of concept studies of Grow Face-to-Face and Grow Online and explores issues regarding mode of delivery and parent participation.*

Design/methodology/approach – *Data were gathered from participants using attendance records, end-of-module/session surveys and semi-structured, in-depth interviews, and were examined using descriptive statistics and inductive thematic analysis.*

Findings – *Findings suggest that, compared to the online implementation, recruitment was more difficult for the face-to-face implementation. Conversely, retention in the online program was poorer than in the face-to-face program. Participants from both programs self-reported high levels of engagement and satisfaction. Parents who completed Grow Online expressed a desire for more interpersonal interactions, which suggests a possible need for hybrid programs that combine online technologies with traditional face-to-face modes of delivery.*

Originality/value – *These findings challenge the idea that the internet can fully address barriers to parenting program participation by showing that while parents may sign up more readily for an online program, they may struggle to complete all modules. This is problematic as program dosage can influence parent and child outcomes.*

Keywords *Parenting, Participation, Programme implementation*

Paper type *Research paper*

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The rise of children who are overweight or obese is a serious public health concern. In the USA, the percentage of children with obesity has more than tripled since the 1970s (Fryar *et al*., 2014). Today, an estimated one in five school-aged children is obese (Ogden *et al.,* 2016). Childhood obesity has sobering and longstanding consequences for not only the individual child but also for families, communities and society. For instance, the estimated direct costs of treating obesity-related illnesses in children are $14.1bn for annual prescription drugs, emergency room visits and outpatient expenses (Trasande and Chatterjee, 2009) and $237.6m for inpatient expenses (Trasande *et al.*, 2009). While genetic and hormonal factors can play a role, lifestyle issues, namely, too little activity, too many calories from food and drink and an improper diet, are the main contributors to childhood obesity.

Because of the significant role parents play in shaping their child's health-related behaviors (Lindsay *et al*., 2006), they are also important to target in prevention and intervention work (see e.g. Golan, 2006). Parents can influence their children's obesogenic behaviors through general parenting styles (i.e. their global orientation to childrearing; Sleddens *et al.,* 2011) and practices (i.e. specific behaviors used to accomplish a goal; Ventura and Birch, 2008). Accordingly, parenting programs that integrate general parenting content with health behavior messaging are potentially an extremely useful childhood obesity prevention strategy. However, most universal parenting programs (i.e. programs focused on providing services and support to the general population as opposed to subsets of the population identified by risk level; Institute of Medicine, 2009) do not include specific health promotion content (De Lepeleere *et al*., 2017),

especially those programs implemented in the US context (Chesnut *et al.*, 2018). The Grow parenting program, which targets parents of 5–10 year olds, seeks to redress this gap.

Grow is part of THRIVE, an initiative spearheaded by scientists from the Clearinghouse for Military Family Readiness at The Pennsylvania State University (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. In 2013, the DoD requested the Clearinghouse create a series of developmentally comprehensive, evidence-informed, universal, parenting programs for military and civilian families with children from birth to 18 years old. Given the mobility of military families, affordability with respect to training, implementation, and evaluation costs was considered a priority. This precluded the adoption of an existing evidence-based parenting program. Parenting practices that promote child physical health were also regarded as essential given their linkage to the long-term well-being of children and the increasing problem of overweight and obesity in military (Tanofsky-Kraff *et al.,* 2013) and civilian (Skinner *et al.,* 2018) communities. Accordingly, child physical health promotion strategies were planned for inclusion in each program. In partnering with the Clearinghouse, the DoD's ultimate goal was to support the development of a suite of evidence-based parenting programs, focused on three learning domains (i.e. positive parenting practices, parent and child stress management, and child physical health promotion), for worldwide use by all US military services (see Table I).

At the DoD's request, and similar to most evidence-based parenting programs, Grow was developed for delivery in a face-to-face group setting (Grow F2F) and, subsequently, tested in a proof of concept study that examined pre- to post-program change in participants on parenting, stress management and health promotion-related measures. The findings of this study found significant change across all three learning domains (i.e. parent reported decreases in suboptimal discipline and feeding practices, stress and child internalizing behavior, as well as parent reported increases in their sense of control in managing behavior, coping socialization, child outdoor playtime and health recommendations met; see Chesnut *et al.*, 2018). Analysis of the implementation data collected during implementation also demonstrated that Grow F2F can indeed be implemented effectively in a community setting (e.g. participants saw Grow F2F as acceptable and appropriate, and were highly engaged in each session; Czymoniewicz-Klippel *et al.*, 2017).

Given Grow F2F's preliminary and feasibility effectiveness, through a series of discussions between the DoD and the Clearinghouse, a decision was made to adapt Grow for online delivery to potentially improve reach among US military families (Grow Online). Transitioning parenting programs into an online delivery format is becoming commonplace as a number of traditional programs have been adapted or are in the process of being adapted for online delivery (Nieuwboer *et al*., 2013; see table on p. 1825). The need for better access to universal parenting programs has been recognized by American professional bodies (e.g. American Psychological Association, 2009; National Research Council and Institute of Medicine, 2009) and international organizations (e.g. World Health Organization, 2009). Currently, parents face multiple barriers to completing face-to-face parenting programs. These include logistical challenges (e.g. scheduling

Table I THRIVE Initiative Program areas

Program area	*Take Root*		*Sprout*	*Grow*		*Branch Out*
Program	Take Root Online	Take Root Home Visitation	Sprout Online	Grow Face-to-Face	Grow Online	Branch Out
Target population: Parents and caregivers of …	Infants and toddlers (0–3 years)	Infants and toddlers (0–3 years) at risk for maltreatment	Preschoolers (3–5 years)	Grades K[a]–5 (5–10 years)	Grades K–5 (5–10 years)	Grades 6–8 (10–14 years) Grades 9–12 (14–18 years)
Mode of delivery	Online	Delivered by home visitors	Online	Face-to-Face	Online	TBD[b]
Level of prevention	Universal	Targeted	Universal	Universal	Universal	Universal

Notes: [a]K, kindergarten; [b]TBD, to be determined

conflicts and time demands; Heinrichs *et al*., 2005) and constraints related to the expectations and attitude of the individual parent, quality of program delivery, and social and cultural barriers (Mytton *et al*., 2014). The internet indeed appears to eliminate many, though not all, of the barriers common to face-to-face programs. Further, parents appear to have a preference for the convenience of asynchronously accessing parenting information from home. For example, in a study of parents' preferred formats for receiving parenting information, Metzler *et al*. (2012) found that self-administered delivery formats (e.g. television, online programs and written materials) were viewed more favorably than the formats traditionally used in evidence-based programs (i.e. home visits, therapists and parenting groups) by parents of children with and without clinical levels of problem behaviors.

Online technologies, however, are not without their limitations, including a small evidence base (see Nieuwboer *et al*., 2013, for a recent meta-analytic review of online parenting programs). Thus, the impact of online parenting programs on parents and children is still uncertain. In addition, the facilitators and challenges of implementing such programs in general parenting populations have received limited attention in the literature.

This paper shares the Clearinghouse's experiences in implementing Grow F2F and Grow Online while focusing on issues of parent participation (i.e. recruitment, retention, satisfaction and engagement). This emphasis allows for critical exploration of the degree to which online, as opposed to face to face, delivery modes are able to foster participation in and increase the reach of universal parenting programs. The paper presents data from two feasibility studies, each of which has its own set of limitations relating primarily to study design, alongside sample size and characteristics (for more detail, see Discussion section). Accordingly, the findings reported here must be interpreted with these limitations in mind.

Adapting Grow F2F for online delivery

Grow F2F consists of 5 weekly, 90-min group sessions that are delivered to about 10 to 15 parent/caregiver participants in a community setting by a certified facilitator using a video-based curriculum. Weekly text messages, supporting videos and homework activities are also included in the curriculum to encourage parents to practice the skills developed during the sessions. Grow F2F aims to teach parents the factors that build resiliency and the behaviors expected for children at this age and to engage the 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, teaching emotional coping and reinforcing physical activity and feeding practices that promote healthy lifestyles.

As previously discussed, Grow F2F was adapted for online delivery in an attempt to increase reach and access to the program and to reduce logistical barriers. Adaptation refers to any modifications made to a program that involve changes in the approach to delivery mode; the nature of the intervention; or a component of the treatment to accommodate cultural beliefs, attitudes and behaviors of the priority population (Whaley and Davis, 2007). Research on the adaptation of evidence-based programs suggests that well-designed adaptations can enhance the effect, cultural relevance and sustainability of programs (Bernal, 2006; Castro *et al*., 2004, 2010). Still, a substantial body of research illustrates the importance of implementation fidelity for replicating and sustaining the program benefits and, particularly, for preserving an intervention's core components (Durlak, 2013; Chorpita *et al*., 2007; Kaminski *et al*., 2008; Rotheram-Borus *et al.,* 2013). To resolve the tension between fidelity and adaptation, Chambers and Norton (2016) suggested attention be turned toward advancing the science of adaptation in the context of implementation with the goal of developing an *adaptome* of knowledge.

Decisions on how to adapt Grow F2F to an online environment were informed by the extant literature on program adaptation and existing evidence-based online parenting programs (e.g. ideal session length; Sanders *et al.,* 2012). Modifications were made to the number and length of sessions (it was thought that dividing the program content into smaller chunks may promote program retention), as well as to the content and delivery system of the prompts and the format of the reflection activities that start each session due to the change in mode of delivery of the

program (i.e. the text-based prompts and facilitator-led discussions used in Grow F2F were eliminated, replaced by e-mail reminders and online open-ended reflective questions in Grow Online; see Table II).

The knowledge components that comprise the program sessions and materials, however, were not adapted. No content on general parenting or health behaviors was added to or removed to maximize the comparability of the program versions. Given that adjustments were made to the length and number of sessions, content fidelity was preserved by reordering the flow of the videos and using the video scripts to generate the on-screen text. The reordering of the videos and program content was influenced, in part, by lessons learned from Grow F2F. For example, in Grow F2F, the final session is devoted to health promotion-specific content; however, it was determined that this placing made it seem that health promotion was an after-thought, as opposed to a core-learning domain. Also, given that health behaviors can be slow to change ("Behavior Change Fast and Slow," 2015), placing this material at the end of the program may make it more difficult to detect the program's impact on health promotion outcomes. Therefore, in Grow Online, the specific health promotion information highlighted in the program is placed in the middle (i.e. Session 4). In-session activities (i.e. multiple choice and short-answer questions, drag-and-drops and fill-in-the-blanks) were added to the Grow Online modules to mirror the individual and group activities that are included in Grow F2F. This approach maintained the program's core components while making adjustments deemed necessary to make online delivery feasible.

Study design and methods

The present investigation draws on data collected from feasibility implementations of Grow F2F and Grow Online. Grow F2F was implemented and evaluated in the Spring of 2015, whereas Grow Online was implemented and evaluated in the Summer of 2017. A single-group, pre- and post-test design was used in both studies to collect preliminary information on implementation (Proctor *et al.*, 2011) and treatments outcomes in a real-world setting. This paper reports on the participation-related data obtained in those studies.

Feasibility Study 1: Grow F2F

Grow F2F was delivered to two groups of parents at two community sites in central Pennsylvania. Site A was a child development center, and Site B was a local YMCA. 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; they received ongoing support and coaching during 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 on the program. At both sites, program sessions were held in the evening, childcare was provided, and families and facilitators ate a meal together before each session. To foster participant retention throughout the program, the facilitators

Table II Overview of the adaptation of Grow F2F to Grow Online

Program component	*Grow F2F*	*Grow Online*
Mode of delivery	Face-to-face facilitator-led group sessions	Web-based self-paced sessions
Number of sessions	5	8
Length of sessions	90 min each	Approx. 35 min each (range 25–40 min)
Prompts	Text-based prompts to encourage parents to practice at home	E-mail prompts to encourage program retention
Reflection activities following at home skills practice	Facilitator-led discussions at the opening of the following session, focused on how skills practice went at home	Written self-reflections built into online modules, focused on how skills practice went at home
In-session activities	Interactive activities, completed individually or as small or large groups, dispersed throughout sessions	Interactive activities built into online modules (i.e. multiple choice and short-answer questions, drag-and-drops and fill-in-the-blanks)

arranged for the participants to have the opportunity to receive door prizes and other small incentives (e.g. free swim time at the YMCA, Lego kits and gift certificates to local restaurants).

At the end of each session, participants completed a weekly exit card, which was designed to assess implementation outcomes (Proctor *et al.,* 2011). More specifically, these exit cards asked participants to rate, on a five-point Likert-type scale, how satisfied they were with their facilitator's delivery of the session and how engaged they were during the session. For the engagement item, participants were prompted to think about how actively they listened and responded to facilitator questions. The facilitators took attendance at each session to track participant retention.

Feasibility Study 2: Grow Online

Grow Online was delivered to parents via an online learning management system, and participants were asked to complete the eight sessions over ten weeks (i.e. approximately one session per week). Participants were sent login information the day before the program went live and were instructed to test their login credentials to ensure they worked properly. The following day, participants were notified that the program was open and were reminded of the targeted completion date. Following program implementation, a subset of participants was selected to participate in a post-program interview for which they received a $20 e-gift card. These interviews focused on eliciting participants' experiences with the program and its implementation in a more nuanced fashion than was possible through other assessments (e.g. surveys).

Similar to Grow F2F, at the end of every session, participants completed a brief survey that was designed to measure implementation outcomes (Proctor *et al.,* 2011). These surveys contained satisfaction and engagement questions that were similar but not identical to the questions contained in the F2F weekly exit cards. The satisfaction question focused on general satisfaction with the module with no prompting to consider specific aspects. The change in item wording was due to the realization that the Grow F2F item was too narrowly focused on the program facilitator. For the engagement question, participants were prompted to consider how actively they listened to the videos and participated in the session's activities. This modification was due to the change in delivery modality. Session completion status was tracked by the website.

Quantitative results

Recruitment

Recruitment for Grow F2F at both sites occurred over a one-month period leading up to program start and was spearheaded by the coordinating facilitators. The goal was to start recruitment three months before the program's start date. The finalization of site selection within each community took longer than anticipated and, consequently, reduced the recruitment period by two months. During the one-month recruitment period, multiple strategies were employed to attract potential participants, including advertising the program through newspapers and radio, coordinating with local school districts and community organizations, placing posters on community boards, and handing out fliers at community events. Eligibility criteria included being at least 18 years old at the start of the program and occupying a caregiver role for at least one child who was between the ages of 5 and 10. In total, 36 individuals registered for the program – 16 at Site A and 20 at Site B.

Recruitment for Grow Online occurred during a two-week window preceding the program's start date. Recruitment occurred through word of mouth and by posting information about the study on two community groups' Facebook pages. At the end of the recruitment period, 75 participants had registered for the program. Detailed participant demographics for both studies can be found in Table III with information about group differences. While participants across groups were similar on a number of demographic characteristics, differences were found for levels of age, education, occupation, military affiliation and marital status.

Retention

Of the 36 participants who registered for Grow F2F, 10 did not attend any sessions. Table IV details the number of sessions attended by the remaining 26 participants. On average, those who

Table III Participant demographics

Characteristic	*Grow F2F (n = 26)*	*Grow Online (n = 41)*	*Grow Online interviews (n = 8)*
Gender (%)			
Female	80.8[a]	95.1[a]	85.7[a]
Male	19.2[a]	4.9[a]	14.3[a] (*n* = 7)
Age (%)			
18–24	11.5[a]	2.4[a]	0[a]
25–34	42.3[a]	26.8[a]	25[a]
35–44	30.8[a]	63.4[b]	62.5[a,b]
45 or older	15.3[a]	7.3[a]	12.5[a]
Race/Ethnicity (%)			
White	76[a]	86.5[a]	87.5[a]
Non-white	24[a] (*n* = 25)	13.5[a] (*n* = 37)	12.5[a]
Education (%)			
No high school diploma/GED	11.5[a]	0[a]	0[a]
High school diploma/GED	15.4[a]	4.9[a]	0[a]
Some college	23.1[a]	4.9[a]	0[a]
Vocational training	0[a]	4.9[a]	0[a]
College degree	50[a]	85.4[b]	100[b]
Occupation status (%)			
Full-time (paid)	42.3[a]	43.9[a]	50[a]
Part-time (paid)	15.4[a]	12.2[a]	0[a]
Stay-at-home parent	23.1[a]	43.9[a]	25[a]
Other	19.2[a]	0[b]	25[a]
Military affiliation			
Active duty	0[a]	16.2[a]	14.3[a]
National Guard or Reserve	0[a]	5.4[a]	0[a]
Former service member	0[a]	2.7[a]	0[a]
Spouse of a service member	0[a]	32.4[b]	57.1[b]
Civilian, no affiliation	100[a]	18.9[b]	0[b]
Other	0[a]	24.3[b] (*n* = 37)	28.6[b] (*n* = 7)
Marital status (%)			
Married	72[a]	95.1[b]	87.5[a, b]
Divorced	12[a]	2.4[a]	0[a]
Never married	8[a]	2.4[a]	12.5[a]
Other	8[a] (*n* = 25)	0[a]	0[a]
Family arrangement (%)			
Two-parent family	76.9[a]	95.1[a]	87.5[a]
Single-parent family	19.2[a]	2.4[a]	12.5[a]
Step family	3.8[a]	2.4[a]	0[a]
Target child			
Age (*M*, SD in years)	6.85[a] (1.06)	7.09[a] (1.69)	7.43[a] (2.23) (*n* = 7)
Male (%)	61.5[a]	59[a]	71.4[a]
Female (%)	38.5[a]	41[a] (*n* = 39)	28.6[a] (*n* = 7)

Note: Values sharing the same superscript are not statistically significantly different from each other at the 0.05 level

started the program attended about four sessions ($M = 3.96$, SD = 1.56). In total, 20 of the participants who started the program attended three or more sessions and, consequently, received more than half of the program. These participants also completed a post-program survey and were considered program completers.

Of the 75 participants who registered for Grow Online, 14 did not complete any of the session modules. In addition, 13 participants who consented to the study never started the program. Table IV summarizes the number of sessions completed by the remaining 48 participants who started Grow Online. On average, participants completed approximately five sessions ($M = 4.71$, SD = 3.58), but there was more variability around this estimate than the F2F estimate. As can be

Table IV Number of sessions attended/completed by program delivery method

	Grow F2F	*Grow Online*
0 sessions	0	9
1 session	4	8
2 sessions	2	2
3 sessions	1	2
4 sessions	3	2
5 sessions	16	0
6 sessions	–	0
7 sessions	–	0
8 sessions	–	25
Mean sessions attended/completed (SD)	3.96 (1.56)	4.71 (3.58)

Note: Means and SDs are based on number of participants who started the program (F2F: $n = 26$; Online: $n = 48$)

seen in Table IV, 21 participants who started the program completed less than half of the sessions with 17 completing none or only one of the sessions. In all, 27 participants received at least half of the program, and 25 completed all eight sessions.

During the implementation of Grow Online, two types of reminders were sent to participants to help them finish the program by the target end date. For those participants who were behind schedule based on their last login date (e.g. had not logged into the program in over 10 days), a reminder e-mail was sent to encourage participation. Only three reminders of this type were sent to an individual participant to avoid overwhelming them with communication. If inactivity continued after receiving the three reminder e-mails, the participant was removed from the study and considered a program drop-out. In total, 23 individuals received all three reminders, remained inactive and were dropped from the program. For participants who had been keeping pace with the program schedule, or had worked ahead, but whose last login date suggested they were at risk for falling behind schedule, a motivational e-mail was sent to acknowledge their positive progress and to encourage them to resume the program to meet the targeted completion date. A similar limit of three reminders for this type of communication was also planned, but no participants received all three motivational e-mail reminders.

Time between program start date and first session completion was found to be a significant predictor of overall program completion, χ^2 (1) = 11.28, df = 1, $p = 0.001$. The odds of completing the program were 8.47 times higher for those who logged in and completed the first session within one week of program start compared to those who took longer than a week or never completed the first session.

Only 25 participants completed all eight sessions, and 22 completed a post-program survey and were considered program completers. Participants were informed that the recommended pace for completing the program was one session per week. This pace provides participants with time to practice the skills at home and reflect on their experiences. None of the participants who completed the program, however, followed this recommendation. In fact, 17 participants took longer than recommended to complete the program, and 8 participants completed it more quickly.

Satisfaction and engagement

Table V presents satisfaction and engagement data for Grow F2F and Grow Online. For both program versions, participants reported high levels of satisfaction and engagement across all sessions. In terms of the average satisfaction and engagement scores across program sessions, Grow F2F ratings were higher than Grow Online ratings; however, only the difference between satisfaction scores reached statistical significance ($t(45) = 3.27$, $p = 0.002$).

Table V Satisfaction and engagement scores by program delivery method and session

	Grow F2F		*Grow Online*	
	Satisfaction	*Engagement*	*Satisfaction*	*Engagement*
Session 1	4.50 (0.51) $n = 24$	4.25 (0.74) $n = 24$	4.11 (0.67) $n = 36$	4.25 (0.69) $n = 36$
Session 2	4.60 (0.60) $n = 20$	4.35 (0.67) $n = 20$	4.40 (0.62) $n = 30$	4.40 (0.67) $n = 30$
Session 3	4.89 (0.32) $n = 18$	4.72 (0.46) $n = 18$	4.48 (0.58) $n = 27$	4.19 (0.88) $n = 27$
Session 4	4.84 (0.38) $n = 19$	4.63 (0.50) $n = 19$	4.37 (0.69) $n = 27$	4.37 (0.63) $n = 27$
Session 5	4.89 (0.32) $n = 18$	4.67 (0.59) $n = 18$	4.46 (0.51) $n = 24$	4.39 (0.89) $n = 23$
Session 6	–	–	4.17 (0.65) $n = 23$	4.29 (0.69) $n = 24$
Session 7	–	–	4.38 (0.49) $n = 24$	4.38 (0.58) $n = 24$
Session 8	–	–	4.54 (0.51) $n = 24$	4.46 (0.59) $n = 24$
Overall program	4.75 (0.31) $n = 20$	4.56 (0.36) $n = 20$	4.38 (0.43) $n = 27$	4.36 (0.49) $n = 27$

Notes: Overall program means based on number of participants who attended or completed at least half of the program. Scale: 1–5

Qualitative results

The poor retention rate for Grow Online triggered interest in further examining the factors behind participation in the program. Correspondingly, a succeeding qualitative data collection phase was added to the original pre- and post-test study design. Altogether, eight parents (seven mothers and one father) were purposively sampled via e-mail for telephone interviews with two members of the research team on the basis of their program completion status (i.e. completer, non-completer, or drop-out). During these interviews, of which eight were conducted (i.e. one with each recruited parent), a semi-structured interview schedule was used to prompt parents to discuss aspects of the Grow Online curriculum and implementation that may have facilitated or inhibited their engagement and retention in the program. The interviews lasted, on average, 40 min; all were recorded on MP3 with participant permission. Data were managed using the computer software package, NVivo 7, and an inductive thematic approach (Markovic, 2006) was used to identify recurrent emergent themes across the narratives. Recruitment ceased when inductive thematic saturation was achieved, i.e., when no new themes relating to facilitators and barriers to program participation could be identified (Saunders *et al*., 2018).

Facilitators to participation

Reminder e-mails. Overall, parents considered the reminder e-mails helpful for promoting participant engagement. Five parents reported that they were satisfied with the frequency, tone and mode of delivery of the reminders ("I appreciated them. They were […] it seemed like they were light but heartfelt. They didn't seem overbearing" (Mother, completer)), and several parents said they relied on the reminders to keep them on track with module completion ("Oh, thank god. Thank god. Because my life is nuts and I'd be like, 'Oh, thank god they sent me that! I gotta do that right now'" (Mother, completer)). Two parents suggested some revisions to the reminders. For instance, one parent suggested a decrease in number ("I mean no more than two per block. You know what I mean? Because once I get a reminder email I'm like, 'Oh, I'm delinquent. I need to get that done'" (Mother, non-completer)) and removal of the three-reminders-and-you're-out protocol ("I think maybe the reminder emails should be kind of

free chicken" (Mother, non-completer)) Similarly, another parent suggested modification to the perceived correctional:

> I felt like the reminders were, they weren't punitive, but they were a little more on the sense of you have to do this, you have this long left, you'll only get one more reminder then we are not reminding you anymore. Which I totally understand, and it wasn't negative, but if there was a little more encouragement rather than you're running out of time […] that would be helpful (Mother, drop-out).

This parent, and one other, also pointed to the absence of the program URL in the reminder e-mails, which was considered antithetical to streamlining the login process and encouraging retention.

Incentives. E-gift card incentives were valued by parents. All parents felt that these incentives were not necessary to promote program engagement but nice to receive ("I don't think it was required, but I thought it was a great incentive, yeah" (Mother, completer)) For instance, one parent was not eligible to receive incentives and, while this was only one of several factors, the fact that she was not going to be incentivized contributed to her program drop-out. Two parents appeared to be highly motivated by the monetary reward ("[…] the Amazon gift card. That was a good idea. That actually made me think, 'Oh, free money! I want to do this' " (Mother, non-completer)) Half of the parents discussed alternative forms of incentivizing, including badges and professional development credits, yet monetary incentives were unanimously preferred ("[…] the Amazon gift card is the perfect incentive, personally. Because you can get anything on Amazon and who doesn't shop on Amazon" (Mother, completer)) Further, a couple of parents suggested increasing the frequency of the incentives:

> […] some people, they go through the eight weeks and you get the one at the beginning but you didn't get the other one until the very end. Maybe not spacing it out so far? Because it kind of seemed like, you know, you got the one, that's the introductory thing, but then you had to do all the work to get the next. Maybe something at the halfway point to encourage you to keep going? To know that, well now you'll get the next thing (Mother, completer).

Additional resources. The researchers' suggestions of additional program resources, such as stand-alone topic-specific modules or worksheets and coloring pages for children were received positively by the three parents who were questioned on the topic. These parents also had their own ideas for extending the program materials ("Just some […] how about ideas for things to do with kids during the summer" (Mother, completer); "[…] other little practice things or little video reminder of a different clip or something" (Mother, non-completer); "[…] an online interactive game or cartoon or something, or little quiz or something" (Mother, completer)). But ultimately, the suggested additional resources were regarded as supplementary. Overall, parents were highly satisfied with the program content and materials.

Barriers to participation

Time burden. Time burden was the most commonly cited barrier to participation, mentioned by all bar two of the interviewed parents. Individually, the Grow Online modules were perceived as being of appropriate frequency and length. However, when viewed collectively, participating in the program was seen as a substantial time commitment:

> Well my initial reaction was, wow, that's a long commitment. Like a very long commitment. And actually, we moved from New York to Pennsylvania during this entire process. So, when I looked at the dates of when everything was due, it was either try to do as much as I can before we move or move and hope to have internet set up to complete it. Which goes back to wow, that's really long. But, and to be totally honest with you, if [name of friend] wasn't the one that asked me to do it, I don't know that I would have stuck with it because it was so long (Mother, completer).

One parent expressed feeling constrained by the suggested timeline for completing the program ("Like sometimes I would have two hours and I'd think 'Oh, I would like to do two of these now.' But because it wants me to go practice them, I couldn't proceed" (Mother, non-completer)). Another three spoke of how the self-paced nature of the program, while favorable on the one hand, minimized accountability and allowed for procrastination, especially when combined with the fact that program participation is voluntary. Further, half of the parents felt that completing the modules during the Summer was especially challenging because their children were out of

school, and their routines were disrupted. For military families in particular, the Summer months were regarded as a less desirable time since this is when relocating families tend to move to their new post (i.e. "PCS season").

Relevance of program content. Parents cited multiple reasons for losing motivation over the course of completing the modules. All parents felt that the program content was suitable for parents of children aged 5–10 years, though half mentioned that it was not always directly applicable to their individual parenting situation. For instance, three parents felt that some material was not as relevant due to their child's age ("I felt like when I went through it, a lot of it applied to my younger children" (Mother, completer)); two parents suggested that their child's temperament led to them having fewer parenting struggles ("I also understand that everyone's child is different, so there may be someone with a nine year old that needs those kinds of things. But my nine year old is pretty relaxed" (Mother, completer)) Two parents hypothesized that others may have dropped-out of the program, in part, because they perceived the program content to be less relevant, especially because parents cannot skip modules if they feel the content is not as useful to them.

Lack of interpersonal interaction. Another key factor that influenced motivation and accountability, discussed by all parents, was the program's lack of interpersonal interaction. Three parents independently expressed disappointment at not being able to connect with a professional or other parents during the course of the program; the remainder responded positively to the researchers' suggestion of incorporating professional and peer support elements into the program. Five parents appeared attracted by the potential of being able to share personal experiences with other parents ("And it's reassuring to know that others are going through the same things that you have" (Mother, completer)), while three parents expressed interest in engaging with a professional ("I thought several times as I was doing the program, 'Wow, it would be nice if I could actually talk to a professional'" (Mother, completer)) One parent wondered whether the relationship(s) created through a more interpersonal approach would promote initial login and ongoing engagement ("Yeah, I think that some people are going to be motivated to do it and just do it. But I think other people might need a little bit more of a push and I think that sense of connection can help with that' " (Mother, drop-out)).

Importantly, parents stressed that incorporating interpersonal elements should not be to the detriment of the self-paced nature of the program. For instance, two parents suggested incorporating only one or two face-to-face meetings or workshops into the curriculum, while one was interested in the idea of synchronous (e.g. videoconferencing), and another asynchronous (e.g. online discussion boards), online interactions. The convenience and flexibility of the program was perceived as fundamental to promoting retention.

Technical issues. Technical challenges incurred by parents during program completion were minimal. Two were unable to log in on specific devices but, upon contacting the designated IT support person, were able to quickly resolve the problem. Further, a couple commented on the unnecessary complexity of the login process ("I felt like there were just too many layers to get to where you needed to be each session. Like I just felt like it could have been a little cleaner" (Mother, completer)) Finally, two parents suggested technical improvements that would facilitate easier program access, such as creating an app for the program or posting the video clips on a Facebook page.

Discussion

Recent years have seen a surge of interest in the development of online parenting interventions as a means of expanding program reach, for example, as a means of addressing rising rates of childhood overweight and obesity. Emerging evidence suggests that online programs may be able to enhance parenting knowledge, attitudes, and skills and, in turn, child outcomes (Nieuwboer *et al*., 2013), though perhaps not to the same extent as face-to-face programs (Cotter *et al*., 2013). Accordingly, it seems their continuing promotion is cautiously warranted.

The extant literature, however, provides limited guidance on issues around the implementation of online parenting programs. Providers commonly face challenges in recruiting and retaining parents in face-to-face programs (Feil *et al*., 2008; Love *et al*., 2013), especially universal programs (see e.g. Heinrichs *et al*., 2005). The majority of online parenting programs target a specific group of parents

whose children experience a particular behavioral or mental health problem. Engaging parents whose child has an identified disorder or problem in an online targeted program arguably requires different recruitment and retention efforts than engaging the general parenting population in an online universal program that incorporates preventive health messaging and strategies.

The findings presented in this paper highlight participation issues relating to the implementation of a universal health-promoting parenting program that can be delivered face to face or online. Attendance data suggest that parent recruitment is more efficient for an online program in terms of time required and cost of recruitment strategies in the form of person hours, printing and advertising costs; however, retaining parents may be more difficult than in a face-to-face delivery. This is consistent with data from the online education field, which indicate widespread problems with student retention and course completion (Herbert, 2006; Allen and Seaman, 2015). During interviews, parents who completed Grow Online ($n = 5$) felt the main barriers to program participation included time burden, irrelevance of some program content and lack of interpersonal interaction. These parents' strong focus on time is not surprising. The Grow Online sessions are indeed shorter than those of Grow F2F (25–40 vs 90 min), and can be completed from home. Still, the program demands a longer time commitment (ten weeks as opposed to five weeks), which gives more opportunities for life events to intervene. Further, the participation barriers raised during interviews have been discussed in the broader parenting program literature (see e.g. Mytton *et al.*, 2014) and are a concern for any type of longitudinal research; accordingly, many techniques designed to increase parent engagement have been offered. These include providing participants with reminders via e-mail, text messaging, newsletters or individualized greeting cards; offering monetary or non-monetary incentives; engaging participants via social media; and incorporating regular parent–coach contact (Abshire *et al.*, 2017).

While a number of retention strategies exist, there is little information on how best to apply these strategies to online parenting programs. For example, results of these interviews, albeit limited, suggest that decreasing the program and/or session length may promote parent participation. However, the relationship between dosage and parent and child outcomes for online parenting programs is still unclear. How much online content do parents need to receive in order for significant effects to be found? More research is needed to determine how retention strategies that have been successful in other intervention contexts (e.g. adjusting session length) could be applied to online parenting programs.

Similarly, the interview data suggest that one possible solution for accommodating parents' desire for interpersonal interactions (e.g. to create a sense of community, learn through the experiences of others and seek professional advice) and flexibility may be the development of hybrid programs that combine online technologies with traditional face-to-face modes of delivery. Notably, however, those parents who expressed a desire for peer or professional supports reported a desire for only a small number of face-to-face interactions or access to asynchronous tools, such as online discussion boards or Q&A systems that can be used on an as-needed basis. Thus, it is possible flexibility trumps the perceived need among some parents for the supplementation of online content with opportunities for direct interpersonal interaction with either other parents or professionals. Still, questions remain, such as how much and what type of interpersonal interaction would serve to foster the implementation of hybrid, universal parenting programs?

Not all of these findings highlighted challenges with online delivery. Overall, parents' self-reported ratings of satisfaction and engagement were high for both groups, which suggests both modes of delivery were well received and can be useful for disseminating the program. A significant difference, favoring Grow F2F, was found for satisfaction; however, this finding should not be over interpreted. The satisfaction questions between the two program versions were not identical and tapped into different dimensions of satisfaction. For Grow F2F, the weekly satisfaction question focused on the facilitator's delivery of the program session, but, for Grow Online, the weekly satisfaction question focused strictly on satisfaction with session content. Thus, in Grow F2F, participants were prompted to think about how the facilitator conducted the session; whereas, in Grow Online, participants were prompted to think just about the material to which they were exposed. Perhaps parents who participated in Grow F2F had higher satisfaction ratings because they liked their facilitator not because they were genuinely more satisfied with the program than Grow Online participants.

Further, during the interviews, all parents spoke to their satisfaction with the monetary incentives that were offered to participants. However, in this implementation e-gift cards were not offered to promote program retention; rather, they were positioned as incentives for participants to complete the evaluation components of the study (i.e. pre- and post-test surveys). This raises the question of how retention rates may be impacted if program incentives are not offered; this is an issue of real concern seeing that retaining families in parenting programs can be difficult even when incentives for attendance and participation are offered (Axford *et al*., 2012). As identified through these data, one enhancement of program participation that should be strongly encouraged is the use of reminder e-mails, especially at the onset of program enrollment.

This study had several limitations. First, participant satisfaction and engagement were assessed in both studies with a single, self-report item that was developed by the research team. Further, item wording varied slightly between versions, which complicates the interpretation of participant differences on these variables between the programs. Second, these studies were conducted separately of each other, so participants were not able to choose their preferred delivery method. This prohibits any firm conclusions to be drawn regarding how participant preferences for receiving material may have impacted satisfaction, engagement and retention. In addition, Grow F2F and Grow Online participants differed on several demographic characteristics, such as age, education and military affiliation. What extent these inherent differences may have impacted the results is not known. Third, sample sizes for both studies were small, which limits the generalizability of these findings. This is further complicated by the fact that across all groups, participants were mostly white, female and married. Moreover, the majority of the interview participants (five out of eight) were program completers who likely had a different experience with the program compared to non-completers and drop-outs. Finally, the start dates for both programs were in late May and early June; thus, some type of seasonal effect could have influenced the findings. For many parents of elementary school children, this time of the year coincides with Summer break, which may not be an optimal time to try to participate in a parenting program – face-to-face or online.

Despite these limitations, the findings presented in this paper provide insight into important program implementation considerations as they relate to in-person and online universal parenting interventions. Perhaps the greatest contribution this paper makes to the current literature base is the recognition that, while online programs provide certain advantages over in-person ones, online programs are subject to their own set of challenges that can hinder program reach and impact. Future research on the Grow program will focus on conducting a rigorous evaluation that compares the two delivery methods. As part of this research, there will be an emphasis on identifying best practices for recruiting, retaining and engaging participants. This work will extend what is presented here by considering program- and participant-specific characteristics. This and future work also contribute to an increased understanding of the nature and consequences of adaptation within the context of implementation (Chambers and Norton, 2016). Ultimately, the identification of these practices will help to advance the field's understanding of how best to maximize the reach and impact of health-promoting, universal parenting interventions, which are critical given the widespread prevalence and impacts of childhood obesity on American children, families and communities.

Implications of the research for policy and practice

- Delivering parenting programs using online technologies may promote program reach in a cost-effective way. However, the literature provides limited guidance on issues around the implementation of online parenting programs.
- These findings challenge the idea that the internet can fully address barriers to parenting program participation by showing that, while parents may sign up more readily for an online program, they may struggle to complete all modules.
- Further research is needed on strategies to support the recruitment and retention of parents into online programs, as well as the role of hybrid programs that combine online technologies with traditional face-to-face modes of delivery.

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