



Parent-Based Prevention of Bullying and Cyberbullying During COVID-19 Social Distancing: A Pilot Intervention using the MOST Framework

Jennifer Doty¹ · Joy Gabrielli² · Michelle Abraczinskas¹ · Karla Girón¹ · Jaclyn Yourell¹ · Elizabeth Stormshak³

Accepted: 4 July 2022 / Published online: 9 August 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

Abstract

Parenting skills are important protective factors in the prevention of bullying and cyberbullying, yet few parent-based interventions have been developed and evaluated in this area. This pilot study examined participant responsiveness to and acceptability of an evidence-based parenting curriculum enhanced to address bullying and cyberbullying. Enhancements included intensive role playing, social emotional coaching, and media parenting. The pilot was delivered online via video conferencing during the unique circumstances of the coronavirus disease pandemic 2019 (COVID-19) shelter-at-home orders. Parents ($N=32$; 88% female) participated in weekly online sessions; 30 completed all eight sessions. Using a sequential exploratory mixed method approach, we first conducted quantitative analyses to examine participant responsiveness and qualitative analyses to further explain outcomes and explore participant acceptability. Satisfaction with individual sessions was high. In a few sessions, satisfaction and home practice completion was lower among those with free- and reduced-price lunch eligibility. Qualitative data reinforced and explained quantitative findings. Participants were appreciative of the program and delivery, particularly during the shelter-at-home conditions. They voiced satisfaction with the online format and with home practice assignments. They also made suggestions to strengthen the emphasis on bullying and cyberbullying in the program. Results suggest that the program and enhancements to the program were acceptable to participants, and high rates of satisfaction suggest that video conferencing is a feasible delivery format. Further, parental programming during the stressful context of the COVID-19 pandemic was well received. Although few differences in satisfaction by free- and reduced-priced lunch were observed, technology support for low-income families may be warranted.

Keywords Parent-based prevention · Multi-phase optimization strategy · Bullying prevention · Participant responsiveness

Bullying and cyberbullying victimization are associated with adverse consequences for youth, including social isolation, depressive symptoms, suicidal ideation, and substance use (Hemphill et al., 2011; Kowalski & Limber, 2013). 90% of youth ages 13 to 17 indicate that online harassment is a problem (Anderson, 2018), while parents express uncertainty about effectively teaching healthy online behavior and monitoring digital interactions (Helfrich et al., 2020). Early adolescence is a time of increased stress and youth online autonomy, yet parents still exert tremendous influence on youth social interactions and media/online access (Gabrielli et al., 2018), making this a critical period for prevention.

However, few interventions substantively involve parents in bullying or cyberbullying prevention (Doty et al., 2022), and addressing the home digital environment to prevent cyberbullying remains a significant need (Helfrich et al., 2020). Further, most bullying and cyberbullying prevention programs have been implemented in schools, with moderately effective results (Gaffney et al., 2019; Ttofi & Farrington, 2011). Effective aspects of school-based bullying prevention programs include intensive programming, firm disciplinary methods, playground supervision, and parent meetings (Ttofi & Farrington, 2011). Parent-based programming has been identified as a gap in the literature, however (National Academies of Sciences, 2016). Parents of pre-adolescents are positioned to guide them as they learn to balance social and online risks with opportunities for adaptive online engagement as well as reduce the risks of bullying and cyberbullying. Parent-based prevention has a strong, established record of reducing internalizing and externalizing behaviors over time based on social cognitive learning theory that youth learn critical social skills through positive interactions with their parents and consistent and firm limit setting (Sandler et al. 2011; Stormshak et al., 2019). Evidence suggests including parents in bullying prevention is an effective strategy (Elsaesser et al., 2017; Ttofi & Farrington 2011).

Although parent-based interventions have a strong record of reducing a number of adolescent risk outcomes, few media parenting interventions have addressed cyberbullying risk in online contexts. One example, the TECH Parenting framework, focuses on increasing parents' digital mediation through enhancement of four evidence-informed parenting strategies (Gabrielli et al., 2018). The acronym TECH stands for *Talking* with children about online activities, *Educating* them on media-related risks, *Co-using* media together, and establishing effective *House rules* for media usage. Effective parental digital mediation has been associated with improved intermediate and long-term outcomes for youth, such as reduced cyberbullying and relational aggression and increased prosocial engagement (Ghosh et al., 2018; Padilla-Walker et al., 2020). Results of studies targeting cyberbullying outcomes have further identified possible protective effects of media parenting behaviors, including parental monitoring of online behavior and restrictive media parenting (e.g., Vale et al., 2018).

Another strategy that could strengthen parents' ability to address bullying and cyberbullying is teaching parents to coach their children in social emotional learning skills (SEL). Strengthening SEL skills has been a successful component in reduction

of bullying and cyberbullying in school-based prevention (e.g., Ortega-Baron et al., 2019), but this strategy has yet to be integrated into parent-based prevention (Doty et al., 2022). Further, role play is an important strategy in prevention because participants learn new behavioral techniques by watching a facilitator. Then they solidify the skills by trying it themselves (Jackson & Back, 2011). Monitoring and immediate feedback ensure that learners consolidate and integrate their learning. These strategies are yet to be tested in the context of a parent-based bullying prevention program.

Innovations are needed to expand the reach of evidence-based, parent-focused prevention programs (Abraczinskas et al., 2020). These include increasing participant engagement via within-home delivery and online strategies (Leslie et al., 2016). Further, physical distancing due to the COVID-19 global pandemic necessitated an increase in online delivery as well as flexibility working with families amid the crisis (e.g., Riegler et al., 2020; Shah et al., 2011). Preventive parenting programs (e.g., Family Check-Up, Everyday Parenting Curriculum) have been adapted for online delivery with high completion rates (72%), and improved outcomes (i.e., parent self-efficacy, child emotional problems) three months post-program similar to in-person implementation (Stormshak et al., 2019). Despite these strengths, concerns about the potential digital divide dampen enthusiasm for online intervention delivery, even as smartphones and access to the internet become nearly ubiquitous (Pew, 2019). Accessibility to intervention content and parental satisfaction with online intervention delivery remain important aspects of study. Further, few studies have assessed home practice, particularly when assigned in online settings (Berkel et al., 2018; Chacko et al., 2016). Since recent literature has linked home practice completion as a key engagement component for improved parenting outcomes, an increased focus on this domain is necessary (Berkel et al., 2018).

The Multiphase Optimization Strategy (MOST) is a three-phase method for designing and optimizing multicomponent interventions for efficiency before evaluating them (Collins, 2018). This study represents the first phase of MOST, preparation: we piloted a factorial design to prepare for the optimization of the enhancements to the core program, Everyday Parenting (Collins, 2018). The second phase, optimization, will inform decisions about the best enhancements to include through a factorial experiment. The third phase of MOST is evaluation through a randomized controlled trial. Because the current study describes the first phase, we examined participant responsiveness to the core elements of the parent-based prevention program, with different combinations of enhancements targeting bullying and cyberbullying prevention.

The primary aim of the current study was to examine participant responsiveness (enrollment, attendance, satisfaction, and home practice completion) to a pilot of Enhanced Everyday Parenting delivered online. Everyday Parenting is a manualized program with substantial research support for mental health outcomes. It has been evaluated as part of the Family Check Up intervention that inhibits growth in internalizing (e.g., anxiety, depression, social withdrawal) and externalizing (e.g., aggression, conduct problems, substance use) problems (Connell & Dishion, 2008; Dishion et al., 2012; Stormshak et al., 2011). Enhancements (intensive role play, SEL, and media parenting) were added to the baseline program to reduce bullying and cyber-

bullying. We examined participant responsiveness by enhancement and socio-economic status. We further analyzed acceptability of the program as a secondary aim.

Methods

We employed a sequential explanatory mixed-methods design, leveraging qualitative data to better explain quantitative results (Fetters et al., 2013). This design is commonly used to assess the user experience for newly designed tools and interventions (e.g., Bragstad et al., 2019; Majuddin et al., 2022). The pilot intervention was offered to 32 participants in two counties in the Southeastern region of the United States between March 2020 – July 2020. During these months, families were under shelter-at-home orders and in-person research was suspended. In late March, the study group obtained approval from the University of Florida Institutional Review Board to deliver the program virtually.

Sample

Participants were parents of children ages 9–12 in 4th, 5th, or 6th grade (see Table 1). This age range was chosen because bullying peaks in middle school and cyberbullying continues to rise throughout adolescence, making this pre-/early adolescent phase a critical time for prevention (National Academies of Sciences, 2016). The mean age of parents was 39.6 years, and 88% were female; although four fathers participated in the sessions as the primary participant, two additional fathers attended sessions where mothers were the primary participant. Only one parent answered the surveys, usually the mother. Just over half (56%) of the parents were White, 28% Black, 6% Latino/a, 6% multiracial, and 3% Asian. Nearly two-thirds (65.6%) were married. 77% completed at least one year of college, and 43% of families made less than \$3000 per month. Eligibility for free- or reduced-price lunch was met by 56% of participating families. About half of participants (48%) said that they participated in the study because it was about bullying/cyberbullying; nearly a quarter (24%) wanted to help their child or improve their parenting; 11% had a desire to participate in a study (e.g., to gain knowledge and perspective). About 10% gave the following reasons: gift cards, contributing to research, learning about technology.

Procedures

Recruitment strategies included Facebook advertisements, listserv announcements, personal invitations from counselors, flyers, phone calls, emails, and newsletters. Parents filled out a screening questionnaire, and a staff member contacted eligible families to explain the study (e.g., each family would receive the core intervention, but enhancements would be randomized). Staff included three trained graduate students, who managed recruitment, supported facilitators, and facilitated data management under the supervision of the principal investigator (J.D.). Before the first

Table 1 Enrollment and Session Completion

	<i>M</i> or <i>N</i> (%)
Mean age of parents in years	39.6
Female	28 (88%)
Race/Ethnicity	
Asian	1 (3%)
Black	9 (28%)
Latino	2 (6%)
White	18 (56%)
Multiracial	2 (6%)
One year of college or more	24 (77%)
Income less than \$3000/yr.	14 (43%)
Interest in the program	63
Interest within 6 weeks	49 (77.7%)
How parents learned about study	
Facebook ads	50.0%
Social media posts	18.3%
University studies page	6.7%
Other means	25.0%
Enrollment	32
Completed half the program	31 (96.9%)
Completed all 8 sessions	30 (93.8%)

session, families consented online. Staff scheduled eight video conferencing sessions consisting of a combination of the brief Everyday Parenting program and enhancements. Only one parent had consistent problems with connectivity, and staff provided her a tablet with data service. Sessions averaged 60 min. Parents received a \$40 e-gift card after each session and resources for referrals in case they became distressed. They received an extra \$25 if they completed all sessions, and \$25 for participating in an interview after the pilot (total: \$370). Parents completed surveys after each session and at the conclusion of the pilot. Post-intervention interviews were conducted by the first author and a member of the study staff, lasting an average of 43 min; they were video recorded and transcribed by trained study staff.

Intervention

To prepare for delivery of the factorial design in a future optimization trial, each enhancement was piloted with Everyday Parenting to inform fine-tuning of the protocol. Using a block randomization method to ensure equal samples in each condition, families were randomly assigned to one of eight conditions via a random number generator ($n=4$ per group; see Table 2). Each condition was set up in REDCap, a data management software, to be a separate arm of the study to easily track which families were in which condition. We also color-coded conditions to visually distinguish them and met weekly to ensure communication between facilitators and the study staff.

To ensure fidelity to implementation, each session was recorded if participants consented. Everyday Parenting program sessions included content on: (1) supporting positive behavior through effective parental directions, (2) promoting child coopera-

Table 2 Factorial Design of Core Program Plus Components

Conditions	Brief Everyday Parenting—constant	TECH Parenting Adaptation (Y/N)*	Social-emotional Learning (Y/N)*	Role Play (Y/N)*
1	Core	TECH	SEL	Digital
2	Core	TECH	SEL	None
3	Core	TECH	None	Digital
4	Core	TECH	None	None
5	Core	None	SEL	Digital
6	Core	None	SEL	None
7	Core	None	None	Digital
8	Core	None	None	None

Note. *Half of the families were assigned to each component condition using a balanced design.

Table 3 Sessions by Condition Assignment

Sessions by week	Conditions 1 & 2*	Conditions 3 & 4*	Conditions 5 & 6*	Conditions 7 & 8*
1	Supporting positive behavior	Supporting positive behavior	Supporting positive behavior	Supporting positive behavior
2	Positive behavior reinforcement	Positive behavior reinforcement	Positive behavior reinforcement	Positive behavior reinforcement
3	SEL Coaching	Practice Session	SEL Coaching	Practice Session
4	Monitoring daily activities	Monitoring daily activities	Monitoring daily activities	Monitoring daily activities
5	Setting limits & consequences	Setting limits & consequences	Setting limits & consequences	Setting limits & consequences
6	TECH Parenting	TECH Parenting	Practice Session	Practice Session
7	Family negotiation	Family negotiation	Family negotiation	Family negotiation
8	Shared Routines	Shared Routines	Shared Routines	Shared Routines

Note. * Families in odd number conditions engaged in role play with their facilitator; families in even numbered conditions did not.

tion through positive behavior reinforcement, (3) monitoring daily activities, (4) setting limits and identifying consequences, (5) improving family relationships through negotiation, and (6) promoting positive parenting through shared routines. For those who did not receive enhancements, two practice sessions were provided (see Table 3). Each week, facilitators assigned home practice tailored to the parents' needs, invited parents to track successes, and discussed outcomes from prior assigned activities.

Each condition included up to three enhancements to the Everyday Parenting program, and each enhancement was delivered to half of the participants (see Table 2). Parents who received the media parenting enhancement were introduced to the four

principles of TECH parenting (i.e., talk, educate, co-view, and house rules). They were assigned a home practice activity to create a family media plan and then collaboratively reviewed the plan the following week with the facilitator. The social emotional coaching enhancement focused on key competencies identified by the Collaborative for Academic, Social, and Emotional Learning (Meyers et al., 2015): self-awareness, self-management, social awareness (empathy and social norms), relationship skills, and responsible decision-making. Parents received a one-page “game plan” with instructions on how to coach the social-emotional learning skills and a home practice assignment at the end of the session. In the intensive role play enhancement, each skill was explained, modeled, and then participants were asked to engage in a role-play with two conditions. In one role-play, the facilitator employed a problematic parenting example, which parents identified; the other role-play had parents exemplify a new parenting skill. Facilitators then discussed the likely reaction of the child following each approach.

Measurement

Participant Responsiveness

Satisfaction with sessions and homework completion operationalized participant responsiveness. Satisfaction was measured using an adapted version of the Client Satisfaction Questionnaire (CSQ-8), for example, “How satisfied are you with the amount of help you have received?” (1 = *Quite dissatisfied* to 4 = *Very satisfied*). We asked parents about the perceived quality of the weekly session and home practice (e.g., “Last week we suggested a home practice activity. Were you able to complete it?”, 1 = *I was not able to complete it*; 4 = *I completed it fully*). At the end of the program, parents received the adapted client satisfaction questionnaire.

Socioeconomic Status. Parents were asked “What is your monthly family income?”, the gender and age of their children, and marital status. Free- or reduced-priced lunch eligibility was calculated by comparing the family income to 2020 government eligibility rates for the size of the household, creating a dichotomous variable (0 = not eligible, 1 = eligible).

Analytic Plan

Following a sequential explanatory mixed method approach, the interviews were analyzed qualitatively after the quantitative results were collected, and data analyses were integrated via connecting (e.g., using a linked sample) and merging (e.g., using parallel questions in both quantitative and qualitative datasets to facilitate comparisons; Fetters et al., 2013).

Quantitative Analysis

We examined differences in weekly satisfaction and home practice completion by enhancement TECH components, SEL components, and inclusion of role-play. We also examined differences by free- or reduced-price lunch (FRL) eligibility. We computed bootstrapped t-tests with 1000 samples to obtain confidence intervals. Missing data was minimal (missingness ranged from 0 to 9.4% on satisfaction questions in weeks 5–7), and listwise deletion was utilized.

Qualitative Analysis

Most participants participated in final interviews (27/32); one of the recordings was corrupted, resulting in 26 coded interviews. We first de-identified transcripts and cross-checked them with the recordings for accuracy. We used NVivo 12 Plus to conduct thematic analysis using a quasi-deductive approach. This involved basing initial themes broadly on the interview script to explain the quantitative results and understand the benefits and barriers of participating in the pilot study in greater depth (Braun & Clarke, 2012). Using an iterative team coding approach, three researchers, the principal investigator (J.D.), and two graduate students with previous qualitative coding experience (K.G., and J.Y.) met to refine the coding manual after coding two of the transcripts (Feredey & Muir-Cochrane, 2006). The researchers double coded 20% of the interviews and coded the rest independently. The team met regularly to discuss coding, define themes, and iteratively resolved differences through consensus (Feredey & Muir-Cochrane, 2006). Interrater reliability was satisfactory, with kappas ranging from 0.65 to 1.00 for each theme.

Results

Participant Engagement. Enrollment and module completion are recorded in Table 1. Parent report of perceived session quality and home practice are found in Table 4. Overall perceived quality of each session was high, ranging from 3.94 to 4.00 on a 4-point scale. The average satisfaction after the program ended was 3.93 ($SD=0.13$). No significant differences were found by assignment to the roleplay, TECH, or SEL component condition, indicating consistent satisfaction with the newly developed sessions. In weeks 1 and 2, participants eligible for FRL reported lower perceived quality than those not eligible ($M_{\text{difference}} = 0.125$; 95% CI [0.053, 0.286]; $M_{\text{difference}} = 0.188$; 95% CI [0.056, 0.385]), and in week 3, participants eligible for FRL were less likely to complete home practice than those not eligible ($M_{\text{difference}} = 0.362$; 95% CI [0.000, 0.700]). No other weekly differences were found by FRL.

Qualitative Results

Qualitative themes corroborated with satisfaction outcomes while providing additional detail. Three themes were identified: (1) satisfaction with the program content, program delivery, and convenience of online format; (2) home practice; and (3) sug-

Table 4 Differences in Perceived Program Quality and Home Practice Completion by Eligibility for Free- and Reduced-Price Lunch

	Session Satisfaction Entire Sample	Session Completed Participants	Session Satisfaction Eligible FRL	Session Satisfaction Not Eligible for FRL	Mean Difference	Bootstrapped 95% Confidence Interval
	Mean (SD)		Mean (SD)	Mean (SD)		
Week 1	3.94 (0.25)	32	3.88 (0.34)	4.00 (0.00)	0.125*	[0.053, 0.286]
Week 2	3.90 (0.25)	31	3.81 (0.40)	4.00 (0.00)	0.188*	[0.059, 0.385]
Week 3	4.00 (0.00)	30	4.00 (0.00)	4.00 (0.00)	0.000	NA
Week 4	4.00 (0.00)	30	4.00 (0.00)	4.00 (0.00)	0.000	NA
Week 5	4.00 (0.00)	30	4.00 (0.00)	4.00 (0.00)	0.000	NA
Week 6	4.00 (0.00)	30	4.00 (0.00)	4.00 (0.00)	0.000	NA
Week 7	4.00 (0.00)	30	4.00 (0.00)	4.00 (0.00)	0.000	NA
Week 8	3.97 (0.18)	30	3.93 (0.26)	4.00 (0.00)	0.067	[0.053, 0.235]
Overall Program	4.00 (0.00)		4.00 (0.00)	4.00 (0.00)	0.000	NA
	Home Practice Completion Entire Sample	Home-work Fully Completed (# Participants)	Home Practice Eligible FRL	Home Practice Not Eligible for FRL		
Week 2	3.58 (0.13)	21	3.64 (0.67)	3.50 (0.82)	0.136	[-0.436, 0.385]
Week 3	3.60 (0.10)	19	3.80 (0.42)	3.44 (0.63)	0.362*	[0.000, 0.700]
Week 4	3.55 (0.14)	22	3.55 (0.82)	3.63 (0.72)	-0.080	[-0.701, 0.473]
Week 5	3.83 (0.47)	25	3.80 (0.42)	3.93 (0.26)	-0.133	[-400, 0.082]
Week 6	3.62 (0.14)	21	3.73 (0.47)	3.50 (0.94)	0.227	[-0.241, 0.756]
Week 7	3.76 (0.10)	23	3.80 (0.42)	3.67 (0.62)	0.133	[-0.270, 0.616]
Week 8	3.57 (0.15)	22	3.27 (1.20)	3.73 (0.59)	-0.460	[-1.27, 0.283]

Note. * $p < .10$

gestions for improvements (see Table 5). Parents expressed satisfaction with both the content and delivery of the program. They reported that parenting skills helped with family cohesiveness, and they appreciated examples tailored to quarantine situations during stressful stay-at-home orders. Parents also reported that the program encouraged empathy for their children during this unique and difficult time contextualized by the global pandemic.

Table 5 Quotations Representing Qualitative Themes

	Example Quotes
Satisfaction	
Program Content (n=21; 85%)	<p>“I think that this program kind of allowed me that opportunity in that safe space to re-evaluate how I’m doing as a dad, and how my relationships with the girls are going... I perceive it as a really beneficial and useful tool to give me an opportunity to say, ‘Okay, well, how’s this going? Like, what am I doing well, what can I improve on?’”</p> <p>“It definitely added structure during [the pandemic stay-at-home-orders], you know. It was a good way to deal with their behavior, which could have been 10 times worse as far as I’m concerned, if there were not much structure having to be home bound for all this.”</p> <p>Regarding media parenting: “[My son] came to me and was like, ‘Hey, I wanted to ask you about this and why they were talking about this on the show I was watching. What is it? Why is it bad?’ And, you know, we were able to sit down and talk, and he wouldn’t normally do that. So by me being calmer and communicating better with him lately, he’s opening up to me....It is a big deal.”</p>
Program Delivery (n=18; 69%)	<p>“It was like having a conversation with someone, like, if you see a therapist or something. You’re having a conversation, which was good, because as an adult, unless you’re actually learning something, you really don’t want to just sit there and have somebody telling you a bunch of information.”</p> <p>Having a facilitator of the same race: “I told [the facilitator] this one day, ‘Seeing you, it’s really, really surprising. But seeing more people that looks like us.... I just feel like things are taken in a different perspective when it’s coming from someone who we feel like can relate to with.’”</p>
Convenience of Online Format (n=17; 65%)	<p>“It ended up being something that I just really look forward to, through the week. As a parent, it seems like no matter how much you try, sometimes it seems like you’re always rushing.... I think having the convenience where I could wake up, walk the dogs, feed the dogs, and have a little bit of time to just kind of go over my notes and stuff, and then just hop on the computer was really useful.”</p>
Home Practice Benefits and Barriers (n=13; 50%)	<p>“Definitely, the key is it’s so easy to fall right back into your old habits, you know, and things just start going all over the place, and at least now we have something.... We have the worksheets. We could go back and say, ‘Okay, we need to try this over again because we’ve lost him.’ You know what I mean? At least we have those tools now.”</p> <p>“Things got hectic midweek. That’s why you might have a nice reminder to just sort of prompt [people]. Gently prompt them, so they don’t...feel like you’re being pushy.”</p>
Suggestions for Improvements (n=14; 54%)	<p>“[Be] clear about what some of this had to do with [preventing cyberbullying] at first and giving a little more examples or ideas so that it helps.”</p> <p>“It would have been kind of cool to, maybe all at the end maybe if all of us could have gotten together and spoken, you know, as families who are going through similar things or whatnot.”</p>

Note. 27/32 parents participated in final interviews; one recording was corrupt resulting in 26 coded interviews

Regarding enhancements, parents who were assigned the TECH parenting session saw value in media parenting. One parent said, “I just think so many of our parents are so clueless about what their kids are doing [online]. And so this is kind of a good first step for parents.” Several parents, however, felt the media parenting practice was not helpful because their children already had limited access to devices. Parents especially appreciated the in-depth discussion of emotions in the SEL lesson but did not offer much additional detail about the social emotional lesson. Although a few parents mentioned that they did not like the role play activities, others commented that they felt the role play enhancement was helpful.

Parents appreciated the collaborative delivery from a live clinician, which they compared to a therapeutic experience. When facilitators followed up with parents each week on home practice assignments, parents appreciated that facilitators encouraged them in a positive and non-judgmental way, making it easier to open up to them. Additionally, a few Black parents appreciated having a Black facilitator or interviewer who understood their culture. Several parents expressed satisfaction with the online delivery of the program and emphasized benefits of videoconferencing, commenting on convenience. One parent said, “We were in quarantine, so everything was a Zoom meeting. They were great....I don’t know that I would have gotten anything more from being in person.” However, another parent said, “Sometimes...the internet was being screwy. I mean, there was sometimes where you tried to show the information, and you couldn’t [share the] screen.” Overall, however, most participants expressed positive experiences in the online delivery of the intervention.

Parents reported that they enjoyed the home practice assignments and the opportunity to put into practice the skills that had been covered in sessions. One parent said, “Some parents don’t want [to do home practice], but I feel that I actually get a benefit from having a pragmatic exercise that I can kind of think through as I’m working on it.” They saw practice as a way of solidifying the skills over time. Another parent suggested that mid-week reminders may be helpful for parents in completing their home practice assignments.

When we asked about improvements, parents offered suggestions about the enhanced content and methods of delivery. Some parents asked for more information about bullying and cyberbullying, particularly when they had been randomly assigned to not receive the enhancements. This pattern suggests a need to reframe the recruitment messaging or add more explicit cyberbullying prevention information to the enhancements. Other parents suggested a chat room or group format to be able to connect with other parents. This reflects a need for parents of adolescents to have connections with one another for social support, which may have presented as an even greater need due to social isolation during the pandemic.

Discussion

The current pilot study was delivered online under the unique circumstances of the COVID-19 pandemic when most participants were sheltering at home. Nearly all families completed all eight sessions, and satisfaction levels and homework completion were high. Some differences in satisfaction and home practice were found by free- and reduced-price lunch status in the early weeks of the intervention. Although the differences were minimal, technology and engagement may be a greater challenge among lower-income parents. Further, the two families that dropped from the program at week 2 and week 5 were eligible for free- or reduced-priced lunch. Qualitative feedback reinforced quantitative findings, highlighting overall acceptability of the program and delivery while also identifying areas for improvement.

Compared to most parent-based prevention programs, attendance and participant responsiveness was higher than usual (Chacko et al., 2016). Results reinforce past studies which have found high rates of participation for online parenting inter-

ventions compared to interventions delivered in person (Breitenstein et al., 2014). Importantly, few differences were found by free- and reduced-price lunch eligibility, indicating that online delivery is feasible for low-income parents, though more research is needed. Prior research suggests that parenting programs delivered online may be more effective than in-person delivery with at-risk populations such as those who report child behavior problems or other risk factors (Stormshak et al., 2019). The high rates of engagement in our study may be in part because parent stress levels were high, and they felt the need for support during the early months of the pandemic when many parents took on extra education responsibilities and uncertainty about the future reigned (Patrick et al., 2020). Flexible delivery scheduling was a priority given these stressors, and results indicate that parents were highly responsive to support during this time. Another reason parent engagement may have been high was that schedules were cleared due to the shelter-at-home orders. However, parents who were essential workers may have been working longer hours than normal, underscoring the importance that few differences in perceived program quality and homework participation by income were found. Several parents indicated that video conferencing was a convenient way to engage with the program, removing barriers for participation. This result adds further evidence of the promise of remotely delivered interventions.

Parents' home practice of program skills is the primary mechanism linking program implementation and improved outcomes in preventive parenting programs (Berkel et al., 2018). Thus, assessing home practice was a strength of this study. Parents reported a high level of home practice completion, satisfaction with the home practice activities, and positive changes in their family functioning during this particularly challenging time. Due to the positive association between home practice and parenting outcomes (Berkel et al., 2018), these findings are promising for future phases of this work. Within home practice, quality is the most important factor, rather than completion and fidelity to the skill. The current study assessed completion, but not other components, which is a limitation of this work.

The current study was guided by the MOST framework and focused on the initial phase of "laying the groundwork" conceptually for an upcoming optimization (Collins, 2018). The implementation of the MOST design required substantial organizational planning, including setting up eight conditions in our data management system, color coding conditions to facilitate organization, and careful tracking of randomization and scheduling. Results support the feasibility of conducting a factorial design in an online setting. Importantly, no differences were found in session satisfaction by enhancement, suggesting the enhancements were acceptable to parents. Parents' suggestions to further emphasize cyberbullying will be incorporated by framing the intervention around parenting to improve youth digital citizenship. The proposed changes to the model are supported by research findings that both parent media monitoring and house rules as well as a strong parent-child relationship are important to deter cyberbullying (Gabielli et al., 2018).

Strengths of the current research include the innovative use of video conferencing, the high levels of attendance and home practice completion, and the positive feedback regarding improvements in family functioning that they attributed to the program. The program also gave us insight into the need to support parents in the wake

of COVID-19. However, limitations must also be addressed. The limited numbers in this pilot study precluded the inclusion of covariates in the analysis and the examination of nested delivery by facilitator. The study did not include youth outcomes of interest, and to ascertain which components are effective, a full optimization trial will be needed. Another limitation is that participant responsiveness may have also been influenced by the circumstances of the COVID-10 stay-at-home orders. Family income may have been disrupted and parents' current income may not have represented their typical income. The lack of a reference period regarding participants income reporting makes this difficult to determine. Because even a few differences were found within this small sample, future studies should further investigate whether perceptions of the intervention differ by socioeconomic status. We had one participant who lacked access to technology, which implies that in larger studies research teams may need to plan for technology accommodations for a portion of the sample.

The current study added to the literature by piloting a program online, with unique components meant to bolster effects and prepare for a MOST trial. Overall, parents indicated that the enhancements were high quality. The program was implemented through video conferencing at the beginning of the COVID-19 pandemic, and parent responses indicated high satisfaction. The study also provided evidence that online delivery of a program designed for face-to-face interaction is not only feasible via video conferencing but may increase participant responsiveness. The increase in technology engagement necessitated by the pandemic will likely require an increased commitment to the online safety of children while also providing more opportunities to deliver preventive programs in online settings.

Acknowledgements This project was funded by USDA REEport Hatch Project Approval FLA-FYC-005789 and an internal seed grant from the University of Florida awarded to Dr. Jennifer Doty. We thank the advisory board, facilitators (Celeste Greenlee, Tarrah Mitchell, Elvira Shalsi, and Eddie StVil) and families who participated in this research for their contribution to this study.

Author Contribution Jennifer Doty: Lead the conceptualization and implementation of the study; wrote the results and discussion; integrated sections of the manuscript; reviewed and revised manuscript multiple times. Joy Gabrielli: Contributed to conceptualization and implementation of the study; wrote parts of the introduction and discussion; critically reviewed entire manuscript multiple times. Michelle Abraczinskas: Wrote parts of the introduction and discussion; critically reviewed entire manuscript multiple times. Karla Girón: Contributed to data collection; wrote parts of the introduction and methods; managed references; critically reviewed entire manuscript multiple times. Jacquelyn Yourell: Contributed to data collection; wrote parts of the introduction and results; managed references; critically reviewed entire manuscript multiple times. Elizabeth Stormshak: Contributed to conceptualization of the study; critically reviewed entire manuscript multiple times.

Declarations

Conflict of Interest The authors have no competing interests to declare that are relevant to the content of this article.

Ethics Approval This study was approved by the Institutional Review Board of the University of Florida and conducted in compliance with ethical standards of the Declaration of Helsinki, including the informed consent of all participants.

References

- Abraczinskas, M., Winslow, E. B., Oswalt, K., Proulx, K., Tein, J. Y., Wolchik, S., & Sandler, I. (2020). A population-level, randomized effectiveness trial of recruitment strategies for parenting programs in elementary schools. *Journal of Clinical Child & Adolescent Psychology*, 1–15. <https://doi.org/10.1080/15374416.2019.1703711>
- Anderson, M., & Jiang, J. (2018, May 31). *Teens, social media, & technology*. Pew Research Center. <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/#vast-majority-of-teens-have-access-to-a-home-computer-or-smartphone>
- Berkel, C., Sandler, I. N., Wolchik, S. A., Brown, C. H., Gallo, C. G., Chiapa, A. ... Jones, S. (2018). Home practice is the program?: Parents' practice of program skills as predictors of outcomes in the new beginnings program effectiveness trial. *Prevention Science*, 19(5), 663–673. <https://doi.org/10.1007/s11121-016-0738-0>
- Bragstad, L. K., Bronken, B. A., Sveen, U., Hjelle, E. G., Kitzmüller, G., Martinsen, R. ... Kirkevold, M. (2019). Implementation fidelity in a complex intervention promoting psychosocial well-being following stroke: an explanatory sequential mixed methods study. *BMC Medical Research Methodology*, 19(1), 1–18
- Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbooks in psychology®. APA handbook of research methods in psychology. Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. <https://doi.org/10.1037/13620-004>
- Breitenstein, S. M., Gross, D., & Christophersen, R. (2014). Digital delivery methods of parenting training interventions: a systematic review. *Worldviews on Evidence-Based Nursing*, 11(3), 168–176. <https://doi.org/10.1111/wvn.12040>
- Chacko, A., Jensen, S. A., Lowry, L. S., Cornwell, M., Chirklis, A., Chan, E. ... Pulgarin, B. (2016). Engagement in behavioral parent training: Review of the literature and implications for practice. *Clinical Child and Family Psychology Review*, 19(3), 204–215. <https://doi.org/10.1007/s10567-016-0205-2>
- Collins, L. M. (2018). *Optimization of behavioral, biobehavioral, and biomedical interventions*. Springer
- Connell, A. M., & Dishion, T. J. (2008). Reducing depression among at-risk early adolescents: three-year effects of a family-centered intervention embedded within schools. *Journal of Family Psychology*, 22(4), 574–585.
- Dishion, T. J., Stormshak, E. A., & Kavanagh, K. A. (2012). *Everyday parenting: A professional's guide to building family management skills*. Research Press
- Doty, J. L., Girón, K., Mehari, R. K., Sharma, D., Smith, S. J., Su, Y. ... Rousso, B. (2022). The dosage, context, and modality of interventions to prevent cyberbullying perpetration and victimization: A systematic review and meta-analysis. *Prevention Science*. Advance online publication. <https://doi.org/10.1007/s11121-021-01314-8>
- Elsaesser, C., Russell, B., Ohannessian, C. M., & Patton, D. (2017). Parenting in a digital age: A review of parents' role in preventing adolescent cyberbullying. *Aggression and Violent Behavior*, 35, 62–72. <https://doi.org/10.1016/j.avb.2017.06.004>
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—principles and practices. *Health Services Research*, 48(6pt2), 2134–2156.
- Gabrielli, J., Marsch, L., & Tanski, S. (2018). TECH parenting to promote effective media management. *Pediatrics*, 142(1), <https://doi.org/10.1542/peds.2017-3718>
- Gaffney, H., Farrington, D. P., Espelage, D. L., & Ttofi, M. M. (2019). Are cyberbullying intervention and prevention programs effective? A systematic and meta-analytical review. *Aggression and Violent Behavior*, 45, 134–153. <https://doi.org/10.1016/j.avb.2018.07.002>
- Ghosh, A. K., Wisniewski, P., & Badillo-Urquiola, K. (2018). Examining the effects of parenting styles on offline and online adolescent peer problems. *Proceedings of the International ACM SIGGROUP Conference on Supporting Group Work*, 150–153. <https://doi.org/10.1145/3148330.3154519>
- Helfrich, E. L., Doty, J. L., Su, Y. W., Yourell, J. L., & Gabrielli, J. (2020). Parental views on preventing and minimizing negative effects of cyberbullying. *Children and Youth Services Review*, 118, 105377. <https://doi.org/10.1016/j.childyouth.2020.105377>

- Hemphill, S. A., Kotevski, A., Herrenkohl, T. I., Bond, L., Kim, M. J., Toumbourou, J. W., & Catalano, R. F. (2011). Longitudinal consequences of adolescent bullying perpetration and victimisation: A study of students in Victoria, Australia. *Criminal Behaviour and Mental Health, 21*(2), 107–116. <https://doi.org/10.1002/cbm.802>
- Jackson, V. A., & Back, A. L. (2011). Teaching communication skills using role-play: An experience-based guide for educators. *Journal of Palliative Medicine, 14*(6), 775–780.
- Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 53*(1 Suppl), 13–20. <https://doi.org/10.1016/j.jadohealth.2012.09.018>
- Leslie, L. K., Mehus, C. J., Hawkins, J. D., Boat, T., McCabe, M. A., Barkin, S. ... Beardslee, W. (2016). Primary health care: Potential home for family-focused preventive interventions. *American Journal of Preventive Medicine, 51*(4, Supplement 2), S106–S118. <https://doi.org/10.1016/j.amepre.2016.05.014>
- Majuddin, C., Khambari, M. N. M., Wong, S. L., Ghazali, N., & Norowi, N. M. (2022). Students' perspectives on the use of differentiated assessment tool: results from an explanatory sequential mixed-method pilot study. *Contemporary Educational Technology, 14*(2), ep358.
- Meyers, D. C., Gil, L., Cross, R., Keister, S., Domitrovich, C. E., & Weissberg, R. P. (2015). *CASEL guide for schoolwide social and emotional learning—Middle and high school edition*. Chicago: Collaborative for Academic, Social, and Emotional Learning.
- National Academies of Sciences, Engineering, and Medicine. (2016). *Preventing bullying through science, policy, and practice*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23482>
- Padilla-Walker, L. M., Stockdale, L. A., Son, D., Coyne, S. M., & Stinnett, S. C. (2020). Associations between parental media monitoring style, information management, and prosocial and aggressive behaviors. *Journal of Social and Personal Relationships, 37*(1), 180–200. <https://doi.org/10.1177/0265407519859653>
- Patrick, S. W., Henkhaus, L. E., Zickafoose, J. S., Lovell, K., Halvorson, A., Loch, S. ... Davis, M. M. (2020). Well-being of parents and children during the COVID-19 pandemic: A national survey. *Pediatrics, 146*(4), e2020016824. <https://doi.org/10.1542/peds.2020-016824>
- Riegler, L. J., Raj, S. P., Moscato, E. L., Narad, M. E., Kincaid, A., & Wade, S. L. (2020). Pilot trial of a telepsychotherapy parenting skills intervention for veteran families: Implications for managing parenting stress during COVID-19. *Journal of Psychotherapy Integration, 30*(2), 290–303. <https://doi.org/10.1037/int0000220>
- Shah, K., Mann, S., Singh, R., Bangar, R., & Kulkarni, R. (2020). Impact of COVID-19 on the Mental Health of Children and Adolescents. *Cureus, 12*(8).
- Stormshak, E. A., Connell, A. M., Véronneau, M. H., Myers, M. W., Dishion, T. J., Kavanagh, K., & Caruthers, A. S. (2011). An ecological approach to promoting early adolescent mental health and social adaptation: Family-centered intervention in public middle schools. *Child Development, 82*(1), 209–225.
- Stormshak, E. A., Seeley, J. R., Caruthers, A. S., Cardenas, L., Moore, K. J., Tyler, M. S. ... Danaher, B. (2019). Evaluating the efficacy of the Family Check-Up Online: A school-based, ehealth model for the prevention of problem behavior during the middle school years. *Development and Psychopathology, 31*(5), 1873–1886. <https://doi.org/10.1017/S0954579419000907>
- Ttofi, M. M., & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of Experimental Criminology, 7*(1), 27–56. <https://doi.org/10.1007/s11292-010-9109-1>
- Vale, A., Pereira, F., Gonçalves, M., & Matos, M. (2018). Cyber-aggression in adolescence and internet parenting styles: A study with victims, perpetrators and victim-perpetrators. *Children and Youth Services Review, 93*, 88–99. <https://doi.org/10.1016/j.childyouth.2018.06.021>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Authors and Affiliations

Jennifer Doty¹ · Joy Gabrielli² · Michelle Abraczinskas¹ · Karla Girón¹ ·
Jacqlyn Yourell¹ · Elizabeth Stormshak³

✉ Jennifer Doty
jendoty@uoregon.edu

¹ Department of Family, Youth and Community Sciences, University of Florida, 3001
McCarty Hall D, 32611-0310 Gainesville, FL P.O. Box 110310, USA

² Department of Clinical and Health Psychology, University of Florida, 1225 Center Dr,
32603 Gainesville, FL, USA

³ Department of Counseling Psychology and Human Services, University of Oregon,
1217 Oregon, USA