




Acceptability of a Virtual Mind–Body Intervention for Parents of Children With Autism or Learning Disabilities

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Abstract

Objective: Parents of children with learning/attentional disabilities (LAD) and autism spectrum disorder (ASD) are at elevated risk for chronic stress. Types of stress and treatment needs differ between these parent groups. We adapted our evidence-based mind–body intervention (SMART-3RP) for parents of children with LAD and ASD, delivered via videoconferencing. Preliminary results from our two wait-list randomized pilot trials suggest the programs were feasible and efficacious. To gain an in-depth understanding of acceptability, the purpose of this secondary analysis from the RCTs is to (1) explore feedback regarding the virtual SMART-3RP and (2) compare feedback across LAD and ASD parents.

Methods: Participants were randomized to immediate or delayed SMART-3RP (separate groups for LAD and ASD) and completed a feedback questionnaire post-intervention ($N = 33$ LAD, $N = 37$ ASD; 93% female, 93% white, $M_{age} = 45.52$, $SD = 6.50$).

Results: Participants reported the intervention had the right number of sessions (69%), session duration (83%), and amount of structure (83%). They felt comfortable during sessions (89%) and found mind–body skills helpful (89%). There were no significant differences between parent groups other than a trend for more ASD parents reporting sessions were too long (22% ASD vs. 6% LAD, $\chi^2 = 5.67$, $p = 0.06$). Qualitative themes were similar across parents and included that video delivery had some technical challenges but enabled participation; group support and mind–body skills were helpful; and further SMART-3RP sessions or therapy is needed.

Conclusion: LAD and ASD parents found a synchronous video-based mind–body resiliency program acceptable. Technology limitations notwithstanding, online delivery was very satisfactory and overcame obstacles to participation.

Keywords

learning/attentional disabilities, autism spectrum disorder, resiliency, e-health

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Background

Learning/attentional disabilities (e.g., specific reading or writing disorders, attention deficit hyperactivity disorder; LAD) and autism spectrum disorder (ASD) are prevalent among children in the United States. Up to 1 in 5 children have a LAD and up to 1 in 54 have ASD, a 10% increase since 2016.^{1,2} Parents of children with LAD or ASD experience high levels of stress, which contributes to further problems including greater anxiety and depression symptoms and poor sleep and physical inactivity.³⁻⁵ In our recent exploration of

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stressors among LAD and ASD parents, we found several sources of stress common to both groups, including establishing services for their children, marital strain, financial burdens, balancing the needs of other children, and fears about their child's future.⁶ At the same time, there were also important differences between the two parent groups. While both groups experienced relational stressors, LAD parents felt rejected and distant from others, whereas ASD parents felt socially isolated. In terms of daily challenges, LAD parents described the burden of their child's homework and ASD parents emphasized their child's sleep difficulties.⁶ These findings are consistent with other published literature indicating similarities and differences in stressors among LAD and ASD parents, with some evidence for greater levels of stress among ASD parents.⁷⁻⁹ These findings highlight the need for stress management interventions for parents of children with LAD or ASD, and suggest that there may be some differences in what each group of parents needs and finds helpful.

We recently conducted two pilot randomized controlled trials of our evidence-based stress management intervention, the Stress Management and Relaxation Training Program–Relaxation Response Resiliency Program (SMART-3RP). The SMART-3RP is a multi-modal mind–body intervention involving 8 weekly group sessions (1.5 h each) wherein parents learn mind–body skills (e.g., relaxation and mindfulness), cognitive-behavioral skills (e.g., cognitive restructuring and goal-setting), and positive psychology skills (e.g., humor and appreciation) to cope with parenting stress. Given that parenting demands require stress management programs to be convenient and easily accessible, we delivered the SMART-3RP virtually using synchronous group videoconference. Synchronous group videoconferencing may provide particular benefit for parents. Specifically, a synchronous group intervention (e.g., as compared to in-person or asynchronous delivery) combines the real-time interaction and support parents need with the convenience and accessibility of remote delivery, providing connections that would not otherwise be possible. Indeed, multi-family group psychoeducation is a common intervention approach for parents of children with disabilities that brings families together for needed support and connection, and has evidence to reduce parental distress.^{10,11}

The trials were conducted separately for LAD and ASD parents. Each trial used adapted manuals targeting parenting stress through parent-relevant examples for LAD or ASD. Results of both trials found that parents in the SMART-3RP demonstrated greater improvements in resiliency, stress reactivity, depression and anxiety symptoms, social support, and mindfulness as compared to wait-list control groups.^{12,13} However, parents of LAD children demonstrated additional improvements in general distress and empathy that were not seen in parents of ASD children.^{12,13}

Mind-body interventions like the SMART-3RP are increasingly delivered via electronic health (e-health) technologies, with good feasibility and acceptability.¹⁴ In the current context of COVID-19, e-health approaches may be the only feasible

way to deliver these interventions. Until recently, most of this research focused on asynchronous delivery modalities that participants used independently (e.g., online websites or smartphone applications). Although useful, asynchronous methods prevent real-time interaction with peers and feedback from the instructor, which may result in decreased effectiveness.^{15,16} More recent work has begun to incorporate synchronous approaches such as group videoconferencing that maintain real-time interactions with others. Delivering mind–body interventions *via* synchronous virtual platforms poses unique considerations, such as how to facilitate group sharing, work with fewer non-verbal cues, and lead relaxation practices with background or technological distractions. Understanding participant's experiences of these virtual mind–body programs is important to inform intervention adaptations that can enhance acceptability for future participants.

The aims of the current study are therefore to use a mixed methods approach to (1) explore parents' feedback regarding participation in the virtual SMART-3RP program and (2) compare feedback across ASD and LAD parent groups. Given that the baseline characteristics and trial outcomes showed similarities and differences between the groups, we wanted to explore potential similarities and differences in parents' perspectives on intervention acceptability in order to inform future efforts to optimize the intervention for parents.

Methods

Participants

There were $N = 53$ participants in the trial for parents of children with LAD and $N = 51$ in the trial for parents of children with ASD. The current study includes the subset of participants from each trial who chose to complete the post-intervention feedback questionnaire: $N = 33$ parents in the LAD group and $N = 37$ parents in the ASD group. There were no significant differences between parents in the current study and those in the larger trial (p 's > 0.05) (see Table 1 for demographic characteristics of participants in the current study). There were no significant differences between LAD and ASD parent group demographics except there was a trend for more LAD parents to have college degrees (100% for LAD vs. 84% for ASD, $p = 0.05$). Across both groups, participants were primarily female (93%), white (93%) and had a mean age of 45.52 years ($SD = 6.50$).

Measures

Data for the current study were derived from a researcher-developed feedback questionnaire that included closed-ended (quantitative) and open-ended (written qualitative) questions about the virtual SMART-3RP program.

Quantitative Assessment. Participants were asked several closed-ended questions about the content and structure of the

Table 1. Participant Characteristics.

	LAD (n = 33)	ASD (n = 37)
Age, years, M (SD)	46.07 (5.78)	44.97 (7.21)
Female n (%)	30 (91%)	35 (95%)
Hispanic/Latino n (%)	1 (3%)	0 (0%)
Race, n (%)		
White	31 (94%)	34 (92%)
Black or African American	1 (3%)	1 (3%)
Asian	1 (3%)	1 (3%)
Other	0 (0%)	1 (2%)
Marital status		
Married/living as married	31 (94%)	30 (81%)
Divorced/separated	2 (6%)	6 (16%)
Never married	0	1 (3%)
Education level		
High school graduate/GED	0 (0%)	1 (3%)
Some college/technical school	0 (0%)	5 (13%)
College graduate	33 (100%)	31 (84%)
Employment status		
Employed for wages	21 (64%)	26 (70%)
Homemaker	11 (33%)	8 (22%)
Not employed	1 (3%)	3 (8%)
Age of child with LAD or ASD, M (SD)	11.70 (3.38)	12.10 (2.69)

Note. There were no significant differences between parent groups on any of these variables, except for a trend for higher education level among LAD parents ($p = 0.05$).

program, and they were asked to select one of 3-4 response options tailored to the question (detailed in Table 2). The questions were (1) *How do you feel about the total number of group sessions?* (2) *How do you feel about the amount of time each group session lasted?* (3) *How do you feel about the group structure?* (4) *How helpful was it to learn relaxation exercises during the session?* (5) *How comfortable were you in the group sessions?* (6) *Since starting this group, how often have you practiced relaxation exercises on your own?* (7) *How helpful was it to practice these exercises between the sessions?* (8) *Overall, how much would you say that this program helped with your ability to cope with your parent-related and other life stressors?* Participants were also asked to rate the helpfulness for each of the eight intervention sessions on scale of 1 (very helpful) to 5 (not at all helpful).

Qualitative Assessment. Participants were also presented with several open-ended questions about the intervention, with the option to provide brief written responses in a free-text box: (1) *How did you feel about the virtual delivery of the SMART-3RP?* (2) *Is there anything else that you found helpful about this program?* (3) *Is there anything else that you found not helpful about this program?* (4) *What kinds of additional programs would be helpful for you at this point?* (5) *Please share your thoughts about ways we could improve this program.* For each quantitative feedback question described

above, participants also had the option to provide a qualitative comment.

Procedure

Parents participated in the SMART-3RP intervention over videoconferencing in separate groups of LAD and ASD parents. Details of the study procedures have been previously published.^{12,13} In short, parents were recruited for the intervention trials through online study flyers at local and national clinics and community organizations serving children with ASD or LAD, including schools, support service centers, online advocacy groups, and Special Education Advisory Councils. Interested parents completed an eligibility phone screen, and eligible parents completed informed consent by phone. After completion of the intervention, all trial participants were approached *via* email and/or telephone and invited to complete a post-intervention survey that included the feedback questionnaire. Thus, this qualitative study used self-selected parents. Twenty LAD parents and 14 ASD parents chose not to complete the feedback questionnaire; reasons for non-participation are unknown. Participants completed the questionnaire from their home.

The SMART-3RP is a multi-modal mind-body intervention that aims to reduce stress and build resiliency through three core components: mind-body skills to elicit the

Table 2. Parent Feedback on the SMART-3RP Program.

	Full sample (N = 70)	LAD (n = 33)	ASD (n = 37)	Test statistic
Number of sessions				$\chi^2 = .13, p = 0.51$
Right amount	48 (69%)	22 (67%)	26 (70%)	
Too few	18 (26%)	10 (30%)	8 (22%)	
Too many	4 (6%)	1 (3%)	3 (8%)	
Length of each session				$\chi^2 = 5.67, p = 0.06$
Right amount	58 (83%)	31 (94%)	27 (73%)	
Too long	10 (14%)	2 (6%)	8 (22%)	
Too short	0	0	0	
Qualitative comment	2 (3%)	0	2 (5%)	
Group structure				$\chi^2 = 1.78, p = 0.62$
Too structured	5 (7%)	1 (3%)	4 (11%)	
Too unstructured	2 (3%)	1 (3%)	1 (3%)	
Right amount	58 (83%)	29 (88%)	29 (78%)	
Don't know/not sure	5 (7%)	2 (6%)	3 (8%)	
How helpful to learn RR				$\chi^2 = 5.19, p = 0.16$
Helpful	62 (89%)	32 (97%)	30 (81%)	
Not helpful	1 (1%)	0	1 (3%)	
Not sure	4 (6%)	0	4 (11%)	
Qualitative comment	3 (4%)	1 (3%)	2 (5%)	
Comfort during sessions				$\chi^2 = 2.45, p = 0.49$
Comfortable	62 (89%)	31 (94%)	31 (84%)	
Uncomfortable	2 (3%)	0	2 (5%)	
Not sure	3 (4%)	1 (3%)	2 (5%)	
Qualitative comment	3 (4%)	1 (3%)	2 (5%)	
RR practice on your own				$\chi^2 = .35, p = 0.32$
Daily	12 (17%)	3 (9%)	9 (24%)	
Few times/week	44 (63%)	24 (73%)	20 (54%)	
Once or twice	10 (14%)	4 (12%)	6 (16%)	
Qualitative comment	4 (6%)	2 (6%)	2 (5%)	
At-home RR practice				$\chi^2 = 3.12, p = 0.37$
Helpful	64 (91%)	32 (97%)	32 (87%)	
Not helpful	1 (1%)	0	1 (3%)	
Not sure	3 (4%)	1 (3%)	2 (5%)	
Qualitative comment	2 (3%)	0	2 (5%)	
Helped coping with stress				$\chi^2 = 3.47, p = 0.33$
Helpful	61 (87%)	31 (94%)	30 (81%)	
Not helpful	1 (1%)	0	1 (3%)	
Unsure	6 (9%)	2 (6%)	4 (11%)	
Qualitative comment	2 (3%)	0	2 (5%)	

Note. All questions had the option for a qualitative comment; qualitative comments that had zero responses are not shown.

relaxation response and counter the negative physiological effects of stress (e.g., deep breathing and guided imagery), cognitive-behavioral therapy skills to promote awareness and adaptive responding to stress (e.g., cognitive restructuring and problem-solving), and positive psychology skills to promote adaptive perspectives and growth (e.g., appreciation and humor).¹⁷ Each session focused on a specific theme, was led by an experienced SMART-3RP clinician, and included a combination of didactic teaching, skills practice, and group discussion. Participants were encouraged to practice the skills at home each day in between sessions. Participants completed

the feedback questionnaire *via* a secure online data collection system (REDCap) within approximately two weeks after completing the intervention. Participants received a \$20 gift card for completing the follow-up survey that included the feedback form.

Data Analysis

Quantitative Analysis. Descriptive statistics (frequencies, percentages) were used to explore participants' responses to the feedback questions. Responses were explored among the full

sample and separately within each parenting group, with chi-square tests used to compare the results between LAD and ASD groups. For session ratings, descriptive statistics (means, standard deviations) and independent samples t-tests were used to compare LAD and ASD groups. Alpha was set at $p < 0.05$ for all analyses. All analyses were conducted in SPSS v25.

Qualitative Analysis. Using a content analysis approach, two study staff (Authors A and B; both PhD clinical psychologists) independently reviewed all qualitative responses to identify themes and develop a preliminary coding framework. Both coders met on a regular basis to compare and refine the categories and coding structure. Authors A and B have 2–5 years of training in qualitative research, including formal educational training and previous qualitative research experience. Themes were derived from the data. Discrepancies were resolved with comparisons to raw data until consensus was obtained. A third coder (Author G; PhD clinical psychologist) then reviewed and coded all of the original qualitative responses, applying the final coding framework. Author G is an expert in qualitative research with over 20 years' experience. No qualitative analysis software was used. Participants did not provide feedback on the findings.

Results

Quantitative Results

Table 2 presents the results for the program feedback questions. There were no significant differences between LAD and ASD parents in terms of their program feedback; however, there was a trend for ASD parents to prefer shorter sessions ($\chi^2 = 5.67$, $p = 0.06$). Overall, among the combined sample, parents reported that the virtual SMART-3RP program had the right amount of sessions (69%), session length

(83%), and group structure (83%). A majority felt comfortable during the group sessions (89%) and reported it was helpful to learn relaxation skills during the sessions (89%). They reported that practicing the relaxation response at home was helpful (91%) and the SMART-3RP skills were helpful for coping with stress (87%). Participants most commonly stated that they practiced relaxation skills at home a few times per week (63%). For ratings of session helpfulness (Table 3), across the combined sample, mean scores ranged from 1.48 (SD = 0.75) to 1.67 (SD = .79) (out of 5). The only sessions that were rated significantly differently between parent groups were session 5 (i.e., creating adaptive perspectives) and session 7 (i.e., healing states of mind), where ASD parents reported lower helpfulness as compared to LAD parents (p 's < 0.05 ; see Table 3)

Qualitative Results

All 37 participants in the ASD group responded to all qualitative questions. In the LAD group, all 33 participants responded to the first two questions (virtual delivery and program helpfulness), but one participant did not respond to the last three questions, leaving 32 respondents for these (unhelpful aspects, ongoing needs, and suggestions for improvement). Very few participants (2–4%) provided additional comments to the quantitative questions. There were similarities and differences between parent groups regarding the virtual delivery, helpful aspects of the program, unhelpful aspects of the program, ongoing needs, and suggestions for improvement. We present the similarities and differences for each domain.

Virtual Delivery: Similarities. In terms of virtual delivery, parents across both groups most commonly reported positive experiences, describing themes of ease/convenience and improved access. For instance, an LAD parent stated “It is a

Table 3. Parent Ratings of the Helpfulness of Each SMART-3RP Session.

Session	Full sample Mean (SD)	LAD (n = 33) Mean (SD)	ASD (n = 37) Mean (SD)	t	p	95% CI
1: Stress management and resiliency training	1.57 (0.66)	1.52 (0.57)	1.62 (0.76)	-0.67	0.51	-0.42 to 0.21
2: Relaxation response	1.48 (0.75)	1.36 (0.60)	1.59 (0.90)	-1.28	0.22	-0.59 to 0.13
3: Stress awareness	1.53 (0.80)	1.36 (0.60)	1.70 (1.00)	-1.74	0.09	-0.73 to 0.05
4: Mending mind and body	1.67 (0.79)	1.55 (0.67)	1.78 (0.92)	-1.25	0.22	-0.62 to 0.14
5: Creating an adaptive perspective	1.60 (0.80)	1.39 (0.66)	1.81 (0.94)	-2.17	0.03	-0.81 to -0.33
6: Promoting positivity	1.64 (0.89)	1.52 (0.80)	1.76 (0.98)	-1.12	0.27	-0.67 to 0.19
7: Healing states of mind	1.70 (0.84)	1.45 (0.71)	1.95 (0.97)	-2.43	0.02	-0.90 to -0.09
8: Humor, empathy, and staying resilient	1.65 (0.83)	1.48 (0.71)	1.81 (0.94)	-1.65	0.10	-0.72 to 0.07

Note. The rating scale ranged from 1 (very helpful) to 5 (not at all helpful) such that lower scores are better. In supplemental analyses, we calculated the mean session rating across all 8 sessions and compared this score between groups using independent samples t-test. Results indicated a non-significant trend toward higher scores in the ASD (M = 1.75, SD = 0.82) as compared to the LAD group (M = 1.45, SD = 0.50; $t(68) = -1.85$, $p = 0.07$).

great way to do it with groups who are not local” and an ASD parent stated that the virtual nature of the program “Saves time and money since travel is not necessary.” When discussing access, parents noted that the virtual delivery enabled them to participate (e.g., “I loved the virtual delivery since I am so far away and we do not have many resources for parents in my rural area. This was a ‘God send’ for me!”). In both groups, some parents noted that virtual delivery was less personal but still better than not participating (e.g., “It may have been slightly more effective in an on-site type setting but I would not have then been able to participate”). Some noted there were technology issues that may have detracted from their experience (e.g., “Enjoyed it but found it extremely distracting when others had a bad connection...”).

Virtual Delivery: Differences. A minority of parents identified some challenges with virtual participation, and the reasons for challenges differed between the groups. LAD parents expressed concern about the impersonal nature of virtual connection (“While it made it easier to participate, I think it affected my ability to feel engaged. I felt disconnected from the process/skills and ultimately dropped out b/c I felt like I could make better use of the time”). However, ASD parents’ concerns centered largely on technical problems (“Technology kinks were frustrating – missed out on a session because of it”) and video distractions (“audio was difficult at times. Participants did not understand to mute when communicating to others in their home”).

Helpful Aspects of the Program: Similarities. LAD and ASD parents found the same things to be helpful: social support, psychoeducation and skills, the opportunity to focus on themselves, and the intervention structure and delivery. Social support was a common theme in both groups and included emotional support, a sense of belonging and community, and accountability. Emotional support was most commonly appreciated in both groups (“Hearing problems other members had that were similar; nice to know I’m not the only one”). Psychoeducation/skills, particularly RR practices, were also commonly found to be helpful (e.g., “It helped me learn some great techniques for reducing stress and coping with stressful situations”). In terms of intervention components, both groups noted that the group facilitator and structure of the intervention sessions was helpful. A couple of parents in each group stated that focusing on themselves was helpful (e.g., “It helped me understand myself better thus making me better able to deal with my husband and children”).

Helpful Aspects of the Program: Differences. While social support was commonly mentioned in both groups, ASD parents most commonly reported social support to be helpful, while LAD parents equally reported social support and psychoeducational skills to be helpful. While both groups noted emotional support to be helpful, ASD parents also

discussed informational support (e.g., “I really enjoyed connecting with other parents who could empathize with my own experiences and offer advice, insight, and support”) and giving support to others (e.g., “Able to transfer skills to others”). When describing the types of skills that were helpful, LAD parents highlighted the utility of several skills (adaptive strategies, cognitive strategies, stress awareness, and RR), while ASD parents most commonly noted that RR skills were helpful.

Unhelpful Aspects of the Program: Similarities. Both group of parents expressed some challenges with session content, homework, study operations, intervention structure, and inconsistent group participation. Specifically, many parents described the program’s homework as stressful and cumbersome (e.g., “I found it created some stress for me”), and they reported frustration with inconsistencies in group participation (e.g., “Frustrating to have parents drop in the middle, but I’m guessing with this audience that is to be expected”). Additionally, a couple of parents reportedly struggled with aspects of the study’s operation (e.g., “The delivery of so much information in so many forms was a little overwhelming (paper to print out, audio to listen to, video to navigate).”

Unhelpful Aspects of the Program: Differences. There were some differing opinions in regard to session content. Several ASD parents noted that some content was irrelevant or invalidating (e.g., “Lack of understanding about who has the problem staying asleep”), whereas parents of LAD did not share the same concerns. For LAD parents, comments included inconsistent scheduling, a lack of time during sessions, underdeveloped content, and too much leniency. For ASD parents, some stated the intervention was too short and others stated it was too long, and others noted a lack of flexibility. Lastly, even though parents in both groups reported technology challenges when asked directly about virtual delivery, only ASD parents identified virtual delivery challenges as an unhelpful aspect of the program, sharing that the platform was unreliable and distracting and participation was uncomfortable because it was too personal (e.g., “It felt weird to have people on videoconference who could see my every move”).

Ongoing Needs: Similarities. When asked about additional programs that would be helpful, LAD and ASD parents again reported similar themes: program continuation or expansion, general support groups, further RR or mind–body training, and professional therapy. For program continuation or expansion, parents in both groups discussed an interest in having a longer program and booster sessions (e.g., “I think some sort of followup/check in would be helpful as well as additional guided practice”). Some parents emphasized a preference for ongoing support groups (e.g., “For me, I enjoyed being able to hear other people’s experiences and feel

like I was not alone. All of the new processes we implemented in our lives certainly helped too, but I was doing some of them previously”). For further RR or mind–body practice, both groups identified an interest in parent meditation groups. In both groups, two parents expressed an interest in professional therapy.

Ongoing Needs: Differences. There were differences in which themes were most common and what the specific needs were. For LAD parents, program continuation/expansion, general support groups, and further RR practice were all similarly common, whereas for ASD parents, general support groups were most common. In addition, some ASD parents expressed an interest in online support groups (“I think a parent online support group with a person to guide the conversation would be great”) while others felt in-person groups would be most beneficial (“I think I would do better getting out of my house and going to a quiet location without household distractions”). Further RR practice was discussed by several parents in the LAD group and included yoga and advanced meditation groups. Only a couple of ASD parents had an interest in further RR practice. Lastly, there was a unique theme of stress management groups among ASD parents, which was not tied to RR methods of stress management (“Any programs that can help with coping with stress and increasing mindfulness would be helpful”).

Suggestions for Improvement: Similarities. In both groups, parents suggested improvements to intervention resources and materials, group dynamics, program structure, program content, technology components, and clearer expectations. A couple of parents in both groups suggested improving program content by tailoring it more to their unique experiences (“I wish there had been more time to practice and get feedback on personal examples of stress”). In terms of intervention resources and materials, parents in both groups suggested providing complementary resources (e.g., “provide a list of all the techniques and then a short paragraph summarizing the technique. Might help us try more of the options”). Parents in both groups suggested promoting greater group cohesion (“My biggest wish is that the entire group had a sense of commitment to each other to do the practice”).

Suggestions for Improvement: Differences. Among LAD parents, several suggested a longer program, less structure and less skills-focused, and a more consistent schedule. Among ASD parents, some suggested a longer program but with shorter session length, and there were mixed perspectives on whether the program should be more or less skills-focused. In terms of improved resources and materials, LAD parents (but not ASD parents) suggested improvements to the manual and homework (“A book that includes more context might be helpful even to people who can’t attend the online sessions”). While improving group dynamics came up in both groups, this was expressed by several LAD parents and only a few

ASD parents. LAD parents suggested more targeted grouping while ASD parents noted a larger group size. For program content, an ASD parent suggested incorporating children and families. In terms of technology components, a LAD parent asked for more guidelines while an ASD parent asked for improvements to the platform. There were also two unique themes among ASD parents: improvement of information delivery and a group for higher child needs. For information delivery, suggestions including sending materials in advance and making materials more available (e.g., “Maybe the material could be sent in advance to be read”).

Discussion

The purpose of this study was to explore participants’ feedback regarding participation in the virtual SMART-3RP program and compare perspectives across ASD and LAD parent groups. Taken together, participants in both groups indicated that the SMART-3RP intervention was acceptable and beneficial. Quantitative results indicated that parents felt comfortable with the number and length of sessions and group format, and found sessions to incorporate an appropriate balance of structured content and informal discussion. Practices intended to elicit the RR were rated positively and most participants incorporated these strategies into their daily routines at least a few times per week. Qualitative analyses revealed that although the virtual delivery format unsurprisingly presented some challenges, participants in both groups appreciated the ability to participate, which would not have been possible in person for many parents. Similar intervention components were found to be helpful across both parent groups, particularly social support and RR elicitation techniques. Common suggestions for improvement included continuing the program or offering booster sessions.

Some parents experienced challenges, which were similar across LAD and ASD parents. Similar to other studies of stress management interventions, parents noted that daily home practice was sometimes difficult to complete.¹⁸ Amount of home practice may be a predictor of treatment outcomes, and so highly stressed parents of children with special needs may require additional strategies to ensure an optimal treatment “dose,” such as including children or other family members and building RR practice into a family routine.^{18,19} Parents in both groups also noted greater difficulty attending fully to the session due to video delivery. Thus, it may be important to explicitly discuss strategies to minimize on- and off-screen distractions at the start of the session, such as wearing headphones, muting oneself when not speaking, and requesting privacy from other family members during group time whenever possible.^{20,21}

There were also some important differences between LAD and ASD parents. In quantitative analyses, there was a trend for ASD parents to provide slightly poorer ratings of some sessions as compared to LAD parents. The qualitative results help to explain these findings. Compared to LAD parents,

parents of children with ASD described a greater need and benefit of social support, a preference for shorter sessions, and greater challenges with video delivery. Parents of children with ASD commonly experience high social isolation, which may explain why these parents reported the greatest benefit from the group social connection and support, rather than mind–body psychoeducation and skills training.²² At the same time, some parents in the ASD group found virtual sessions to be uncomfortably intimate. These concerns may be addressed by explicit group discussion of utilizing “gallery view” and “speaker view” features in Zoom, hiding one’s “self view” or even turning off one’s web camera to minimize self-consciousness, and/or blurring or changing your background on the screen for greater privacy of the home.²³ Given the high heritability of ASD traits, there may be cases in which some parents of children with ASD may also exhibit some traits that impact the type and amount of social interaction desired.²⁴ Parents in the ASD group also identified some unhelpful program content around sleep, given the pervasive nature of their children’s sleep difficulties. In future iterations of this program for parents with ASD, it will be beneficial to validate parents’ difficulties with this issue and discuss creative solutions to children’s sleep challenges, or directly incorporate parent-mediated sleep strategies for children.²⁵

In contrast to ASD parents, some parents of children with LAD felt the virtual connection was not personal enough. LAD parents noted that remote delivery of this program sometimes impeded meaningful social connection with other group members. For parents like those in the LAD group who desire closer social connection, future interventions might utilize breakout groups to provide time for more intimate small-group discussions within the larger group. In addition, web-based resources such as a private online message board may allow participants to easily provide feedback and offer individualized suggestions to one another outside of the scheduled meeting.²³ As much as LAD parents enjoyed the social connection, they equally appreciated the psychoeducational skills and RR practices. In fact, some LAD parents highlighted intervention issues like not enough time during sessions, underdeveloped content, and unstructured group meetings as potential areas of improvement. The appreciation for psychoeducational content and preference for fully developed and structured information might relate to the slightly greater alignment between intervention content and LAD parents’ needs. Given their stronger engagement with course content targeting self-compassion, interpersonal skills, and acceptance, LAD parents may have received a stronger dose of these skills-based intervention components, potentially contributing to the greater improvements in distress and empathy observed among LAD parents in our previous papers.^{12,13}

We had separate groups for ASD and LAD parents in the current study. Parents of children with ASD report greater levels of parenting stress than parents of children with other

disabilities^{8,26} and the types of stressors they experience are also unique due to differences in child severity and presentation (e.g., more severe symptoms, unpredictable emotional outbursts, deficits in social communication, and restrictive/repetitive behaviors).^{9,26} Separating the groups allowed the interventionist to use examples specific to the parents’ experience, and may have provided greater shared experience and understanding among parents. At the same time, both groups experience significant parenting stressors, and there may be enough common experience that combined groups are also beneficial. The current results suggest that overall, the intervention was acceptable to both groups of parents, though each parenting group may have some specific needs. Future research should further explore whether separate or combined groups optimize acceptability and efficacy for ASD and LAD parents.

Strengths and limitations to the present study must be noted. Strengths include recruitment of a highly stressed community sample, many of whom would not have been able to complete an in-person stress management program, as indicated in the qualitative responses. Our reliance on a manualized session format allowed for interpretable group comparisons between parents of children with ASD and LAD and will also facilitate replication and systematic optimization of this intervention in future research. In addition, the mixed methods approach provides a nuanced assessment of program acceptability across domains and resulted in many meaningful suggestions for virtual intervention development.

Regarding limitations, it is likely that those who chose to enroll in the stress management intervention and complete the feedback questionnaire had greater motivation and/or stronger feelings than those who did not enroll or complete the questionnaire. As such, these results may not fully characterize the needs of all parents of children with ASD and LAD. A second limitation is the limited demographic variability of participants, who were predominantly female, White, non-Hispanic, and college educated. Given the majority of women, the results effectively reflect mothers’ experience and more research is needed to explore interventions for fathers. The literature on acceptability of remote-delivered mental health services is generally overrepresentative of well-resourced adults and future work is needed to understand the needs of racially and economically diverse parents, who likely have even greater symptoms and needs.²⁰ Thirdly, comparisons between the LAD and ASD groups should be interpreted as preliminary in light of the small study sample size. Related, the use of a researcher-developed measure for quantitative responses is a limitation. Finally, we were unable to control for some potentially meaningful individual differences for this population, such as marital status, childcare responsibilities, mental health concerns (including personal diagnoses of LAD or ASD), and child’s symptom severity. In the future, audiovisual recordings of online group sessions might promote more detailed treatment fidelity rating, ensuring that participants in both groups receive similar

intervention content.²⁷ In addition, we plan to explore parent co-delivery in future research, to assess the effects of incorporating an ASD or LAD parent co-leader, which may be another viable option for future research.

Nonetheless, results suggest that a group-based, video-delivered, stress management intervention is highly acceptable to parents of children with ASD and LAD alike. With the necessary expansion of video-delivered treatments in the context of COVID-19, the current findings are encouraging for promoting resilience interventions virtually to expand its reach to underserved populations. Although some people may find video delivery more or less preferable, many are still willing to engage and perceive benefit from this approach. Future research should continue to explore methods to optimize social connection and comfort with video delivery, leveraging this important technology to extend the reach of stress management programming to those who may otherwise have limited access to supportive resources.

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