

© 2020 American Psychological Association ISSN: 2578-4218

The Efficacy of Problem-Solving Consultation for Homeschooled Students With Behavior Concerns

Rachel M. DeRish, Thomas R. Kratochwill, and S. Andrew Garbacz University of Wisconsin–Madison

The purpose of this study was to explore the efficacy and acceptability of problem-solving consultation for homeschooling families with children who exhibited externalizing behavior problems. Three families participated, with multiple siblings participating from each family. Six children were male and 1 child was female. Children's ages ranged from 5 to 9 years old. Single-case experimental multiple baseline designs were used to evaluate the functional relation between implementation of behavior support plans within problem-solving consultation and children's externalizing behaviors. Direct observation data showed decreases in externalizing behaviors after the consultation and intervention process for 2 of the 3 families. The parents of the homeschooling children reported that the behavior support plans and consultation process were acceptable. Implications for future research and practice are presented.

Impact and Implications

This study explored the utility of consultation provided by school psychologists to homeschooling families for children with externalizing behavior concerns. Findings of this study suggested that problem-solving consultation can be used in a homeschool setting and holds promise for supporting homeschooling parents in promoting children's behavior at home.

Keywords: behavioral consultation, externalizing behaviors, homeschooling, problem-solving consultation, behavior support plan

A repeated problem reported by homeschooling parents is the disconnect they feel from supports available within the public school (Fields-Smith & Williams, 2009). Many families who homeschool their children need services such as special education assessment, speech therapy, and access to extracurricular activities (Fields-Smith & Williams, 2009). The disparity therein lies between parents who have chosen to homeschool their children due to their child having unique academic and behavioral needs, and a lack of resources available to equip parents with skills and competencies to meet their children's needs (Fields-Smith & Williams, 2009; Redford, Battle, & Bielick, 2017).

could identify multiple reasons for homeschooling, physical or mental health issues with the child (15% reported) and having a child with special needs (16%) were commonly chosen reasons for deciding to homeschool (Redford et al., 2017). Despite the increasing numbers of families choosing to homeschool, minimal research has been conducted regarding the needs of and supports for homeschooling families. In fact, a repeated problem reported by homeschooling parents is their disconnect from supports available to public school students (Fields-Smith & Williams, 2009). The current research seeks to begin to bridge the gap in assessing the

Homeschooling

tion in the U.S. (Grady, Bielick, & Aud, 2010). The number of

students being homeschooled has grown by 74% in a little less

than a decade, and as of 2012, these students accounted for

approximately 3% of students in the U.S. (Grady et al., 2010;

Redford et al., 2017). According to a 2017 report from the National

Center for Education Statistics, in which homeschooling parents

Homeschooling is currently the fastest growing form of educa-

Consultation

efficacy and acceptability of supports for homeschooling families.

The problem-solving consultation model (Kratochwill, Altschaefl, & Bice-Urbach, 2014) has typically involved the teacher, parent, and consultant in identifying and addressing behavioral and academic difficulties that occur at school (Kratochwill et al., 2014; Kratochwill & Bergan, 1990). The problem-solving consultation

Rachel M. DeRish, Thomas R. Kratochwill, and S. Andrew Garbacz, Department of Educational Psychology, University of Wisconsin-Madison.

The data analysis of the research was completed with the assistance of Joel Levin, as he supported the utilization of ExPRT in data analysis, and multiple University of Wisconsin—Madison graduate students who assisted in coding. The research reported here was supported by the Society for the Study of School Psychology through a Dissertation Grant Award to Rachel DeRoos at the University of Wisconsin—Madison. The opinions expressed are those of the authors and do not represent views of the Society for the Study of School Psychology.

Correspondence concerning this article should be addressed to Rachel M. DeRish, 150 British Road, Bristol BS3 3BZ, United Kingdom. E-mail: rachelderish@gmail.com

process includes building rapport among teachers, parents, and consultant; identifying and analyzing the problem; and individualizing programming for specific behaviors (Kratochwill et al., 2014). The consultation process can be applied in a conjoint manner, with both teachers and parents (Sheridan & Kratochwill, 2008), and the protocol for this approach can be used with only the parents. Problem-solving consultation is effective in addressing concerns across all behavioral, socioemotional, and academic concerns, and has been highly rated by parents in terms of acceptability and effectiveness (Sheridan, Eagle, Cowan, & Mickelson, 2001). Although problem-solving consultation has been shown to be efficacious in reducing externalizing behavior concerns (e.g., Bice-Urbach & Kratochwill, 2016), this model has not been applied to the homeschool setting.

Externalizing Behavior Concerns

The current study examined problem-solving consultation with homeschooling parents to address children's externalizing behavior concerns. Externalizing behaviors refer to a wide range of negative behaviors directed to an individual's environment (e.g., defiance; American Psychiatric Association, 2013). Approximately one in five children exhibit externalizing behavior concerns (Carter et al., 2010). Researcher suggests that the level of quality parenting and the development of externalizing behavior concerns have a transactional effect on each other (Pearl, French, Dumas, Moreland, & Prinz, 2014).

Purpose of the Current Study

For the current study, we posited that problem-solving consultation would be an excellent match for homeschooling parents who need support in teaching their children. The purpose of the current study was to assess the efficacy of problem-solving consultation for homeschooled children who exhibit externalizing behavior problems. Multiple exploratory research questions were identified due to the lack of background research and small sample size. The exploratory research questions were as follows: (a) Will child externalizing behavior problems be significantly lower after completing the problem-solving consultation process? (b) Will parents experience increased self-efficacy in their parenting skills after receiving parent-consultation? (c) After receiving problem-solving consultation, will parents report higher self-efficacy in teaching compared to before consultation? and (d) Will homeschooling parents who implement the intervention report that the consultation process and the Behavior Support Plan (BSP) are effective and acceptable?

Method

Participants and Setting

Three families enrolled in the research and completed the study. The three families were enrolled because they met criteria for the research and would allow for multiple baseline design (MBD) methodology (Kratochwill & Levin, 2010). Each family enrolled multiple children, with Family 1 enrolling two third-grade twin sons, Family 2 enrolling two sons, a first and third grader, and Family 3 enrolling three children, a third-grade son, a first-grade

daughter, and a son in kindergarten. Families were contacted by the researchers via recruitment flyers through their homeschooling organization, and direct contact was made through community resources. Informed consent was provided by each parent in the study, and child assent was also gained, in adherence with the approval of the university Institutional Review Board.

Each child met the inclusion criterion of receiving at least one subscale (e.g., hyperactivity, aggression) on the Behavior Assessment Scale for Children, Third Edition (BASC-3; Reynolds & Kamphaus, 2015) within the at-risk range. One participant (1B) had previously received a diagnosis of Attention-Deficit/Hyperactive Disorder, as reported by his parent. No other child in the research received clinical diagnoses, as reported by their parents. Each family had one primary homeschooling parent who completed problem-solving consultation with the consultant. The research took place within the homeschooling families' homes. The primary homeschooling parent enrolled in the research for each family identified as female and white. The mothers' education levels were (a) vocational/technical degree, (b) college degree, and (c) master's degree. Six male and one female student were enrolled in the research. The students ages ranged from 5 years old to 9 years old. Five students identified as white and two students identified as multiracial.

Measures

Direct observation. For each child enrolled in the research, the child's parent selected three to four behaviors to address in the BSP. These behaviors were measured using Partial Interval Recording (PIR), which was collected between one and four times a week in 15-min sessions, with the PIR intervals being 60 15-s intervals. The behaviors were recorded based on partial intervals, meaning that the consultant recorded the behavior if it occurred at all in each 15-s interval. Interobserver agreement (IOA) was measured for the PIR observations. Observers were responsible for completing IOA for 30% of all observational data with 80% agreement with the researcher. Observers completed a minimum of 30% data coding for every phase of the single-case design, with IOA coding ranging from 30% to 42% per phase. Across all participants, an average of 36% of each phase was coded. Average agreement was 85% (range = 75% to 98%).

Goal Attainment Scale. Initially developed to assess mental health service outcomes, Goal Attainment Scales (GAS) measure how an individual is progressing on a target behavior (Kiresuk & Sherman, 1968). Parents completed daily GAS to provide a measure of their perception of their child's behavior throughout the course of the research, at baseline and throughout intervention. Approximations of appropriate behavior were operationalized on a scale (e.g., 1–10). The GAS provided the parents an opportunity to assess the child's progress, and to become aware of how their interactions with their child influence the child's behaviors. Reliability and validity have not been established for GAS.

Behavior Assessment Scale for Children, Third Edition (Reynolds & Kamphaus, 2015). The BASC-3 is an assessment that measures maladaptive and adaptive behaviors in the home and community settings. For the current study, the BASC-3 Parent Rating Scale-Child (PRS-C), as well as the BASC-3 Parent Rating Scale-Preschool (PRS-P), were used. The BASC-3 has a mean *t*

score of 50, with a standard deviation of 10. The BASC-3 PRS P and PRS C have evidence of reliability and validity (Reynolds & Kamphaus, 2015). The BASC-3 was administered at pre- and posttest. Pre- and posttest BASC-3 scores were compared to assess the difference in the parents' reports of child behavior before and after the intervention.

Parent Sense of Competence (PSOC; Johnston & Mash, 1989). The PSOC is a measure of parenting competence for parents of elementary-school-age children. The questionnaire comprises 17 items, with two subscales: satisfaction and efficacy. The scale has adequate internal consistency, with an alpha coefficient of .75 for the satisfaction factor and .76 for the efficacy factor (Johnston & Mash, 1989). The PSOC is rated on scale from a 1 (*strongly disagree*) to 6 (*strongly agree*). Parents completed the PSOC for each child enrolled in the research before they began the baseline phase and at the end of the intervention.

Teacher Self-Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES was used to assess the parents' self-efficacy regarding their teaching abilities. Parents completed the TSES for each of their children at the beginning and at the conclusion of the research. The TSES comprises questions asking "How much can you do . . .?" (e.g. "to control disruptive behaviors in your classroom") with responses ranging from 1 (nothing) to 9 (a great deal). The TSES is divided into three categories: Efficacy in Student Engagement, Efficacy in Instructional Strategies, and Efficacy in Classroom Management. The questions addressed individual student behavior as well as "classroom" management skills. This scale was not adapted, as all parents in the study enrolled multiple children, indicating that classroom management would also be applicable in a group context. The TSES has acceptable internal consistency reliability (overall $\alpha = .94$) for Efficacy in Student Engagement ($\alpha = .87$), Efficacy in Instructional Strategies $(\alpha = .91)$, and Efficacy in Classroom Management ($\alpha = .90$; Tschannen-Moran & Woolfolk Hoy, 2001).

Behavior Intervention Rating Scale—Revised (BIRS-R; Sheridan et al., 2001; Von Brock & Elliott, 1987). The BIRS-R was used to examine the parents' perceptions of the acceptability and effectiveness of problem-solving consultation and the BSP. The Pre-BIRS-R was completed after the consultant and parent developed the BSP, but prior to the implementation of the BSP. The Post-BIRS-R was completed after the completion of the research. The BIRS-R contains 24 items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The Acceptability factor and Effectiveness factor have acceptable internal consistency reliability based on parent-report (Acceptability factor $\alpha = .95$, Effectiveness factor $\alpha = .95$; Sheridan et al., 2001, 2012).

Consultant Evaluation Form (CEF; Erchul, 1987). The CEF was used to assess parents' perception of the consultant. The CEF comprised 12 items on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Parents completed a CEF-Pre prior to beginning consultation, which measured their expectations regarding the work of the consultant, as well as their collaboration and relationship with the consultant. After completing consultation, parents completed a CEF-Post. The CEF has acceptable internal consistency reliability (α range = .94 to .95; Erchul, 1987).

Fidelity

Multiple measures were implemented during the consultation and BSP process to ensure that all procedures implemented in the research were completed as designed.

The consultant completed a Treatment Integrity Checklist (TICT) during each PIR home observation session to measure the parent's fidelity to the BSP. A second observer coded 30%–42% of all phases using the TICT, with an average of 35% of the data coded. Observers agreed with the consultant for 89.6% of the adherence ratings.

Parents completed a Weekly Implementation Checklist throughout implementation of the BSP, in which they rated their fidelity to the intervention components that composed the BSP on each day during the intervention phase.

The fidelity of the consultant to the problem-solving consultation interviews was also measured. The researcher and the trained observers reviewed all interviews and rated the consultant for fidelity to the interview script. Coder rating of consultant fidelity to the problem-solving consultation process across all participants was 95% (range = 89% to 100%).

Procedure

A trained graduate student consultant completed the problemsolving consultation process across the four structured interviews within the problem-solving consultation protocol with homeschooling parents. The interviews were as follows: Problem Identification Interview (PII), Problem Analysis Interview (PAI), Plan Implementation Interview (PI), and Treatment Evaluation Interview (TEI). The consultant also completed a Functional Assessment Interview (FAI) during the PAI phase to assess the function of the child's externalizing behavior concerns.

During the PII, parents identified specific, measurable behaviors that they wanted to either decrease or increase. Examples of these behaviors include student engagement in off-task verbalizations, and off-task motor activities (e.g., getting out of seat when not permitted). After the completion of the PII, the consultant began collecting baseline data on the behaviors identified by the parents. The baseline behaviors were measured using PIR and were collected using video cameras. During the FAI, the consultant and parent completed a functional behavior assessment to assess the function of the child's off-task behaviors. Once the PAI and FAI were completed, the consultant and parent collaboratively developed the BSP based on the function of the child's off-task behaviors. The function-based BSPs were developed after the completion of the FAI, using the Helping Kids Succeed: Behavioral Strategies for Teacher's manual as a foundation for BSP designs (Sheridan & Witte, 2010).

Although behavior codes were similar across participants, the BSPs were individualized based on the parent reports of function of the child's behavior. Participant 1A's BSP included training appropriate social skills (i.e., how to ask appropriately for help), preteaching of behavior expectations, self-monitoring, differential reinforcement, and rewards for on-task behaviors. Participant 1B's BSP included coaching of calming strategies and positive acknowledgments for maintaining a "calm body," frequent and regular praise for on-task behavior, preteaching of behavior expectations, and rewards for on-task behaviors. The BSP for Participant 2A included identifying clear behavior expectations, regular check-ins to assess his adherence to the expectations, and scaffolded support for self-monitoring. The BSP also included positive attention for on-task behaviors, as well as the chance to earn rewards for on-task behavior. Participant 2B's BSP included identifying clear behavior expectations, praise for following expectations, and rewards for on-task behavior. Student 3A's BSP included immediate praise for beginning schoolwork in a prompt manner, identifying clear expectations for behavior when completing schoolwork, and rewards for on-task behavior. Student 3B's BSP included differential attention, identifying clear behavior expectations, and rewards for on-task behavior. Student 3C's BSP included frequent and scheduled praise for on-task behavior, as well as immediate and specific praise for asking appropriately for help. Student 3C's BSP included identifying clear behavior expectations for completing work, expectations for when she was stuck in her work, and rewards for on-task behavior.

Once the baseline phase was complete, the parent began implementing the BSP. Throughout the implementation phase, the consultant provided ongoing support and coaching of the BSP, and completed the PI interview to assess the parent's perception of the BSP implementation. At the conclusion of the intervention phase, the consultant completed the TEI with the parent to assess the parent's perception of the utility and effectiveness of the intervention as well as to what degree the intervention goal was achieved. A 6-week follow-up data point was completed with Families 1 and 3, but not with Family 2, as the follow-up would have taken place during the summer and the family did not complete school during the summer.

Design and Analysis

Visual analysis. Single-case design methodology was used to analyze the children's off-task and on-task behaviors before and during intervention implementation (Kazdin, 2011). Three types of MBDs were used with three different homeschooling families due to the participants enrolling in a staggered fashion, as well as each family's behavioral needs. With Family 1, an MBD *across behaviors* was used during math. Based on the reports of the mother from Family 2, the students were exhibiting off-task behaviors across multiple school subjects, with the mother's priority for intervention being math, writing, and reading; therefore, an MBD *across settings* was used. Finally, for Family 3, the mother enrolled three children in the study. Based on the mother's report, overall classroom/behavior management while teaching all three students was an area of concern for her; thus, an MBD *across participants* was utilized.

The study was designed to meet the What Works Clearinghouse (WWC) Single-Case Design Pilot Standards for the research design, meeting the following standards: (a) systematically manipulate the independent variable, (b) assess each outcome variable over time by one assessor, with IOA of 80% in each phase and IOA coded during at least 20% of the observations, (c) have three replications of phases, and (d) have five data points per phase. All MBDs used in the current research met the above criteria and therefore met WWC Single-Case Design Pilot Standards for design criteria (Kratochwill et al., 2010). Information regarding assessment of child behaviors and IOA is outlined in the direct observation and fidelity sections. For Family 2 and Family 3, a dual randomization method was also implemented (Kratochwill &

Levin, 2010). To adhere to WWC Single-Case Design Standards, baselines were randomized to last between five and six data points. After the first intervention was implemented, randomization was utilized to select a starting point of either three or four data points of the previous intervention prior to implementing the following intervention.

Visual analysis was completed for all three designs. The visual analysis of the observational data met the WWC Single-Case Design Pilot Standards for evidence criteria for participants in Family 2 and Family 3 (Kratochwill & Levin, 2010). Two doctoral students who completed graduate-level courses on single-case design and were competent regarding the WWC Single-Case Design Pilot Standards (as evidenced by their completion of visual analysis for MBD training on singlecase.org), were utilized as raters for visual analysis. The agreement between the two raters was 89.1%.

Statistical analysis. The Koehler and Levin (1998) regulated randomization procedure was utilized with the statistical software program ExPRT (Excel Package of Randomization Tests; Levin, Ferron, & Gafurov, 2017) to determine if there were significant differences between the baseline and intervention means, as well as to examine the slopes, variance, and nonoverlap of all pairs (NAP) effect size (Parker & Vannest, 2009). The NAP ES magnitude ranges proposed by Parker and Vannest (2009) are as follows: .0-.65 are considered weak effects, .66-.92 are considered medium effects, and .93-1.0 are considered strong effects. A one-tailed test was used to analyze the data since it was predicted that the students' externalizing behaviors would decrease as a result of the intervention. The descriptive analyses that were completed were as follows: Pre- and posttest ratings of parent selfefficacy of their parenting and teaching, as well as acceptability of the consultation process and BSPs.

Results

Homeschooling Consultation for Externalizing Behavior

Participant 1A. The MBD across behaviors used for Participant 1A met WWC design standards, and the WWC evidence criteria were used to examine 1A's outcomes. Figure 1 displays data for Participant 1A. The results of the visual analysis indicate that the data provide no evidence for intervention effectiveness.

Table 1 displays the means, standard deviations, NAP ES, B–A variances, and slope deviations of Participant 1A's behaviors. The NAP ES for Off-Task Verbalizations was .84, indicating a medium effect size for Off-Task Verbalizations. The NAP ES for Off-Task Motor was .34, indicating a weak effect size. The NAP ES for Off-Task Passive was .14, also indicating a weak effect size. Finally, the NAP ES for Independent Engaged Time was .84, indicating a medium effect size.

Participant 1B. The MBD utilized for Participant 1B met WWC design standards, and the WWC evidence criteria were therefore utilized to examine 1B's outcomes. Figure 2 displays a graph of the data. The results of the visual analyses indicate that the data provide no evidence for intervention effectiveness.

Table 1 displays the means, standard deviations, NAP ES, B–A variances, and slope differences for Participant 1B's behaviors during the baseline and intervention phases. The NAP ES for



Figure 1. Participant 1A: Percentage of intervals with behaviors.

Off-Task Motor was .8, indicating a medium effect size for 1B's change in Off-Task Motor. The NAP ES for Off-Task Passive was .19. The NAP ES for Independent Engaged Time was .03. The magnitude of the ES for Off-Task Passive and Independent Engaged Time was weak.

Participant 2A. The MBD that was implemented across settings utilized for Participant 2A met WWC design standards, and the WWC evidence criteria were therefore utilized to examine Participant 2A's externalizing behavior problems at baseline and intervention. Figure 3 displays a graph of the data. Findings indicate that the data provide strong evidence for intervention effectiveness.

Table 2 displays Participant 2A's means, standard deviations, NAP ES, B–A variances, and slope differences across the three settings. The NAP ES for 2A's disruptive behavior in writing and reading were both 1.0, indicating strong effect sizes for the changes in behavior in these settings. The NAP ES for 2A's disruptive behavior in math was .77, indicating a medium effect size.

2	2
Э	Э

Participant behavior codes	Baseline		Intervention				
	М	SD	М	SD	NAP ES	B-A variance	Slope difference
Participant 1A							
Off-Task verbalizations	29.17	16.42	7.22	4.97	.84	-200.08	-7.77
Off-Task passive	27.69	17.19	21.04	14.64	.14	187.46	-1.24
Off-Task motor	24.44	21.36	12.36	10.9	.34	-292.84	2.12
Independent engaged time	66.56	13.57	85.0	5.14	.84	21.11	1.06
Participant 1B							
Off-Task motor	34.67	19.13	12.6	10.75	.8	-184.34	-4.04
Off-Task passive	31.25	19.96	23.46	12.33	.19	-208.07	.11
Independent engaged time	58.03	17.17	60.5	12.94	.03	-117.51	1.71

 Table 1

 Means, Standard Deviations, NAP ES, B–A Variances, and Slope Differences of Participant 1A and 1B Behaviors

Note. NAP ES = non-overlap of all pairs effect size.

The results of the Koehler- Levin dual regulated-randomization procedure indicated a statistically significant decrease in disruptive behavior (p = .0208; Koehler & Levin, 1998). No statistically significant differences were found between Baseline and Intervention for either slope or variance.

Participant 2B. The MBD across settings that was implemented for Participant 2B met the WWC design standards, and the WWC evidence criteria were therefore used to assess the effectiveness of the intervention. Figure 4 displays a graph of the data. Findings indicate that the data provide strong evidence for intervention effectiveness. Table 2 displays the means, standard deviations, NAP ES, B–A variances, and slope differences for Participant 2B's disruptive behaviors and independent engaged time at baseline and intervention. The NAP ES for 2B's disruptive behavior in writing and math was 1.0. The NAP ES for 2B's disruptive behavior in reading was .93. These results indicate strong effects.

The results of the Koehler- Levin dual regulated randomization procedure denote a statistically significant decrease in the amount of disruptive behavior exhibited by Participant 2B (p = .0208; Koehler & Levin, 1998). No statistically significant differences were found when comparing the slopes and variances between baseline and intervention.

Participants 3A, 3B, and 3C. The MBD across participants utilized for Participants 3A, 3B, and 3C met WWC design standards; therefore, WWC evidence criteria were utilized to examine the participants' disruptive behavior. Figure 5 displays a graph of the data. Results of the visual analysis indicate that the data provide strong evidence for intervention effectiveness.

Table 3 displays the means, standard deviations, NAP ES, B–A variances, and slope differences of Participant 3A, 3B, and 3C's behaviors at baseline and intervention. The NAP ES for 3A, 3B, and 3C's disruptive behaviors were all 1.0, indicating strong effects for all three participants.

The Koehler- Levin dual regulated randomization procedure indicated that there was a statistically significant decrease in student disruptive behavior (p = .0417; Koehler & Levin, 1998) from baseline to intervention. There was not a significant difference in the slope or variance between baseline and intervention.

Goal Attainment Scale. The GAS Scales for Participants 1A and 1B did not provide any evidence of intervention effectiveness. In addition, there were missing GAS data for Participants 1A and 1B. Similarly, there were missing GAS data for Participants 2A and 2B, and did not provide any further evidence about intervention effective-

ness. The multiple baseline design across participants utilized for Participants 3A, 3B, and 3C did not meet WWC design standards because no interobserver agreement data were collected on the GAS.

Consultation for Homeschooling Parents and Parenting Self-Efficacy

The PSOC premean for all participants was 3.57 (SD = 1.42), and the PSOC postmean for all participants was 3.65 (SD = 1.24), indicating a slightly higher parent rating of sense of competence after the intervention. Based on a paired *t* test, these results had a *p* value of .429, indicating that the pre–post difference was not statistically significant. With all paired sample *t* tests utilized in the research, the results should be interpreted with caution due to the small sample size.

Consultation for Homeschooling Parents and Teaching Self-Efficacy

The TSES Pre Mean was 5.89 (SD = 1.97), and the TSES post mean was 6.44 (SD = 1.1). Based on a paired t test, these results had a p value of .20, indicating that the pre-post difference was not statistically significant. Due to the small sample size, t test results should be interpreted with caution.

Homeschooling Parents' Ratings of Behavior Support Plan Effectiveness and Acceptability

All parents in the research reported increases in both the acceptability and effectiveness of the BSP at the conclusion of the intervention compared to prior to beginning the intervention. At the conclusion of the research, parents' ratings of acceptability averaged between *slightly agree* and *strongly agree*.

Homeschooling Parents' Ratings of Consultation Acceptability

Prior to the beginning of the consultant–consultee relationship, the parents in the research rated their expectations between 5.75 and 6.83 ($5 = somewhat \ agree, \ 6 = agree, \ 7 = strongly \ agree$). At the conclusion of the research, all parents' ratings increased to between 6.67 and 7.0. All three parents' ratings of the consultant–consultee relationship after completing the consultation process were higher than their CEF ratings prior to the consultation process.

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly



Figure 2. Participant 1B: Percentage of intervals with off-task behaviors.

Discussion

Previous research on problem-solving consultation has shown it to be effective in addressing academic and behavioral concerns in public school settings (e.g., Sheridan & Kratochwill, 2008). Problem-solving consultation has also been shown to be acceptable to teachers and parents who have completed the process (e.g., Bice-Urbach & Kratochwill, 2016; Sheridan et al., 2001). Although problem-solving consultation has been shown to be effective in reducing behavior concerns in the public school setting, it had not been used within the homeschool setting, despite many homeschooling parents' reports that they homeschool due to their child's behavioral needs (Bice-Urbach & Kratochwill, 2016; Redford et al., 2017). The present study utilized problem-solving consultation with homeschooling par-

Intervention



100

Baseline



Figure 3. Participant 2A: Percentage of intervals with behaviors.

ents who had a child with behavior concerns. The research examined (a) the efficacy of the problem-solving consultation model for addressing behavior concerns of homeschooled children, (b) the extent to which problem-solving consultation improved parent self-efficacy in regard to their parenting and teaching, (c) parents' perceived acceptability and effectiveness of the behavior plans, and (d) parents' perceived acceptability of collaboration with a consultant. The BSPs completed with Participants 2A, 2B, and 3A, 3B, and 3C supported prediction one, that the problem-solving consultation model can be used in a homeschool setting to decrease externalizing behavior problems. Previous researchers have found that teachers who engage in the consultation and BSP process tend to rate their students' behaviors as closer to desired outcome during intervention when compared to their ratings of behaviors at baseline (Bice-Urbach & Kratochwill,

Ta	hl	le	2
1 4	\mathbf{U}		_

Means, Standard Deviations,	NAP ES, B-	A Variances,	and Slope	Differences of	f Participant	2A and	d 2B Disruptive	? Behavior	' and
Independent Engaged Time									

	Baseline		Interv	ention			
Observation settings	М	SD	М	SD	NAP ES	B-A Variance	Slope difference
Participant 2A							
Writing	63.61 (DB) 46.94 (IET)	17.21 (DB) 13.47 (IET)	15.97 (DB) 73.33 (IET)	10.55 (DB) 17.48 (IET)	1.0 (DB)	-144.62 (DB)	-5.19 (DB)
Reading	50.0 (DB) 84.07 (IET)	16.14 (DB) 7.91 (IET)	8.7 (DB) 91.3 (IET)	6.55 (DB) 12.16 (IET)	1.0 (DB)	-193.35 (DB)	3.22 (DB)
Math	45.9 (DB) 74.62 (IET)	15.69 (DB) 12.23 (IET)	22.0 (DB) 52.78 (IET)	8.61 (DB) 9.43 (IET)	.77 (DB)	-167.85 (DB)	2.54 (DB)
Participant 2B							
Writing	77.78 (DB) 33.89 (IET)	18.28 (DB) 19.02 (IET)	12.22 (DB) 81.25 (IET)	8.77 (DB) 11.83 (IET)	1.0 (DB)	-207.87 (DB)	-4.14 (DB)
Reading	42.2 (DB) 83.7 (DB)	22.03 (DB) 8.41 (IET)	7.96 (DB) 91.48 (IET)	6.6 (DB) 12.54 (IET)	.93 (DB)	-392.73 (DB)	3.14 (DB)
Math	60.38 (DB) 56.54 (DB)	13.37 (DB) 17.29 (IET)	19.0 (DB) 71.33 (IET)	5.6 (DB) 10.10 (IET)	1.0 (DB)	-139.91 (DB)	3.84 (DB)

Note. DB = disruptive behaviors; IET = independent engaged time; NAP ES = non-overlap of all pairs effect size.

2016). The improved parent perception of child behavior may also be beneficial for improving the parent-child relationship (Pearl et al., 2014).

Previous researchers have also shown that parents' report of selfefficacy increases after receiving parent consultation regarding their children's externalizing behavior concerns (Heath, Curtis, Fan, & McPherson, 2015). In the present study, parents' self-reported mean parenting and teaching self-efficacy scores tended to increase slightly from before the consultation process to the conclusion of the consultation process. This is a promising finding as research indicates parents who feel efficacious in providing academic support to their children tend to be more engaged in their child's schoolwork than parents who feel less efficacious in providing academic support (O'Sullivan, Chen, & Fish, 2014).

In terms of the parent ratings of BSP acceptability and effectiveness, parents began the consultation with relatively high ratings of acceptability and effectiveness for the intervention and provided slightly higher ratings at the conclusion of the consultation process. These findings suggest that homeschooling parents found the interventions to be acceptable and effective in decreasing problem behavior. In the context of problem-solving consultation, consultees often report favorable impressions of BSPs (e.g., Bice-Urbach & Kratochwill, 2016).

Limitations and Future Directions

There were several limitations that should be considered in the current research. The first limitation was the dearth of follow-up data points. In the absence of multiple follow-up data for all families, the maintenance of intervention effects is unknown. Future researchers should collect sufficient follow-up data (e.g., six months and a year). A second limitation is that participants were relatively homogeneous. All families in the study were two-parent households in which one parent stayed home full-time to provide a homeschooling education to their children. These homogeneous demographics limit generaliz-

ability to other homeschooling families. Future research could investigate problem-solving consultation with homeschool families from different backgrounds. Third, self-efficacy data could only be examined using descriptive, mean ratings from before consultation was initiated to after consultation concluded. Future research should include a sample size sufficient to conduct a more rigorous examination of self-efficacy data than could be examined in the present study. The fourth limitation was that the consultant and observers were not blind to the baseline or intervention phases of the research while completing the behavior coding, due to the nature of the BSPs. It may be useful for future research to explore keeping observers blind to phase changes. Fifth, the current study was implemented by a graduate student in school psychology with perhaps more resources, support, and time than many practicing professionals. To advance a research-to-practice application, future researchers should examine how problem-solving consultation can be completed with homeschooling families in a cost-effective manner with cost data presented. Sixth, a brief assessment of behavior function was conducted through the FAI. Future researchers should complete more thorough functional behavior assessments to increase the accuracy of function-based hypotheses.

Implications for Research

Based on the findings of the current study and consonant with previous research, further research is warranted in several areas: (a) how school psychologists can support families with homeschooled children with disabilities, (b) the utility of consultation for homeschooling families with children with academic concerns, (c) the utility of consultation across educational and extracurricular settings for homeschooling families, (d) the influence of problem-solving consultation on the parent– child relationship for homeschooling families, and (e) the degree to which problem-solving consultation influences parent interest in continuing to homeschool. In terms of parent–child



Figure 4. Participant 2B: Percent of intervals with behaviors.

relationships, previous research has shown that the teacherchild relationship is a significant predictor of child externalizing behavior in the classroom, and that closeness and reduced conflict are predictive of fewer behavior concerns in students (Ladd & Burgess, 2001). Similarly, as previously discussed, child externalizing behavior concerns and parent disengagement are interrelated, indicating that they cause the other to increase (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). It may be useful for researchers examining problem-solving consultation in homeschool settings to investigate effects on the quality of the parent-child relationship.

In addition, future researchers could address the utility of problem-solving consultation in reducing homeschool attrition rates. As previous researchers have found, child externalizing behavior problems and parent disengagement are often related (Lovejoy et al., 2000). This interrelation may lead to a difficult parent–child relationship within the homeschool setting. Similar to how problem-solving consultation is often utilized as a preventa-



Figure 5. Participants 3A, 3B, 3C: Percentage of intervals with behaviors.

tive measure prior to the development of individualized education plans for students in public schools, problem-solving consultation may create an opportunity for homeschooling families to maintain their retention in homeschooling (Feldman & Kratochwill, 2003).

Implications for Practice

The present study has implications for practicing mental health professionals, including school psychologists. It may be useful for school psychologists to consider ways to broaden services that are Table 3

	Bas	Baseline		Intervention			
Participants	М	SD	М	SD	NAP ES	B-A variance	Slope difference
3A	59.88 (DB) 46.79 (JET)	19.84 (DB)	24.33 (DB) 70.33 (JET)	7.69 (DB)	1.0 (DB)	-316.08 (DB)	3.64 (DB)
3B	40.79 (IET) 60.93 (DB)	22.78 (DB)	14.1 (DB)	7.9 (DB)	1.0 (DB)	-405.56 (DB)	.75 (DB)
3C	37.78 (IE1) 75.33 (DB) 31.67 (IET)	20.93 (IE1) 12.67 (DB) 17.95 (IET)	78.7 (IE1) 13.72 (DB) 78.97 (IET)	6.28 (DB) 14.78 (IET)	1.0 (DB)	-91.83 (DB)	5.34 (DB)

Means, Standard Deviations, NAP ES, B–A Variances, and Slope Differences of Participants 3A, 3B, and 3C Disruptive Behavior and Independent Engaged Time

Note. DB = disruptive behaviors; IET = independent engaged time; NAP ES = non-overlap of all pairs effect size.

provided to homeschooling families, which could help address concerns homeschooling families have about a lack of available resources and services (Fields-Smith & Williams, 2009). For example, school psychologists in public school settings could utilize problem-solving consultation to support homeschooling families who contact public schools for behavior management support or who are transitioning from a public school to homeschool education.

Conclusion

Findings from the present study indicated that some homeschooling families benefitted from problem-solving consultation, as evidenced by observations of reduced disruptive behaviors and parent ratings that indicate perceptions of improved behavior at the conclusion of the consultation process. Similarly, findings suggested that BSPs developed through problem-solving consultation were overall perceived as acceptable and effective by homeschooling parents. In addition, parents reported that the consultation process was acceptable. Future research is needed to refine appropriate methods to support homeschooling parents who have a child with externalizing behavior concerns.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Bice-Urbach, B. J., & Kratochwill, T. R. (2016). Teleconsultation: The use of technology to improve evidence-based practices in rural communities. *Journal of School Psychology*, 56, 27–43. http://dx.doi.org/10.1016/j.jsp .2016.02.001
- Carter, A. S., Wagmiller, R. J., Gray, S. A. O., McCarthy, K. J., Horwitz, S. M., & Briggs-Gowan, M. J. (2010). Prevalence of DSM–IV disorder in a representative, healthy birth cohort at school entry: Sociodemographic risks and social adaptation. Journal of the American Academy of Child & Adolescent Psychiatry, 49, 686–698. http://dx.doi.org/10.1097/ 00004583-201007000-00009
- Erchul, W. P. (1987). A relational communication analysis of control in school consultation. *Professional School Psychology*, 2, 113–124. http:// dx.doi.org/10.1037/h0090534
- Feldman, E., & Kratochwill, T. R. (2003). Problem solving consultation in schools: Past, present and future directions. *The Behavior Analyst Today*, 4, 318–330. http://dx.doi.org/10.1037/h0100022
- Fields-Smith, C., & Williams, M. (2009). Motivations, sacrifices, and challenges: Black parents' decisions to home school. *The Urban Review*, 41, 369–389. http://dx.doi.org/10.1007/s11256-008-0114-x

- Grady, S., Bielick, S., & Aud, S. (2010). *Trends in the use of school choice: 1993 to 2007*. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubs2010/2010004.pdf
- Heath, C. L., Curtis, D. F., Fan, W., & McPherson, R. (2015). The association between parenting stress, parenting self-efficacy, and the clinical significance of child ADHD symptom change following behavior therapy. *Child Psychiatry and Human Development*, 46, 118–129. http://dx.doi.org/10.1007/s10578-014-0458-2
- Johnston, C., & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18, 167–175. http://dx .doi.org/10.1207/s15374424jccp1802_8
- Kazdin, A. E. (2011). Single-case research designs: Methods for clinical and applied settings. New York, NY: Oxford University Press.
- Kiresuk, T. J., & Sherman, R. E. (1968). Goal attainment scaling: A general method for evaluating comprehensive community mental health programs. *Community Mental Health Journal*, 4, 443–453. http://dx.doi .org/10.1007/BF01530764
- Koehler, M. J., & Levin, J. R. (1998). Regulated randomization: A potentially sharper analytical tool for the multiple-baseline design. *Psychological Methods*, *3*, 206–217. http://dx.doi.org/10.1037/1082-989X.3.2 .206
- Kratochwill, T. R., Altschaefl, M. R., & Bice-Urbach, B. (2014). Best practices in school-based problem solving consultation: Applications in prevention and intervention systems. In P. Harrison & A. Thomas (Eds.), *Best practices in school psychology* (5th ed., pp. 461–482). Bethesda, MD: National Association of School Psychologists.
- Kratochwill, T. R., & Bergan, J. R. (1990). Behavioral consultation in applied settings: An individual guide. New York, NY: Plenum Press.
- Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). *Single-case designs technical documentation*. Washington, DC: What Works Clearinghouse.
- Kratochwill, T. R., & Levin, J. R. (2010). Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue. *Psychological Methods*, 15, 124–144. http://dx.doi.org/10.1037/a0017736
- Ladd, G. W., & Burgess, K. B. (2001). Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment? *Child Development*, 72, 1579– 1601. http://dx.doi.org/10.1111/1467-8624.00366
- Levin, J. R., Ferron, J. M., & Gafurov, B. S. (2017). Additional comparisons of randomization-test procedures for single-case multiple-baseline designs: Alternative effect types. *Journal of School Psychology*, 63, 13–34. http://dx.doi.org/10.1016/j.jsp.2017.02.003
- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, 20, 561–592. http://dx.doi.org/10.1016/S0272-7358(98)00100-7

- O'Sullivan, R. H., Chen, Y., & Fish, M. C. (2014). Parental mathematics homework involvement of low-income families with middle school students. *School Community Journal*, 24, 165–187.
- Parker, R. I., & Vannest, K. (2009). An improved effect size for single-case research: Nonoverlap of all pairs. *Behavior Therapy*, 40, 357–367. http://dx.doi.org/10.1016/j.beth.2008.10.006
- Pearl, A. M., French, B. F., Dumas, J. E., Moreland, A. D., & Prinz, R. (2014). Bidirectional effects of parenting quality and child externalizing behavior in predominantly single parent, under-resourced African American families. *Journal of Child and Family Studies*, 23, 177–188. http:// dx.doi.org/10.1007/s10826-012-9692-z
- Redford, J., Battle, D., & Bielick, S. (2017). Homeschooling in the United States: 2012 (NCES 2016–096. REV). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Retrieved from https://nces.ed.gov/pubs2016/ 2016096rev.pdf
- Reynolds, C. R., & Kamphaus, R. W. (2015). *Behavior assessment system* for children (3rd ed.). Bloomington, MN: Pearson.
- Sheridan, S. M., Bovaird, J. A., Glover, T. A., Garbacz, S. A., Witte, A., & Kwon, K. (2012). A randomized trial examining the effects of conjoint behavioral consultation and the mediating role of the parent– teacher relationship. *School Psychology Review*, 41, 23–46.

- Sheridan, S. M., Eagle, J. W., Cowan, R. J., & Mickelson, W. (2001). The effects of conjoint behavioral consultation results of a 4-year investigation. *Journal of School Psychology*, 39, 361–385. http://dx.doi.org/10 .1016/S0022-4405(01)00079-6
- Sheridan, S. M., & Kratochwill, T. R. (2008). Conjoint behavior consultation: Promoting family-school connections and interventions. New York, NY: Springer.
- Sheridan, S. M., & Witte, A. L. (2010). *Helping kids succeed: Behavioral strategies for teachers* (Unpublished toolkit). Nebraska Center for Research on Children, Youth, Families and Schools, University of Nebraska–Lincoln, Lincoln, NE.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783–805. http://dx.doi.org/10.1016/S0742-051X(01)00036-1
- Von Brock, M. B., & Elliott, S. E. (1987). Influence of treatment effectiveness information on the acceptability of classroom interventions. *Journal of School Psychology*, 25, 131–144. http://dx.doi.org/10.1016/ 0022-4405(87)90022-7

Received December 14, 2018 Revision received July 27, 2019 Accepted August 19, 2019