

Effects of Consultation-Based Family-School Engagement on Student and Parent Outcomes: A
Meta-Analysis

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Abstract

Given that consultation has consistently yielded benefits for clients and consultees, it is likely an effective method of promoting family-school engagement. Thus, this meta-analysis examined the effects of consultation-based family-school engagement on child and parent outcomes, and complementary intervention methods used in conjunction with consultation. This study also sought to advance consultation research via a contemporary meta-analytic technique, robust variance estimation (RVE). Analyses yielded significant effects of consultation-based family-school engagement on children's social-behavioral competence ($\delta = 0.34$), mental health ($\delta = 0.37$), and academic achievement ($\delta = 0.27$). Significant effects for parent practices ($\delta = 0.53$), parent attitudes ($\delta = 0.49$), and relational outcomes ($\delta = 0.37$) were also found. Complementary intervention methods revealed significant effects across various child, parent, and relational outcomes. Results indicate benefits of consultation-based family-school engagement for key outcomes and have implications for utilizing complementary methods to augment the net effects of consultation for valuable stakeholders.

Introduction

Families and school personnel share responsibility for promoting student academic success and helping students develop social-emotional competencies (Sheridan & Kratochwill, 2008). Families are the first source of influence in a child's life; through interactions with family members, children experience opportunities to form relationships, receive nurturance, and seek guidance (Weiss, Caspe, & Lopez, 2006). Schools provide a second socializing context where students learn to acquire information formally and interact socially with peers (Authors, 2019a). Bridging efforts across these essential systems through family-school engagement practices is instrumental to optimally support child development (Coutts, Sheridan, Sjuts, & Smith, 2014). Decades of research have highlighted the benefits espoused for children when families are engaged in their education. Positive effects have been demonstrated across elementary and middle school (Smith, Reinke, Herman, & Huang, 2019), for children in rural (Sheridan et al., 2017a) and urban (Jeynes, 2005) settings, and for students who are racially diverse (Jeynes, 2003). Many of these findings have been replicated across large-scale studies, systematic reviews, and meta-analyses. For instance, recent meta-analytic work has demonstrated the positive impact of family-school interventions on children's academic, social-behavioral, and mental health outcomes (Authors, 2019a; Authors, 2019b).

Key intervention components that contribute to family-school engagement intervention effects are becoming clear. Recent meta-analyses found that three primary components of family-school interventions are related to student benefits across academic and social-behavioral outcomes: communication, home-based involvement, and behavioral support (Authors, 2019a; Authors, 2019b). When exploring partnership-based interventions, communication from school to home, bi-directional communication, and collaboration (i.e., relational components) – alone or

together –predict student outcomes most consistently (i.e., academic achievement, social-behavioral competence, mental health). Despite an understanding of their effective components, little is known about *how* evidence-based family-school interventions are delivered.

Consultation, as an indirect form of service delivery wherein a consultant works with one or more parent and/or teacher consultee(s) to address student concerns (Bergan & Kratochwill, 1990; Kratochwill & Bergan, 1990), may be an important process to enhance connections between families and schools and promote a shared responsibility for student development. Thus, the purpose of the current study was to evaluate the impact of consultation-based family-school engagement interventions on child, parent, and relational outcomes. Furthermore, this study introduced into the consultation meta-analysis literature an advanced analytic approach, robust variance estimation (RVE). This approach accounts for issues with effect size dependence previously unaccounted for in many meta-analytic models. In subsequent sections, we discuss in greater detail the relevant literature to the central topics of our study – both in terms of content (i.e., family-school engagement, consultation) and methodology (i.e., meta-analysis).

Family-School Engagement

Definition. It is widely acknowledged that child development is optimally supported when families are engaged in their children’s education. Family-school engagement is a complex, multi-faceted construct with varying definitions. Terms such as parent involvement, family engagement, and family-school partnership are common (Sheridan, Holmes, Smith, & Moen, 2016). *Family-school engagement* is a broad term that includes both *parent involvement* (i.e., wherein significant caregivers [including parents, grandparents, foster parents, etc.] partake in activities to promote children’s educational efforts; Fishel & Ramirez, 2005) and *family-school partnerships* (i.e., child-focused efforts wherein families and schools collaboratively aim

to enhance opportunities and success across developmental domains; Albright & Weissberg, 2010; Lines, Miller, & Arthur-Stanley, 2012). Parent involvement typically includes parent actions that align with and support what is being done at school (Sheridan et al., 2012a). Storytelling for the Home Enrichment of Language and Literacy Skills (SHELLS; Boyce, Innocenti, Roggman, Norman, & Ortiz, 2010) is an example of a parent involvement intervention, wherein parents support children's early language and literacy through language elicitation strategies (e.g., encouraging active participation). Distinct from parent involvement, family-school partnerships emphasize relationships between families and schools in order to support child development via cross-system approaches that facilitate continuities between settings. One example of a family-school partnership intervention, Conjoint Behavioral Consultation (CBC; also known as Teachers and Parents as Partners [TAPP]; Sheridan, 2014), involves collaborative planning and problem-solving between parents and teachers to solve children's behavioral and academic challenges. For purposes of the current study, the term *family-school engagement* will be used in reference to both parent involvement and family-school partnerships.

Theoretical framework. In theory, successful family-school engagement involves multiple key stakeholders (e.g., families and schools) that contribute to child development within numerous proximal and distal environments (Weiss, Kreider, Lopez, & Chatman-Nelson, 2014). Bronfenbrenner's (1977) ecological model is useful to conceptualizing family-school engagement. In particular, this framework recognizes direct and indirect systems influencing children's academic, social, and behavioral development. Within an ecological systems framework, family-school engagement involves (a) families and teachers directly interacting with children in their respective settings in ways that influence development at the

microsystemic level (e.g., home and school); (b) indirect influences based on relationships among families and teachers at the mesosystemic level (e.g., home with school); (c) social structures impacting children indirectly through the influence they exert on parents, teachers, and environments at the exosystemic level (e.g., school policy focused on family-school communication); and (d) overarching patterns of the culture or subculture that may influence family-school engagement at the macrosystemic level (e.g., governmental mandates focused on family-school engagement such as the Every Student Succeeds Act [ESSA, 2015] and No Child Left Behind [NCLB, 2002]).

Empirical support. Family-school engagement is consistently associated with a plethora of benefits for children including decreased disruptive behaviors (Smith et al., 2019; Thompson, Herman, Stormont, Reinke, & Webster-Stratton, 2017), improved academic achievement (Fan & Chen, 2001), increased academic competence (Marchant, Sharon, & Rothlisberg, 2001), and better social skills (Sheridan et al., 2017b). Further, the positive impact of family-school engagement on academic outcomes has been revealed for both boys and girls (Jeynes, 2005) and students from racially diverse backgrounds (Jeynes, 2003; 2005). Benefits have also been noted across writing, reading, and math competencies (Sénéchal & Young, 2008; Sheldon & Epstein, 2005), and for students at various developmental levels (Reinke, Smith, & Herman, 2019). Both parent involvement (e.g., using home literacy practices to support reading achievement; Dixon et al., 2012) and family-school partnership (e.g., utilizing parent-teacher collaborative teams to improve student engagement; Mortier, Hunt, Desimpel, & Van Hove, 2009) interventions have been found to be efficacious at improving students' academic outcomes.

Our recent meta-analytic work has demonstrated the importance of interventions intended to increase parent involvement and family-school partnerships in supporting children's

academic, behavioral, and social-emotional development. In one meta-analysis, family-school engagement interventions were found to significantly improve children's mental health and social-behavioral outcomes (Authors, 2019a). In a second meta-analysis, studies exclusively using collaborative family-school partnership approaches were also found to benefit children's mental health and social-behavioral outcomes, in addition to gains in academic achievement and academic behaviors (e.g., engagement/persistence, attendance; Authors, 2019b).

Within the context of family-school engagement research, it is also important to consider *how* family-school engagement interventions are delivered. Our recent meta-analyses have identified key intervention components that significantly influence the effects of family-school interventions on child outcomes (e.g., home-based involvement, collaboration, school-to-home communication, parent-teacher relationship; Authors, 2019b; Authors, 2019a). However, research to date has not systematically considered the processes by which family-school interventions are delivered. In particular, consultation, as an indirect form of service delivery, is a feasible and potentially efficacious method by which family-school interventions can be delivered.

Utilizing Consultation to Deliver Family-school Engagement Interventions

A number of past meta-analyses and research reviews have linked school consultation to improved outcomes for clients and consultees. For example, Reddy and colleagues (2000) found that behavioral consultation was effective at promoting positive changes in children (as clients) and parents and teachers (as consultees). Further, consultation was found to be especially effective for students with externalizing concerns and academic problems (Reddy, Barboza-Whitehead, Files, & Ruble, 2000). Other research reviews have found consultation to be generally effective at improving client academic and behavioral outcomes, in addition to

consultee practices and attitudes (Mannino & Shore, 1975; Medway, 1979; Medway & Updyke, 1985; Sheridan, Welch, Orme, 1996). In a more recent meta-analysis of 19 studies from 1986 to 2009 focused on school-based problem-solving consultation, Davis (2012) found that consultation had significant indirect effects on the learning, behavior, and functioning of students (e.g., academic achievement, disruptive behaviors) and system-level outcomes (e.g., special education evaluations placements, and/or referrals).

Given that consultation consistently has been shown to positively influence both clients and consultees, it may be a viable and effective method of promoting family-school engagement. This idea is further supported by exemplar consultation-based family-school engagement interventions, such as CBC, which have demonstrated improvements for children's academic, behavioral, and social-emotional outcomes across a number of randomized controlled trials (e.g., Sheridan et al., 2013; Sheridan, Witte, Eastberg, Dizona, & Gormley, 2019). That said, the consultation-based family-school engagement interventions on child outcomes have not been assessed meta-analytically.

Further, based on the important role parents play in supporting their children's development, it is imperative to understand critical parenting practices (e.g., behavior/emotion management), attitudes (e.g., beliefs about teacher/school), and relational outcomes (e.g., bi-directional communication, parent-teacher relationships) that may be influenced by consultation-based family-school engagement. For example, parental expectations regarding their children's education are positively associated with children's academic achievement (Weinstein, 2002). Additionally, relationships between parents and teachers have been found to mediate the impact of consultation-based family-school engagement on children's social-behavioral competence (Sheridan et al., 2012b; 2017a, b). Despite their importance, no meta-analyses have explored the

effects of consultation-based family-school engagement on parent or relational outcomes.

Additionally, previous meta-analyses have not considered complementary intervention methods that may be used to support consultation services. Family-school engagement is multidimensional and may involve multiple systems in isolation (i.e., home and school) and interactions between systems (i.e., home with school) to support child development. As an indirect intervention, consultation approaches exert their influence on children via strategies implemented by parents and teachers. Because a stated goal of consultation is to build parents' and teachers' skills and competencies at supporting children's development, parent and teacher training and specific adult-child interactions are sometimes included in conjunction with consultation interventions. Consultant home visits to encourage fidelity of parents' practices may also be included. Past research has indicated that directly training consultees (e.g., modeling, role-playing, and/or rehearsals) leads to higher treatment integrity of interventions developed through consultation services (Sterling-Turner, Watson, & Moore, 2002). Teacher training, including professional development, has also been shown to increase teachers' family engagement attitudes, practices, and knowledge when it includes consultation (Smith, 2019). Further, researchers involving parent training within consultation services have noted the importance of direct instruction and specific feedback for consultees to support child behaviors (Serketich & Dumas, 1996). That said, these complementary strategies have not been assessed in school consultation meta-analyses.

Advances in Meta-analysis

Meta-analyses are often considered the highest level of evidence available in a given area of study or practice (Ackley, Swan, Ladwig, & Tucker; 2008; Hoffman, Bennett, & Del Mar, 2013). By synthesizing data across studies, meta-analyses allow researchers to determine if

certain treatment effects exist beyond individual studies alone. Evidence resulting from meta-analyses are derived from effect size estimates, which provide a standard metric that is interpretable across studies (Maxwell & Delaney, 2004). Meta-regression models are often utilized to synthesize and compare effect size estimates (Fisher & Tipton, 2015). Unfortunately, commonly used meta-regression models assume effect size independence, which can lead to misleading or incorrect results (Cheung, 2019). Thus, it is important to yield consideration to issues related to effect size dependence.

Dependence issues in meta-analyses often occur in two forms: (1) correlated estimation errors and (2) correlated effect size parameters (Fisher & Tipton, 2015; Hedges, Tipton, & Johnson; 2010). Dependence issues based on correlated estimation errors can occur when studies provide multiple effect size estimates. There are three situations in which this can be problematic. First, the same participants may be assessed at multiple time points using the same measure, with an effect size calculated at each time point (e.g., pre-, post, and follow-up assessment). Second, the same participants may be assessed using various assessments (e.g., different measures of child disruptive behavior), with an effect size calculated from data on each of the various measures. Third, studies may involve multiple groups in which effect sizes are calculated by making several comparisons between the various treatment groups and the same control group (Hedges et al., 2010). Dependence based on correlated effect size parameters often occurs when a hierarchical relationship is present due to common settings, methods, or study level characteristics that are “systematically related to effect size” (Hedges et al., 2010, p. 40). For example, a single research group may produce a large proportion of the effect size estimates analyzed in a meta-analysis.

One recent approach to addressing dependence issues in effect size estimates is robust variance estimation (RVE; Hedges et al., 2010). The RVE approach expands previous work on cluster (Liang & Zeger, 1986) and heteroskedasticity-robust (Huber, 1967; White, 1980) standard errors in the general linear model, in order to address forms of dependence and weighting that frequently occur in meta-analyses (Fisher & Tipton, 2015). The RVE model is increasingly being utilized within the social sciences, as it addresses key limitations of previous meta-analytic approaches. Within meta-regression, RVE obtains consistent estimates of the underlying population parameters under a broad set of conditions including non-normality. The results do not need the predictor variables to be fixed, as is required with traditional regression methods utilized in meta-analyses (Hedges, 1983). Further, when effect sizes are non-independent, RVE provides valid standard errors and significance tests, without needing to model the precise nature of this dependence (Fisher & Tipton, 2015).

To our knowledge, no past meta-analyses of school consultation have applied this advanced approach of RVE to analyses. This is no fault to many of the previously discussed meta-analyses (e.g., Reddy et al., 2000), as RVE is a recently introduced approach (Hedges et al., 2010). This also speaks to the datedness of large-scale reviews and meta-analyses on school consultation, as very few have been conducted in recent years. Erchul and Sheridan (2008) previously drew attention to this issue, but unfortunately it does not appear that much has changed since then. That said, conducting a meta-analysis using RVE offers an important and novel contribution to the school consultation literature.

Study Purpose

The purposes of the current study were to (a) identify the effects of consultation-based family-school engagement interventions on child (i.e., social-emotional, academic), parent (i.e.,

attitudes, practices), and relational (i.e., parent-teacher relationship, bi-directional communication) outcomes; and (b) determine if particular intervention methods (i.e., teacher/administrator training, parent-child activities, parent training, home visits) used in conjunction with consultation were related to significant positive intervention effects. To do so, we applied RVE as an advanced meta-analytic technique to address previously discussed research gaps from the family-school engagement and school consultation literature. Our research was guided by the following research questions:

1. What are the effects of consultation-based family-school engagement interventions on children's social-emotional (i.e., social-behavioral competence and mental health) and academic (i.e., academic achievement and academic behavior) outcomes?
2. What are the effects of consultation-based family-school engagement interventions on parent attitudes, practices, and relational outcomes?
3. When utilized in conjunction with consultation, what intervention methods (i.e., parent training, parent-child activities, teacher training, home visits) are effective at improving child, parent, and relational outcomes?

Method

The present study was part of a larger, comprehensive meta-analysis focused on the effects of family-school interventions on children's academic, behavioral, and social-emotional outcomes (see Authors, 2019a; Authors, 2019b). For purposes of this study, consultation-based family-school engagement interventions were identified and analyzed to answer our research questions. In the following section, we first describe methods and procedures from our larger, comprehensive meta-analysis, followed by the selection and analyses of studies that involved consultation-based family-school engagement interventions.

Construction of the larger meta-analytic database involved three steps: (1) literature search, (2) study identification, and (3) study coding.

Literature Search

Three approaches were utilized within our literature search process: reference databases, hand searches of journals, and cited references. Family-school intervention literature spans several content areas across education, psychology, and sociology. Thus, multiple databases were searched in an attempt to yield relevant literature from each of these fields. Specifically, the following databases were searched: Education Resources Information Center (ERIC), PsycINFO, Sociological Abstracts, and Dissertation & Theses Abstracts. Reference database searching involved using multiple search terms in combination (e.g., “parent*” or “famil*” with “involve*” or “engag*” with “school” or “educat*”). Parameter limitations to searches included searching keywords for each online database, as well as limiting results to studies reported in English and occurring between 2001 and 2014. The year 2001 was chosen due to the passage of the No Child Left Behind Act requiring parent involvement programming for all schools receiving Title 1 funding (NCLB, 2002). Second, hand searches of relevant journals in the areas of education (i.e., *School Psychology Quarterly*, *Journal of Educational Psychology*, *School Community Journal*, *Journal of School Psychology*, *School Psychology Review*), psychology (i.e., *Child Development*, *Developmental Psychology*, *Early Childhood Research Quarterly*, *Early Education and Development*, *Journal of Child and Family Studies*), and sociology (i.e., *Sociology of Education*) published between 2001 and 2014 were conducted. Lastly, cited reference searching of previously published meta-analyses (e.g., Fan & Chen, 2001; Hill & Tyson, 2009) was performed.

Study Identification

Abstract screening. Comprehensive literature search procedures yielded 19,183 journal articles, book chapters, and dissertations/theses. In particular, 18,442 were identified through reference databases and 741 were found through hand searches and reviewing prior meta-analyses and systematic reviews; see Figure 1 for a breakdown of screening and inclusion procedures at each stage of our study. Abstracts of each study were reviewed by trained doctoral students and postdoctoral fellows to determine if they met two criteria for inclusion in the larger study. First, studies must have involved a family-school intervention including *parental involvement* defined as the participation of significant caregivers (e.g., parents, grandparents, stepparents, foster parents, etc.) in the educational process of their children (Fishel & Ramirez, 2005); or *family-school partnership approaches* wherein families and professionals cooperate, coordinate, and collaborate (Christenson & Sheridan, 2001; Albright & Weissberg, 2010). Second, studies must have focused on academic, behavioral, or social-emotional outcomes for school-aged children (i.e., PreK through 12th grade). Approximately 20% of abstracts were double-coded, and disagreements among coders were discussed until consensus was reached during bi-weekly meetings. To assess interrater reliability, a Fleiss' Kappa (Orwin & Vevea, 2009) was computed. Results revealed a Kappa estimate of 0.65, indicating a fair to good level of agreement beyond chance (Fleiss, 1971). In total, 1,032 studies were retained upon abstract coding.

Full-text screening. For remaining studies, full-text copies were retrieved and their methods sections were reviewed for five inclusion criteria. Inclusion criteria were more extensive at this stage because full-text screening allowed coders to search relevant information often unavailable in an abstract alone. Inclusion criteria were as follows:

1. The study presented the results of a family-school intervention focused on parental involvement or family-school partnerships.
2. The study involved students in preschool through Grade 12.
3. The study presented outcomes involving children's academic, behavioral, and/or social-emotional functioning.
4. The study occurred within the context of a naturalistic setting (i.e., not a contrived or laboratory setting).
5. The study used any of the following research designs:
 - a. An experimental or quasi-experimental design that compared groups receiving one or more parent involvement or family-school partnership interventions with one or more control groups, with both pretest and posttest measures on at least one qualifying outcome variable.
 - b. A pre-/posttest design with measures on at least one relevant outcome using the same participants, including one- and multiple-group designs involving parent involvement and/or family-school partnership interventions (Wilson, Lipsey, & Derzon, 2003).

Study Coding

After full-text methods sections were reviewed, 392 family-school intervention studies were included in the final sample of our larger family-school intervention database. Six doctoral students and postdoctoral fellows with expertise in family-school interventions coded the studies, with 15% double-coded. Similar to abstract reviewing, weekly meetings occurred that allowed coders to discuss and address disagreements and discrepancies. Fleiss' generalized kappa (1971) was utilized as an estimate of interrater reliability. Results revealed a Fleiss' generalized kappa

of 0.61, indicating a fair to good level of agreement across studies in the larger meta-analysis (Green, 1997).

All family-school intervention studies were coded for children's social-emotional (i.e., social-behavioral competence, mental health) and academic outcomes (i.e., achievement, academic behaviors), parent outcomes (i.e., attitudes, practices), and interpersonal outcomes (i.e., parent-teacher relationship, bi-directional communication; see Table 1), and intervention method (i.e., consultation, parent training, teacher/administrator training, home visits, and parent child-activities). For the current study, all group-design studies coded as using consultation (i.e., "an indirect service delivery model wherein a consultant works with one or more parent and/or teacher consultee(s) to address concerns for a student") were included. Our final sample was comprised of 31 consultation-based family-school engagement studies with 277 effect sizes.

Data Analysis

We used RVE to answer all research questions. RVE was an appropriate choice for our analyses given that many studies reported multiple outcomes within the same study. Hedges' (1981) standardized mean difference effect was used as a summary for each intervention effect. Our final data set included 277 effect sizes across 31 studies. Fisher, Tipton, and Zhipeng's (2017) *robumeta* R package was utilized to estimate a random effects model when calculating each pooled effect size estimate. Further, we incorporated Tipton's (2015) small-sample bias correction due to the limited number of studies and effects present for some of our analyses. As recommended by Tanner-Smith, Tipton, and Polanin (2016), we used a more stringent p -value (i.e., $p < 0.01$ rather than $p < 0.05$) and adjusted the degrees of freedom when our t -test statistics were less than four to control for Type I error. To analyze main effects, we calculated the overall pooled effect size, $\bar{\delta}$, for each type of child (i.e., academic, social-emotional), parent (i.e.,

attitudes, practices), and interpersonal (i.e., parent-teacher relationship, bi-directional communication) outcome. We also calculated pooled effect sizes for each outcome associated with each complementary strategy (i.e., parent/caregiver training, teacher/administrator training, parent-child activities, home visits).

Results

Final sample characteristics. Our final sample included 31 total group-design studies with 277 effect sizes (i.e., approximately nine effects per study). Child social-emotional outcomes were assessed in 80.65% of included studies and academic outcomes were assessed in 67.74%. Parent practices were assessed in 38.71% and parent practices were assessed in 19.35% of the final sample. Further, relational outcomes (i.e., parent-teacher relationship and bi-directional communication) were assessed in 22.58% of the included studies. Consultation was a requirement for study inclusion; thus, 100% of studies were coded as such. Other intervention methods utilized within studies were: parent/caregiver training (used in 65.63% of included studies), teacher/administrator training (22.58%), parent-child activities (41.93%), and home visits (16.13%). Child participant sample sizes within studies ranged from 12 to 440 ($M = 93.63$). Five studies (i.e., 16.13%) were dissertations/theses and 26 (i.e., 83.87%) were published articles that appeared in a range of educational, psychological, and developmental journals (e.g., *School Psychology Review*, *Journal of Educational and Psychological Consultation*, *Autism*, *International Journal of Special Education*).

Child outcomes. Our first research question explored the effects of consultation-based family-school engagement interventions on children's social-emotional (i.e., social-behavioral competence and mental health) and academic (i.e., academic achievement and academic behavior) outcomes. For children's *social-behavioral competence*, 107 outcomes were reported

across 18 studies. Results revealed that consultation-based family-school engagement interventions had a significant positive effect on children's social-behavioral competence ($d = 0.34$, $t[15.10] = 4.69$, $p < 0.01$; see Table 2). Regarding children's *mental health*, 14 outcomes were reported across seven studies. Consultation-based family-school engagement interventions had a significant positive impact on children's mental health ($d = 0.37$, $t[5.92] = 2.45^{**}$, $p < 0.05$ see Table 2).

Children's *academic achievement* was reported across 48 outcomes and 13 studies. Consultation-based family-school engagement interventions had a significant positive effect on children's academic achievement ($d = 0.27$, $t[8.69] = 4.35^{**}$, $p < 0.01$; see Table 3). For children's *academic behaviors*, 17 outcomes were reported across eight studies. Results revealed that consultation-based family-school engagement interventions did not have a significant positive impact ($d = 0.42$, $t[6.89] = 1.32$, $p = 0.23$; see Table 3).

Parent outcomes. For *parent practices*, 46 outcomes were reported across 12 studies. Results indicated that consultation-based family-school engagement interventions had a significant positive impact on parent practices ($d = 0.53$, $t[10.71] = 3.97$, $p < 0.01$; see Table 4). Regarding *parent attitudes*, 17 outcomes were reported across six studies. Results revealed that consultation-based family-school engagement interventions had a significant positive impact on parent attitudes ($d = 0.49$, $t[3.13] = 10.23$, $p < 0.01$; see Table 4).

Relational outcomes. Relational (i.e., parent-teacher relationship, bi-directional communication) outcomes were reported across 24 outcomes and seven studies. Consultation-based family-school engagement interventions had a significant positive impact on relational outcomes ($d = 0.37$, $t[5.42] = 3.56$, $p < 0.05$; see Table 5).

Complementary intervention methods. Analyses of each complementary method used in conjunction with consultation are organized by child, parent, and interpersonal outcomes and displayed below in Tables 6, 7, and 8. For studies that included *parent training* with consultation, significant effects were revealed for children's academic achievement ($\bar{\delta} = 0.31$, $t[6.99] = 3.87$, $p < 0.01$; see Table 6), social-behavioral competence ($\bar{\delta} = 0.39$, $t[11.15] = 5.95$, $p < 0.01$; see Table 7), and mental health ($\bar{\delta} = 0.37$, $t[5.92] = 2.45$, $p < 0.05$; see Table 7). Consultation with parent training was also found to significantly impact intervention effects for parent practices ($\bar{\delta} = 0.62$, $t[8.86] = 3.98$, $p < 0.01$; see Table 8) and relational outcomes ($\bar{\delta} = 0.47$, $t[2.98] = 4.75$, $p < 0.01$; see Table 8). When consultation interventions included *parent-child activities*, significant effects were found for children's academic achievement ($\bar{\delta} = 0.33$, $t[5.63] = 3.32$, $p < 0.05$; see Table 6) and social-behavioral competence ($\bar{\delta} = 0.31$, $t[7.29] = 4.14$, $p < 0.05$; see Table 7). Parent-child activities implemented with consultation also significantly impacted parent practices ($\bar{\delta} = 0.82$, $t[4.94] = 3.34$, $p < 0.05$; see Table 8). Regarding studies including *teacher training* with consultation, significant effects were found for children's social-behavioral competence ($\bar{\delta} = 0.49$, $t[1.97] = 3.84$, $p < 0.01$; see Table 7) and interpersonal outcomes ($\bar{\delta} = 0.76$, $t[2.77] = 17.54$, $p < 0.01$; see Table 8). No significant effects were revealed for any child or parent outcomes when *home visits* were included with consultation.

Discussion

The purpose of the current study was to evaluate the impact of consultation-based family-school engagement interventions on child, parent, and relational outcomes. Furthermore, this study utilized, thereby introducing, an advanced analytic approach, robust variance estimation (RVE), into the consultation meta-analysis literature. Results augment previous meta-analyses

conducted on both school-based consultation (e.g., Reddy et al., 2000) and family-school interventions (e.g., Authors, 2019a; Authors, 2019b). Overall, findings suggest that consultation-based family-school engagement interventions enhanced the majority of child, family, and relational outcomes. Interestingly, consultation-based family-school engagement did not significantly impact children's academic behaviors. Both our expected and unexpected findings are discussed in more detail below.

Results of this study suggest that consultation-based family-school engagement interventions positively impact children's social-behavioral competence, mental health, and academic achievement. Each of these areas is critical to children's functioning. Social-behavioral skills, mental well-being, and academic achievement are comprised of multiple skillsets that are associated with long-term outcomes, including meaningful peer relationships (Wentzel, 2009), school completion (Barry & Reschly, 2012), and healthy physical development (Boehm & Kubzansky, 2012). Indeed, family-school engagement interventions delivered through consultation provide comprehensive supports across home and school that set the stage for children to develop long-term competencies.

Consistent with the practice of consultation, results from this meta-analysis also indicated that consultation-based family-school engagement interventions improved parent practices and attitudes, as well as relational outcomes between parents and teachers (i.e., parent-teacher relationship, bi-directional communication). Consultation is an indirect approach within which child-directed strategies are developed and delivered by teachers and parents (Sanetti, Kratochwill, & Long, 2013). Thus, by definition, the effects of consultation-based family-school engagement interventions are contingent on changes in adult practices, attitudes, and relationships. For example, CBC research has consistently found that the quality of the

relationship between parents and teachers mediates the effects of CBC on children's social-behavioral outcomes (Sheridan et al., 2012; Sheridan et al., 2017). The results of this meta-analysis suggest that family-school interventions delivered through consultation can enhance proximal parenting practices and attitudes, as well as the relational outcomes that may be needed to enhance shared (parent-teacher) responsibilities and support children's social, emotional, and academic functioning.

Complementary Strategies in Consultation

Many consultation-based family-school engagement interventions include unique strategies designed to augment the consultation process. Common to many consultation approaches is the use of complementary strategies, including didactic instruction (i.e., parent and teacher training), specific parent-child activities, and home visits. In the present study, these complementary strategies were explored to enhance our understanding of their role in consultation-based family-school engagement interventions.

Taken together, complementary strategies used in conjunction with consultation enhanced child, parent, and interpersonal outcomes; however, the impact of the strategies was varied. Parent training within consultation-based family-school engagement interventions appeared to have the broadest impact, with improvements noted in children's academic achievement, social-behavioral competence, and mental health, as well as parent practices and parent-teacher interpersonal/relational outcomes (i.e., parent-teacher relationship, bidirectional communication). The inclusion of parent-child activities also impacted multiple outcomes, namely children's academic achievement and social-behavioral competence, and parent practices. Other complementary strategies appeared to have a more specific influence. For example, teacher training within consultation positively impacted social-behavioral competence

and interpersonal/relational outcomes between parents and teachers. These findings shed light on methods that can add precision to consultation-based interventions and potentially bolster their efficacy. Understanding the impact of complementary strategies on desired outcomes allows consultants to tailor their consultation practices to maximize benefits for children, parents, and teachers.

Unexpected Findings

Some of our analyses yielded results that were contrary to our hypotheses. For example, consultation-based family-school engagement interventions did not significantly impact children's academic behaviors (e.g., academic engagement, truancy). It may be that consultation-based family-school interventions tend to focus on social and emotional enablers of academic achievement (e.g., social skills, behavioral regulation) rather than specific academic behaviors (e.g., attendance). Indeed, researchers targeted academic behaviors with less frequency than other academic and social-behavioral targets. The limited prevalence of studies targeting academic behaviors as an outcome ($n = 8$) may have influenced this result, thereby making it difficult to make conclusive statements regarding its efficacy on this important outcome. Additional research is needed to discern the effect of consultation-based family-school engagement interventions on academic behaviors.

Similarly, no significant effects were revealed for the use of home visits as a complementary strategy to consultation-based family-school engagement interventions. It is possible that this strategy provides other benefits to the process not measured in the current study, such as parents' problem-solving skills (Thomas & Zimmer-Gembeck, 2007) or social support (Sweet & Applebaum, 2004). It is also not clear that teachers were involved in home visits, and effects of home visits on relationships with other school personnel who may have

been responsible for delivering this program component (e.g., family specialists, consultants) is unknown. It is important to note that home visits were included in only five studies, none of which had outcome data available for children's academic behaviors or mental health, or parent attitudes or parent-teacher outcomes.

Implications

The results of this meta-analysis support and extend previous meta-analyses in the fields of consultation and family-school intervention (e.g., Authors, 2019a; Authors, 2019b). The findings may have potential implications for the practice and study of consultation. Overall, our results indicate that consultation-based family-school engagement interventions are effective to foster and improve child, parent and relational outcomes. Beyond simply demonstrating the benefits of consultation in family-school intervention, results revealed specific complementary intervention methods that can be used to effectively augment the effects of the consultation process.

These findings make important contributions to the practice of consultation. For consultants implementing family-school interventions, the results may help to guide the use of adjunct strategies to augment the consultation process. For example, consultants may consider incorporating parent training as a universal strategy integrated into the consultation process because it had broad positive effects on child and parent outcomes. Indeed, the empirical support for parent education and training programs suggests these are effective strategies to improve a host of child and parent outcomes (e.g., Cedar & Levant, 1990). Other complementary strategies examined may be used more strategically by consultants. For example, consultants may supplement consultation with specific teacher training when improvements in relationships and communication between parents and teachers are needed. Indeed, many teachers are tasked with

establishing communication and relationships with parents, but often feel unprepared to do so (Epstein & Sanders, 2006; Weiss, Lopez, Kreider, & Chatman-Nelson, 2014). However, when teachers are provided training in family-school engagement, they report improved practices, knowledge, and attitudes toward working and collaborating with families (Smith, 2019; Smith & Sheridan, 2019).

The study also extends and advances consultation research by using contemporary meta-analytic techniques. Meta-analyses provide a high level of evidence in a given area because of the synthesis of data across studies and their ability to determine if treatment effects exist beyond individual studies (Ackley, Swan, Ladwig, & Tucker; 2008; Hoffman, Bennett, & Del Mar, 2013). Moreover, meta-analytic techniques allow researchers to identify various components that represent an intervention or consultation process. This is salient to the study of consultation because these models are often comprised of multiple elements that are implemented as a single process. Meta-analysis can help begin the process of empirically deriving the operative features of consultation. By highlighting RVE as a meta-analytic approach, the current study provides further support for the positive, indirect effects consultation can have on child, parent, and relational outcomes. Further, this study is perhaps the most up-to-date meta-analysis in the area of school consultation, as there have been very few meta-analyses or large-scale reviews conducted in recent decades.

Study Limitations

Although our study revealed interesting and important findings, it is not without limitations. First, our study relied on a broad definition of consultation (i.e., indirect service delivery model wherein a consultant works with one or more parent and/or teacher consultee(s) to address concerns for a student). Thus, it is likely that our sample included studies that utilized

various consultative approaches and models (e.g., CBC, mental health consultation) within family-school engagement interventions. Future research should delineate the effects of different models of consultation-based family-school engagement interventions to determine if particular models are especially effective in improving child, parent, and relational outcomes.

Second, although this study identified effective strategies that can be used to complement and augment consultation-based family-school engagement interventions, it is not possible to isolate the impact of these characteristics of consultation. Further, consultation is characterized by structural and relational features that are embedded within and inherent to the process (e.g., Sheridan, Rispoli, & Holmes, 2014). For example, problem-solving consultation (Bergan & Kratochwill, 1990) is comprised of dual processes that represent both the problem-solving procedures undertaken by the consultant and the consultee(s), as well as the development and implementation of a behavior intervention plan designed to remediate the children's concerns. It is likely that there are several elements, in isolation and together, that either drive (i.e., mediate) or impact (i.e., moderate) the effectiveness of said processes. One variable, parent-teacher relationship, appears to consistently mediate the effects of consultation-based family engagement on child outcomes (Sheridan et al., 2012b; 2017a, b). That said, more research intent on empirically deriving the elements that are responsible for consultation's effects is necessary. The significant findings related to parent practices and interpersonal/relational variables suggest the need to explore their role in mediating the efficacy of consultation on child outcomes. Other ingredients that may be active in producing desired child outcomes (mediators) but not included in this study, such a teacher practices or attitudes, should also be explored. Likewise, a greater understanding of the core components of consultation-based family-school engagement

interventions (i.e., components that augment the efficacy of interventions, or moderate the strength of their impact) is also necessary.

Third, this meta-analysis only included studies using group designs. Several consultation-based family-school intervention studies have utilized single case experimental designs (e.g., Bellinger, Lee, Jamison, & Reese, 2016; Lees & Ronan, 2008; Sheridan, Kratochwill, & Elliot, 1990; Weiner, Sheridan, & Jenson, 1998, and their lack of inclusion in the current study resulted in a limited and incomplete sample. Future meta-analytic work is needed to synthesize research on the effects of consultation-based family-school engagement interventions using single-case methodologies.

Fourth, Kappa was not particularly high (i.e., 0.61) for studies coded by more than one reviewer. This may be due to limitations associated with conducting such a large-scale review. First, the larger meta-analysis from which the current study was drawn included a high number of studies and codes, and thus required multiple coders. The use of multiple coders responsible for extracting data across a high number of categories creates potential for disagreements (Sim & Wright, 2005). Disagreements most often occurred when coders were required to make fine-grained differentiations between comparable constructs (e.g., differentiating peer relationships from social skills), which other researchers have previously indicated as a frequent source of coding disagreement (e.g., Krippendorff, 2008). Fine-grained differentiations were particularly difficult when studies lacked definitional clarity, thus leaving some interpretation to study coders. As we mentioned previously, we took appropriate steps to reduce these disagreements via biweekly meetings where consensus was reached. Thus, although disagreements occurred and our study was quite large in scale, we ultimately trust the accuracy of our results.

Finally, data were very limited in regard to certain complementary strategies reported in studies. Thus, we were limited in our ability to draw conclusions about their contributions to consultation. For example, none of the consultation-based studies targeting children's academic behaviors or parent attitudes used complementary strategies. Additional research is needed to understand the full impact of these strategies across a broad set of outcomes.

Conclusion

Meta-analyses are conducted to rigorously identify and synthesize the available evidence for a identified topic, in this case, the current study included consultation-based family-school engagement interventions. Uniquely, this study utilized RVE as a meta-analytic approach to address limitations of other approaches including the dependency of identified effect size estimates. Generally, consultation has been found to be effective for improved outcomes for clients and consultees, and this meta-analysis augments the literature by indicating that consultation is effective for family-school engagement interventions as well. In many cases, complementary intervention components are often used to support the effects of consultation, with evidence that they enhance the child, parent, and interpersonal outcomes. Future research should continue to evaluate various components and outcomes in support of consultation-based family-school engagement interventions, including novel methodologies, to support clients and consultees at home and school.

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Studies included in the current meta-analysis are denoted with an asterisk.

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