ABSTRACT

OWENS, CAITLYN REIS. The Role of Peer Assisted Supervision and Support in Provider Use of Triple P- Positive Parenting Program. (Under the direction of Dr. Mary Haskett).

Triple P- Positive Parenting Program is a widely used parenting intervention that aims to reduce child behavior problems by increasing positive parenting practices at a population level. However, many providers trained in Triple P implement the intervention with very few families. The study was designed to examine a link between attendance at Peer Assisted Supervision and Support (PASS) sessions and use of Triple P-Positive Parenting Program with families among providers across North Carolina. In the current study, we examined (a) fidelity to the PASS model as a moderator of the link between attendance at PASS sessions and use of Triple P by providers and (b) providers’ perceived fit of Triple P with typical services as a mediator of the association between providers’ attendance at peer support and use of Triple P with families. Results revealed that providers who attended more peer support sessions tended to use Triple P with more families. Additionally, results indicated that fidelity to the PASS model was not a significant moderator and perceived fit was not a significant mediator. This study highlights the importance of attending PASS sessions for providers in terms of serving families, and it was the first study to assess the model of PASS sessions in association with use of the intervention.
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The Role of Peer Assisted Supervision and Support in Providers’ Use of Triple P- Positive Parenting Program

by
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DEDICATION

This thesis is dedicated to my family, without whom I would not be here today. To my mom, Jacqueline Gyimesi, and my sister, Courtney Klotz, thank you for always encouraging me to do my best and for providing me with unconditional love. To my Nana and Bumpa, thank you for always being there for me and always being the first ones to call to check on me after a rough day. To my son, Luke Owens, thank you for being your wonderful toddler self. You inspire me every day with your love for learning and exploring. To my husband, Micah Owens, thank you for encouraging me to pursue my dreams and always helping me to be my best self. I would not be here today if it wasn’t for your unconditional love (and patience).
BIOGRAPHY

Caitlyn Reis Owens (Formerly, Caitlyn Anne Klotz) was born on September 27, 1991 in Newton, Massachusetts. Caitlyn graduated from James River High School in 2009. She attended James Madison University for her bachelor’s degree and double majored in biology and psychology. After graduating college in 2014, Caitlyn began working as a social worker for a rural social services agency. Her experiences with families involved in the foster care sector inspired Caitlyn to pursue a doctoral degree. Caitlyn sought to learn how to support families involved with child welfare on both an individual and macro level. Caitlyn is a doctoral student of School Psychology at North Carolina State University. She is also a pre-doctoral research fellow for the Carolina Consortium on Human Development.
I would like to thank my advisor, Dr. Mary Haskett for helping me with this project. Thank you for editing countless drafts and helping me on my journey to academia. Your passion for helping your community is inspiring. Your work has touched the lives of many students, practitioners, and community members. Thank you for letting me be a part of your journey!
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INTRODUCTION

In 2011, an estimated 658,000 children were reported victims of abuse and neglect in the United States, and in 2015 there was an estimated 683,000 victims (U.S Department of Health & Human Services, 2016). The 3.8% increase in victims from 2011 compared to 2015 is unfortunate due to the known physical, psychological, and behavioral effects of maltreatment on development, as well as the known negative long-term consequences for victims (Cowell, Cicchetti, Rogosch, & Toth, 2015; Felitti et al., 1998; Norman et al., 2012; Shackman & Pollak, 2014; Springer, Sheridan, Kuo, & Carnes, 2007). Child maltreatment is not only associated with adverse consequences for the individual, but it also is correlated with negative factors on a societal level. In 2010, the economic burden of maltreatment was estimated to be $124 billion for the United States, alone (Fang, Brown, Florence, & Mercy, 2012). Given the number of victims, the negative consequences, and the financial consequences of maltreatment, prevention efforts should be widespread to reach the entire population of parents. Given the widespread need for prevention efforts, in 2006, the World Health Organization (WHO) published a child maltreatment guide in support of population-wide prevention efforts. The guide endorsed intervention models that go beyond the scope of the individual by altering other systems acting on the individual, including: (a) immediate relationships, (b) communities, and (c) society. At the individual level, the guide advocates for evidence-based interventions that seek to improve parenting skills and access to support (Horswell & Istfan, 2006). As the current study focused on parenting interventions, a brief discussion of evidence-based parenting programs is provided below to lay a foundation for the study.
Evidence-based parenting interventions: Triple P - Positive Parenting Program

Evidence-based parenting programs have been shown to facilitate positive changes in their targeted populations. Chen and Chan (2016) performed a meta-analysis that verified the effectiveness of parenting programs at reducing risk factors associated with maltreatment by decreasing harsh and dysfunctional parenting practices. The authors also validated the success of these programs’ ability to enhance parental protective factors through increased confidence in the parenting role and knowledge of parenting practices. Although these outcomes are positive in terms of effects for individual families, prevention of child maltreatment must be provided on a much larger scale for meaningful outcomes at the population level.

One successful parenting program that seeks to make evidence-based parenting support available and accessible to all parents is the Triple P - Positive Parenting Program. The Triple P intervention model was developed to help parents raise children through supporting parents in the use of positive behavior practices and by providing families with a community of trained service providers across different disciplines (Sanders, Burke, Prinz, & Morawska, 2017). Although research indicates that Triple P has positive effects at the population level (as described in detail below), emerging research also indicates that many providers who become accredited to provide Triple P do not use the program with all parents who might benefit and do not sustain their use of Triple P over time. Given this low uptake of Triple P, it is likely that the intervention is not reaching the wide intended population and is therefore less cost-effective than projected. Thus, the overall goal of the current study was to use an implementation science lens to examine a potential facilitator for successful adoption of evidence-based parenting programs.

The implementation of evidence-based programs is costly for agencies, thus an effective model for dissemination of these programs is critical. Supervision is one method used in
dissemination of evidence-based parenting programs to help providers and agencies adopt these new practices. Participation in supervision is associated with higher fidelity and adoption of evidence-based programs, but there is little research about the associations between specific supervision models used in evidence-based parenting programs and the implementation of those programs (Beidas & Kendall, 2010; Herschell, 2010). Furthermore, little is known about the characteristics of providers who are most likely to participate in supervision.

The first purpose of the current study was to determine whether there were differences in rates of participation in supervision based on provider characteristics, such as the setting in which providers worked and the level of Triple P they were trained to administer. A second purpose was to examine the degree to which the Triple P peer supervision model, referred to as Peer Assisted Supervision and Support (PASS), was related to use of Triple P. The third purpose of this study was to examine whether fidelity to the PASS model moderated the relation between peer support attendance and use of Triple P. Finally, this study assessed if provider’s perceived fit of Triple P with typical job responsibilities mediated the relation between attendance at peer support and use of Triple P with families. Following is an overview of the Triple P Positive Parenting Program, including a brief discussion of the efficacy of the intervention. The discussion will then move to an examination of the challenges in Triple P adoption, and it will conclude with a review of the current literature on supervision in evidence-based parenting programs, with a focus on the PASS model.

**Triple P- Positive Parenting Program**

Triple-P is a widely-used evidence based parenting intervention designed for use in many settings including mental health clinics, schools, and physicians’ offices. Triple P is currently implemented in 25 countries with more than 65,000 trained providers (McWilliam, Brown,
It is based on social learning principles and places an emphasis on the reciprocal relationship between a parent and child (Sanders, 1999). The developer’s goal for Triple P was to make parenting strategies available to all parents, so Triple P includes variants to reach parents with minor parenting challenges and those with more specialized needs due to greater child behavior problems. The program consists of five tiers that become more individualized and target more specific behaviors in the higher levels. At each level, Triple P covers five core positive parenting principles to address factors associated with positive child development and reduced child maltreatment. The core principles are: 1) Creating a safe and engaging environment, 2) building a positive learning environment, 3) using assertive discipline, 4) setting realistic expectations, and 5) parental self-care (Sanders & Cann, 2003). This multi-tiered evidence-based parenting program targets children from birth to 16 years and strives to prevent and reduce social, emotional, and behavioral problems in children by enhancing the knowledge, skills, and confidence of parents (Sanders, 1999).

The continuum of levels allows Triple P to be tailored to an individual family’s specific needs, thus eliminating over-servicing. Providers of Triple P are accredited in levels appropriate for their professional training and the goals of their agency. To illustrate, child care providers would likely be trained in lower levels to address parents’ relatively minor, common concerns such as, toilet training and bedtime problems. Licensed mental health providers would likely be trained at higher levels to provide more intensive parenting support for parents with serious and persistent child behavior challenges. A feature of Triple P is to promote self-regulation among both the parents and the providers who use Triple P. This process involves individuals acquiring knowledge and skills to change their own behaviors in order to become independent problem-solvers (Sanders & Mazzucchelli, 2013). Enhancing self-regulation among providers is a primary
goal of the PASS model of peer support.

**Effects of Triple P.** Over the years, numerous studies around the world have been conducted to evaluate the efficacy of Triple P in increasing positive parenting practices and reducing negative behavior in children (Bodenmann, Cina, Ledermann, & Sanders, 2008; Graaf, Speetjens, Smit, Wolff, & Tavecchio, 2008; Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009). In 2014, Sanders, Kirby, Tellegen, and Day published a meta-analysis using 101 studies of the effects of Triple P conducted over a span of 33 years. The researchers found significant short-term effects on children’s social, emotional, and behavioral adjustment ($d=0.473$), parenting practices ($d=0.578$), parenting satisfaction and efficacy ($d=0.519$), parental adjustment ($d=0.340$), and parental relationships ($d=0.225$) (Sanders et al., 2014). These results provide support for Triple P as a pathway to positive outcomes for children and their parents.

In 2009, results of the first study evaluating Triple P at a population level in the United States were published (Prinz et al., 2009). A stratified random sample of 18 counties in South Carolina either received the Triple P intervention or continued services as usual. Compared to the control counties, state-level data indicated significantly slower growth in confirmed child maltreatment cases ($d=1.09$), out of home placements ($d=1.22$), and reported child maltreatment related injuries ($d=1.14$). The large effect sizes found in this population trial provide evidence for the use of Triple-P as a vehicle to help reduce indicators of child maltreatment. However, as reviewed below, there are barriers to implementation of Triple P that limit the number of families the program reaches. Failure to fully saturate the community with the intervention might explain why Prinz et al. did not find overall reductions in child abuse rates in the intervention counties in SC (although there was a slower rate of growth in rates compared to the control counties).
**Challenges to Triple P adoption.** Although the South Carolina population trial demonstrated positive effects on indicators of child maltreatment, two subsequent studies of the providers who delivered Triple P in that trial found that many service providers were not actually adopting and using the program to serve their families. In 2009, 37% of providers trained in the South Carolina population trial reported not using the program with any families after accreditation (Sanders, Prinz, & Shapiro, 2009). Three years later, the same sample was surveyed again, and 58% of the providers that had adopted Triple P reported using the intervention with fewer than 10 families over a 12-month period (Shapiro, Prinz, & Sanders, 2012). This lack of uptake and use not only decreases the number of families that could potentially benefit from Triple P, but it also means agencies are wasting resources to train and support providers who are not using the program. Following is a brief review of the two Triple P implementation population studies to demonstrate some of the challenges associated with the adoption of Triple P, including supervision, the focus of the current study.

In 2009, Sanders, Prinz, and Shapiro used structured interviews to identify several facilitators and barriers to program use six months after the providers’ initial trainings (Sanders et al., 2009). Factors classified as barriers to program use were lack of recognition in the workplace about the added time and effort providers needed to begin to use Triple P, appointment clashes, lack of overtime for after-hours appointments, clash of theoretical orientation, and lack of integration of Triple P with providers’ current caseload. Of the 611 participants, 97% of participants identified the lack of fit between Triple P and their current caseload as another barrier to program adoption, and subsequent research identified program integration of Triple P into typical services as a key element in program sustainability (Shapiro, Prinz, & Sanders, 2015). Finally, Sanders and colleagues reported that 96% of participants
reported lack of supervision or consultation as an obstacle to program use. However, the researchers did not collect data on providers’ use of Triple P, so it is not known whether the reported barriers were associated with less use. Type of supervision providers were referring to (i.e. peer supervision, supervision with directors, etc.) was not described, so there is no way of knowing if a lack of one type of supervision was viewed as a greater barrier compared to the other types. Although lack of supervision was identified as a barrier to program use by the participants, the opportunity to consult with colleagues trained in the same intervention was noted as a facilitator to program use (Sanders et al., Shapiro, 2009). The results of this study provide preliminary support for a focus on peer support and practitioner’s perceived fit of Triple P as facilitators to program use.

In 2012, Shapiro, Prinz, and Sanders performed a partial replication of the previous study (Shapiro et al., 2012). Their sample included 174 service providers across several disciplines to examine predictors of sustained Triple P program use. Several factors were identified by providers as explanations for the frequency with which they used Triple P with clients, including (a) self-efficacy in conducting parent consultations about child behavior after training, (b) post-training support (c) post-training supervision, and (d) fit of Triple P with the needs of parents in their current caseloads. Similar to the previous study (Sanders et al., 2009), lack of supervision and lack of fit with caseload were reported barriers to program adoption. This study, and other research in implementation science (Fixsen, Naoom, Blase, & Friedman, 2005), suggests that supervision is necessary in early implementation to aid providers in the integration of the program and new skills into existing services and in sustainability of new skills over time. Shapiro and colleagues considered their study to be exploratory, and they suggested that further research was needed to identify what models of supervision are most useful in adopting new
evidence-based parenting programs. Following is a review of the role of supervision in evidence-based parenting programs. Effects of peer support, the specific form of supervision examined in the current study, are also reviewed.

**Supervision in Evidence-Based Programs**

Novins and colleagues performed a systematic review to examine key findings from empirical studies on dissemination and implementation of evidence-based programs in child and adolescent mental health (Novins, Green, Legha, & Aarons, 2013). In five studies, they found that on-going supervision, fidelity monitoring, and support to providers resulted in higher levels of adherence and fidelity. They also found in two studies that supervision, monitoring, and support improved staff retention and reduced emotional exhaustion. Novins and colleagues stated that in the 44 studies they reviewed, supervision was one of two factors that had the strongest empirical evidence for successful dissemination and implementation across the multiple outcomes examined.

The two exploratory population studies on Triple P implementation identified lack of supervision as a perceived barrier to both program adoption and sustainability (Sanders et al., 2009; Shapiro et al., 2012). Results of another study of Triple P (Hodge, Turner, Sanders, & Filus, 2016) indicated that supervision moderated the association between perceived program burden (i.e., the program interferes with work schedules and personal free time) and sustained program use. Specifically, providers that viewed Triple P as a burden were less likely to have sustained program use; however, providers who indicated high program burden but received supervision were 1.4 times more likely to sustain program use compared to providers who did not have supervision. The researchers of the previous studies demonstrated that supervision is important in implementation, but various types of supervision (face-to-face with supervision or
expert and peer support) were not examined separately in these studies. Peer supervision and supervision with an expert could have different effects on the implementation process. Peer assisted supervision is purported to be central to use of Triple P, as described below.

**The Triple P peer support model.** The Peer Assisted Supervision and Support (PASS) supervision model was developed by Sanders and Murphy-Brennan (2010) to ease the transition from providers-in-training to providers becoming independent and competent users of Triple P. The model was designed to establish self-regulation of providers by facilitating self-management, self-efficacy, personal agency, problem solving, and self-sufficiency (Sanders & Murphy-Brennan, 2010). The model strives to promote practitioner skills in competent use of Triple P by promoting independent decision making, clinical reasoning, and self-directed learning. Providers are encouraged to participate in peer support networks to facilitate reviews of cases, continue skill development, prevent program drift from protocols, and foster a support system to prevent burnout (Turner & Sanders, 2006). In the PASS model, providers meet in small groups to discuss their Triple P experiences. Each session lasts approximately 1.5-2 hours and each participant serves in one of three rotating roles: peer facilitator, peer mentor, and practitioner. Sessions are structured around an agenda created by the participants and involves three key activities: case reviews, discussion of implementation issues, and a professional development activity. The model is assumed to foster self-regulation through peer relationships to improve intervention delivery (McPherson, Sanders, Schroeter, Troy, & Wiseman, 2016). However, the benefits of the PASS model have largely been assumed, not empirically examined. Following is an overview of the only study that examined the PASS model.

In 2016, McPherson and colleagues, utilized a q-methodology approach to examine the acceptability and feasibility of the PASS Model among providers trained in Triple P. A small
sample of 24 providers received one day per week of protected time to deliver Triple P and to participate in PASS for eight months prior to the evaluation. The q-methodology utilized in this study combined qualitative and quantitative research to develop a set of materials (Q-items) that assessed the views, perceptions, and experiences of participants in PASS sessions. They found that participants viewed PASS with colleagues as enjoyable and they found it to be a supportive experience. Participants reported being at ease with key processes of the PASS model, including peer feedback and role rotation. The participants disagreed about whether PASS induced nervousness and views about presenting problems in PASS group as a fearful experience. The researchers suggested that the cooperative environment endorsed by participants supported the development of practitioner skills associated with client outcomes, but they did not actually measure clinical skills or use of Triple P (McPherson et al., 2016). This study provided evidence for the acceptability of the PASS model among providers, but methodological weaknesses and the narrow scope of the study limit the conclusions that can be drawn. Specifically, the sample of providers was very small, and there was no attention to variability in providers’ perceptions of PASS based on their professional discipline, years of experience with Triple P, or other characteristics. More importantly, the researchers did not investigate associations between supervision using the PASS model and providers’ program use, the outcome variable of the current study.

**Current Study**

Program accessibility is imperative for population-based dissemination of interventions to ensure that a large number of families are exposed to the intervention. Unfortunately, many providers trained to deliver Triple P do not implement the intervention or they use it with very few families. As previously discussed, supervision has been identified in multiple studies as a
possible facilitator to aid in successful implementation of evidence-based parenting programs (Hodge et al., 2016; McPherson et al., 2016; Nadeem, Gleacher, & Beidas, 2013; Schoenwald et al., 2013; Shapiro et al., 2012). The current study was designed to explore characteristics of providers who were utilizing peer supervision. The developers of Triple P strive to train providers across different settings to create a community of support for parents, however, no studies have examined characteristics of providers who are attending peer supervision and support. As noted above, supervision has been linked to positive adoption outcomes, therefore, by understanding characteristics of providers who are not attending peer support, agencies can better target which providers might need more encouragement to increase attendance. The following characteristics of providers were examined: geographic location, lowest level of Triple P training, work settings, and accreditation length. Given the lack of attention to these variables in prior research, analyses were considered exploratory.

The current study was also designed to expand the understanding of the role of supervision in use of Triple P. Understanding links between attendance at PASS sessions and provider use of the intervention might help support providers in their work in the community and aid in the underlying goal of reducing child maltreatment. We hypothesized that providers’ peer support attendance would significantly predict the number of caregivers they served with Triple P. Additionally, we sought to identify potential moderators and mediators of the association between attendance at PASS sessions and number of caregivers served. We hypothesized that the association would be moderated by fidelity the PASS and mediated by providers’ perceived fit of Triple P with typical services.
Method

Participants

Participants for the current study included 287 Triple P accredited providers from six county or county clusters across North Carolina. The following county and county clusters were included in the survey: Albemarle cluster (n=39), Buncombe County (n=70), Pitt County (n=78), Halifax/Hertford/Northampton cluster (n=17), Nash/Edgecomb cluster (n=21), and Wake County (n=62). All participants were accredited Triple P providers and were trained in various levels 2-5 of the intervention (there is no accreditation in Level 1). Providers worked in a variety of settings across the state. Characteristics of the sample are summarized in Table 1. Approximately 89.7% (N=253) of the participants had been trained for more than 6 months. Data collected from providers that were trained for longer than 6 months were analyzed for the primary analyses. This allowed for providers to have had the opportunity to attend peer support, the focus of the study. To ensure providers’ anonymity, no demographic information (e.g., race, gender, age) was obtained from participants.

Procedure

There were nine counties or county clusters in North Carolina adopting Triple P when the survey was administered. Counties with small populations were “clustered” together for administrative purposes. A workgroup of the NC Triple P Learning Collaborative collected surveys from providers across six counties/county clusters, whose coordinators agreed to participate in the study (a 66% response rate). The workgroup received the contact information for accredited Triple P providers in each of the participating counties. Accredited Triple P providers received an email from their coordinator inviting them to complete an online Qualtrics survey. Participants in all but one participating county had the option to fill out an additional survey and be entered in a drawing to win a small incentive. The second survey was not linked to
the first survey so any contact information (email addresses) given in the second survey was not connected to responses in the first survey. The sample of providers represents approximately 35% of eligible participants across the six counties (participant rates across counties ranged from 20%-60%). The university IRB gave approval for use of these extant data.

Measures

The NC Triple P Learning Collaborative: Practitioner Survey was comprised of items drawn from evaluations of Triple P adoption in Washington state (Kerns, Negrete, & McCormick, 2014) and New South Wales (Masters, Gaven, Pennington, & Askew, 2011). The survey included 19 questions, and it took providers approximately 8 minutes to complete. The survey contained a mix of multiple choice and open ended questions. The current study focused on seven questions from the survey. Unfortunately, there are no psychometric data to support the reliability or validity of the survey, but the tool has been useful in program evaluations of Triple P (Kerns et al., 2014; Masters et al., 2011).

Dependent Variables

Number of Caregivers Served. Providers were asked, “How many caregivers have you served, to date? (if you served two caregivers in a family, count both).” The participants were provided with a blank box to type in the number of caregivers served with Triple P.

Independent Variables

Peer Support Attendance. Providers were asked: “How many peer support sessions have you attended?” They were provided with an open box to type in the number of sessions attended.

Fidelity to the PASS Model. Providers were asked “If you participate in a peer support group, do the meetings include…?” They indicated which of 8 elements of the PASS model were
typically included in the peer support groups they attended. One possible choice was excluded because it did not describe an element of the PASS model. For purposes of the current study, a summary “fidelity” score was derived for each provider based on the total number of elements they selected. Scores ranged from 0-7, with higher scores indicating higher adherence to the PASS model.

**Perceived Fit with Typical Services.** Providers were asked, “How well does Triple P fit with your typical services to parents and families?” They selected from the following: a) Not at all; there is no way I’ll be able to use Triple P, b) It fits a little, I am beginning to see how it might fit with typical services, c) It fits reasonably well, I am able to incorporate Triple P into my typical services, d) It fits very well; I am likely to use Triple P with many families, e) It is essential; I will definitely use Triple P with most families.

**Exploratory Variables**

**Geographic location.** Providers were asked to identify “Triple P Program county/county cluster.” They could select from a list of 9 county or county clusters.

**Work setting.** Providers were asked to indicate which of 14 work settings they were employed in. The provider’s work settings were classified into 8 categories. Seven of these categories (Education, Non-for profit/Independent, Mental Health, Child Care, Social Services, Health, and Other) were used by Shapiro and colleagues (2012) and a case management category was added to capture a significant number of providers.

**Lowest level of Triple-P training.** Providers were asked to identify “Levels of Triple P in which you have been trained.” There were 18 possible training courses providers might have completed. This variable was recoded to reflect the lowest level of Triple-P each provider was accredited in, with a range of 2-5 (Level 1 does not require a formal training course).
**Length of accreditation.** Providers were asked “If you are accredited in Triple P, how long have you been accredited?” Answers “less than 3 months” and “less than 6 months” were collapsed into one category labeled “Less than 6 months accredited.” Answers “about a year” and “greater than one year” “12-18 months” “6-12 months” were collapsed into “6 months or longer accredited.”

**Results**

**Exploratory Analyses.** The first goal of this study was to explore who attended peer support sessions in terms of geographic location, lowest level of Triple P training, work setting, and length of accreditation. With respect to geographic location, providers from across the 6 county clusters differed in the number of peer support sessions they attended, $F(5,261) = 5.45, p < .001, (ES = .1)$. Providers in Wake County ($M=5.24, SD=4.16$) attended significantly more sessions compared to Albemarle ($M=1.31, SD=2.45$) and Pitt ($M=2.45, SD=4.90$). Providers in other counties did not differ in peer support attendance. See Table 2 for the mean number of peer supports attended by providers in all of the county and county clusters.

To explore the group differences in peer support attendance by providers’ level of Triple P training, one-way between-groups analysis of variance was conducted. Results showed a significant difference in peer support attendance among the providers in the different levels of Triple P, $F(2,262) =3.04, p=.05$. Despite reaching significance, the actual difference had a small effect size (ES=.02). Providers trained in level 3 ($M=2.48, SD=4.42$) differed significantly in the number of peer supports attended from providers trained in Level 2 ($M=3.84, SD=4.1$). Providers trained in Level 4 ($M=3.29, SD=4.0$) did not significantly differ from providers trained in levels 2 and levels 3.
The number of peer supports attended did not differ for providers across the different settings, $F(7,255)=.828, p=.565$. See Table 2 for the mean number of peer supports attended by providers in each work setting. Conversely, providers attendance at peer support did differ between providers who had been accredited for less than 6 months ($M=0.86, SD=1.04$) and those accredited for greater than 6 months ($M=3.54, SD=4.22$), $F(1,264)=10.48, p<.001$.

**Preliminary Analyses.** Before we ran our primary analyses, we first had to look at any nesting effects in our data. Providers of Triple P are nested within their work settings and geographic locations, so an unconditional model was estimated for each variable using SAS PROC Mixed. This model was used to partition the total variance in the number of caregivers served with Triple P into within- and between- provider work setting and geographic location components, and estimated the proportion of the total variance in the number of caregivers served that existed between work settings and between geographic locations. The interclass-correlation coefficients ICC can be used to signify the extent to which there is similarity between groups. The ICC values for both geographic location and practitioner work setting were not significant (ICC<.001). As a result of the non-significant ICC values, we did not need to account for nesting effects when running the primary analyses.

**Fidelity to the PASS model as a moderator.** To test the hypothesis that fidelity to the PASS model moderated the association between provider peer support attendance and number of caregivers served with Triple P, a multiple regression analysis was performed. Providers included in this analysis had all been trained for longer than 6 months. Multicollinearity diagnostics were within an acceptable range. See Table 3 for correlations among variables.

In the first step, both the number of peer support sessions attended and fidelity to the PASS model variables were entered. The overall model accounted for 3% of the variance in
number of caregivers served with Triple P, $R^2=.03$, $F(2,137)=2.315$, $p=.103$. Results indicated that number of peer support sessions attended was associated with the number of caregivers served, ($\beta =1.85$, $t(139)= 2.14,p=.034$). Fidelity to the PASS model was not significantly associated with the number of caregivers served with Triple P, ($\beta =-.96$, $t(139)=-.46$, $p=.646$).

In the next step, the interaction term between number of peer supports attended and fidelity to the PASS model was entered and did not account for a significant change in the amount of variance explained, $\Delta R^2 = .003$, $p=.473$. In addition, the interaction term did not account for a significant amount of variance in the number of caregivers served with Triple P, ($\beta =-.35$, $t(139)=-.64$, $p=.524$).

**Perceived Fit as a mediator.** To examine the hypothesis that providers’ perceived fit of Triple P with typical services would mediate the relation between attendance at peer support sessions and caregivers served, we first calculated two pearson correlations. Each of the providers examined in these analyses had been trained in Triple P for 6 months or longer. A significant positive relation was found between attendance at peer supports and caregivers served with Triple P, $r=.34$, $n=229$, $p<.001$. There was also a significant positive association between providers’ perceived fit of Triple P with typical services and the number of caregivers served with Triple P, $r=.20$, $n=204$, $p=.004$. However, because there was no significant relation between attendance at peer support sessions and providers’ perceived fit of Triple P with their typical services, $r=-.03$, $n=202$, $p=.640$, the hypothesized mediation model was not tested.
Discussion

Child maltreatment is a worldwide epidemic that has serious physical, emotional, and psychological effects on children. To end maltreatment, prevention efforts need to be aimed at creating a population wide change. Triple P is one population wide intervention that was developed to make parenting supports accessible to all parents. However, Triple P has not been reaching all possible parents because providers trained in Triple P have not used the intervention to the full extent. Supervision has been identified as one element involved in the adoption of evidence-based parenting interventions (Fixsen, Naoom, Blase, & Friedman, 2005).

Additionally, previous researchers have demonstrated a link between all types of supervision and sustainability of Triple P (Hodge, Turner, Sanders, & Filus, 2016), but no researchers have focused on the Peer Assisted Supervision and Support (PASS) model that was developed to support Triple P providers. To date, there has been only one study of the PASS model published. In that study, 24 providers found the PASS model to be acceptable (McPherson et al., 2016), but the study did not include measures of providers’ use of Triple P. The primary aim of the current study was to assess the association between attendance at PASS (referred to herein as peer support) and providers’ use of Triple P with families. A second aim was to understand characteristics of providers who were most likely to attend peer support sessions.

To understand which providers were attending peer support sessions across North Carolina, we examined differences in attendance based on providers’ characteristics, including the county in which they worked, the lowest Level of Triple P in which they were trained, their work setting, and the length of time they had been accredited. In terms of county, differences were found in the number of peer supports attended across the state, with rates in several counties being higher than others. We are not able to account for these differences based on data
collected in this study, but findings might be explained by differential accessibility of peer support sessions across counties or differences in the attendance expectations of county Coordinators.

With respect to Triple P Level, providers trained in Level 2 attended the most peer support sessions, although the group differences on this variable were rather small. Perhaps Level 2 providers attended more peer support sessions because Level 2 Triple P is designed to reach a broad range and high number of families and these providers might benefit from more support. With regards to providers’ attendance at peer support across settings, no differences in attendance were found. This is a promising finding because Triple P seeks to create a community of diverse providers, and in North Carolina it seems that trained providers across disciplines are attending peer supports with equal frequency. The final finding in the exploratory study was that providers who were accredited for more than 6 months attended more peer supports compared to those trained less than 6 months. This finding is not surprising because providers who had been trained longer had more opportunities to attend peer support sessions. All in all, it is important to understand which providers are utilizing peer support to find out who is taking advantage of this program implementation aid. Additionally, the association between peer support attendance and caregivers served with Triple P explained below provides further evidence that it is important to determine which providers are more likely to attend peer support.

The current study established an important link between the number of peer supports attended and the number of caregivers served with Triple P. This finding was expected given the previous literature that emphasizes the importance of supervision in program adoption and implementation (Biedas & Kendall, 2010, Sanders, 2005; Shapiro et al., 2015). The relation between these two variables also highlights a cost-effective way for agencies to promote uptake
and use of the intervention through peer support. Holding peer support sessions comes at little cost to agencies but can potentially promote providers’ use of Triple P with families, thus reducing the waste of resources on providers who are not using the intervention. These findings support the idea that providers should attend peer support sessions. Future research should examine strategies to promote providers’ attendance at peer support sessions. County coordinators could consider the use of incentives to draw providers into attending sessions.

To further understand the link between peer support attendance and provider use of Triple P with families, we examined fidelity to the PASS model as a moderator. Contrary to expectations, providers’ use of Triple P with families did not vary based on fidelity of peer support sessions to the PASS model. The lack of significant moderation by fidelity to the PASS model could be due to the very low reported fidelity to PASS elements. On average, providers reported that their peer supervision sessions included only three elements of the PASS model. The low fidelity could be explained by providers’ lack of understanding of the elements of the PASS model. Additionally, low reporting by providers could be due to actual poor fidelity to the PASS model. This, potentially, means that Triple P trainers need to focus more attention on explaining the critical elements of the PASS model and ensuring that future accredited providers understand the elements and can implement them.

Although there was no support for fidelity to the PASS model overall as a moderator, there could be key individual elements of the PASS model that moderate the relation between attendance at peer support and families served. Indeed, Sanders and Murphy-Brennan (2013) discuss three key activities from the PASS model that all sessions should include: case review of delivered intervention sessions, discussion of implementation issues and a professional development activity. Additionally, McPherson and colleagues (2016) stated that focusing on
self-regulatory activities in PASS sessions will equip providers with the tools to use Triple P in their perspective settings. Future research should explore each of the key activities individually to potentially explain why some people attend peer support yet still not use the intervention with families. Further, those studies could provide a clearer understanding about what elements of peer support are meaningful. This could offer trainers of Triple P providers with characteristics to emphasize when teaching about the PASS model.

Finally, this study sought to examine providers’ perceived fit of Triple P with typical services as a potential mediator of the relation between attendance at peer support and number of caregivers served with Triple P. We were unable to perform the analyses, due to an insignificant correlation between peer support attendance and providers’ perceived fit. Previous studies of facilitators and barriers to Triple P adoption identified lack of fit of Triple P with typical services as a barrier (Sanders, Prinz, & Shapiro, 2009; Shapiro, Prinz, & Sanders, 2012). This means that a provider’s view of how Triple P fits with their typical services is important to adoption, but does not necessarily explain the association between peer support attendance and perceived fit. Although providers’ perceived fit was not a significant mediator, it could be a moderator such that providers who perceive Triple P as a good fit and attend peer support sessions would use the intervention with more families compared to providers who attend peer support but do not feel that Triple P is a good fit.

**Limitations.** The primary limitation of the current study was that all data were collected via self-report. Providers had to report how many peer support sessions they attended and how many caregivers they served with Triple P. This approach required providers to accurately recall events that happened in the past. The results could have been different if it were possible to collect data via a different method. Another approach to collecting data could require providers
to track their use of Triple P with families or attendance of peer support via online reporting on an ongoing basis. Providers could periodically update their use and attendance on the website. Additionally, all Triple P providers were emailed the survey to complete, but participation was not 100%. It is possible that there were differences between those who participated and those who choose not to complete the survey, but we were unable to explore these potential differences given the limited data available in this study.

**Conclusions.** The current study provides a novel perspective about the role of peer assisted supervision and support on the use of Triple P by accredited providers. Implementation science is a growing field and there are many implementation variables that need to be explored, especially pertaining to the role of supervision models in dissemination of programs. This study provided some of the first evidence that Triple P’s peer support sessions are associated with greater use of Triple P by providers. What remains unclear is the impact PASS has on intervention delivery fidelity and client outcomes.
REFERENCES


http://doi.org/10.1111/j.1468-2850.2010.01216.x


http://doi.org/10.1016/j.cpr.2014.04.00


Table 1. *Provider characteristics of entire sample.*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N(%)</th>
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</thead>
<tbody>
<tr>
<td>Geographic Location (N=287)</td>
<td></td>
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<tr>
<td>Pitt</td>
<td>78(27.2%)</td>
</tr>
<tr>
<td>Buncombe</td>
<td>70(24.4%)</td>
</tr>
<tr>
<td>Wake</td>
<td>62(21.6%)</td>
</tr>
<tr>
<td>Albemarle</td>
<td>39(13.6%)</td>
</tr>
<tr>
<td>Nash/Edge</td>
<td>21(7.3%)</td>
</tr>
<tr>
<td>Halifax/Hertford/North Hampton</td>
<td>17(5.9%)</td>
</tr>
<tr>
<td>Work Setting (N=282)</td>
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<tr>
<td>Education</td>
<td>66(23.4%)</td>
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<tr>
<td>Health</td>
<td>57(20.2%)</td>
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<tr>
<td>Mental Health</td>
<td>41(14.5%)</td>
</tr>
<tr>
<td>Non-Profit/Independent</td>
<td>32(11.3%)</td>
</tr>
<tr>
<td>Case Management</td>
<td>29(10.3%)</td>
</tr>
<tr>
<td>Childcare</td>
<td>21(7.4%)</td>
</tr>
<tr>
<td>Social Services</td>
<td>19(6.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>17(6.1%)</td>
</tr>
<tr>
<td>Lowest Level Training (N=280)</td>
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<tr>
<td>Level 2</td>
<td>140(50%)</td>
</tr>
<tr>
<td>Level 3</td>
<td>105(37.5%)</td>
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<tr>
<td>Level 4</td>
<td>35(12.5%)</td>
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<tr>
<td>Length of Accreditation (N=282)</td>
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<tr>
<td>Greater than 6 months</td>
<td>253 (89.7%)</td>
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<tr>
<td>Less than 6 months</td>
<td>29(10.3%)</td>
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Table 2. *Descriptive results of providers’ attendance at peer support sessions.*

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<tr>
<th>Variable</th>
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<th>M</th>
<th>SD</th>
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<tr>
<td><strong>County/County Cluster</strong></td>
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<tr>
<td>Albemarle</td>
<td>36</td>
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<tr>
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<td>65</td>
<td>3.54</td>
<td>3.79</td>
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<td>HHN</td>
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<td>2.12</td>
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<td>Nash, Edge</td>
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<tr>
<td>Pitt</td>
<td>74</td>
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<td>Wake</td>
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<td><strong>Lowest Level Training</strong></td>
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<td>Level 3</td>
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<td><strong>Settings</strong></td>
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<tr>
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<td>Health</td>
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<td>5.41</td>
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<tr>
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<tr>
<td>Non-Profit/ Independent</td>
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<td>4.09</td>
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<td>Childcare</td>
<td>20</td>
<td>3.65</td>
<td>3.51</td>
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<tr>
<td>Social Services</td>
<td>19</td>
<td>3.47</td>
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<tr>
<td>Other</td>
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<td>3.24</td>
<td>4.18</td>
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<tr>
<td><strong>Length of Accreditation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 6 months</td>
<td>28</td>
<td>0.86</td>
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<tr>
<td>6 months or greater</td>
<td>238</td>
<td>3.54</td>
<td>4.4</td>
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Table 3. *Inter-correlations among variables used in moderation analysis.*

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<thead>
<tr>
<th>Variable</th>
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<tr>
<td>1. Peer Supports Attended</td>
<td>--</td>
<td>.27***</td>
<td>.18**</td>
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<tr>
<td>2. Fidelity to the PASS Model</td>
<td>.27***</td>
<td>--</td>
<td>.01</td>
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<tr>
<td>3. Caregivers Served</td>
<td>.18**</td>
<td>.01</td>
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*p < .05, **p < .01, ***p < .001
Table 4. Results of regression analyses predicting Triple P use.

<table>
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<tr>
<th></th>
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<th>SE</th>
<th>p</th>
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<tr>
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<td>R^2</td>
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<tr>
<td>Peer Support Attendance X Fidelity to PASS</td>
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<tr>
<td>R^2</td>
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