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Barriers to Participation in Parenting Programs: The Relationship between Parenting Stress, Perceived Barriers, and Program Completion

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Abstract

Families experiencing child maltreatment or risk factors for child maltreatment often receive referrals to interventions focused on changing parenting practices. Compliance with specific parenting programs can be challenging as many of the stressors that place families at-risk may also interfere with program participation. Because families may receive limited benefit from programs they do not fully receive, it is critical to understand the relationship between parenting stress and barriers to program completion. We used structural equation modeling to examine the relationship among parenting stress, perceived barriers to program participation, and program completion in two datasets involving low-income parents. Data were collected at two time points from a sample of parents involved with child welfare services and a sample of parents considered at-risk of future involvement (total study $n = 803$). Direct paths from parenting stress at time 1 to barriers to participation and parenting stress at time 2, and from parenting stress at time 2 to program completion were significant. Interestingly, increased barriers to participation were related to increased parenting stress at time 2, and greater parenting stress was related to increased program completion. Results suggest that with increasing levels of parenting stress, parents have an increased likelihood of completing the program. Assessing and addressing the influence of perceived barriers and parenting stress on program participation may decrease the likelihood of treatment attrition.

Author Contributions W.R. collaborated with the design of the study, conducted data analyses, and wrote the manuscript. A.M. collaborated with the design of the study and writing of the manuscript. L. V. collaborated with the design of the study and writing of the manuscript.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no competing interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional review boards of Purdue University, University of Oklahoma Health Sciences Center, and the Centers for Disease Control and Prevention, and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Keywords

Child welfare; Prevention; Parenting stress; Barriers to program participation; Program attrition and retention

Introduction

Child abuse and neglect is a significant public health problem that increases risk for an array of detrimental outcomes for children and their families (Jonson-Reid et al. 2012; Lanier et al. 2010; Widom and Hiller-Sturmhofel 2001; Widom and Kuhns 1996). Child abuse and neglect refer to a caregiver's intentional act of commission or omission of care that causes harm, potential harm, or threat of harm (Leeb et al. 2008). In addition to the adverse consequences suffered by children and families, the lifetime economic burden to society has been estimated at approximately \$124 billion across costs associated with health care, child welfare, criminal justice, and special education (Fang et al. 2012). Families experiencing child maltreatment or experiencing risk factors for child physical or emotional abuse or child neglect often receive referrals to interventions focused on promoting positive child development and positive parenting practices, such as the use of effective communication techniques, parent-child interaction skills, and child behavior management strategies. Parenting interventions are routine services for approximately 800,000 child-welfare involved families per year (Barth et al. 2005). Interventions may be mandated due to a substantiated report of maltreatment, but parents may also be referred for preventive services to reduce child maltreatment risk or may volunteer for services due to other parenting challenges.

Greater parent participation (as typically measured by attendance and participation quality at service sessions) in parenting interventions are consistently associated with better child and parenting outcomes, including lower risk of child maltreatment recurrence (DePanfilis and Zuravin 2002; Haine-Schlagel and Walsh 2015), but as with other family-based mental health services, families may never begin treatment or may terminate treatment prematurely (e.g., Jones et al. 2013; Lindsey et al. 2014; McGoron and Ondersma 2015). Between 35 and 50% of parents do not attend the first parenting intervention session, and 50% of parents do not complete the full intervention (e.g., Baker et al. 2011; Barkley et al. 2000; Lutzker et al. 1998; Koerting et al. 2013; Miller and Prinz 2003). Families considered at-risk (e.g., low income, adolescent parent) but without obvious existing problems may not perceive a need for preventive services and may not participate (Baker et al. 2011). Families mandated or referred for child maltreatment services historically have been considered to be at even greater risk for treatment nonadherence because they are not self-referred and may not identify parenting problems they believe warrant changes (e.g., Hansen and Warner 1994; Lundquist and Hansen 1998; MacKinnon and James 1992; McWey et al. 2015). Families also may be burdened with numerous stressors, including resource limitations, which make participation difficult, undermine the use of positive parenting practices, and contribute to their risk for child maltreatment or involvement with child welfare services in the first place (Folger et al. 2016; Lundquist and Hansen 1998).

Factors that influence families' service participation have long been a focus in mental health research (e.g., Biegel et al. 2004; Drotar 2000; Gopalan et al. 2010; Haine-Schlagel and Walsh 2015; Kazdin et al. 1994), including attention to engagement in mandated and voluntary parenting programs (Cunningham et al. 2000; Dumas et al. 2007; Lochman 2000; Spoth et al. 2000; Webster-Stratton 1998). For example, the barriers-to-treatment participation model developed by Kazdin et al. (1997a) proposed that multiple barriers can cumulatively and interactively influence families' participation and retention in treatment. Kazdin and colleagues also suggested that strategies to address relevant barriers prior to or early in treatment may enhance participation (Kazdin et al. 1997a). Although prospective studies of perceived barriers and participation are lacking, retrospectively reported number of barriers to treatment predicted different stages of treatment participation, including initial follow through on referral, enrollment, attendance, drop out, and quality of participation (Kazdin et al. 1997a; MacNaughton and Rodrigue 2001; Salloum et al. 2016). However, research has primarily examined three types of factors: family sociodemographic characteristics, logistical and resource constraints, and perceptual or motivational barriers related to the treatment (e.g., MacNaughton and Rodrigue 2001). In addition, previous studies also frequently examined factors in isolation from other barriers without examining cumulative or interactive effects (Kazdin et al. 1997a).

Results of studies examining various family sociodemographic characteristics and intervention participation are inconsistent (Gopalan et al. 2010; Haine-Schlagel and Walsh 2015; McGoron and Ondersma 2015), with some studies reporting links between parenting program engagement and family sociodemographic factors such as income, number of children, caregiver education, and marital status (e.g., Cunningham et al. 2000; Eisner and Meidert 2011; Haggerty et al. 2002; Spoth et al. 1997; Winslow et al. 2009), and other studies finding no significant relationships between engagement and family sociodemographic characteristics (Danoff et al. 1994; Dumas et al. 2007; Gross et al. 2001; Orrell-Valente et al. 1999). In contrast, engagement consistently tends to be higher among European American and Hispanic parents than among African American, Asian, and Native American parents (Baker et al. 2011; Cohen and Linton 1995; Danoff et al. 1994; Orrell-Valente et al. 1999, and see reviews by Gopalan et al. 2010, and Haine-Schlagel and Walsh 2015). Because sociodemographic factors are not easily modifiable, cultural tailoring or other adaptations may be undertaken to enhance a program's appeal to different groups (e.g., McCabe et al. 2005).

Research on logistic and resource barriers to engagement in parenting programs has centered primarily on obstacles associated with program enrollment and attendance, such as time and scheduling constraints, childcare needs, and transportation issues. Parents consistently report time and scheduling factors as a primary reason parents do not enroll, attend, or complete parenting interventions (Cunningham et al. 1995, 2000; Harachi et al. 1997; Heinrichs et al. 2005; Spoth and Redmond 1993; Spoth et al. 1996). For example, one study found that enrollment increased by 32% for every unit decrease in reported time constraints, and that having relatively few time constraints predicted program attendance (Dumas et al. 2007). As a result, some parenting programs try to encourage participation by offering flexible scheduling options, childcare, and transportation assistance, and by providing services at convenient local locations (Dumas et al. 2007; Ingoldsby 2010).

Another well-studied barrier to participation in parenting interventions involves parents' perceptions and motivation and/or attitudes regarding parenting programs. Specifically, beliefs that parenting interventions are not relevant or effective, and concerns about being stigmatized as a "bad parent" needing training may reduce motivation to participate (Kazdin et al. 1997a; McGoron and Ondersma 2015). For example, parents are more likely to enroll and attend parenting interventions when they see them as an opportunity to meet other parents or to share experiences, rather than to be "taught" parenting skills (Gross et al. 2001; Harachi et al. 1997). If parents are not motivated to attend parenting interventions, engagement and participation will likely be low. Accordingly, some parenting programs have used motivational augmentations to facilitate participation (e.g., Damashek et al. 2011; Chaffin et al. 2009).

Parenting programs may also target other issues that impact parenting practices. For example, a significant proportion of parents report parenting stress as a primary reason for enrolling in parenting interventions (Dumas et al. 2007), but less research has investigated parenting stress as a possible barrier to program participation. The studies that have examined stress as a barrier have focused more specifically on family stressors or acute stressful life events (e.g., Cunningham et al. 2000; Dumas et al. 2007; Orrell-Valente et al. 1999; Perrino et al. 2001), rather than targeting the cumulative, ongoing parenting stress that is often present in at-risk families involved in parenting interventions. This is troublesome given that: (a) the cumulative impact of minor interpersonal stressors are more critical than single major stressful events (Lazarus et al. 1985) and (b) seemingly minor stressors related to parenting (e.g., challenging child behaviors, time consuming childrearing responsibilities) often accumulate to form significant parenting stress (Crnic and Low 2002). Given this important and cumulative role of stress in relation to parenting, parenting stress may be an essential barrier impacting whether parents engage in parenting programs at various program stages. Parenting stress or other stressors may also interact with other barriers to influence engagement (McGoron and Ondersma 2015). In other words, cumulative parenting stress may make already existing barriers more significant and may impact how a parent is able to manage the other barriers. Because families are less likely to benefit fully in the absence of sufficient dosage or exposure to vital program content, understanding how perceived barriers and stress may contribute to program participation is critical to informing the development of strategies to facilitate parents' participation and program completion.

In this study, we sought to further understand the factors that underlie perceived barriers to participation in parenting programs and to examine prospectively the relationship between parenting stress, encompassing a broad range of perceived barriers to program participation, and program completion. The study is unique as it allows examination of the relationship between these variables across different parenting programs with differing formats, including group and individual family services, and across parents with varying degrees of risk, including voluntary or mandated parenting program participants. We hypothesized that initial parenting stress would be positively related to higher levels of later parenting stress and perceived barriers to program participation, all of which would be inversely related to program completion. Further, we hypothesized that parenting stress at wave 1 would indirectly effect program completion through its influence on parenting stress at wave 2 and barriers to participation. See Fig. 1 for a graphic depiction of the hypotheses.

Method

Participants

The study uses data from two existing data sets (Chaffin et al. 2009; Begle and Dumas 2011) across two waves of data collection (pre-intervention and post-intervention). The study sample was recruited from two mid-sized towns in Midwestern states and included 763 parents enrolled in one of three parenting programs: PACE—Parenting Our Children to Excellence ($n = 610$; Begle and Dumas 2011), Parent–Child Interaction Therapy (PCIT) (Eyberg et al. 1995) combined with either a self-motivational or standard orientation group ($n = 70$), or a local child welfare agency-developed parenting program (referred to as standard parenting services) combined with either a self-motivational or standard orientation group ($n = 83$; see below for program descriptions). Families enrolled in the PACE program were recruited through community daycare centers that served primarily economically disadvantaged families and thus voluntarily enrolled in the program. Families enrolled in PCIT and standard parenting services were recruited through a community agency under contract with the state child welfare system and were referred to parenting services because of child physical abuse and/or neglect. All participants provided informed consent, and all study procedures were approved by institutional review boards at a federal agency and at the applicable university for each study site.

On average, participants were 30.6 years old ($SD = 7.0$). Participants were primarily female (89.0%). The majority of participants self-identified as White (49.3%) or African American (41.6%), while the remainder of the sample reported their ethnicity/race as Hispanic (2.9%), American Indian (2.2%), Asian American/Pacific Islander (1.0%), or Other (3.1%). A large portion of the sample reported an income of less than \$30,000 (63.0%) and nearly 70.0% reported an income of less than \$40,000. With regard to education, 25.6% of participants had a high school diploma or G.E.D., 33.7% had attended some college or a technical school, and 23.9% had obtained a college degree or higher. A majority of the participants reported any employment (63.1%), while the remainder (36.9%) identified as unemployed, retired, a student, or not employed outside the home.

Families were considered to be at risk for child maltreatment, but for different reasons. Parents participating in PCIT or standard parenting services were referred due to recent child neglect or child physical abuse and thus mandated to services, whereas parents voluntarily participating in PACE demonstrated a risk factor for child maltreatment, significant socioeconomic disadvantage (i.e., mean yearly income [\$26,459] was well below the median income in Indianapolis at the time of the study [\$40,421]; approximately 1 in 2 families qualified for subsidized childcare, and 54% of the parents were single). A large portion of families participating in PCIT and standard parenting services were living below the poverty level (65.5%), as were families participating in PACE (38%).

Procedure

PACE—Participants were recruited through poster advertisements displayed at 51 daycare centers that mostly served families with children between the ages of 3 and 6 that were economically and ethnically diverse. Advertisements summarized the content of each

session and stated that the program was free and that at each session parents and children would receive a free meal, free childcare, and monetary compensation to cover cost of transportation.

PACE focuses on parent skill building and enhancement within a social learning framework, which consists of eight weekly, two-hour sessions covering these topics: child strengths; clear limit-setting; positive reinforcement and punishment strategies (e.g., use of praise, ignoring, time out); sleep hygiene; school-readiness; child development and self-esteem; and establishing a social support network. Each PACE parenting group was conducted by a trained leader and assistant. Content training pertained to the topics covered in each session, and to their rationale, presentation, and supporting materials (videotapes, posters, handouts). Process training focused on effective communication skills. See Begle and Dumas (2011) for a more detailed description of the PACE program.

Parent–child interaction therapy (PCIT) and standard parenting services—

Before attending any parenting sessions, child welfare-referred parents in both PCIT and the standard parenting services were randomly assigned to either a six-session weekly self-motivational or a standard informational orientation group. The self-motivation condition was based on motivational interviewing principles (Miller and Rollnick 1991), such as exercises weighing the pros and cons of change, setting goals, and increasing commitment (Chaffin et al. 2009). The standard informational orientation group focused on providing information about child welfare, child maltreatment, and additional services. Upon completing the orientation group, parents were randomly assigned into PCIT ($n = 70$) or the standard parenting services ($n = 83$; described below). PCIT is an evidence-based treatment for disruptive childhood behavior disorders (Eyberg et al. 2008). An adapted version of PCIT (see Chaffin et al. 2004, 2009), which closely followed the evidence-based PCIT structure and content was used in the present study. PCIT consists of two phases, a child-directed interaction, which focuses on relationship enhancement and interaction skills, and a parent-directed interaction, which focuses on giving clear commands and using a consistent discipline protocol. PCIT is a dyadic intervention, in which therapists directly coach parents in using the skills with their child during parent–child interactions.

The standard parenting services consisted of a 12-session weekly didactic parenting group in which parents learned about child development and appropriate expectations, discipline, praise, communication, and stress management and dealt with family needs and crises (Chaffin et al. 2009). The double randomization process allowed the effects of the self-motivation group vs. orientation group on retention in the parenting program to be disentangled. For parents with low to moderate levels of motivation to attend, as indicated by an adapted version of the *Readiness for Parenting Change Scale* (Chaffin et al. 2009), the combination of the self-motivation group and PCIT resulted in increased retention, 85%, compared to approximately 61% for the three other combinations (Chaffin et al. 2009).

Measures

Parenting stress—The *Parenting Stress Index/Short Form* (PSI-SF; Abidin 1990) contains 36 items that assess the extent to which parents experience stress in their role as

parents (e.g., feel that I cannot handle things) and in the parent–child relationship (e.g., child does things that bother me a lot). Higher scores indicate greater parenting stress, with scores above 90 indicating clinically significant parenting stress (Abidin 1990). The measure has well-established psychometric properties (Haskett et al. 2006), with Cronbach's alphas reported at .90 from the PCIT and standard parenting services sample (Chaffin et al. 2009) and .91 from the PACE sample (Begle and Dumas 2011).

Barriers to participation—We used 31 items of the *Obstacles to Engagement Scale* (Dumas et al. 2007), a 34-item measure based on the *Barriers to Treatment Participation Scale* (Kazdin et al. (1997b). The scale was designed to assess the extent to which participants perceive various obstacles will interfere with attending sessions. Three of the original scale items were not used because they were not consistent across the two data sets and overlapped in content of other items (i.e., feeling uncomfortable talking about problems; spouse does not agree with participation; and too much information were each assessed by two items). Participants responded to items regarding competing demands (e.g., work schedule), social barriers (e.g., spouse objects to participation, distrust), transportation barriers, financial barriers, and health and mental health barriers (e.g., depression, spouse health). Each item was rated as to whether it would interfere with session attendance on a 4-point scale from 'Definitely yes' to 'Definitely no'. The alpha for the current sample was .93.

To explore the structure of the 31-item *Obstacles to Engagement* scale for the measurement model of our structural equation model, we conducted an exploratory factor analysis using an oblique rotation, which yielded four factors explaining 69.54% of the variance. The first factor was labeled 'competing priorities' and accounted for 56.46% of the variance; example items include difficulty finding time, possibility of homework, and low energy. Factor two was labeled 'hopelessness that things can change' and accounted for 5.37% of the variance, which included items such as too depressed or unhappy, belief that there is no hope for change, and belief that programs have little connection to family problems. The third factor, 'spouse and family barriers,' accounted for 4.21% of the variance; example items included spouse/partner objects to participation, spouse/partner's health, and conflict with spouse/partner. Finally, the fourth factor was labeled 'logistical barriers,' which accounted for 3.49% of the variance, and included transportation problems and health problems. The four-factor solution had moderately good indices of fit with a RMSEA of .062 (CI: 0.059–0.066), a CFI of .971, and a TLI of .961. The four factors were entered in a structural equation model representing *barriers to participation* (see Fig. 2). All four indicators significantly represented this variable at $p < .001$, with standardized coefficients ranging from .71 (logistical barriers) to 1.01 (competing priorities).

Program completion—Program completion was assessed based on how many sessions a participant attended. Because the intervention structure, duration, and ordering of content varied, a dichotomous variable was created to allow application of the model across different interventions. The dichotomous variable ensured that families were exposed to program content considered vital to each program and also precluded the potential differential impact of missing earlier content on later attendance in a particular program. For the PCIT program

and standard parenting services, both consisting of 12 sessions, participants who attended 11 or more sessions were considered completers; for PACE, which consisted of 8 sessions, participants who attended 7 or more sessions were coded as completing the program. Across all programs, 42.0% of participants were considered completers.

Data Analyses

Given the longitudinal nature of the data and our interest in the relationship between the four latent factors detected in the measurement model and the observed variables, linear structural equation modeling was used to analyze the relationships among parenting stress, barriers to participation, and program completion. Analyses were conducted in *Mplus 7.0* (Muthén and Muthén 1998–2011). Based on past literature and hypothesized causal relationships, a structural equation model, accounting for participant clustering within condition, was specified treating parenting stress at wave 1 (baseline) as exogenous and parenting stress at wave 2 (post-test), perceived barriers to participation at wave 1, and program completion as endogenous. Pathways that reached an alpha level of .05 were considered significant. We explored the direct effects (effect of one variable directly on another) of parenting stress at wave 1 on barriers to participation and parenting stress at wave 2, and parenting stress at wave 2 and barriers to participation on program completion. We also analyzed the indirect effect (effect of one variable on another through its effect on a third variable) of parenting stress at wave 1 on program completion through parenting stress at wave 2 and through barriers to participation. Modeling both direct and indirect effects is important because it allows examination of complex relationships between variables that are likely to occur in real world settings. Although not hypothesized, we also explored the indirect effect of barriers to participation on program completion through parenting stress at wave 2.

We first tested the full model with all direct and indirect paths specified and continued to remove paths in subsequent models until adequate model fit was achieved. Only results for the model achieving best fit are presented. Model fit was assessed with RMSEA, CFI, and TLI, which are commonly reported in the literature (McDonald and Ho 2002). Missing data ranged from 2.0% (parenting stress at wave 1) to 17.6% (parenting stress at wave 2). In *Mplus*, we adjusted for missing data using a weighted least squares means and variances adjusted (WLSMV) estimation, which is recommended for use with categorical outcomes (Brown 2006). Further, *Mplus* operates under the assumption that data are missing at random and uses all data available for each participant.

Results

Families in PACE reported significantly higher levels of parenting stress ($M = 85.6$, $SD = 21.5$) than families in PCIT or standard parenting services ($M = 74.3$, $SD = 19.0$; $t[745] = 5.915$, $p < .001$), although means for parenting stress were within the normal range for both samples. Because this study was interested in examining the relationship between parenting stress, perceived barriers to participation, and program retention across program format (group-based vs. dyadic parent–child) and level of risk (mandated vs. voluntary), this variability in stress was considered desirable for this study.

Results from the path model of the structural equation model with best fit are graphically presented in Fig. 2. The best fitting model estimated statistically significant direct effects between parenting stress at wave 1 to parenting stress at wave 2 and barriers to participation, between barriers to participation and parenting stress at wave 2, and between parenting stress at wave 2 and program completion. Excluding the direct effect between barriers to participation and program completion resulted in better fit. The standardized path coefficients between parenting stress at wave 1 and barriers to participation ($\text{estimate}_{12} = .187$, $\text{SE} = .076$, $p < .05$) and parenting stress at wave 1 and at wave 2 ($\text{estimate}_{13} = .720$, $\text{SE} = .009$, $p < .001$) were both statistically significant. The standardized path coefficient between barriers to participation and parenting stress at time 2 was also significant, with a standardized estimated coefficient of .070 ($\text{SE} = .005$, $p = <.001$). Finally, the standardized path coefficient representing a direct effect of parenting stress at wave 2 ($\text{estimate}_{34} = .094$, $\text{SE} = .022$, $p < .001$) on program completion was also statistically significant.

Indirect pathways (not shown in figure) from parenting stress at wave 1 to program completion through parenting stress at wave 2 and barriers to participation were also tested. There was a significant indirect effect of parenting stress at wave 1 on program completion through parenting stress at wave 2 (standardized estimate = .068, $\text{SE} = .016$, $p < .001$). Although no hypothesis was specified, an indirect pathway from barriers to participation to program completion through parenting stress at wave 2 was tested, which was significant (standardized estimate = .007, $\text{SE} = .002$, $p < .001$). According to Hu and Bentler (1999), the model RMSEA indicated reasonable fit (RMSEA = .083, 95% CI: .066, .101) as did the CFI (.997) and TLI (.995).

To examine whether the significance of pathways varied across program format, we analyzed separate structural equation models for each program (i.e., PACE, PCIT, standard services). None of the pathways, across the different models, reached statistical significance.

Discussion

Attrition from parent training interventions among at-risk populations is a challenge regardless of the specific intervention, program format, or voluntary or mandatory nature of services (Barkley et al. 2000; Lutzker et al. 1998; Jensen and Grimes 2010; Miller and Prinz 2003). In the current study, we examined the relationships between parenting stress, perceived barriers to program participation, and program completion using structural equation modeling across two different Midwestern locations and populations and three different parenting programs. A strength of the current study was that a coordinated effort was made to include the same measures across data sets so that evaluation of relationships between parenting stress, barriers to participation, and completion across the different program and population characteristics was possible. We hypothesized that greater initial parenting stress would be directly related to higher levels of later parenting stress at wave 2 and to perceived barriers to program participation—both of which would be inversely related to program completion. Some hypotheses were supported. Specifically, direct effects were observed for parenting stress at wave 1 on parenting stress at wave 2 and on perceived barriers to participation, and for parenting stress at wave 2 on program completion. Although we expected higher levels of parenting stress to directly contribute to program attrition, our

results suggest that greater parenting stress was associated with greater program completion. Further, although we expected perceived barriers to participation to significantly affect program completion, the model excluding this direct path resulted in a better fit, suggesting that level of perceived barriers was not a direct contributor to attrition.

The results from our study suggest that parenting stress is an important predictor of program completion, and that increased parenting stress may facilitate program participation. Our results are inconsistent with past research demonstrating stress as a contributor to program drop-out (e.g., Fernandez and Eyberg 2009; Kazdin and Mazurick 1994; McWey et al. 2015). However, other studies have combined parenting stress with other stressors, such as maternal depression (Fernandez and Eyberg 2009), which may account for some of the inconsistency. Similarly, McWey and colleagues (2015) combined multiple constructs to examine typologies of parents that tended to complete treatment, including discipline strategies, parental distress, parent-child interactions, and child behavior. Taken together, it may be that parenting stress, in isolation from other stressors, may contribute to enhanced motivation to participate in parenting programs, but that parental stress does not stand out as a significant predictor when combined with other constructs. Further, timing of dropout may be an important factor contributing to inconsistent results, as Kazdin and Mazurick (1994) found that parental stress predicted dropout early in treatment, but not late in treatment. Other research suggests that different forms of parenting stress may motivate program participation, while other forms may impede it (Murray et al. 2015). Although excluding the direct effect of barriers on program completion resulted in a better fitting model, perceived barriers continued to impact program retention through its effect on parenting stress, indicating that perceived barriers may only contribute to program participation in conjunction with parenting stress. This complex, indirect relationship is consistent with previous research showing parenting stress is associated with parents' perceptions of barriers that may interfere with participation. (Nock et al. 2001). Importantly, our results were detected in a sample comprised of caregivers participating in different programs with different program formats who were either mandated to or volunteered for services, suggesting that parents with increased parenting stress may recognize that services help alleviate stress or be motivated to comply with mandated services or seek out other services that can do so.

Many programs involve curricula in which later sessions build on preceding ones, making it critical to minimize the number of missed sessions. Our results suggest that, for parents reporting higher levels of parenting stress, it may be more important to address their initial levels of stress than to assess and address their perceptions of barriers (competing priorities, hopelessness, logistical barriers, and spouse/ family barriers) anticipated to interfere with program participation. However, developing and evaluating different program elements to address different barriers may be important, as it is unlikely that only one approach can overcome all barriers (McGoron and Ondersma 2015). Motivational interventions to increase parental perceptions of program value and to address potential barriers have improved program attendance with both child welfare and child mental health service populations (e.g., Chaffin et al. 2009; Nock and Kazdin 2005).

Other common practices associated with improved family retention in parenting programs for child mental health service populations include conducting initial assessments, increasing service accessibility, educating clients about services and expectations, and providing homework assignments (Lindsey et al. 2014), but these approaches still need to be fully evaluated for effectiveness in engaging and retaining populations at risk for child maltreatment. Finally, providing services that parents regard as relevant and beneficial may be critical to program engagement (e.g., Damashek et al. 2011). For example, a significant number of families involved with or at risk for involvement with child welfare services live in poverty, and thus, in addition to program content, services that also offer assistance with concrete needs during crises (e.g., helping to pay rent) have the potential to enhance engagement and program satisfaction (Rostad et al. 2017). This type of program augmentation is one way to address the competing priorities and logistical barriers that can potentially interfere with engagement.

Limitations

This study has several limitations. First, our measure of stress was specific to parenting stress, so it is not clear if stress outside of the parenting context is related to perceived barriers to program completion and program retention. In addition, parents' perceived barriers to participation was measured at the beginning of the program and so it is not known whether parents actually experienced these barriers while participating in services, which may explain why perceived barriers did not contribute to program completion. Further, participants who terminated services early may have experienced increasing barriers as services progressed, which may have interfered with participation, however, non-completers were not queried for their reasons for terminating. Future research that follows up with parents who exit services prematurely would help clarify whether stress and other barriers do indeed impact program completion. The current study is also limited to services provided in agency settings and by nonprobability sampling strategies (parents volunteering or mandated to services), and thus caution should be exercised when generalizing findings, particularly to families in home-based services or with other presenting problems or levels of risk. More research is needed to examine the influence of stress and barriers on participation in programs implemented in different service settings and with different populations.

In addition, no significant results emerged when analyzing the structural equation model separately for each of the different program models, perhaps because of reduced power as a result of smaller sample sizes after de-aggregating the data. Similarly, given the significant differences in the orientation condition (i.e., self-motivation vs. standard) on program attendance for PCIT, it would have been worthwhile to model the relationship between parenting stress, barriers to engagement, and program completion according to orientation condition for PCIT participants; however, low sample sizes precluded this analysis. Future research on the relationship between barriers and program participation across different levels of initial motivation is warranted. Finally, we used an attendance-based dichotomous measure of program completion as our measure of engagement. Although attendance is the most commonly used measure of program engagement reported in the literature (Lindsey et al. 2014), relationships between parenting stress, perceived barriers, and program engagement may have differed for other measures of program engagement, such as

continuous or other patterns of session attendance, or quality of participation. Barriers may also differ across different program stages from initial enrollment to completion (e.g., Koerting et al. 2013). For example, stigma regarding the need for services may be a significant barrier to initial enrollment, while perceptions of services as unhelpful may contribute to early program termination (Koerting et al. 2013).

Future research could examine the effectiveness of strategies to engage parents in child welfare and preventive services to reduce risk for child maltreatment. For example, service providers working with families with different levels of risk (e.g., mandated vs. voluntary) may consider focusing on how parents' stress may influence their perceptions of barriers and program completion, and based on early assessments, work with families to proactively troubleshoot solutions to address potential barriers throughout the course of services. Acknowledging the complexity of factors affecting program participation may thus improve future research and the selection and provision of relevant services to engage families at different program stages (Baker et al. 2011; MacNaughton and Rodrigue 2001).

Dedication—We dedicate this manuscript to the memory of our dear colleague and co-author, Mark J. Chaffin. Mark was the Principal Investigator for one of the original funded projects, participated in initial discussions of the project, and helped conceive the study concept and conduct data analyses. Mark was a world-renowned expert in the field of child maltreatment who was dedicated to ensuring safe, stable, and nurturing relationships and environments for all children.

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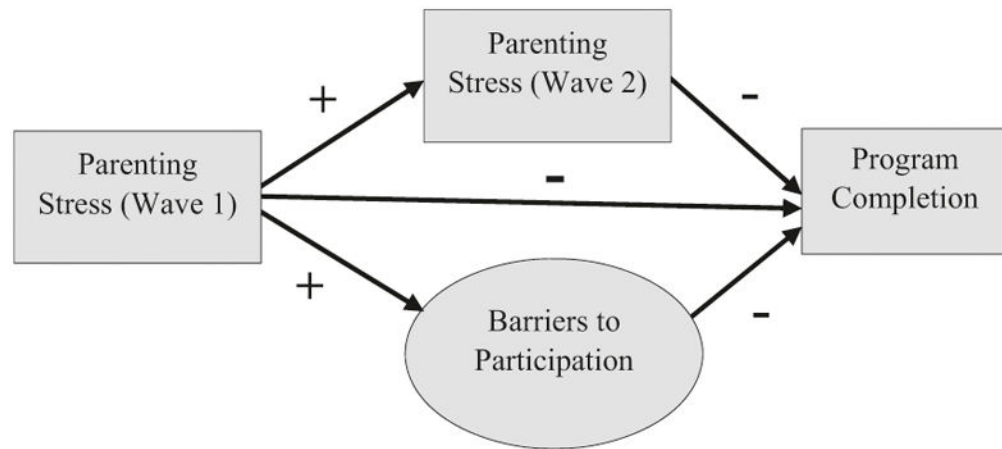
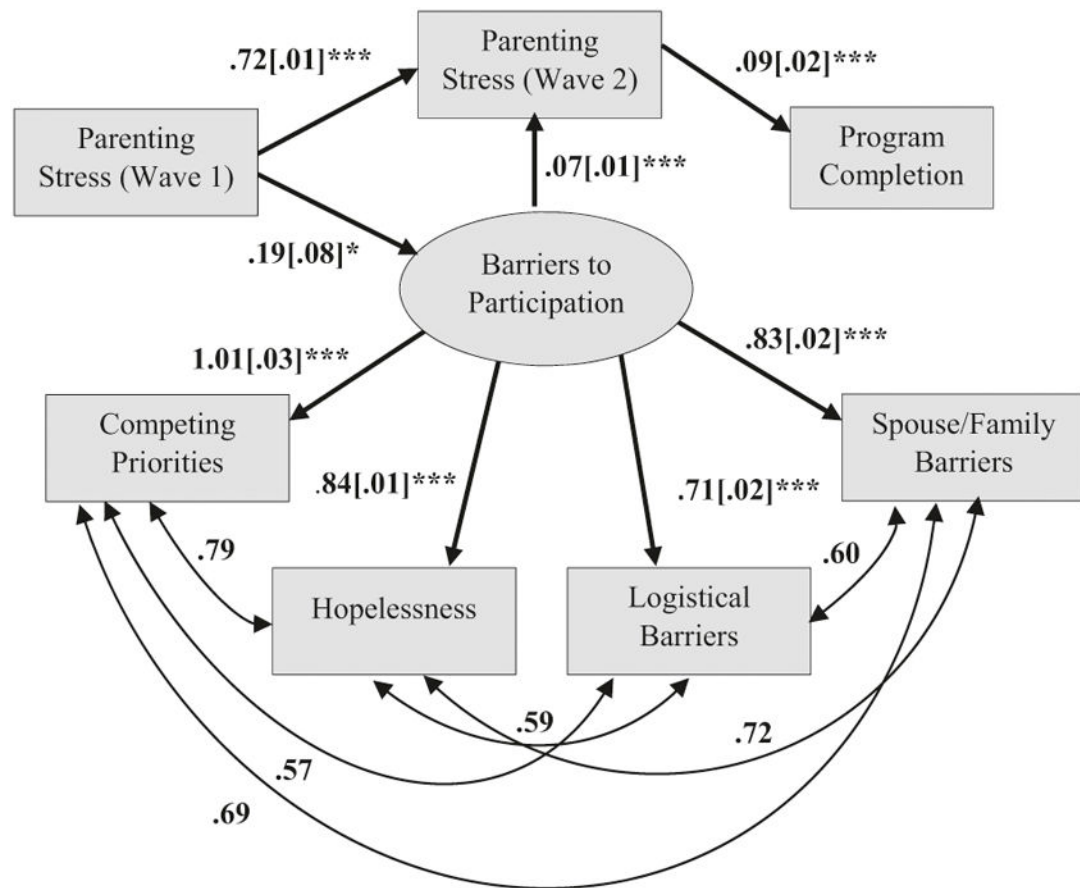


Fig. 1.
Hypothesized direction of relationships between parenting stress, barriers to participation, and program completion; hypothesized indirect pathways are not shown

**Fig. 2.**

Structural equation model accounting for cluster depicting relationships (standardized estimates [standard error]) among parenting stress, barriers to participation, and program completion. Only statistically significant paths with standardized coefficients are shown