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# Family-School Engagement: A Protective Process against Racial Disproportionality in Exclusionary Discipline?

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Family-School Engagement: A Protective Process against Racial Disproportionality in  
Exclusionary Discipline?

by

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M.S., Miami University, 2011

B.S., Miami University, 2008

Dissertation Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

School Psychology

Lehigh University

September 2015

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Dissertation Signature Page

Approved and recommended for acceptance as a dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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## **ABSTRACT**

Disparities in the use of exclusionary discipline between African American and Caucasian students have persisted in the United States education system despite considerable research on the topic. Although it has not been empirically tested, increasing family-school engagement (i.e., school-based family involvement, home-based family involvement, school's engagement with the family, family endorsement of the school) has been recommended as a strategy to abate this "discipline gap." Thus, the purpose of the proposed study is to test whether increased family-school engagement is associated with a greater reduction in the probability of being suspended for African American students compared to Caucasian students using the National Household Education Survey (2003). Results indicated that increased school engagement with families and family endorsement of their child's school reduced the probability of suspension for all students equally. School- and home-based family involvement could not be tested as each measure demonstrated significant measurement invariance. Implications and limitations of the study are discussed.

## **Chapter I: Introduction**

*Brown v. Board of Education* (1954) set a *de jure* legal precedent for equitable education in the United States; however, research has continually demonstrated poignant racial inequalities that continue to pervade the American education system. One particularly concerning inequality is the “discipline gap,” or the disparate use of exclusionary disciplinary strategies such as office referrals, suspensions, and expulsions between African American and Caucasian students (Blanchett, Mumford, & Beachum, 2005; Skiba et al., 2011). Though considerable research has been conducted in an effort to understand the underlying reasons for the discipline gap (Skiba, Eckes, & Brown, 2009), there is a paucity of research investigating mutable factors that attenuate the racially disparate application of discipline within schools. Thus, the purpose of this study is to determine if the frequently cited recommendation of increasing family-school engagement can serve as a protective process that will be associated with a reduction in disproportionate discipline in schools (AAP, 2013; APA, 2012; Kauffman, Conroy, Gardner, & Oswald, 2008; NABSE, 2002; Skiba et al., 2008; Skiba, Eckes, & Brown, 2009). Specifically, this study seeks to determine whether increased family-school engagement reduces the probability of receiving a suspension to a larger degree for African American students compared to Caucasian students.

### **The Discipline Gap**

A seminal report released by the Children’s Defense Fund (1975) revealed that African American students were suspended at higher rates, were more likely to be suspended multiple times, and were less likely to receive milder alternative consequences for similar behavior compared to Caucasian students. Since that report, racial disproportionality in the use of exclusionary discipline has been a highly consistent finding (e.g., Lietz & Gregory, 1978; McFadden, Marsh, Price, & Hwang, 1992; Skiba, Peterson, & Williams, 1997; Skiba et al.,

2011; Streitmatter, 1985; Sullivan, Klingbeil, & Van Norman, 2013; Wallace, Goodkind, Wallace, & Bachman, 2008; Wu et al., 1982). Furthering this concern, research suggests that the discipline gap between Caucasian and African American students may be widening over the past 30 years (Losen & Skiba, 2010; Wallace et al., 2008), though this varies greatly by location (Losen, Hodson, Keith, Morrison, & Belway, 2015).

Extant research has found disparities across all major exclusionary discipline types including office disciplinary referrals (e.g., Skiba et al., 2011; Vincent, Tobin, Hawken, & Frank, 2012), suspensions (e.g., Gregory & Weinstein, 2008; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011), and expulsions (Gilliam, 2005; Rausch & Skiba, 2004). In addition, the discipline gap has been found to exist in all levels of schooling including preschool (Gilliam, 2005), elementary (Bradshaw, Mitchell, O'Brennan, & Leaf, 2010), middle school (Shirley & Cornell, 2012), and high school (Bryan, Day-Vines, Griffin, Moore-Thomas, 2012). The discipline gap has also been found across geographical settings (i.e., urban, suburban, rural); however, evidence is mixed regarding which school settings are most likely to have the highest disproportionality in discipline rates (Noltmeyer & McLoughlin, 2010b; Rausch & Skiba, 2004).

### **Public Health Significance**

Exclusionary discipline has been consistently associated with poor academic performance (Arcia, 2006; Gersh & Nolan, 1994; Rausch & Skiba, 2004; Reyes, 2006; Skiba & Rausch, 2006; The Civil Rights Project/Advancement Project, 2000). For example, students who are suspended are more likely to experience grade retention (Safer, 1986), to be tracked into lower-level classes (Watts & Erevelles, 2004), and to report a more negative academic identity (Townsend, 2000). Tobin and Sugai (1999) found that three or more suspensions in ninth grade strongly predicted

school failure (i.e., GPAs below 1.0) in high school. In addition, boys referred to the office for fighting more than twice, and girls referred even once for harassing a peer in sixth grade, were not likely to be on track for graduation when in high school (Tobin & Sugai, 1999). Studies have also demonstrated that African American students perceive inequities in the application of disciplinary procedures (Sheets, 1996; Weinstein, 2002) and chronic perceptions of discrimination undermine the motivation of students to do well in school (Wong, Eccles, & Sameroff, 2003). With strong evidence that African American students experience exclusionary discipline at higher rates than Caucasian students and the negative academic effects associated with these disciplinary strategies, Gregory, Skiba, and Noguera, (2010) have theorized that disproportionality in discipline may actually be contributing to the achievement gap between African American and Caucasian students. In fact, Sullivan and Bal (2013) found that racial disproportionality in special education identification reduced after controlling for whether a student had been suspended or not.

Exclusionary discipline has also been associated with negative social and behavioral outcomes. For example, students who have been suspended are more likely to be suspended again (Gregory & Thompson, 2010) and more likely to be suspended for more minor offenses (Morrison, Anthony, Storino, & Dillon, 2001). Exclusionary discipline is also associated with higher rates of truancy (Newcomb, Abbott, Catalano, Hawkins, Battin-Pearson, & Hill, 2002), drop out (Lee, Cornell, Gregory, & Fan, 2011; Mendez, 2003), substance abuse (Hemphill, Heerde, Herrenkohl, Toumbourou, & Catalano, 2012; Swartz & Wirtz, 1990), and involvement with the juvenile justice system leading to what some have termed a “school-to-prison pipeline” (Chobot & Garibaldi, 1982; Civil Rights Project/Advancement Project, 2000; Justice Policy Institute, 2002; Reyes, 2006; Skiba, Arrendondo, & Williams, 2014; Toldson, 2008, 2011; Wald

& Losen, 2003). Similar to the achievement gap, researchers and organizations have begun to hypothesize that the discipline gap in schools may be contributing to the disproportionately higher rates of African American involvement with the juvenile justice system and increased likelihood of being arrested and imprisoned later in life (Leone & Weinberg, 2012; Toldson, 2008, 2011; Wald & Losen, 2007). In fact, Nicholson-Crotty, Birchmeier, and Valentine (2009) found that racial disproportionality for out-of-school suspensions is strongly associated with similar levels of disproportionality in juvenile court referrals within the same counties, even after controlling for poverty and urbanization.

### **Contributing Factors**

Multiple factors have been hypothesized to contribute to the discipline gap including differences in socioeconomic status (SES), differential rates of disruption, and cultural mismatches between teachers and students. Consistent with the differences in SES hypotheses, previous research has demonstrated that low SES students are more likely to be suspended (Skiba et al., 1997; Wu et al., 1982) and that African American students are more likely to be impoverished compared to Caucasian children (National Center for Children in Poverty, 2012). However, studies have consistently found significantly higher rates of exclusionary discipline practices for African American students compared to Caucasian students, even after controlling for SES (e.g., Noltemeyer & Mcloughlin, 2010a,b; Petras et al., 2011; Skiba, Michael, Nardo, & Peterson, 2002; Skiba et al., 2011; Wallace, Goodkind, Wallace, & Bachman, 2008; Wu et al., 1982). For example, Sullivan and colleagues (2013) found that African American students were 3.28 times more likely to be suspended once and 1.83 times more likely to have been suspended multiple times as compared to Caucasian students, even after controlling for free and reduced

lunch status and parent education. Thus, the disparities in rates of discipline between African American students and Caucasian students are not fully explained by SES.

Another hypothesis is that African American students are more likely to “act out” in school resulting in higher rates of discipline. Supporting this hypothesis, evidence suggests that African American youth are more likely to be exposed to stressors and risk factors related to learning and behavioral difficulties compared to Caucasian students which may lead to increased difficulties in school (Burchinal, Roberts, & Zeisel, 2008; Fantuzzo, LeBoeuf, Rouse, & Chen, 2012; Prelow, Danoff-Burg, Swenson, & Pugliano, 2004). As a result, it has been argued that African American students may engage in disruptive behavior more frequently or to a larger degree, and therefore the discipline gap may be a response to elevations in the intensity or frequency of disruptive behavior (Esptein et al., 2005; Koth, Bradshaw, & Leaf, 2009; Sbarra & Pianta, 2001). Providing further support, Wright and colleagues (2014) found that the racial gap in discipline in eighth grade was completely accounted for after controlling for teacher ratings of problem behavior in grades kindergarten through third grade.

However, mounting evidence suggests that higher rates of misbehavior cannot account for the disparities in exclusionary discipline. For example, research has highlighted the subjectivity that is involved in decisions regarding exclusionary discipline. Skiba and Colleagues (2002) demonstrated that African American students are more likely to be suspended for more subjective offenses such as noise violations, disrespect, and loitering while Caucasian students are more likely to be suspended for concrete reasons such as smoking, truancy, and vandalism. Subjectivity has also been demonstrated in the severity of punishment. Multiple studies have indicated that African American students were more likely to receive harsher consequences for engaging in the same topographical behavior as Caucasian students after

controlling for the type of infraction (Payne & Welch, 2010; Skiba, Michael, Nardo, & Peterson, 2002; Skiba et al., 2011; Skiba et al., 2015). Finally, studies have found that disproportionality is still evident when controlling for teacher and peer ratings of student behavior (Bradshaw et al., 2010; Horner, Fireman, & Wang, 2010). For example, one study found that African American students were twice as likely to receive either a suspension or expulsion compared to Caucasian students even after controlling for SES and teacher ratings of aggression (Petras et al., 2011). Thus, it is unlikely that differential rates of disruption between African American and Caucasian students can fully explain the discipline gap.

The final hypothesis posits that the disparate rates of exclusionary discipline are due to cultural mismatches or implicit bias. The teaching force in the United States is predominantly Caucasian and female (National Education Association, 2014) and there is evidence to suggest that, as a group, Caucasian teachers may be unfamiliar with the interactional patterns of African American students (Townsend, 2000; Weinstein, Curran, & Tomlinson-Clarke, 2004). This unfamiliarity may cause these teachers to interpret impassioned or emotive interactions as combative or argumentative (Donovan & Cross, 2002; McIntosh, Girvan, Horner, & Smolkowski, 2015; Townsend, 2000; Weinstein et al., 2004). Caucasian teachers have been found to have lower behavioral expectations of African American students (Ruck & Tenenbaum, 2007). This may lead to a self-fulfilling prophecy whereby teachers expect African American students to misbehave and are thus more likely to notice their misbehavior resulting in differential responses including increased discipline (Downey & Pribesh, 2004; Moule, 2009; Neal, McCray, Web-Johnson, & Bridgest, 2003). Further, African American students, as a group, are more engaged when instruction matches cultural values such as communalism, verve (i.e., proclivity toward sensation stimulation), and use of movement (Tyler et al., 2008);

however, teachers rarely endorse using these culturally-valued behaviors in the classroom (Tyler, Boykin, Miller, & Hurley, 2006) despite their effectiveness as a means of improving academic achievement among minority populations (APA, 2012; Boykin, Lilja, & Tyler, 2004; Tyler et al., 2008). Finally, implicit racial bias has been found to explain achievement gaps between minority and non-minority students (van den Bergh, Denessen, Hornstra, Voeten, & Holland, 2010). Although cultural mismatches or implicit may play a role in the disproportionate use of exclusionary discipline between African American and Caucasian students, it is important to note that this hypothesis has not been extensively examined (Rocque, 2010).

### **Reducing the Discipline Gap**

Due to the negative academic, behavioral, and social outcomes associated with exclusionary discipline and the inherent inequality of the disproportionate application of these disciplinary strategies to African American students, schools have been under increased pressure to close the discipline gap within their schools. The United States Department of Education's Office of Civil Rights has identified districts with large discipline gaps and required them to take immediate action to reduce these gaps (Zehr, 2010). With increased awareness of the negative impacts of the disproportionate application of exclusionary discipline and pressure from the government to address it, schools need to identify ways to reduce the disparity in rates of discipline between African American and Caucasian students. Unfortunately, there is a paucity of research to guide schools in this task. Researchers, professional and academic organizations, and policy makers have identified multiple targets for intervention including improving teacher preparation, early intervention for African American students, school-wide positive behavior supports, and policy reform, but research has not been conducted to determine if these recommendations are effective in reducing the discipline gap (American Academy of Pediatrics,



2013; American Psychological Association, 2012; Kauffman, Conroy, Gardner, & Oswald, 2008; NABSE, 2002; Skiba et al., 2008; Skiba, Eckes, & Brown, 2009).

### **Family-School Engagement**

One recommendation to reduce the discipline gap is to increase family-school engagement (American Academy of Pediatrics, 2013; American Psychological Association, 2012; McIntosh, Girvan, Horner, & Smolkowski, 2014; NABSE, 2002; Skiba, et al, 2008; Voulgarides, Zwerger, & Noguera, 2014). Family-school engagement is a multidimensional construct that describes a transactional relationship whereby families and schools partner to assist one another in promoting student development (Christenson, 2003; Fantuzzo, Tighe, & Childs, 2000; Hill et al., 2004). Thus, family-school engagement is comprised of both schools' actions to support students and families as well as families' actions to support their children in school (Weiss & Lopez, 2009). In addition, research has demonstrated that parents' endorsement of their child's school is an important dimension of family-school engagement (Harry, Allen, & McLaughlin, 1995; Kohl et al., 2000; Wong & Hughes, 2006).

Family-school engagement is uniquely suited to reduce the discipline gap for several reasons. First, family-school engagement is a salient target for schools as it is mandated by legislation such as the Individuals with Disabilities Education Act (2004) and No Child Left Behind (2002, §9101). Second, family-school engagement can be increased using family-based intervention (e.g., Mautone et al., 2012; Power et al., 2012; Sheridan & Christenson, 2004) and by school-wide initiatives (Sheldon & Epstein, 2002). Third, family-school engagement is particularly important when a family's attitudes, beliefs, and expectations are different from that of the school as open communication and partnership can help to develop understanding of differences and continuity between home and school settings (Abdul-Adil, Farmer, & Alvin,

2006; Christenson, 2003; Sheridan, Eagle, Doll, 2006). Fourth, if the discipline gap is due to implicit biases as has been hypothesized (McIntosh, Girvan, Horner, & Smolkowski, 2015), research has demonstrated that frequent contacts between people of different races, particularly when the contact involves a common goal (e.g., improving student behavior and academic success) and cooperation is needed to achieve that goal, reduces implicit bias (Allport, 1954; Pettigrew & Tropp, 2006). Finally, family-school engagement can help promote a student's social and behavioral competence at school, minimizing behaviors that are likely to lead to suspension (e.g., Nakoli, Bachman, & Vortuba-Drzal, 2010).

According to the bioecological model (Bronfenbrenner & Morris, 2006), a child's development is influenced by transactions within and across multiple systems. With respect to family-school engagement, the bioecological model posits that interactions between parents and teachers occur within the mesosystem and can serve as protective processes (Bronfenbrenner & Morris, 2006; Christen & Sheridan, 2001; Masten & Obradovic, 2006). Protective processes are interactions between systems that promote developmental competence (Masten, 2001; Masten & Cicchetti, 2010). Results from several meta-analyses have found that family-school engagement is associated with higher academic competence for both Caucasian and African American students in aggregated and urban contexts (Fan & Chen, 2001; Hill & Tyson, 2009, Jeynes, 2007). Studies conducted in urban areas have found family-school engagement variables to be associated with increased social and behavioral competence in urban samples (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Powell, Son, File, & San Juan, 2010). Nakoli, Bachman, and Vortuba-Drzal (2010) found that years in which a student's teacher and mother reported higher rates of school-based family involvement, the student was rated as more socially competent with fewer behavioral problems compared to years with lower rates of engagement in

a national sample. In addition, between-child analyses found that students with higher maternal ratings of family engagement were rated as more socially competent and had fewer classroom behavioral problems as rated by their teacher. However, Nakoli and colleagues (2010) measured family-school engagement using a modified version of the Parent Teacher Involvement Questionnaire (PTIQ; Kohl et al., 2000) which yielded a composite that combined both home- and school-based engagement activities as a single construct rather than testing family-school engagement as a multidimensional construct.

Researchers often fail to consistently differentiate the type of involvement (i.e., school-based versus home-based) studied due to definitional differences and measurement constraints (Fantuzzo et al., 2000; Hill & Tyson, 2009). Researchers also rarely measure family-school engagement as a reciprocal relationship between family and schools and thus focus only on families' engagement with schools or schools' engagement with families. Thus, careful inspection of how variables are defined and measured is required when reviewing the literature. Contemporary views of family-school engagement emphasize the need to differentiate families' school- and home based involvement, schools efforts to engage with families', and parents' endorsement of their child's school (Fantuzzo et al., 2000; Kohl et al., 2000; Manz et al., 2004; Wong & Hughes, 2006).

**School-based family involvement.** School-based family involvement include activities that families' engage in at their child's school such as volunteering in the classroom and attending parent-teacher conferences (Fantuzzo et al., 2000; Manz et al., 2004). Families' engagement with their child's school is related to increased social skills and lower teacher ratings of behavior problems (e.g., Brody, Flor, & Gibson, 1999; Domina, 2005). In a sample of pre-school children, school-based involvement positively predicted children's social skills and

negatively predicted problem behaviors (Domina, 2005). Brody, Flor, and Gibson (1999) found that students of parents who volunteer and attend more school meetings have increased ability to self-regulate their behavior. This improved self-regulation was related to greater psychosocial competence (i.e., increased social skills and low levels of problem behavior). Although no studies could be identified that tested whether school-based family involvement is more protective for African American students, McWayne and colleagues (2004) found that school-based family involvement was positively related to cooperation and self-control as well as less hyperactivity in a sample of primarily low-income African American Kindergarten students. No studies were identified that investigated whether school-based family involvement lead to reductions in the probability of being suspended.

**Home-based family involvement.** In addition to school-based activities, families engage in activities that actively promote learning and social competence within the home such as helping children with homework, initiating and participating in learning activities at home, and creating learning experiences in the community (Fantuzzo et al., 2000; Manz et al., 2004). Studies have found that home-based family involvement is also associated with reduced problem behaviors in school. For example, Domina (2005) found that students whose parents check to make sure their homework is completed are rated as having lower rates of behavior problems in school. Toldson (2011) found that families who engaged in more home-based involvement activities were suspended less often in a sample of primarily African American students. However, not all studies find that home-based involvement is related to decreased behavior problems (Powell et al., 2010). These differences in findings may depend on the types of activities that families engage in at home. Although homework-checking, supervision, and setting rules and expectations for behavior at home have been found to be related to decreases in

problem behaviors and discipline at school (Deslandes & Royer, 1997; Domina 2005; Toldson, 2011), parents who report talking with their children about school matters every day have been found to be more likely to have received a suspension (Deslandes & Royer, 1997). While directionality cannot be determined from the correlational design, the authors argued that the positive relationship between parent-child communication about school and discipline may be a parental response to the child having received a suspension (Deslandes & Royer, 1997). No studies testing whether home-based family involvement predicts differential reductions in the probability of being suspended for African American compared to Caucasian students could be identified – an important analysis in determining whether home-based family involvement can narrow the discipline gap.

**School engagement with families.** Although families' engagement with schools has been found to be associated with decreased rates of school discipline, teacher communication with a student's guardian is often found to be associated with increased rates of school discipline (Deslandes & Royer, 1997). For example, Serpell and Mashburn (2012) found that teachers called students' guardians more frequently if the teacher had rated the student as having less social competence, more problem behaviors, and greater levels of teacher-child conflict. Thus, at the individual student level, evidence suggests that teachers are more likely to contact families when there are behavioral problems.

At the school level, research has found that schools that engage with families more frequently have lower rates of discipline problems (Mendez, Knoff, & Ferron, 2002). Using a sample of middle schools with a predominately African American population, Mukuria (2002) found that principals of schools with low rates of suspension were more effective in engaging with parents than principals of schools with high rates of suspension. In addition, Sheldon and

Epstein (2002) implemented family-school partnership programs in 47 schools and collected surveys regarding disciplinary practices before and after implementation. The follow-up survey provided at the end of the intervention revealed decreased rates of in-school suspension and detention, suggesting that increasing schools' engagement with families reduces the incidence of exclusionary discipline practices. Overall, existing evidence suggests that a school's ability to facilitate engagement with families is associated with decreased rates of discipline; however, studies that simply measure the frequency of contact between teachers and families find increased rates of school discipline with more frequent contact. Studies examining racial differences in schools' engagement with families were not found.

**Family endorsement of their child's school.** Parental endorsement moves beyond measuring *whether* family- or school-based engagement activities occur to provide an understanding of parents' perceptions of the *quality* of family-school engagement activities, academic standards, behavior management, and school safety procedures employed by the school (Hausman & Goldring, 2000; Fantuzzo et al., 2006). Parental perceptions of their child's school is an important component of family-school engagement as low endorsement often reflects tenuous family-school relationships and is likely to influence their willingness to be engaged (Harry, Allen, & McLaughlin, 1995; Kohl et al., 2000). In fact, higher parental endorsement of their child's school has been associated with more positive parent-teacher relationships, increased family involvement at home and school, and more positive parental attitudes of school involvement and as rated by teachers and parents (Kohl et al., 2000; Wong & Hughes, 2006). Despite these small to moderate associations with other dimensions of family-school engagement, factor analytic studies have supported the inclusion of family endorsement as a distinct dimension of family-school engagement (Kohl et al., 2000; Wong & Hughes, 2006).

Despite evidence that family endorsement is a distinct and important component of family school engagement, there is currently dearth of research linking it to student outcomes including student behavior and discipline (Fantuzzo et al., 2006).

**Family-school engagement and race.** Consistent with the bioecological model, the frequency and quality of family-school engagement varies based upon child and family characteristics (e.g., race/ethnicity, SES), school characteristics, as well as community norms and cultural beliefs (Overstreet, Devine, Bevans, & Efreom, 2005). Indeed, family-school engagement may be especially important for African American families as a way for parents and teachers to collaboratively communicate cultural differences, understand individual family attitudes, beliefs, and practices rather than relying on stereotypes, and develop continuity in expectations between home and school (Christenson & Sheridan, 2001). However, despite similar ratings of home-based involvement, African American parents typically report lower levels of school-based engagement compared to Caucasian parents (Manz et al., 2004; Nzinga-Johnson, Baker, & Aupperlee, 2009). Teacher ratings of parent involvement also support these ethnic differences in parent's involvement in school-based activities (Wong & Hughes, 2006). Both personal (e.g., current life context, beliefs about family-school engagement, language differences) and school-related (e.g., inflexible hours, deadlines) barriers have been found to contribute to these racial differences (Abdul-Adil, Farmer, & Alvin, 2006; Gibson, Wilson, Haight, Kayama, & Marshall, 2014; Harry et al., 1995; Hornby & Lafael, 2011; Thomspson, 2003; Winn & Winn, 2014).

It is important to note that while the increased importance of family-school engagement for African American families is theoretically cogent, there is a dearth of research testing this hypothesis. To be an effective strategy in reducing the discipline gap, family-school engagement

would need to reduce exclusionary discipline practices at a greater rate for African American students as compared to Caucasian students. Only one study was identified that tested the interaction between race and a dimension of family-school engagement on a behavioral outcome. Iruka, Winn, and Orthodoxou (2011) found that when parents reported less communication and agreement with their child's school, teachers were more likely to rate African American students as having more problem behaviors compared to Caucasian students, despite rating children of different races similarly when parents reported higher levels communication and agreement. Thus, school-based family involvement may be even more protective for African American students than Caucasian students; however, this research has not yet been extended to determine if greater reductions in problem behaviors translates to reduced rates of suspensions for African American as compared to Caucasian students.

### **Purpose of the current study**

Previous research has focused on documenting the existence of disparities in exclusionary discipline and exploring individual, teacher, and school-level characteristics that may account for these disparities (e.g., Skiba et al., 2011; Sullivan, et al., 2013). Although understanding contributing factors is important, identifying mutable factors that reduce the discipline gap is a necessary step in establishing equity in disciplinary practices. Prominent professional organizations and scholars have argued for increased family-school engagement as a method of reducing the discipline gap (American Academy of Pediatrics, 2013; American Psychological Association, 2012; NABSE, 2002; Skiba, et al, 2008). Supporting this recommendation, components of family-school engagement (i.e., school- and home-based family involvement and schools' engagement with families) have been shown to increase social skills, reduce teacher ratings of problem behaviors, and decrease rates of exclusionary discipline in



aggregated samples of children (e.g., McWayne et al., 2004; Nakoli et al., 2010; Sheldon & Epstein, 2002). However, no existing research has investigated whether family-school engagement can attenuate the discipline gap.

Thus, the purpose of this investigation is to determine if increased family-school engagement is associated with a reduction in the discipline gap between Caucasian and African American students using the National Household Education Survey (NHES, 2003) -- a national database created by the United States Department of Education in order to gather information regarding families' perceptions of family-school engagement. This study will be the first to examine whether a multidimensional model of family-school engagement (i.e., school-based family involvement, home-based family involvement schools' engagement with families, and family endorsement of school) reduces suspension rates at the individual level in a large, nationally representative sample. The proposed study will also be the first to investigate whether family-school engagement is associated with reductions in the discipline gap as measured by in-school and out-of-school suspension.

### **Research Questions and Hypotheses**

**Measurement invariance.** R1. Is there variance in measurement between African American and Caucasian families on each of the four family-school engagement scales (school-based family involvement, home-based family involvement schools' engagement with families, and family endorsement of school)?

**Replication of disproportionality.** R2. Is the probability of having been suspended for African American students significantly greater than for Caucasian students after controlling for poverty status and parent education?

Studies have repeatedly found that the discipline gap remains after controlling for SES (e.g., Bradshaw et al., 2010; Skiba et al., 2011; Sullivan et al., 2013); thus, it is hypothesized that the disparities in the probability of receiving suspension will remain after controlling for poverty status and parent education as a proxy for SES.

**Family-school engagement and suspensions for all students.** R3a. As families' school-based involvement increases, does the probability of having been suspended decrease after controlling for poverty status and parent education?

Research has found that increased school-based family involvement is associated with increased social skills and reduced behavioral problems (e.g., McWayne et al., 2004); thus, it is hypothesized that increased school-based family involvement will result in reduced probability of being suspended for all students.

R3b. As families' home-based involvement increases, does the probability of having been suspended decrease after controlling for poverty status and parent education?

Research has also found that increased home-based family involvement is associated with lower probability of a student being suspended (e.g., Toldson, 2011); thus, it is hypothesized that increased home-based family involvement will result in reduced probability of being suspended for all students.

R3c. As school engagement with the family increases, does the probability of having been suspended decrease after controlling for poverty status and parent education?

Extant research suggests that increased numbers of calls home are associated with increased rates of discipline, decreased teacher ratings of social skills and increased ratings of problem behaviors and teacher conflict (Deslandes & Royer 1997; Serpell & Mashburn, 2012). However, schools' attempts to increase engagement with families in a

more preventative way have been found to reduce rates of exclusionary discipline for both Caucasian and African American students (Mukuria, 2002; Sheldon & Epstein, 2002). Given that the current study defines school engagement in a more preventative way than simply the frequency of contacts between the school and the parent, school engagement with families is expected to be associated with a decreased probability of being suspended.

R3d. As family endorsement of their child's school increases, does the probability of having been suspended decrease after controlling for poverty status and parent education?

Although no previous research has directly tested this hypothesis, higher family endorsements of a child's school have been found to be indicators of less family-school conflict (Harry et al., 1995; Kohl et al., 2000) and Iruka and colleagues (2011) found that parent perceptions of the quality of communication and general agreement were negatively associated with teacher's ratings of problem behavior. Thus, it is hypothesized that more positive perceptions of the family endorsement of school will result in decreased probability of suspension for students.

**Associations of family-school engagement with the discipline gap.** R4a. Do differences in the probability of being suspended between African American and Caucasian students remain after including the interactions between family-school engagement variables and race in the model?

Given that family-school engagement leads to reductions in ratings of behavior problems and the probability of being disciplined (e.g., Sheldon & Epstein, 2002, Nakoli et al., 2010) and teachers and African American families report lower family-school engagement (e.g., Wong & Hughes, 2006), it is hypothesized that race will account for

less variance in the probability of being suspended after accounting for the variance related to the family-school engagement variables. That is, the differences in the probability of having been suspended between African American and Caucasian students will be smaller after including the family-school engagement variables in the model.

R4b. As school-based family involvement increases, does the probability of receiving a suspension decrease at a greater rate for African American compared to Caucasian students?

It is expected that the difference in probability of receiving a suspension between Caucasian and African American students will decrease as parents' involvement in school activities increases. Iruka and colleagues (2011) found that when parents reported less communication, trust, and had more disagreements, teachers were more likely to rate African American students as having more problem behaviors compared to Caucasian children. In addition, the purpose of this study is to test the hypothesis proposed by several professional organizations and scholars that increasing family-school engagement will result in abatement of the discipline gap. Thus, it is hypothesized that as school-based family involvement increases the probability of having received a suspension will decrease by a greater magnitude for African American students compared to Caucasian students.

R4c. As home-based family involvement increases, does the probability of receiving a suspension decrease at a greater rate for African American compared to Caucasian students?

Congruent with the purpose of this study, it is hypothesized that as home-based family involvement increases the probability of having received a suspension will decrease by a greater magnitude for African American students compared to Caucasian students.

R4d. As school engagement increases, does the probability of receiving a suspension decrease at a greater rate for African American compared to Caucasian students?

No research could be identified that has tested the interaction between race and school engagement on school discipline; however, Mukuria (2002) found that schools who are more affective engaging African American families are less likely to discipline their students. Thus, it is hypothesized that as home-based family involvement increases the probability of having received a suspension with decrease by a greater magnitude for African American students compared to Caucasian students.

R4e. As family endorsement of schools become more positive, does the probability of receiving a suspension decrease at a greater rate for African American compared to Caucasian students?

Iruka, Winn, Kingsley, and Orthodoxous (2011) found that the quality of parent-teacher relationships resulted in significantly larger improvements in ratings of social skills and reduction of behavior problems for African American students compared to Caucasian students. Thus, it is hypothesized that as family endorsement increases the probability of having received a suspension with decrease by a greater magnitude for African American students compared to Caucasian students.

## **Chapter II: Review of the Literature**

Exclusionary discipline is one of the most common forms of discipline in American public schools (Skiba & Knesting, 2002). Exclusionary discipline encompasses disciplinary procedures that remove students from the classroom, school, or curriculum and include office discipline referrals, suspensions, and expulsions. Research has consistently found that African American (African American) students are subjected to exclusionary discipline practices more frequently than Caucasian students (e.g., Skiba et al., 2011). Current research has focused on identifying factors that are associated with disproportionality in school discipline; however, organizations have recently begun to emphasize the need to identify mutable factors that reduce the disparity (American Academy of Pediatrics, 2013; APA, 2012; NABSE, 2002). One recommendation to reduce this discipline gap is to increase family-school engagement; however, this recommendation has not yet been studied empirically. Thus, the current study investigates whether increased family-school engagement is associated with reductions in the disproportionate use of exclusionary discipline with African American students compared to Caucasian students. The purpose of this chapter is to: (a) describe the guiding theoretical framework of the study; (b) review the extant research regarding disproportionality in exclusionary discipline; and (c) review the extant research on family-school engagement as it relates to school behavior and discipline.

### **Guiding Theory**

Urie Bronfenbrenner's bioecological theory of human development explains the development of a child using the Process-Person-Context-Time (PPCT) model (Bronfenbrenner & Morris, 2006). Bronfenbrenner describes development as occurring through progressively more complex reciprocal interactions between an active, evolving child (i.e. *person*) and the

people in the child's external environment. He refers to these complex reciprocal interactions as proximal *processes*. Proximal processes are theorized to be more effective if the interactions occur on a frequent basis over extended periods of *time*. These proximal processes most frequently occur within the *context* of microsystems. Two particularly salient microsystems are the child's interactions with their family and their school. Thus, interactions between the child and the family such as playing and reading together affect the development of children's behavioral and academic competencies (e.g., McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Powell, Son, File, & San Juan, 2010). Similarly, interactions between the child and the school including the teacher's classroom behavior management strategies, opportunities for social emotional learning, and school discipline policies influence children's behavioral competencies in school (e.g., Skiba, Eckes, & Brown, 2009).

Although children's development is facilitated by direct interactions within these microsystems, transactions between school and home can also indirectly influence the development of the child. The interactions between microsystems are referred to as the mesosystem in Bronfrenbrenner's model. Thus, the proposed study examines whether processes at the level of the mesosystem (i.e., family-school engagement) have differential effects on child level outcomes based upon race, a child level characteristic. Specifically, this study seeks to determine whether family-school engagement reduces the risk of receiving exclusionary discipline to a larger degree for African American students compared to Caucasian students. A systematic review of the disciplinary disproportionality and family-school engagement literature was conducted to determine factors related to school behavior and discipline.

## **Disparities in the Use of Exclusionary Discipline**

In 1975, the Children's Defense Fund analyzed national data collected by the United States Department of Education Office for Civil Rights and found significant disparities in the use of exclusionary discipline between African American (African American) and Caucasian students. Specifically, the study found that African American students were two times more likely to be suspended than Caucasian students across all grade levels. Breaking the data down further, African American students were more likely to be suspended more than once and were less likely to receive milder alternatives when referred for similar behaviors compared to Caucasian students; however, no differences in the length of suspension were found. Since that report, racial disproportionality in the use of exclusionary discipline has been a highly consistent finding (e.g., Lietz & Gregory, 1978; McFadden, Marsh, Price, & Hwang, 1992; Skiba, Peterson, & Williams, 1997; Skiba et al., 2011; Streitmatter, 1985; Sullivan, Klingbeil, & Van Norman, 2013; Wallace, Goodkind, Wallace, & Bachman, 2008; Wu et al., 1982).

**Changes over time.** Although research has consistently found that disparities exist, the disparities have not remained stable over time. Data collected as part of the Monitoring the Future study from 1991 to 2005 found that the probability of an African American student being sent to the office remained static while the risk decreased for Caucasian, Latino, and American Indian students (Wallace, Goodkind, Wallace, & Bachman, 2008). The study also found that the prevalence of suspension and expulsion among African American students *increased* between 1991 and 2005 while the prevalence *decreased* for Caucasian, Latino, and American Indian students. However, not all studies have found that the disparities in discipline are increasing. Noltemeyer and Mcloughlin (2010a) found that the disparities in suspensions between African American and Caucasian students were shrinking after controlling for socioeconomic status



(SES) in a sample of 288 Ohio Schools between 2000 and 2009. Specifically, rates of suspension for African American students were decreasing (slope = - 0.3737) and the rates of suspension for Caucasian students were slightly increasing (slope = 0.1977). Thus, if this pattern of suspensions continued at the same rate, the disparity in discipline would be eliminated by the 2026 – 2027 school year. This trend for equality was not found for other types of discipline.

A recent reported titled *Are We Closing the Discipline Gap* (Losen et al., 2015) carefully disaggregated national data to allow for a more nuanced understanding of the size of the discipline gap overtime. Since 1972, Losen and colleagues (2015) found a general trend of widening in the discipline gap. During this time, suspension rates for Caucasian students increased from three to five percent from 1972 to 1989 and have generally remained steady at five percent with an exception of drop to four percent in the 2009-2010 school year. For African American students, suspension rates started at six percent in the 1972 to 1973 school year and have gradually increased to sixteen percent in 2011-2012. While looking at the last two years of data collected (2009-2010 to 2011-2012) suggests a narrowing in the gap from African Americans being 4 times to being 3.2 times more likely than Caucasians being suspended. However, this reduction was driven by an increase in the amount of Caucasian students being suspended which is not the preferred method of reducing the disparities given the negative outcomes associated with suspension and 3.2 is still higher than any other year in which data were collected.

Differences within the literature about whether the discipline gap is growing or abating are likely due to differences in the samples used. The Losen and colleagues (2015) report also revealed markedly different patterns of suspension and disproportionality across states and districts. For example, the discipline gap between African American and Caucasian students is

12.5 percentage points in Missouri, 2.9 percentage points in Kentucky, and no gap was found in North Dakota. Despite national increases in the discipline gap, Saginaw City School District in Michigan was one of several districts to narrow the discipline gap between the 2009-2010 and 2011-2012 school year. Specifically, Losen and colleagues found an 18% reduction in suspensions for African Americans compared to a 3% reduction resulting in a narrowing of the discipline gap in this district. These findings add to growing awareness that research in disproportionality needs to carefully consider locality (e.g., Artiles, 2009).

**Grade level.** Research suggests that suspension rates increase markedly from elementary to middle school and then drop off in high school (Arcia, 2006; Mendez & Knoff, 2003). In a large Florida school district, Mendez and Knoff (2003) found that 3.36% of elementary students had at least one suspension compared to 24.41% of middle school and 18.46% of high school students. Despite this wide variation in overall suspension rates across grade levels, research on disproportionality in school discipline has found disparate rates of exclusionary discipline from preschool to high school.

In a sample of 3,898 publicly funded prekindergarten programs operating across 40 states, Gilliam (2005) found that 6.67 out of every 1,000 preschoolers were expelled. When disaggregating the data by race, African American prekindergarten students were two times as likely to be expelled as Caucasian and Latino students and five times more likely than Asian students to be expelled; thus, patterns of disproportionality in the use of exclusionary discipline starts early in the development and school of children.

Disproportionality in discipline has also been documented within elementary schools. Horner, Fireman, and Wang (2010) investigated disproportionality in a sample of 537 third-, 470

fourth-, and 486 fifth-grade students (732 boys; 12 missing gender) in an urban district in the Southwestern United States. Within this sample of elementary students, African American students were 6.93 times more likely to receive exclusionary discipline compared to Caucasian students, even after controlling for peer ratings of overt aggression. Another study using a sample of 6,988 elementary students across 21 kindergarten to fifth grade elementary schools concluded that African American students were 1.35 times more likely to be referred to the office after controlling for individual and class-wide teacher ratings of classroom behavior and classroom rates of office discipline referrals.

Disproportionality has also been found in middle school settings. In a study of 400 students from a suburban public middle school in the state of Virginia, 63% of the African American students sampled had been referred to the office for discipline compared to only 26% of Caucasian students (Shirley & Cornell, 2012). The result of a hierarchical logistic regression analysis indicated that African American students were more likely to be referred to the office for disciplinary problems (ODR) and suspended compared to Caucasian students, although the amount of variance in ODRs (11% of variance to 8%) and suspensions (8% of variance to 6%) explained by race was reduced after including student perceptions of school climate into the model. Thus, some of the racial disparities in this study were explained by African Americans endorsing more positive attitudes towards aggression and expressing less willingness to seek help from their teachers after being bullied or threatened. Further, Skiba and colleagues (2011) conducted the only study identified that directly compared rates of disproportionality between grades. In order to compare the rates of disproportionality, School-Wide Information System (SWIS) data was collected during the 2005-2006 academic year from 272 kindergarten to sixth grade level (elementary) schools and 92 sixth to ninth grade schools (middle) from across the

country. After controlling for SES, African American students were 119% more likely to be referred to the office for problem behavior compared to their Caucasian peers in elementary school and 278% more likely in middle school. Thus, not only do overall rates of suspension increase in middle schools (Arcia, 2006), but disproportionality between African American and Caucasian students also increases.

Finally, African American high school students also experience disproportionate rates of exclusionary discipline compared to Caucasian students. Using the Educational Longitudinal study of 2002, Bryan, Day-Vines, Griffin, and Moore-Thomas (2012) found that African American tenth grade students were 71% more likely than Caucasian students to be referred to the office by their English teacher. Gregory and Weinstein (2008) investigated rates of disproportionality in discipline within an urban high school in a mid-size city. Although African American students comprised 30% of the high school's population, they accounted for 58% of office referrals for defiance whereas Caucasian students comprised 37% of the population and only accounted for 5% of the referrals for defiance. Finally, Wallace and colleagues (2008) found that African American male high school students were 3.3 times more likely than Caucasian male students to be suspended. Further, African American female students were 5.4 times more likely than Caucasian females to be suspended. Thus, existing evidence suggests that African American students are suspended at higher rates than Caucasian students at all levels of schooling.

**School typology.** Although the evidence is clear that all types of schools (i.e., urban, suburban, town, and rural) have been found to have disproportionate rates of discipline, research has been mixed about which school type has the largest disparity in the application of exclusionary discipline. For example, Eitle and Eitle (2004) found that high resource, suburban

districts were found to have the highest rates of disproportionality in school discipline within Florida public schools. Rausch and Skiba (2004) also found that well-resourced suburban schools had the highest disproportionality within a sample of public schools in Indiana; specifically, 52.39% of African American students were suspended compared to only 10.01% of Caucasian students in suburban Indiana schools. On the other hand, Noltemeyer and McLoughlin (2010b) found that disproportionality was highest in major urban, very high poverty schools and lowest (although still significant) in rural-high income schools in a sample of Ohio locales.

It is currently unclear whether these differences are due to state policy, cultural differences between states, artifacts of statistical methods and sampling procedures used, related to actual school characteristics, or combination of factors. For example, schools that use exclusionary discipline more frequently tend to have higher rates of disproportionality (Skiba et al., 2002). In addition, schools with more educated and more experienced teachers have higher disparities in suspension rates (Eitle & Eitle, 2004). However, recent research is mixed on whether these school-level factors are not related to disproportionality when entered into a model containing child-level factors (Anyon et al., 2014; Skiba et al., 2014; Sullivan et al., 2013). Thus, more research is needed to clarify what school types are most at-risk for disproportionality in exclusionary discipline.

**Contributing factors.** Much of the disproportionality research to date has focused on identifying factors that may be contributing to disparities in discipline rates. This research can be synthesized into three broad categories: SES, differential rates of disruption, and cultural mismatches or racial stereotyping. The research related to each category is summarized below.

**SES.** One of the most common explanations for the disparity in discipline rates is the “wealth gap.” African American students are significantly more likely to be living in poverty compared to Caucasian children (National Center for Children in Poverty, 2013). Specifically, 38% of African American children live in families whose income is below the federal poverty line compared to only 13% of Caucasian students. Previous research has demonstrated that students living in poverty are more likely to be suspended than students living above the poverty line (Skiba et al., 1997; Wu et al., 1982). Similarly, Hinojosa (2008) found that several variables typically associated with SES including presence of mother or father in the home, number of siblings, and quality of home resources were all predictors of receiving a suspension. Thus, the discipline gap was hypothesized to be a reflection of disparities in family income rather than bias in the discipline process.

Although research demonstrates that SES does account for some of the variance in the discipline gap, studies have repeatedly concluded that the disparities persist even after controlling for SES. For example, Sullivan and colleagues (2013) found that African American students were 6.91 times more likely to be suspended compared to Caucasian students, prior to controlling for free and reduced lunch (FRL) status and parent education. Although the odds ratio decreased by approximately half after controlling for FRL status and parent education, African American students were still significantly more likely to receive one suspension (3.28 times) or multiple suspensions (1.83 times).

Another study used 1,169 students across 19 elementary schools in Baltimore to examine the role of SES in disproportionality (Petras, Masyn, Buckley, Ialongo, & Kellam, 2011). A multi-level discrete time survival analysis was conducted to determine the relationship between individual and contextual variables and the timing of first school removal between first and

seventh grade. Consistent with previous research, low SES students were 1.68 times more likely to receive their first school removal at any grade compared to students of high SES controlling for race, sex, age, and teacher-rated aggression. However, race was found to be a stronger predictor of first school removal as African American students were 2.02 times more likely to experience their first school removal at any given grade compared to Caucasian students after controlling for SES, sex, and teacher-rated aggression levels. Petras and colleagues (2011) concluded that race independently predicts exclusionary discipline above and beyond SES. In fact, race was a stronger predictor of exclusionary discipline than SES in their sample.

Several other studies have demonstrated that race remains a significant predictor of discipline rates even after controlling for SES. Noltemeyer and Mcloughlin (2010a) conducted a study that included 288 school districts in Ohio and found that poverty was a significant predictor of a school's overall rate of suspension, but not of disproportionality in suspension at the district level of analysis. Specifically, the average rate of suspensions, expulsions, and other disciplinary actions for African American students was 1.8 to 2.3 times greater than the rate of their Caucasian peers even after controlling for SES. Skiba and colleagues (2002) conducted an ANCOVA to provide effect sizes before and after adjusting for free and reduced lunch status and found similar effect sizes between the adjusted and non-adjusted effects sizes indicating the SES did not account for the disproportionality in discipline rates.

Although the discipline gap is widely believed to be the result of the well-documented disparities in SES between Caucasian and African American families in the United States (Skiba et al., 2008), evidence does not support this belief. Although the discipline gap appears to reduce after controlling for SES, the disparity remains significant. Not only does the relationship between race and exclusionary discipline remain statistically significant after controlling for

SES, but African American students remain two to three times more likely to experience exclusionary discipline compared to Caucasian students. This suggests that SES may play a role in the disproportionality in discipline rates, but other factors contribute to the discipline gap as well.

***Differential rates of disruption.*** Another hypothesis regarding the cause of disproportionality is that African American students more frequently engage in behaviors that warrant suspension (Koth, Bradshaw, & Leaf, 2009; Sbarra & Pianta, 2001). In support of this hypothesis, Wright and colleagues (2014) found that teacher ratings of prior problem behavior on the Social Skills Rating System (Gresham & Elliot, 1990) in kindergarten through third grade explained racial disparities in discipline found in 8<sup>th</sup> grade using the Early Childhood Longitudinal Study (ECLS-K). However, research examining whether African Americans do in fact demonstrate more behavioral difficulties compared to Caucasian students has been mixed. Though some observational studies find that African American students engage in more disruptive behaviors (Epstein et al., 2005; Hosterman, DuPaul, & Jitendra, 2008) other studies fail to find increased behavioral difficulties among African American students (Bahr, Fuchs, Strecker, & Fuchs, 1991). Ideally, a direct observational study of the behavior of African American and Caucasian students in the classroom and the consequences applied to those behaviors would be the strongest test of this hypothesis (Rocque, 2010); however, this study has yet to be conducted due to methodological barriers such as the low incidence of exclusionary discipline and the large samples and observation periods that would be required. Despite not having direct observational studies to test this hypothesis, there are several lines of research that do not support the idea that the discipline gap is due to differential rates of disruption.



First, if disproportionate rates of discipline emerged in response to increased misbehavior, one would expect that teacher ratings of classroom behavior would account for the disproportionate rates of school suspension. Petras and colleagues (2011) found that African American students still had 2.02 times the hazard odds of receiving either a suspension or expulsion compared to Caucasian students after controlling for teacher ratings of aggressive behavior in addition to SES and gender. Bradshaw, Mitchell, O'Brennan, and Leaf (2010) tested the differential rate of disruption hypothesis with a sample of 6,988 students across 21 elementary schools. In this study, teacher perceptions of student behavior were measured using the Teacher Observation of Classroom Adaptation- Checklist (TOCA-C; Koth et al., 2009). In addition, class-wide behavioral ratings of disruptive behavior and individual teacher rates of office discipline referral were statistically controlled to account for classroom levels of misbehavior and differences between teacher use of office discipline referrals. Even after controlling for teacher ratings of student behavior, class-wide rates of behavior problems, and teachers' rate of office discipline referral, African American students were still 82% more likely to receive a minor office discipline referral and 26% more likely to receive an office discipline referral for fighting.

Second, research has also been conducted to test whether peer ratings of classroom behavior can account for the disparities observed in school discipline practices (Horner, Fireman, & Wang, 2010). In a diverse sample of 1,493 students, peer nominations of aggressive and prosocial behavior were collected and statistically accounted for in a model predicting in- and out-of-school suspension, detention, expulsion, and alternative placement. Even after controlling for peer nominations of aggression and prosocial behavior, African American students were 593% more likely to be disciplined compared to Caucasian students.

Third, detailed analyses of the types of infractions for which students are suspended suggest that African American students are disproportionately suspended for subjective and not objective offenses (e.g., Forsyth et al., 2015). Skiba and colleagues (2002) analyzed the documented reasons for one year of office referral, suspension, and expulsion data in a group of 19 urban middle schools in a large Midwestern public school district. A total of thirty-two possible reasons were identified and racial differences were found in eight types. White students were more likely to be suspended for more concrete reasons such as smoking, truancy, and vandalism whereas African American students were more likely to be suspended for reasons that require more subjective judgment such as disrespect, excessive noise, threat, and loitering. In another study, Skiba and colleagues (2011) replicated the finding that disproportionality was highest in more subjective categories such as disruption and noncompliance in an elementary and middle school sample. This pattern of higher disproportionality in more subjective categories has also been documented in high school samples (Gregory & Weinstein, 2008). Thus, research suggests that African American students are not being suspended for engaging in greater rates or intensity of disruptive behavior across all categories. Instead, it appears that African American students are being punished at higher rates for more subjective behaviors and possibly less frequently for more concrete offenses.

Finally, if disproportionality exists solely because of increases in within-student difficulty in their ability to regulate their behavior, these increased rates of exclusionary discipline should occur with multiple teachers; however, Gregory and Weinstein (2008) found that African American students with multiple referrals were typically suspended by a particular teacher rather than multiple teachers. Further, differences in classroom management style significantly contributed to both student attitudes toward classroom management and actual disciplinary

outcomes in a subsample of African American students who had received office discipline referrals. Thus, it appears that particular teaching practices and teacher-student combinations have an impact on the rate of discipline indicating that there is likely more to disproportionality than simply increased behavioral difficulties of African American students.

***Cultural mismatch/racial stereotyping.*** Finally, the lack of evidence supporting the hypotheses that SES and differential rates of misbehavior are driving factors for disproportionate discipline has led to considerations that cultural misunderstandings or racial stereotyping is playing a significant role in the disproportionate rates of discipline. The teaching force in the United States is overwhelmingly Caucasian (84%) and female (84%; Feistritzer, 2011). It has been suggested that this overwhelmingly Caucasian and female teacher base may be unfamiliar with the interactional patterns of non-Caucasian males, which may result in teachers interpreting impassioned and emotive interactions as combative, threatening, or argumentative (Townsend, 2000; Weinstein, Tomlinson-Clarke, & Curran, 2004). Supporting this idea, Vavrus and Cole (2002) videotaped interactions among students and teachers and found that many office discipline referrals were less the result of serious disruption than “violations of... unspoken and unwritten rules” (p. 91; e.g., differences in discursive expectations such as diction and tone that lead to perceived threats to teacher’s authority). Students who were singled out for violating these unspoken and unwritten rules in the study were disproportionately students of color, supporting the hypothesis that the increased rates of exclusionary discipline practices may be the result of cultural misunderstandings of unspoken rules within the classroom.

Furthering the argument that the discipline gap is the result of cultural misunderstandings or racial stereotyping, Downey and Pribesh (2004) found that African American students were consistently rated as having more classroom behavior problems than Caucasian students in a

nationally representative sample of students; however, this pattern did not persist when teacher's race was taken into account. In fact, when students are matched with same-race teachers and when demographic characteristics including SES, gender, family structure, age, and grade repetition are controlled statistically, African American students were rated more favorably than Caucasian students. However, research has not been definitive in this conclusion. For example, Bradshaw and colleagues (2010) found that African American students are as likely to receive an office discipline referral when they were placed in a class with African American teachers as when they are placed with Caucasian teachers. Sullivan and colleagues (2013) also found the percentage of Caucasian teachers in a school was not a significant predictor of disproportionality. Ramirez and Shapiro (2005) found that Caucasian teachers rated Latino and Caucasian students similarly, while Latino teachers rated the behavior of Latino students more harshly. Thus, it is currently unclear to what extent – if at all – teacher race is related to cultural misunderstandings and the discipline gap.

Beyond teacher ratings and perceptions of behavior, differences in educational practices that promote resilience between Caucasian and African American students have been found. For example, Tyler and colleagues (2008) found that African American students value communalism (social identity linked with group membership), *verve* (proclivity toward sensation seeking), and use of movement in school and when school values do not match these beliefs that are being modeled in the home or community, African American students are more likely to become disengaged. Further, teachers rarely endorse these culturally valued behaviors in the classroom despite evidence that these culturally sensitive teaching strategies are a means of improving engagement and achievement in minority populations (APA, 2012; Boykin, Lilja, & Tyler, 2004;

Tyler, Boykin, Miller, & Hurley, 2006). Thus, current research is unclear regarding the exact role that cultural mismatches or racial stereotyping play in the discipline gap.

### **Family-School Engagement**

Increasing family-school engagement is a frequently cited recommendation to reduce the discipline gap (American Academy of Pediatrics, 2013; American Psychological Association, 2012; NABSE, 2002; Skiba, et al, 2008). Family-school engagement is a relatively novel construct that has been developed through the evolution of the parent involvement literature. Parent involvement is often conceptualized as parents' actions at school and home that promote a child's school success (Hill et al., 2004). The No Child Left Behind Act, defines parental involvement as, "the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities" (NCLB, 2002, §9101). One of the most comprehensive definition of family-school engagement was developed by the Harvard Family Research Group (HFRG; Weiss & Lopez, 2009). The HFRG definition includes three principles. First, family-school engagement is a shared responsibility that describes a family's commitment to actively support their child's learning and development and a school's commitment to engaging with families in meaningful ways. Second, family-school engagement occurs throughout a child's life and parents' roles may change as children develop. Finally, effective family engagement occurs across many contexts including in the home, at school, in after school programs, in faith-based institutions, and in the community.

In an effort to better reflect the diversity in family structures, the National Education Association (2008) emphasized the importance of family rather than parent involvement to include the various family members (e.g., grandparents, legal guardians, parents) that may be

contributing to the academic and behavioral success of children. Further, traditional definitions of family involvement focus on the actions and responsibilities of family members that support the school such as volunteering to assist in the classroom, raise funds for the school, or activities at home to support school performance such as reading to their child and assisting with homework (Hill & Tyson, 2009). Family-school engagement, on the other hand, focuses on the mutual, transactional relationships between families and schools.

Effective family-school partnerships share the responsibility for educational outcomes, value and respect differences, work collaboratively to develop a solution to problems, and are responsive to everyone's needs (Christenson & Sheridan, 2001; Christenson, 2003). Simply defined, family-school engagement is the degree to which families reach out to assist schools and schools reach out to assist families. Thus, the value of family-school engagement is dependent on the context of both the family and the school. Further, family-school engagement is most effective when family and school contexts support each other in mutually respectful and stable ways. Difficulties arise when the family and school contexts are in conflict with each other, contradict each other, or are disconnected (Crosnoe, 2012). Thus, resources and risks extend beyond any one context such as the family or the school and begin to affect the connections between those contexts at the level of the mesosystem (Epstein & Sanders, 2006). Family-school engagement can be used to explain these cultural differences and promote continuity across settings (Christenson & Sheridan, 2001).

**Models.** As a result of this evolving definition, several models of family involvement and family-school engagement have been provided. Two models that emphasize the role of the parent are the Eccles and the Grolnick and Slowiazek models of family involvement. Eccles' model of parental involvement includes five dimensions of parent-initiated involvement

including: 1) monitoring (how parents respond to the teacher's requests for helping their children with school work such as checking homework or listening to them read); 2) volunteering (parents' level of participation in activities at school including Parent-Teacher Organizations); 3) involvement (parents' involvement in their children's daily activities such as homework); 4) contacting the school about their children's progress; and 5) contacting the school to find out how to give extra help (Eccles & Harold, 1996). Grolnick and Slowiaczek's model (1994) delineated three types of parents' school involvement: 1) behavior (participation in school activities and helping with school work at home); 2) cognitive-intellectual (exposing the child to intellectually stimulating activities; and 3) personal (staying informed about the child's schooling). These two models emphasize the role of the parent in establishing and maintaining a family-school partnership.

Alternatively, Epstein's model provides a framework for family involvement that includes both parent and school behaviors to support the competence of students. This model is a highly influential model of family-school involvement and includes six types of involvement: 1) parenting practices that establish home environments to support children as students; 2) effective forms of school-to-home and home-to-school communications about school programs and children's progress; 3) volunteering to support children at school; 4) supporting children's learning at home; 5) parent's involvement in school decisions; and 6) collaborations with the community (Epstein, 1995; Epstein & Sanders, 2006).

Although the previous models focus on explaining the types of ways parents can be involved in their children's education, Hoover-Dempsey and Sandler's (1997) model offers a framework for understanding why parents become involved and how their involvement improves student outcomes. In the most recent revision of their model (Walker, Wilkins, Dallaire,

Sandler, & Hoover-Dempsey, 2005), parent's motivational beliefs, perceptions of invitations for involvement from others, and perceived life context contribute to whether or not parents become involved in their child's education. Hoover-Dempsey and Sandler's model defines parental involvement as including both home- and school-based behaviors that support children's academic success. Parents' motivational beliefs are beliefs about what they should do in the context of their child's education and how much they believe they could improve their child's school outcomes. Parental perceptions of invitations describe how parents view general school invitations, child invitations, and specific teacher invitations. Finally, parent's perceived life context is a parent's self-perceived time and energy to engage in involvement activities as well as their self-perceived skills and knowledge to take advantage of involvement opportunities. This model is the most comprehensive model to date including the reasons parents become involved, the ways they become involved, and how that involvement positively impacts their children. In addition, this model includes the role of school invitations to promote family involvement.

**Measurement.** Each of the preceding theoretical models presents different approaches to the definition and conceptualization of parental involvement that may, in part, lead to differences in the measurement of parental involvement. Extant studies use a variety of methods to measure parental involvement including interviews, surveys, individual questions involving the frequency or summation of specific activities, and multidimensional questionnaires (Hill & Tyson, 2009). The specific survey items and interview questions vary substantially from study to study, even when selected from the same pool of available items (Fan, 2001; Hill & Tyson, 2009; Yan & Lin, 2006). Survey items of specific parent activities and direct measures such as tracking the number of hours volunteering fail to address the multidimensional and transactional nature of



parental involvement (Fantuzzo et al., 2000). In addition, these methods of measurement often lack psychometric investigation, thus limiting researchers' ability to draw strong conclusions from findings and to compare findings across studies. Very few validated, multidimensional measures exist, and of those that do, even fewer represent family-school engagement as a transactional construct including information about both the families' engagement in the school and the schools' engagement with the families. Thus, measures should address family-school engagement as a construct with multiple related dimensions and investigations of the psychometric properties of the measures will be an integral step to the advancement of the family-school engagement science base.

**Inter-rater agreement.** Research comparing teacher and parent reports of family-school engagement has primarily focused on families' engagement with their child's school. Although there have been limited studies investigating the correspondence between teacher and parent ratings, existing evidence suggests low correspondence between ratings. For example, Reynolds (1992) found low correspondence among parents', children's, and teachers' ratings of family engagement within a sample of low-income, seven-year-old students. Similarly, Epstein (1984, 1996) has found that parents and teachers show only low agreement on families' educational beliefs and values and their engagement with their child's school. Some researchers argue that parents may inflate their measures of engagement given the social desirability of the construct (Nord, Lennon, Liu, & Chandler, 1999; Wong & Hughes, 2006). Parents understand that there is a positive social valence associated with school-based family involvement and that low ratings of school-based family involvement may be perceived as a deficiency in parenting. To avoid these negative perceptions, parents may rate themselves as being more involved than they actually are. While social desirability may play a role in the low correspondence between teacher and parent

perceptions of engagement, these differences in ratings may also be related to the significant barriers to parents' involvement in education (Hornby & Lafaele, 2011; Kim, 2009; Stalker, Bruner, Maguire, & Mitchell, 2011). That is, parents may endorse parent engagement but have barriers preventing them from being more involved, which results in lower perceptions of involvement by the teacher.

**Demographic Differences in Family-School Engagement.** Consistent with Bronfenbrenner's (1977) theory, student, family, and school factors affect the type and frequency of engagement between families and schools. For example, parent education and family structure play a significant role in family-school engagement (Green, Walker, Hoover-Dempsey, & Sandler, 2007). In a sample of pre-k to first grade students, Fantuzzo and colleagues (2000) found that parents with a high school diploma were significantly more engaged with their child's school than were parents who had not completed high school. Parents with more than a high school education engaged in school-based participation and home-school conferencing more frequently than parents with a high school diploma or less. Similarly, Manz, Fantuzzo, and Power (2004) found that parents who had a high school diploma or an equivalent engaged in more home-school communication (Cohen's  $d = 0.44$ ) and home-based involvement (Cohen's  $d = 0.49$ ) than families who did not have a high school diploma in a sample of primarily African American elementary school students. Kohl and colleagues (2000) found that parents with less education are less likely to be in contact with their child's teacher, less likely to be involved in school- and home-based activities, and teachers perceive that less educated parents do not value education as highly as more educated parents.

Thus, families who experience disadvantage are often reported to have lower levels of engagement with their school as rated by teachers and the parents themselves. This decreased

involvement is likely due to significant structural and cultural barriers such as conflicting and less flexible work schedules, difficulty arranging childcare, not feeling valued or welcomed, as well as differing beliefs in the role of families in education and their ability to support the school or their child academically (Abdul-Adil & Farmer, 2006; Hornby & Lafaele, 2011; Kim, 2009; Stalker, Bruner, Maguire, & Mitchell, 2011).

Related to race, studies typically find that African American parents report less engagement with the school compared to Caucasian parents (Desimone, 1999). Using data from the National Center for Early Development and Learning Multi-State study of Pre-Kindergarten dataset, Nzinga-Johnson, Baker, and Aupperlee (2009) found that parents of African American kindergarten students were reported to be less likely to initiate engagement with schools as rated by the student's teacher ( $\beta = -.17$ ). In a diverse sample of first grade students, Wong and Hughes (2006) found that teachers rated Caucasian parents as engaging in more general involvement activities (e.g., volunteering at school, attending PTA meetings, parent has visited school for a special event) compared to African American parents after controlling for parent education and employment status. Compared to Caucasian parents, African American parents report less shared responsibility for their child's learning, placing more emphasis on the role of teacher to develop children's academic and behavior competence (Wong & Hughes, 2006). However, Rimm-Kaufman and Pianta (1999) found no differences in the frequency of teacher contact between African American and Caucasian parents using daily family-school contact logs, a more objective measure of family-school engagement.

Differences in family-school engagement between African American and Caucasian families have been theorized to be due to several factors. First, African American parents may be engaged with their child's school in ways that are not frequently assessed such as involvement

in activities at home and in the community (e.g., religious activities) as well as informal interactions with school professionals (Abdul-Adil et al., 2006; DeMoss & Vaughn, 2000). Second, African American families are more likely to experience poverty and have lower levels of educational attainment, which have been associated with several barriers to engaging with schools such as needing child-care, having scheduling conflicts due to inflexible and varied work schedules, and not believing they have the sufficient skills and knowledge to be adequately engaged (Green et al., 2007; Hornby & Lafael, 2011). Finally, African American parents often report cultural barriers to engaging with schools and have even cited unfair disciplinary practices as a barrier to developing effective family-school partnerships (Abdul-Adil et al., 2006; Thompsom, 2003). For example, Harry, Allen, and McLaughlin (1995) found that African American parents made frequent initial attempts to engage with their child's school but became discontent and frustrated with school-imposed limitations and barriers to their engagement (e.g., meeting content not matching parent concerns, negative perceptions of school personnel, inflexible meeting times). Thus, extant research suggests that African American families face significant personal and school-related barriers to developing effective family-school partnerships although these partnerships may be particularly important for this group.

**Role of family-school engagement on behavior.** Family-school engagement has been shown to reduce teacher ratings of behavior and social skills; however, it appears that different components of family-school engagement are associated differently with teacher ratings of student's behavior. School- and home-based family involvement appears to be associated with improved behavior, whereas school engagement with the family appears to be associated with higher rates of problem behavior.

A frequently researched component of family-school engagement is school-based family involvement. School-based family involvement is often defined as parents volunteering in the school (e.g., classroom assistant, fundraising, chaperoning field-trips), attending parent teacher conferences, contributing to educational decisions, and participating in the parent-teacher association. For example, Grolnick, Kurowski, Dunlap, and Hevey (2000) found that families who engaged with their child's school more frequently were reported to have lower rates of behavior problems using a sample of 60 primarily Caucasian junior high school students. McWayne, Hampton, Fantuzzo, Cohen, and Sekino (2004) found that low levels of school-based involvement were associated with increased externalizing, internalizing, and hyperactive behavior in a sample of urban, primarily African American kindergarten students. In a sample of rural, low income, African American children with single parents between the ages of six and nine, Brody, Flor, and Gibson (1999) found that school-based involvement was associated with increased teacher-rated self-regulation and greater psychosocial competence.

The protective effect of family engagement has also been found using large, nationally representative samples of children. For example, Domina (2005) found that parents' volunteering at school and home-based involvement (i.e., supervision) was strongly associated with lower levels of child behavior problems after controlling for SES in a nationally representative sample of elementary school children and their parents. Similarly, Powell, Son, File, and San Juan (2010) found that high levels of home-based family engagement were uniquely associated with less teacher rated problem behaviors ( $d = .47$ ) in a diverse sample (43% African American, 36% Caucasian, 14% other) in a model including observed teacher interactions with children in the classroom, parental home involvement, parental education, and child race. Finally, Nakoli, Bachman, and Votruba-Drzal (2010) assessed the relationship

between a composite of family engagement and social skills and behavior problems over time using the longitudinal and nationally representative National Institute of Child Health and Development Study of Early Child Care and Youth Development dataset (NICHD SECCYD). This study employed a modified version of the Parent-Teacher Involvement Questionnaire that includes parent and teacher reports of parents' involvement in children's educational progress in school and at home (PTIQ; Kohl et al., 2000). The modified version measured parental volunteering at school, importance of education to the family, and educational attitudes of the parents. Nakoli and colleagues (2010) found that children with higher family engagement were rated by their teachers to have enhanced social functioning and fewer behavioral problems. Further, within-child changes in maternal and teacher reported family engagement predicted changes in teacher reported behavior problems and social skills with higher involvement resulting in less behavior problems and more social skills and years with less involvement resulting in more behavior problems and lower ratings of social skills.

Only one study was identified that explicitly examined associations between race, mesosystem level interactions between home and school with classroom level behaviors. Iruka, Winn, and Orthodoxou (2011) used the National Center for Early Development and Learning database to determine whether interactions between parents and teachers differentially impacted teacher's ratings of African American students' social skills and disruptive behavior compared to Caucasian children. When parents reported lower trust, agreement, and communication with teachers, teachers were more likely to rate African American children as having more problem behaviors compared to Caucasian children. Thus, this study provides initial evidence that interactions between home and school at the mesosystem level have greater impacts for African American students compared to Caucasian students.

Although family involvement has been consistently shown to be related to lower ratings of problem behavior, the evidence is not as clear regarding schools' engagement with families. For example, Serpell and Mashburn (2012) found that teachers called the guardians of students with less social competence, more problem behaviors, and greater levels of teacher-student conflict more frequently. Serpell and Mashburn (2012) also found that teachers rated their relationships with African American guardians lower compared to Caucasian parents. Further, lower quality parent-teacher relationships were related to higher behavior problem ratings for African American students compared to Caucasian students.

**Role of family-school engagement on school suspension.** In addition to its association with increased social skills and reductions in behavior problems, family-school engagement has also been negatively associated with suspension. Studies have shown that reduced suspension rates are related to both schools' engagement with families and school-based family involvement.

There is evidence that schools who engage with families report reduced rates of exclusionary discipline use (Stevens, 1983). For example, Mukuria (2002) conducted a qualitative analysis of family-school engagement and discipline rates across four primarily African American middle schools. Results indicated that principals of schools with low suspension rates were more successful at involving parents in school activities. In contrast, schools with high suspension rates used suspensions as the only opportunity to involve parents. Thus, this study provides preliminary evidence for the importance of improving the engagement between families and schools in order to reduce suspension rates within African American communities and the importance of involving families prior to the suspension of students.

Sheldon and Epstein (2002) found similar results with a more heterogeneous population. In this study, they implemented family-school engagement programs in 47 schools (37 elementary, 10 middle school) across 12 states and collected surveys regarding disciplinary practices after implementation. Examples of the program components included: (a) conducting workshops or meetings for parents regarding the school's goals and expectations for student behavior, discipline, and dress code; (b) involving families or community mentors to guide students with special behavior problems; and (c) involving parents and community volunteers to improve school safety and/or student behaviors and discipline in halls, on the playground, to and from school, or at other school locations. A follow-up survey provided at the end of the intervention revealed decreased rates of in-school suspension and detentions.

Using data from 97 elementary schools and 45 secondary schools, Mendez, Knoff, and Ferron (2002) found that schools with lower suspension rates had more parents who engaged with the school and in teaching school expectations at home compared to high suspension schools. A significant limitation of this study is that family engagement was rated by administrators, who are often removed from the day-to-day interactions between teachers and guardians, and have little information to surmise levels of home-based parental involvement in education. In addition, the survey that measured families' engagement with school consisted of only two questions on a five point likert type scale. Finally, Mendez and colleagues (2002) controlled for race in their analyses rather than investigating group differences.

Using nationally representative data from the University of Michigan's Monitoring the Future database of high school students, Toldson (2011) investigated whether family involvement with the school reduced students' risk of receiving a suspension. The results of the study found that increased family engagement with school resulted in reductions in the probability of being



suspended for the sample as a whole. Similar to previous research, interactions between family engagement and race were not assessed. Further, although the independent variable was titled “Parents’ involvement with school,” the four questions comprising the variable addressed only home-based activities such as checking and helping with homework, limiting television watching, and requiring chores to be completed at home.

The final study identified investigated the effects of families’ supervision at home and daily school communication on discipline rates in 249 high school freshman (Deslandes & Royer, 1997). Students whose families reported higher levels of supervision were significantly less likely to be disciplined in school; however, increased daily school communication with the teacher was related to increased rates of discipline. It was hypothesized that the positive association between daily school communication with the teacher and discipline rates was related to increased communication *due to* the inappropriate behaviors. That is, families and schools were appropriately increasing their level of communication to discuss frequently occurring interfering behaviors at school.

### **Contributions of the Present Study**

Previous research has focused on understanding why African American students are disciplined more frequently and for more ambiguous offenses (e.g., Skiba et al., 2002; Skiba et al., 2011; Sullivan et al., 2013); however, research has not been able to identify mutable factors that are associated with reductions in the discipline gap. In addition to testing the frequently cited recommendation of fostering family-school engagement as a method to achieve more equitable disciplinary outcomes in schools, this study builds upon the extant literature in several ways. First, this study uses a multidimensional assessment approach to measuring family-school

engagement to determine which types of family-school engagement (i.e., school-based family involvement, home-based family involvement, schools' engagement with families, and family endorsement of schools) are associated with reductions in the probability of receiving a suspension. Second, this study uses a large, nationally representative sample that minimizes school- and community-level confounds present in previous research. Finally, if the findings prove significant, this will be the one of the first studies to identify a mutable protective factor that can be used to decrease the pervasive disparity in the use of exclusionary discipline.

## Chapter III: Methods

### Participants

The current study used data from the 2003 National Household Education Survey (National Center for Educational Statistics, 2003). The NHES was conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). Parent interviews for 12,426 students ranging from kindergarten through twelfth grade were gathered for the NHES. The sample was limited to elementary-aged (kindergarten to fifth grade) students for several reasons. First, the components that comprise family-school engagement as well as the effectiveness of family-school engagement are likely to change between pre-school, elementary, and secondary school-levels (Hill & Tyson, 2009). Second, the content in the survey is most consistent with family-school engagement for elementary school students (Manz, Fantuzzo, & Power, 2004). Finally, dimensions of family-school engagement have been found to be consistent within families throughout elementary school, but often become more variable during middle- and high-school (Hill & Tyson, 2009; Nakoli et al., 2010).

Limiting the sample to elementary aged students reduced the sample to 5,543. The sample was also limited to non-Latino, African American and Caucasian students, further reducing the sample size to 3,897. Ethnicity was determined by parent report. Latino and Asian students are not included in the current study as previous research has demonstrated these groups are not subjected to disproportionate rates of exclusionary discipline in elementary school (e.g., Skiba et al., 2011) and they comprised a very small percentage of the sample. Although Native American students have been found to be disciplined at higher rates compared to Caucasian students (e.g., Wallace et al., 2008), Native American students were not included in the current study as they comprised less than 1% of the NHES (2003) sample.

The survey sampled up to two children per family resulting in a total of 737 sibling pairs within the sample. However, including multiple children from the same family violates the independence of errors assumption and artificially inflates type 1 error (Keppel, 1973). In order to avoid violating the independence of errors assumption, one child from each family was randomly selected. To find the sibling pairs, duplicate household identification numbers (BASEID) were identified and siblings were labeled as sibling one or sibling two. Then, a random number generator ([www.randomizer.org](http://www.randomizer.org)) was used to select either sibling one or sibling two within each family by randomly selecting the number one or two within 737 number sets ranging from one to two. Using the randomization output, siblings were manually selected by coding the randomly selected sibling as one and the non-selected sibling as zero. The selection process was repeated using the same randomization output to ensure accuracy. No differences were found between the first and the second selection processes indicating no errors were made identifying selected and non-selected siblings.

Chi-squared tests indicated no significant differences between the siblings randomly selected and those excluded from the current sample on major demographics including race/ethnicity,  $\chi^2(1, n = 1474) = 0.045, p = .88$ , sex,  $\chi^2(1, n = 1474) = 0.061, p = .07$ , poverty status,  $\chi^2(1, n = 1474) < 0.001, p > .999$ , grade level  $\chi^2(9, n = 1474) = 13.236, p = .15$ , parent status,  $\chi^2(2, n = 1474) = .041, p = .98$ , parent education,  $\chi^2(4, n = 1474) = .016, p > .999$ , as well as in-school,  $\chi^2(1, n = 1474) = 2.711, p = .148$ , and out-of-school,  $\chi^2(1, n = 1474) = .824, p = .47$ , suspensions. Thus, the non-selected siblings were excluded from all further analyses. Table 1 describes the demographics of the final sample of 3,149 students after removing the non-selected siblings.

## **Survey Methodology**

Data collection for this survey occurred between January and April of 2003 (Hagedorn, Montaquila, Vaden-Kiernan, Kim, & Chapman, 2004). The sample was obtained using a random digit dial (RDD) method to randomly select a nationally representative sample. Children in grades kindergarten through twelfth grade were eligible for the study. In families with multiple children, two children were randomly selected to participate in the study. The 2003 collection of the NHES collected information regarding demographic characteristics, school choice, types and frequency of family involvement in children's schools, school practices to involve and support families, parent perceptions of the school, and families' learning activities with children outside of school. The parent or guardian knowing the most about the child was chosen as the respondent for the interview. Multiple attempts were made to complete interviews with persons not available at the time of selection. Overall, 65% of the people called participated in answering the screening questions to determine whether they were eligible for the study. Of those who agreed to participate in the NHES, 83% completed the Parent/Family Involvement interview resulting in a total response rate of 54%. Clustering effects due to characteristics of the telephone number and the number of eligible children in the household were accounted for using sampling weights. A full review of the methodology can be found in Hagerdorn and colleagues' (2004) review.

## **NHES Data Reliability**

Data within the NHES (2003) were subjected to two types of error: non-sampling error and sampling error. Sources of non-sampling errors are typically related to problems such as item non-response, differences in respondents' interpretations of the meaning of questions, response differences related to the particular time the survey was conducted, and mistakes in data

preparation. The NHES survey made efforts to reduce this non-sampling error by using cognitive interviews in the survey design stage to improve substantive validity, a two-stage field test of the survey, online data edits and post-interview edits, and a comparison of the survey estimates with estimates from previous surveys. Another important source of error for the NHES was the failure to include persons who do not live in households with telephones.

A weighting procedure using the probabilities of selection of the respondents was employed to account for non-response and sampling bias. These weights were developed to produce unbiased and consistent estimates of national totals. A bias study where in-person follow-up interviews were conducted with a sample of those who did not respond to the original survey was conducted to determine if there was significant bias between those who did and did not respond. These comparisons yielded no evidence of overall bias (Hagerdorn et al., 2004).

## **Measures**

**Demographics.** Several demographics were analyzed including poverty status, parental education, parent status, race, gender, and grade.

**Poverty status.** Poverty status was determined by creating a derived variable using the total household size (HHTOTAL) and household income (HINCOME) variables provided within the NHES (2003) dataset. HHTOTAL indicates the total number of people living in a household and is truncated at eight people. HINCOME represents the total income of all the people living in the household including salaries or other earnings, interest, and retirement and is coded from 1 (\$5,000 or less) to 14 (over \$100,000). The Census Bureau defines specific incomes per household size to determine whether a family is considered to be living in poverty or not. It is important to note that the NHES (2003) measured total household income in \$5,000 increments

for incomes between \$5,000 and \$50,000; thus, the poverty thresholds defined by the U.S. Census in 2003 were adjusted to the next largest \$5,000 household income increment to be consistent with the NHES data. For example, the poverty threshold provided by the U.S. Census Bureau in 2003 was \$14,680 for a household size of three that was adjusted to the next largest household income increment of \$15,000 in the current study. Thus, households of three people with a total household income estimated at \$15,000 or below were considered to be below the poverty threshold and households making \$20,000 and more were considered to be above poverty threshold. Families below the poverty threshold were coded as 1 and had estimated household incomes below the adjusted poverty threshold. Families with household incomes above the adjusted poverty threshold were coded as 0. Table 2 demonstrates the adjusted poverty thresholds used for each household size in comparison to the more precise U.S. census thresholds.

***Family education level.*** Level of education attained was collected from each member within a family. A derived variable was created for each household representing the highest level of education attained in each household. The variable was coded as: (1) less than high school diploma; (2) high school graduate or equivalent; (3) some college (4) college graduate; and (5) graduate or professional school.

***Race.*** The NHES interviewer first asked whether the sampled student identifies as Latino or not. Then, the interviewer asked whether the student identifies as Caucasian, African American, Latino, Asian or Pacific Islander, or other. These two questions were combined in the derived variable RACEETHN identifying participants as non-Hispanic Caucasian, Non-Hispanic Black, Hispanic, and other. For the current study, the RACEETHN variable was recoded into a

new variable limiting the sample to non-Latino, African American students coded as 1 and non-Latino, Caucasian students coded as 0.

**Gender.** Guardians were asked to report the gender of their child as part of the NHES survey. Gender was coded as 1 for males and 0 for females.

**Grade.** The NHES study questionnaire asked guardians to report the selected child's grade. Grades were coded as kindergarten (1), first grade (2), second grade (3), third grade (4), fourth grade (5), and fifth grade (6).

**Measures.** Family-school engagement is defined as a partnership that includes both the families' involvement with the school (school-based family involvement) as well as the schools' engagement with the families (school engagement). In addition, a measure of the family's endorsement of school was included to determine families' perceptions of the relationship with the school. The term *family* was intentionally selected rather than parent because the surveyors asked to speak with the family member who is most involved in the care of the child and this was not always the parent (e.g., grandparent, aunt). Family-school engagement variables were measured by constructing scales from the questions included within the NHES. These scales have not been used in prior research. Items for each family-school engagement scale can be found in Appendix A.

**School-based family involvement.** School-based family involvement was measured by summing the number of activities that families engage in with the school. The NHES asks about six types of involvement related to school-based family involvement. Specifically, the study asked whether parents (1) Attended a general school meeting (e.g., an open house, back-to-school night, etc.); (2) Attended to a regularly scheduled parent-teacher conference; (3) Attended



a school or class event such as a play, dance, sports event, or science fair; (4) Served as a volunteer in your child's classroom; (5) Participated in fundraising for the school; or (6) Served as a volunteer in the school outside of the classroom such as being part of a committee, since the start of the school year. Each activity was rated as a forced choice ("yes" or "no") indicating whether they have or have not participated in that activity. Items were coded in the data set as either a 1 for yes or a 0 for no. The questions were summed to create a composite of the total number of school-based activities in which families engaged.

***Home-based family involvement.*** Home-based family involvement was measured by summing the number of activities that families engage in at home and in the community to support the academic, social, and behavioral competence of their children. The NHES asks about 18 different home-based family involvement opportunities. Questions include whether a family member engages in learning activities with the child, maintains family rules, and takes the child to events in the community. A full list of the questions can be viewed in Appendix A. Each activity was rated as a forced choice ("yes" or "no") indicating whether the respondent has or has not participated in that activity. Items were coded in the data set as either a 1 for yes or a 0 for no. The questions were summed to create a composite of the total number of home-based activities in which families engaged.

***School engagement with the family.*** School engagement was measured using seven questions that include a four point Likert-type response ranging from 1 ("Does not do it at all") to 4 ("Does it very well"). The seven questions that comprise the school engagement measure reflect the school's overtures to communicate or provide activities for families. These questions are: Would you say that his or her school... (1) lets you know between report cards how your child is doing in school; (2) helps you understand what children at your child's age are like; (3)

makes you aware of chances to volunteer at the school; (4) provides workshops, materials, or advice about how to help your child learn at home; (5) provides information on community services to help your child or your family; (6) provides information about how to help your child with his or her homework; and (7) provides information about why your child is placed in particular groups or classes. Responses for each of these seven questions were summed to create one total school engagement score.

***Family endorsement of child's school.*** Similar to the Parent-Involvement Questionnaire (Kohl et al., 2000), families' perceptions of the school were measured using four questions that use a four-point Likert-type response ranging from 1 ("Very Dissatisfied") to 4 ("Very Satisfied"). The four questions are: Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with (1) the way your child's school communicates with parents; (2) the teachers your child has this year; (3) the academic standards of the school; (4) the order and discipline at the school. The responses to these four questions were summed to create one total family endorsement of school score.

**Dependent variables.** The dependent variable was a dichotomous variable indicating whether a student had received an in-school and/or an out-of-school suspension. Two forced-choice ("yes" or "no") questions asking about the receipt of suspension were asked by the survey: (1) Has your child had an out-of-school suspension; (2) Has your child had an in-school suspension, not counting detentions? There was considerable overlap in students receiving in-school and out-of-school suspension. Specifically, 67.7% of children who had received an in-school suspension had also received an out-of-school suspension. Given this considerable overlap and the need to retain a large enough sample, in-school and out-of-school suspensions

were combined into one dependent variable indicating whether a student has received a suspension (i.e., in- school or out-of-school).

## **Data Analysis**

Two phases of data analysis were conducted. In Phase 1, preliminary analyses providing evidence of the reliability and validity of the scale scores and their inferences were performed.

Phase 2 analyses tested the proposed research questions.

**Phase 1: Preliminary analyses of measures.** Extant studies investigating family-school engagement use a variety of methods to measure parental involvement including interviews, surveys, and individual questions (Hill & Tyson, 2009). The specific survey items and interview questions are often quite different from study to study, even when selected from the same pool of available items (Fan, 2001; Hill & Tyson, 2009; Yan & Lin, 2006). These methods of measurement often lack psychometric investigation that can limit researchers' ability to draw strong conclusions and to compare findings across studies. In order to address this concern, the current study conducted preliminary analyses to provide evidence of their psychometric properties.

**Internal validity.** A multiple group confirmatory factor analysis (MGCFA) was used to provide evidence of the internal validity and measurement invariance of the school-based family engagement, home-based family engagement, school engagement with families, and the family endorsement measures. Measurement invariance empirically tests the assumption that respondents from different groups, who have the same *true* score on a measure, will have the same *observed* score (Wu, Li, & Zumbo, 2007). In the current study, assessing measurement invariance determined the extent to which differences in family-school engagement between

parents of African American and Caucasian students represent true differences in engagement rather than being an artifact of differences in measurement. Measurement invariance of the family-school engagement measures were examined using the measurement invariance model for categorical outcomes defined by Muthen and Asparouhov (2002). It should be noted that the approach for categorical outcomes is different from the approach for continuous outcomes defined by Meredith (1993).

First, configural invariance was established by testing the fit of each of the family-involvement scales (i.e., School-based family involvement, Home-based family involvement, School engagement with families, Parental endorsement) separately for both Caucasian and African American students to establish an adequately fitting model within each group. When adequate model fit was achieved in both the African American and Caucasian groups separately, a configural model that includes both groups was estimated allowing the factor loadings and thresholds to vary across groups. Configural invariance was considered met if at least two of the model fit indices fall within the *a priori* recommendations for good or marginal fit within both the African American and Caucasian groups. Meeting criteria for configural invariance provided support for the assumption that the factor structure of the family-school engagement scales was similar between African American and Caucasian groups.

Once criteria for configural invariance was met, measurement invariance was examined (Muthen & Asparouhov, 2002). To test measurement invariance, factor loadings and thresholds were constrained to be equal across the African American and Caucasian groups. Constraining factor loadings to be equal across groups provides evidence to support the assumption that a one unit change in the item score results in equal unit change in the factor score across African American and Caucasian students. A threshold is the expected value of the latent response

variable at which an individual transitions from one response category to another. For example, for binary outcomes, a threshold is the value of the latent response variable at which an individual transitions from no (i.e., zero) to yes (i.e., one). When achieved, invariance provided evidence that there are not racial differences in the estimated value of the latent response variables (e.g., family engagement with school) at which a parent is likely to endorse a particular item (e.g., attending a parent teacher conference). Measurement invariance is achieved when constraining factor loadings and thresholds to be equal across groups does not result in a significant reduction in model fit compared to when factor loadings and thresholds were allowed to differ between Caucasian and African American students (i.e., configural model).

The analyses were conducted using MPLUS (Version 6.11; Muthen & Muthen, 2007) as it allows for the application of sample weights to account for the complex survey design and the weighted least squares means and variance adjusted (WLSMV) estimator to account for the non-normal, categorical response choices of the FSE scales (Beauducel, & Herzberg, 2006; Muthen & Asparouhov, 2002). Syntax testing each of the four scales can be found in Appendixes B – E. The sample size in the current study exceeds the recommendation of 250 participants per group for conducting a CFA using WLSMV (Beauducel & Herzberg, 2006). As illustrated in Figure 1, there are four scales tested as separate one factor models (i.e., school-based family involvement, home-based family involvement, school engagement with families, and family endorsement of school) with six indicators for school-based family involvement, eighteen indicators for home-based family involvement, seven indicators for school engagement, and four indicators for family endorsement of school.

Three fit indexes were selected following the recommendations of Martens (2005): *CFI*, *TLI*, and *RMSEA*. This selection represents both stand-alone fit indices (*RMSEA*) and

incremental fit indices (*CFI* and *TLI*). Using recommendations set by Hu and Bentler (1999), the *a priori* criteria for good fit for *CFI* and *TLI* was set at 0.95 or greater and less than .05 for *RMSEA*. *CFI* and *TLI* between 0.90 and 0.95 and *RMSEA* values between 0.08 and 0.05 were defined as marginal fit (Browne & Cudeck, 1993; Weston & Gore, 2006). Thus, *CFI* and *TLI* estimates of fit lower than 0.90 and *RMSEA* values greater than 0.08 are considered poor fit. It is important to note that  $\chi^2$  is sensitive to sample size and often supports rejecting the model due to trivial levels of misfit when using large sample sizes (Hu & Bentler, 1995; Martens, 2005). Specifically,  $\chi^2$  includes sample size within its equation  $((N-1) * (\text{Minimum Fitting Function}))$  and therefore, the larger the sample, the larger the  $\chi^2$ , resulting in rejection of the null hypothesis with too much power. Given the large sample size employed in this investigation,  $\chi^2$  was reported, but was cautiously interpreted.

The Satorra-Bentler scaled chi-square difference test for nested models (Satorra & Bentler, 2001) was used to determine whether there is a significant reduction in model fit after constraining the factor loadings to be equal. The Satorra-Bentler scaled chi-square difference test is a mean-adjusted chi-square test that more accurately determines whether the fit of nested models are significantly different by accounting for the non-normality of categorical data (Satorra, 2000). It is important to note that the Satorra-Bentler scaled chi-square difference test is also sensitive to sample size; however, no other empirically based criteria have been established to accurately test nested models with large sample sizes using WLSMV. Thus, Muthen (2005) recommends using a modified version of the Satorra-Bentler scaled chi-square for nested models via the DIFFTEST command as well as inspection of the standardized parameter estimates, standard errors, standardized parameter weights, and thresholds to help

determine whether the loadings and thresholds are practically different or if chi-squared may be oversensitive to small differences due to sample size.

**Reliability.** To provide evidence of reliability, estimates of internal consistency were calculated. In order to determine the internal consistency for the school engagement and quality of family-school partnership measures, Cronbach's  $\alpha$  was used. In order to determine the internal consistency of the school-based family involvement measure, the Kuder-Richardson 20 ( $KR_{20}$ ; Kuder & Richardson, 1937) formula was used due to the binary (i.e., yes/no) response format. The following criteria were used to evaluate the internal consistency of each subtest: Excellent > .90; Good > .80; Acceptable > .70; Questionable > .60; Poor > .50; and Unacceptable < .50 (George & Mallery, 2003). When internal consistency fell below .70 for any scale, inter-item correlations were reviewed for items with negative or low (i.e., below .30) correlations with other items. In addition, the "item total statistics" output within SPSS was reviewed to determine whether removing those items with negative or low correlations would have improve the internal consistency estimate to the acceptable .70 or higher internal consistency estimate.

## **Phase 2**

Statistical analyses within phase 2 were conducted using SAS ® software (v9.4). Complex sampling designs typically yield less precise variance estimates than simple random samples due to the stratification, formulation of clusters, and oversampling that influence the probability of being selected as a participant (Lohr, 2009). The difference between the variance of an estimate using complex sampling and simple random sampling is termed the design effect (DEFF; Kish, 1965). DEFF is calculated by dividing the variance of an estimate using complex sampling by the variance of an estimate using simple random sampling. Thus, DEFF can be

used as a correction factor to more accurately calculate estimates of variance and to adjust the output of standard analyses. SAS ® (i.e., PROC SURVEYFREQ, PROC SURVEYREG, PROC SURVEYMEANS, PROC SURVEYLOGISTIC) allows for the application of sample weights necessary for accurate population estimates and Taylor series linear estimation methods which uses DEFF to more accurately estimate variance than traditional estimation methods (e.g., Ordinary Least Squares; Lohr, 2009).

***Descriptive analyses.*** First, descriptive statistics including the means and standard deviations of all measures were calculated and reported separately for African American and Caucasian students in the sample. Second, multivariate correlations between all variables were calculated in order to test the relationships between demographics, family-school engagement measures, and the dependent variable (i.e., suspensions). Pearson product moment correlations were conducted when continuous variables are correlated with other continuous variables and the point biserial correlation coefficient -- a special case of the Pearson correlation -- were used between dichotomous (e.g., poverty status) and continuous variables. Finally, multiple ANOVAs were chosen over conducting a MANOVA due to the inability of SAS ® (v9.4) or SPSS (v22) to account for the design effects due to the complex sampling design in their multivariate GLM procedures. PROC SURVEYREG in SAS ® (v9.4) was used with the ANOVA model option to control for the complex survey design. Syntax can be found in Appendix F.

***Analyses testing specific research questions.*** To directly test the hypotheses, a model was built using hierarchical logistic regression. The current data and model meet the assumptions of logistic regression (Field, 2009; Wright, 1995). First, the outcome variables are dichotomous (i.e., suspended or not). Second, the outcome variables are *mutually exclusive* and



*collectively exhaustive* as a person cannot belong to the suspended and not-suspended category at the same time and the entire sample has either been suspended or not. Third, the current sample of 3,160 is well over the minimum of 50 cases per predictor variable (9 predictors including interaction terms equals a multiplied by 50 participants = 450; Aldrich & Nelson, 1984). Fourth, the assumption of linearity of the logit was tested by computing new natural log transformation variables for each predictor, and then running the model using interactions between each predictor and the new natural log transformations to predict suspension. Interactions that are significant indicate violations of the linearity of the logit assumption.

The data was also assessed for outliers using Cook's D (Cook, 1997) and studentized residuals (Howell, 2002). Cook's D measures the influence of an outlier on both the dependent variable and on the set of predictors. Cook and Weisber (1982) determined that values greater than one should be considered a red flag and investigated further. The studentized residuals approach divides each residual by its standard error. Values that are beyond the range of -2.00 and +2.00 are considered problematic (Howell, 2002).

Moderate relationships between variables may indicate a problem with multicollinearity. Previous research has indicated that SES (i.e., poverty status, parent status, and parental education) and race are related to some dimensions of family engagement (e.g., Manz et al., 2004) and suspensions (e.g., Skiba et al., 1997) increasing the probability for problems with multicollinearity. Thus, tolerance and the condition index were analyzed to determine if multicollinearity is large enough to confound the results. Tolerance measures the degree to which an independent variable is predicted by the other independent variables in the model and values below .10 will indicate that multicollinearity may be affecting the results and thus limiting the interpretability of findings (Tabachnick & Fidell, 2001). The condition index measures the

level of dependency of one predictor on the other predictors. A conditioning index greater than 30 indicates problematic multicollinearity (Tabachnick & Fidell, 2001).

Hierarchical linear regression (HLR) analyses were performed using SAS® (v9.4) PROC SURVEYLOGISTIC and the syntax can be found in Appendix G. The HLR analysis included the dichotomous combined suspension variable as the dependent variable and poverty status, parent education, race, school-based family involvement, home-based family involvement schools engagement with the family (school engagement), family endorsement of school, and an interaction between race and each of the three family-school engagement categories (school-based family involvement, home-based family involvement school engagement, family endorsement of school) as independent variables. Race was entered in block one. Poverty status, parent education, sex, poverty status, family structure, and parent education were entered as covariates within block two to test whether race continues to be a significant predictor after controlling for multiple covariates (i.e., research question 1). Then, the school engagement and family endorsement variables were entered in block 3 in order to test whether dimensions of family-school engagement reduce the probability of being suspended for the aggregated sample of students (i.e., research questions 2a – 2d). The interaction between each of the family-school engagement variables and race were also entered in block three to test the final set of questions related to moderation (3b – 3e). Finally, the final model would be tested to determine whether the family-school engagement variables or the interactions between family-school engagement variables and race entered in block three change the relationships between race and suspension (i.e., research question 3a).

## Chapter IV: Results

### Phase I

**R1. Measurement invariance of the family-school engagement measures.** A multiple group confirmatory factor analysis (MGCFA) was conducted to provide evidence of internal validity and measurement invariance for the family-school engagement measures within the NHES (2003). First, the sample was bifurcated using the select cases function in SPSS to allow for cross-validation of the findings. Each subsample was saved as a separate file. Subsample A ( $n = 1,596$ ) did not differ from subsample B ( $n = 1,553$ ) in regard to race,  $\chi^2 (1) = .01, p = .922$ ); sex,  $\chi^2 (1) = .036, p = .850$ ; grade level,  $\chi^2 (7) = 6.577, p = .474$ ; or poverty status,  $\chi^2 (1) = 2.42, p = .119$ . Fit indexes for each of the final models are presented in Table 4.

*Measurement invariance of the school-based family involvement scale.* The first attempt to run the model in the African American group revealed empty cells in the bivariate tables involving the item assessing whether the family participated in fundraising for the school (FEFUN) indicating that it was perfectly correlated with multiple other variables and was therefore removed from the model. The factor loading for the item assessing whether families volunteered in the classroom (FEVOL) was small and not statistically significant in both the African American,  $B = .101, p = .139$  and Caucasian,  $B = .101, p = .139$ , groups and was also removed. After removal of FEFUN and FEVOL, the school-based family involvement scale demonstrated perfect fit as it was a fully identified model with zero degrees of freedom (see Table 4).

The Satorra-Bentler scaled chi-square difference test for nested models (Satorra & Bentler, 2001) revealed that constraining the factor loadings and thresholds to be equal across

groups resulted in a significant reduction in model fit (see Table 4). Factor loadings for Caucasian and African American students were compared to identify race variant items. Factor loadings in the African American group were markedly higher on the school-based family involvement scales compared to the Caucasian group (see Table 3). In addition, the school-based family involvement scale demonstrated poor internal reliability ( $\alpha = .487$ ). Inspection of inter-item correlation tables revealed small relationships between all items and the item-total statistics did not indicate that removing any items would improve the internal consistency of the measure. The school-based family involvement scale was removed from the study due to its demonstrated measurement invariance and poor internal reliability.

***Measurement invariance of the home-based family involvement scale.*** The first attempt to test model fit in the African American group revealed empty cells in several of the bivariate tables; thus, one of the variables within the pair needed to be removed. Items assessing whether the family have worked together on a project (FOBUILD), limits related to television viewing (FORTV), and rules for what time their child goes to bed (FORBED) were removed as each of these variables were identified by MPLUS to be perfectly correlated with multiple other variables. After removal, the model demonstrated good fit in the African American group,  $RMSEA = .018$ ,  $CFI = .988$ ,  $TLI = .984$ . In the Caucasian group,  $RMSEA (.021)$  indicated good fit, but  $CFI (.931)$  and  $TLI (.909)$  indicated marginal fit. All factor loadings were significant and no modification indexes were recommended for either group. The item assessing whether someone in the household has told the child a story (FOSTORY) loaded negatively in both groups suggesting that telling stories to children at home was related to lower rates of family involvement at home for both Caucasians and African Americans. This item was removed as this negative loading is counter to the theory from which the measure was designed. When

tested in both groups simultaneously, the configural model allowing factor loadings and thresholds to vary across ethnic groups demonstrated good fit as indicated by *RMSEA* and *CFI* but marginal fit as indicated by *TLI* (see Table 4).

The Satorra-Bentler scaled chi-square difference test for nested models (Satorra & Bentler, 2001) revealed that constraining the factor loadings and thresholds to be equal across groups resulted in a significant reduction in model fit (see Table 4). Factor loadings for Caucasian and African American students were again compared to identify race variant items. Similar to the school-based scale, factor loadings in the African American group were markedly higher compared to the Caucasian group (see Table 3). The home-based family involvement scales also demonstrated poor internal reliability ( $\alpha = .402$ ). Inspection of inter-item correlation tables revealed small relationships between all items and the item-total statistics did not indicate that removing any items would improve the internal consistency of the measure. Thus, the home-based family involvement scale was also removed from the model.

***Measurement invariance of school engagement with families scale.*** The one factor model containing only the school engagement with family items was tested next. *RMSEA* indicated poor fit though *CFI* and *TLI* indicated a good fitting model in the African American group,  $\chi^2 (9) = 32.880 p = .0001$ , *RMSEA* = .09, *CFI* = .984, *TLI* = .974. The one factor school engagement model demonstrated marginal fit as indicated by *RMSEA*, but good fit as indicated by *CFI* and *TLI* in the Caucasian group,  $\chi^2 (9) = 84.236 p < .001$ , *RMSEA* = .08, *CFI* = .984, *TLI* = .973. The school engagement model also demonstrated good fit according to *CFI* and *TLI* and marginal fit as indicated by *RMSEA* when run with both groups simultaneously allowing the factor loadings and thresholds to be estimated freely in both groups (see Table 4).

Constraining the factor loadings and thresholds to be the same across groups resulted in a significant reduction in model fit,  $\Delta\chi^2(12) = 28.910, p = .004$ . Factor loadings for each group were compared to determine items that demonstrated variance between groups. The factor loading for the item assessing how well a child's school helps families understand developmental expectations (SEDEV) was markedly higher in the African American group,  $B = .786$ , compared to the Caucasian group,  $B = .625$ , and was therefore removed. Removal of SEDEV improved the fit of the configural model and constraining the factor loadings and thresholds to be equal across groups no longer resulted in a significant reduction in model fit (see Table 4).

The one factor school engagement model was then cross validated in subsample B. The model demonstrated good fit as indicated by all fit statistics when run with both groups simultaneously allowing the factor loadings and thresholds to be estimated freely in both groups (see Table 4). Constraining the factor loadings and thresholds to be equal across groups did not significantly reduce model fit. Factor loadings, standard errors, and estimates/standard error for this final model can be found in Table 5.

***Measurement invariance of the family endorsement scale.*** The one factor family endorsement model demonstrated good fit according to *CFI* and *TLI* and poor fit as indicated by *RMSEA* in the African American group,  $\chi^2(2) = 7.024, p = .0298, RMSEA = .091, CFI = .994, TLI = .982$ . In the Caucasian group, *RMSEA* indicated marginal fit and *CFI* and *TLI* indicated good fit,  $\chi^2(2) = 16.062, p < .001, RMSEA = .074, CFI = .994, TLI = .981$ . The fit of the family endorsement model was indicated to be marginal by *RMSEA* and good by *CFI* and *TLI* when conducted with both groups simultaneously allowing the factor loadings and thresholds to be estimated freely in both groups (see Table 4). Constraining the factor loadings and thresholds to be the same across groups did not result in a significant reduction in model fit.

*RMSEA* indicated marginal fit while *CFI* and *TLI* indicated good fit in subsample B when run with both groups simultaneously allowing the factor loadings and thresholds to be estimated freely in both groups (see Table 4). Constraining the factor loadings and thresholds to be equal across groups did not significantly reduce model fit. Factor loadings, standard errors, and estimates/standard error for this final model can be found in Table 5.

## **Phase II**

Relationships between demographics, predictors, and the outcome variable are presented in Table 6. The four family-school engagement scales demonstrated statistically significant, positive relationships ranging from small to moderate in magnitude. Further, significant relationships were found between most demographics, predictors, and the outcome variables. As a result, demographics were entered into the regression model to statistically control for these potentially confounding variables. Interestingly, scores on the school engagement with families scale were not related to any of the demographics.

**Descriptive Analyses.** Overall, parents endorsed their child's school positively with an average score of 14.57 given a possible range of four to sixteen. Schools were commonly engaged with parents ( $M = 16.01$ , Range = 5-20). Parents reported an average of 2.61 school-based involvement activities out of three and an average of 5.24 home-based activities out of nine possible activities.

Two separate analyses of variance (ANOVAs) were conducted to examine demographic differences within the two family-school engagement scales that demonstrated adequate psychometric properties (see Table 7 for means and standard deviations). To account for the multiple tests, a Bonferroni correction was made in order to reduce the likelihood of a type I

error ( $.05/2 = .025$ ). The school engagement with families, school-based family involvement, and home-based family involvement scales did not demonstrate marked skewness or kurtosis; though, the family endorsement scale was leptokurtic (kurtosis = 3.832). After logarithmic transformation of the family endorsement scale, skewness and kurtosis values for all scales fell well within the recommendation of  $\pm 2$  (Field, 2009).

The first ANOVA revealed significant differences in school engagement with families in regard to parent education,  $F(4) = 3.35, p = .0096$ . The only significant post-hoc contrast at the  $p < .0125$  level revealed that parents who graduated high school ( $M = 16.42, SE = .17$ ) reported slightly more school engagement with families than parents who completed some college ( $M = 15.77, SE = .14$ ). No significant effects were found for race,  $F(1) = 3.68, p = .0553$ ; sex,  $F(1) = 0.28, p = .579$ ; poverty,  $F(1) = 0.25, p = .619$ ; or family structure,  $F(2) = 0.47, p = .6239$ , on family endorsement at the corrected  $p < .0125$  level.

The second ANOVA found significant effects of race/ethnicity  $F(1) = 20.01, p < .001$ , and sex  $F(1) = 7.63, p = .006$  on the family endorsement measure. Specifically, Caucasian parents ( $M = 14.65, SE = .05$ ) reported slightly more positive endorsement of their child's school compared to African-American parents ( $M = 14.09, SE = .11$ ). Parents of female students ( $M = 14.42, SE = .06$ ) reported slightly higher endorsement than parents of male students ( $M = 14.64, SE = .06$ ). No significant effects were found for poverty  $F(1) = 0.60, p = .439$ ; family structure,  $F(2) = 1.39, p = .250$ ; or parent education,  $F(4) = 1.52, p = .195$  on family endorsement.

**Checking of assumptions and model fit.** A hierarchical logistic regression was performed with suspension (yes or no) as the dependent variable and demographic variables (i.e., ethnicity, sex, poverty status, family status, parent education), school engagement with families



scale, family endorsement of their child's school scale, and interactions between each of the two family-school engagement variables and race as predictors. Prior to running the analysis, the linearity of the logit assumption was tested by entering interactions between each continuous predictor and a natural log transformation of the continuous predictor into the model. None of the interactions were statistically significant (smallest  $p = .577$ ) supporting the assumption of linear relationships between continuous predictors and the logit transformation of the dependent variable.

Multicollinearity was tested using tolerance and the condition index. All tolerance values were greater than .47 which are above the recommended .10 cutoff (Tabachnick & Fidell, 2001); however, the largest condition index was 32.90 which was above the recommended cutoff value of 30 (Tabachnick & Fidell, 2001). Given moderate Pearson correlation,  $r = .52, p < .001$ , two separate models were built, one for each scale. A Bonferroni correction was used to account for the increased risk of type I error ( $.05/2 = .025$ ). For the model containing demographics and the school engagement scale, all tolerance values were greater than .77 and the largest condition index was 21.71 indicating that multicollinearity is unlikely to have a negative effect on the model. Similarly, the lowest tolerance value was .69 and the highest condition index was 29.85 for the model containing demographics and the family endorsement scale.

Multiple tests of model fit were examined for both models. A test of the school engagement with families model against a constant-only model was statistically significant,  $\chi^2(11, n = 3,149) = 1072875.47, p < .001$ , indicating that the predictors, as a set, were able to distinguish between those who have and have not been suspended. A reliable estimate of  $R^2$  is unavailable in PROC SURVEYLOGISTIC due to the use of complex sample weights.

Inspection of the studentized residuals revealed 75 cases fell outside of  $\pm 1.96$  (2.4%) and 20

cases fell outside  $\pm 2.58$  (.6%) indicating that the model fit the data adequately. Inspection of the 20 cases that fell beyond  $\pm 2.58$  did not reveal any reason to remove them from the dataset (e.g., data entry error, demographic difference, large amount of missing data within case). Cook's  $D$  was less than one for all cases (largest Cook's  $D = 0.21$ ) suggesting that no outliers had undue influence on the model.

Testing the family endorsement model against a constant-only model also found that the predictors outperformed the null model in differentiating between students who have and have not been suspended,  $\chi^2(11, n = 3,149) = 1142519.11, p < .001$ . A total of 68 cases had studentized residuals that fell beyond  $\pm 1.96$  (2.2%) and 23 fell beyond  $\pm 2.58$  (.7%). Cook's  $D$  was less than one for all cases (largest Cook's  $D = .23$ ). Inspection of the 23 outliers beyond 2.58 did not reveal any errors or cases that should be removed. The results of each model are depicted in Table 8.

### **Analyses testing specific research questions.**

***R2. Replication of disproportionality.*** Within the NHES (2003) sample, 10.5% of African American students had received a suspension compared to 2.7% of Caucasian students. Logistic regression analyses revealed this difference to be statistically significant,  $B = .73, p < .001$ , indicating that, before controlling for other demographics, African American students were 4.34 times more likely to be suspended compared to Caucasian students (see Table 8). After entering gender, poverty status, family structure, and parent education into the model, race remained a significant predictor,  $B = .94, p < .001$ , with African American students being 2.56 times more likely to be suspended compared to Caucasian students.

**R3. Family-school engagement and suspensions for all students.** Higher parent-reported school engagement with families,  $B = -0.10$ ,  $p = .004$ , and family endorsement of their child's school,  $B = -0.20$ ,  $p < .001$ , significantly differentiated those who did and did not receive a suspension within the aggregated sample. Specifically, for every one point increase in family endorsement of their child's school, the odds of having been suspended reduce by 18%. Additionally, every one point increase school's engagement with families resulted in a 10% reduction in the odds of being suspended.

**R4. Associations of family-school engagement with the discipline gap.** As the schools' engagement with families increased, the probability of receiving a suspension did not decrease at a greater rate for African American compared to Caucasian students,  $B = .05$ ,  $p = .386$ . Similarly, race did not moderate the relationship between family endorsement and suspension,  $B = .04$ ,  $p = .568$ . Further, race remained a significant predictor of suspension after entering school engagement and the interaction between school-engagement and race into the model,  $OR = 2.89$ ,  $p < .001$ , as well as after entering family endorsement and the interaction between family endorsement and race into the model,  $OR = 2.52$ ,  $p < .001$ .

## Chapter V: Discussion

Consistent with extant research (e.g., Petras et al., 2011; Sullivan et al., 2013), African American students in this study were significantly more likely to be suspended compared to Caucasian students. After controlling for gender, poverty status, family structure, and parent education, African American students were 156% more likely to have received a suspension compared to Caucasian students. Further, disciplinary disproportionality could not be explained by differences in the extent to which schools engage with families or families' endorsements of their children's schools as race remained a powerful predictor of having received a suspension after these variables were entered into the model. This study adds to a long history of research documenting disparities in the receipt of discipline between African-American and Caucasian students after controlling for multiple relevant factors. The problem is complex and multiply determined and solutions will likely need to be equally multifaceted and ecologically oriented (Sullivan, Artiles, & Hernandez-Saca, 2014). Continued research needs to be conducted in order to better understand the underlying mechanisms of this disparity and strategies to reduce it. Recent research suggests that school-level variables such as the percentage of African American students enrolled in a particular school and administrators' attitudes towards discipline may be particularly important in understanding disparities in discipline (Anyon et al., 2014; Skiba et al., 2014).

Students who attended schools that were more engaged with families were less likely to have been suspended regardless of their race. Previous research has revealed a complicated pattern of mixed findings regarding whether school engagement with families is associated with increased or decreased rates of discipline. Studies that simply measure the frequency of contact between schools and families find that more contact is related to increased rates of discipline,

lower teacher ratings of social skills, and higher teacher ratings of problem behaviors and teacher conflict (Deslandes & Royer, 1997; Serpell & Mashburn, 2012). This indicates that teachers often reach out to families when their child is struggling. However, when schools increase engagement with families in a preventative and supportive way (e.g., inviting parents to volunteer at the school, regularly discussing student goals and expectations with families), rates of exclusionary discipline reduce for both Caucasian and African American students (Mukuria, 2002; Sheldon & Epstein, 2002). This study is consistent with this interpretation of the literature as the school engagement with families scale used in this study contained items focused on supporting the development of children such as providing them with helpful homework strategies, inviting them to volunteer at school, and making them aware of resources in the community.

Students of families who reported higher endorsements of their child's school were also less likely to have been suspended. Further, parents of children who were more likely to be disciplined (i.e., African-Americans and Males) were significantly less likely to positively endorse their child's school in this study. It may be that when schools suspend students, parents lose confidence in the schools ability to successfully support and educate their children. As previously mentioned, parents of students who have been suspended are also more likely to be in contact with their child's school (Deslandes & Royer 1997; Serpell & Mashburn, 2012). This increased communication around these negative events may often lead to conflict and result in decreased parental satisfaction of the school (Abdul-Adil & Farmer, 2006; Haight, Gibson, Kayama, Marshall, Wilson, 2014). However, it is important to note that previous investigations of parent satisfaction have not found significant differences for race or gender (Fantuzzo, Perry, & Childs, 2006; Wong & Hughes, 2006). The design of the measure and the sample size used in

this study may have contributed to these differences in findings. For example, Fantuzzo and colleagues (2006) used a multidimensional measure of parent satisfaction that measured parents' satisfaction of teacher contact, classroom contact, and school contact independently whereas the current investigation combined each of these dimensions into a single question to create an overall composite of endorsement. Wong and Hughes (2006) used a similar composite format that contained similar questions but used a significantly smaller sample. Given the small effect size in this study, these differences may be due to the power to detect small differences afforded by the large sample employed. Similar to these previous studies, no differences in family endorsement were found between families with different poverty status, family structure, or level of family education (Fantuzzo et al., 2006; Wong & Hughes, 2006).

Extant research has found that stronger family-school relationships were related to higher teacher ratings of social skills and lower ratings of behavioral problems for African American students more so than Caucasian students (Iruka et al., 2011). Further, family-school relationships have been found to be positively correlated to family endorsement of their child's school and schools' engagement with families (Kohl et al., 2000; Wong & Hughes, 2006). Thus, it was hypothesized that higher family endorsement of the school and schools' engagement with families would reduce the odds of receiving a suspension to a greater degree for African American students compared to Caucasian students within this study. Contrary to hypotheses, race did not moderate the relationship between the probability of being suspended and school engagement with families or family endorsement. That is, higher ratings of school engagement with families and family endorsement were associated with reductions in the likelihood of having been suspended for all students equally.

The differences between the Iruka and colleagues (2011) study and this study may be due to differences in the constructs measured. Iruka and colleagues (2011) focused on parent ratings of the quality of the parent-teacher relationship (i.e., trust, clarity of communication, and agreement) -- a slightly different, albeit related, construct. Although items in the family endorsement measure used in this study assessed parents' satisfaction with their child's teacher, this item was combined with other items measuring their endorsement of their child's school overall to create a total family endorsement scale. It is possible for a family to be satisfied with their child's teacher, but be dissatisfied with the school as a whole. In addition, the school engagement with families measure assessed whether or not schools engaged in particular supportive strategies and did not measure their perception of the quality or their agreement of these strategies. Thus, it may be that the quality of the parent-teacher relationship is differentially protective for African American students compared to Caucasian students, but the constructs measured within this study (i.e., school engagement with families and family endorsement of their child's school) are not.

The fact that race did not moderate the relationship between the two family-school engagement variables in this study may also indicate that greater benefits in social skills and reductions in behavioral problems for African American students found in other studies do not translate into greater reductions in suspensions. Supporting this hypothesis, previous research suggests that the discipline gap is not due to differences in student behavior as rated by teachers (e.g., Petras et al., 2011). It is important to note that this hypothesis could not be directly tested within this study as teacher ratings of student behavior were not available. Thus, additional research is needed that carefully defines and measures family-school engagement variables to

determine whether certain dimensions are more protective for one ethnicity compared to another, under what conditions, and in regard to what outcomes.

Previous studies have compared family-school engagement domains and found that African American families have lower rates of school-based involvement compared to Caucasian families (e.g., Desimone, 1999; Nzinga-Johnson et al., 2009; Wong & Hughes, 2006). However, no studies were identified that tested the assumption of measurement invariance between Caucasian and African American students. That is to say, although racial differences have been found, there have been no studies to date that have empirically tested whether these differences represent true differences in engagement or whether these differences may be statistical artifacts related to variation in how engagement is measured between African American and Caucasians. Within the current study, a confirmatory factor analysis found that school- and home-based family involvement scales demonstrated good fit for the aggregated sample. However, the assumption that the scales measure family involvement equivalently between Caucasians and African Americans failed when tested empirically. More specifically, endorsing one of the home- or school-based items is not associated with an equal increase in the estimated level of family involvement between African Americans and Caucasians on the school- and home-based family involvement scales used within the current sample. This suggests that any differences in school- and home-based family involvement as measured by the scales in the NHES (2003) would be confounded by differences in measurement.

The identification of measurement variance is a significant finding as many of the items employed in this study are similar to those used in existing measures of family involvement used to explore differences in race/ethnicity in previous studies (e.g., Family Involvement Questionnaire, Parent-Teacher Involvement Questionnaire). However, it is important to note that



unlike these other scales, the response format for the family involvement items in the NHES (2003) are binary (i.e., yes or no) which may have contributed to these differences by restricting response options resulting in categorization effects (e.g., Bernstein & Teng, 1989). Restricting response options forces participants to answer by indicating whether they are or are not involved which results in lost information related to the amount of family involvement. Thus, small differences spread across multiple response categories can be amplified by only offering the extremes as response options. Research has also found that restricting response choices is typically associated with lower reliability which may explain the low internal consistency found for home-based family involvement variables in the current study (Bernstein & Teng, 1989). In addition, the internal consistencies of these items were below acceptable limits. Thus, it is difficult to determine whether this measurement variance is likely to be present in these other measures. Still, these findings emphasize the need to test the assumption of measurement invariance before more definitive conclusions can be drawn regarding differences in family involvement between different groups.

### **Limitations and Future Research**

Although this study addressed a novel and important question using a large, nationally representative sample, it is not without limitations. First, the data used in this survey were collected using a single method (i.e., phone interview) and single informant (i.e., parents of elementary school children). Future studies should include multiple methods of assessing family-school engagement such as school records (e.g., school discipline records) and direct observations of family-school engagement activities (e.g., contact logs between families and schools). Research investigating the relationship between family-school engagement and the discipline gap would also be bolstered by including the perspectives of teachers and

administrators in addition to families given teachers are the primary driver of office discipline referrals and administrators often make the final decisions regarding discipline (Skiba et al., 2014).

Second, the current study collapsed in-school suspensions and out-of-school suspensions into a single variable due to the large overlap between those who received both types and the need to retain a large enough sample size given the low base rate of suspension, particularly in the Caucasian group. However, recent research has demonstrated significant differences in outcomes of in-school suspensions compared to out-of-school suspensions. For example, Noltemeyer and colleagues (under review) found out-of-school suspensions are associated with significantly greater decrements in academic achievement compared to in-school suspensions. Recent research has also suggested that individual (i.e., gender, race, SES) and school (i.e., percentage of African American students within a school, and principal attitudes towards discipline) level variables significantly influence whether students receive an in-school versus out-of-school suspension. Thus, future studies should investigate the relationship between family-school engagement, race, and these two types of exclusionary discipline separately given the multiple factors that differentially contribute to decisions to discipline using in-school compared to out-of-school suspension as well as the differences in negative outcomes associated with each.

Third, this study is limited by the use of a cross-sectional design. Although studies have found that levels of some family-school engagement domains (i.e., parent-teacher relationships) tend to be consistent over time (Iruka et al., 2011), this study is unable to establish a temporal relationship between variables. That is, it is unclear whether high rates of family-school engagement reduce the probability of receiving discipline or whether discipline reduces or

changes family-school engagement. Future studies employing longitudinal designs would be able to address a myriad of questions regarding the relationship between family-school engagement, suspensions, and race by assessing how differences and changes in family-school engagement relate to the receipt of school discipline over time. For example, a study that uses a multidimensional family-school engagement measure and rates of discipline at multiple points throughout the year or over multiple years can compare initial levels of family-school engagement with future rates of discipline for different races. Further, this type of study can assess whether different dimensions of family-school engagement increase or decrease following receipt of discipline which can help to further clarify the differences in findings between more preventative school engagement strategies from measures of family-school contact which can be more reactionary. Importantly, this type of study can also compare outcomes of students where the level of family-school engagement decreases following discipline to students whose level of family-school engagement remains stable or increases following discipline in order to identify protective processes against the receipt of multiple disciplinary actions. Finally, studies that experimentally manipulate the level of family-school engagement over time through interventions at the school (e.g., Sheldon & Epstein, 2002) and family (Sheridan et al., 2006) levels will provide the strongest support for a causal relationship between these variables and the use of family-school engagement strategies to reduce the discipline gap.

Fourth, future studies should build on these findings by controlling for additional salient variables. For example, examining teacher race will be important to further clarify its role in the discipline gap and to determine whether different combinations of family, teacher, and administrator race affect family-school engagement and its relation to disciplinary actions in schools. Future studies should also assess and control for the role of both teacher perceptions

and independently conducted observations of student behavior to better understand the relationship between family-school engagement, behavior, exclusionary discipline, and race. It will also be important to measure and control for school-level variables such as administrators' beliefs about discipline, total school enrollment, and percentage of African American students enrolled within a school given their relationship with the discipline gap.

Fifth, researchers are beginning to more explicitly explore the role of implicit bias and its role in disciplinary outcomes (McIntosh et al., 2015). Future studies should investigate the role that teachers' and administrators' unconscious racial attitudes and beliefs contribute to their decisions to suspend students. In addition, it will be important to better understand the quality and context of family-school engagement activities in order to better determine whether it can reduce implicit bias or attenuate its effects in the classroom. Allport's (1954) contact hypothesis states that simply interacting with others of a different race can reduce implicit bias and these effects appear to be larger when a non-hierarchical relationship is established, each side perceives a common goal, cooperation is fostered, and support is provided from administration or legislation (Tropp & Pettigrew, 2006). Similarly, family-school partnerships are most effective when families and school professionals share the responsibility for educational outcomes, respect differences, collaboratively define a common goal, work together to develop a solution to problems (Christenson, 2003; Christenson & Sheridan, 2001). However, tenuous family-school partnerships do occur and negative or forced interactions between races have been found to result in increased implicit bias (Pettigrew, Tropp, Wagner, & Christ, 2011). The current study investigated the types of interactions between families and schools rather than the quality or context of these interactions. It may be that family-school engagement is only differentially effective when certain conditions such as a cooperative working relationship

around a common goal have been established. Thus, future research should also more carefully assess the quality and context of family-school interaction rather than simply documenting whether the interaction occurred.

Finally, future research needs to determine what types of involvement activities are most effective and for whom. Current measures of family-school engagement ask about various types of involvement at home (e.g., helping with homework, reading stories, participating in community events), at school (e.g., volunteering in the school, meeting with teachers), contacts between families and schools (e.g., emails, phone, in-person), and schools' engagement with families (e.g., informing of academic progress, developmental expectations, resources in the community) while treating each activity within each dimension as equal (e.g., Fantuzzo et al., 2000; Kohl et al., 2000; Wong & Hughes, 2006). However, it is unclear whether a particular activity within a dimension contributes more, less, or equally to behavioral competence than another activity or whether simply engaging in a particular number of activities, regardless of the type of activity, is what is most protective. For example, within the dimension of school-based involvement, it is unclear whether volunteering in the classroom is more, less, or equally related to improved behavioral competence compared with attending parent-teacher conferences or whether the type of activity does not matter as long as a family engages in X number of different activities or one activity X number of times. Relatedly, assessments of family-school engagement dimensions need to better capture the implementation quality of each activity. For example, it may not be enough to simply document whether parents' help their child with homework as interactions between parents, children, and teachers around homework can often be stressful and lead to further conflict and frustration (Power, Jarustis, & Habboushe, 2001; Theodore, Kehle, & Bray, 2004). If family-school engagement research is to effectively and

efficiently inform intervention and prevention practices, it will be necessary to determine what type, number, or frequency of activities are most likely to result in the largest improvements and whether different activities and ways of implementing activities are more or less beneficial between families of varied races, genders, and SES.

### **Implications for Practice**

The findings of this study suggest that the more a child's school engages with their family, the less likely they were to have received a suspension for all students. Specifically, this study along with others suggests that preventative strategies such as inviting families to volunteer at school, providing them with home-based strategies to support their child's academic and behavioral competence, and helping them gain knowledge of and access to community services appear to be more related to a reduction in suspensions than simply calling parents to inform them of behavioral difficulties. Epstein (1995) describes a model with six categories of strategies schools can use to engage with families to support the competence of students and thereby reduce behavioral problems and suspensions: 1) help all families establish home environments that support academic and behavioral competence; 2) communicate or design effective forms of home-to-school and school-to-home communication; 3) recruit families to help support the school and students; 4) provide families with ways to help students with homework; 5) include families in school decision making; and 6) identify and integrate community resources to strengthen the school and family. Sheldon and Epstein (2002) demonstrated a significant reduction in behavioral problems and use of exclusionary discipline strategies following an intervention using strategies across all six of these categories to increase schools' supportive engagement with families. Pre-service training and continuing professional development afford opportunities to provide teachers and administrators with skills in

implementing the partnership strategies to increase engagement with families, reduce suspensions, and to possibly help ameliorate the discipline gap (Gregory, Allen, Mikami, Hafen, & Pianta, 2015).

The findings of this study also suggest that higher family endorsement ratings are associated with lower probabilities of having received a suspension and the more schools engaged with families the more families were likely to report higher endorsements of their child's school. It is likely that family endorsement is part of a dynamic process wherein variables transact to potentiate or attenuate one another. Families who have a good relationship with their child's teacher are probably more likely to interact with the school and the school is more likely to interact with families who appear engaged. Parents of students who are the most likely to have been suspended (i.e., African American and male) were the least likely to positively endorse their child's school in this study. Family endorsement likely serves as a proxy for the health of those transactional processes between the family and the school. When this transactional relationship is dedicated to helping the child develop competence within the context of a positive relationship, students often demonstrate increased competence (Sheridan et al., 2012). In fact, higher family endorsement of their child's school has been associated with more positive parent-teacher relationships, increased family involvement at home and school, and more positive parental attitudes of school involvement in other studies (e.g., Kohl et al., 2000; Wong & Hughes, 2006). Thus, schools would likely benefit from focusing on these multiple transacting factors when attempting to understand and increase family endorsement as a strategy to reduce the disparate use of disciplinary strategies.

Although this study found that increased school engagement with families and family endorsement may be a mechanism for reducing suspensions within schools, this was not

differentially effective for African American compared to Caucasian students. Still, it is important to consider how race may interact with these family-school engagement dimensions to support equality. For example, previous research has highlighted the many barriers African American families face in effectively partnering with schools (e.g., Abdul-Adil et al., 2006; Harry et al., 1995; Horby & Lafael, 2011; Thompson, 2003) and this study found that African Americans less positively endorsed their child's school. This suggests that increasing family-school engagement may be equally protective, but families may not have equal access to these protective processes and may not be equally satisfied with the way in which schools are reaching out to them. Therefore, ensuring that African American families have equal access to culturally congruent school engagement practices may be an important targeted prevention strategy help schools reduce the discipline gap. Further, recent research conducted by Skiba and colleagues (2014) suggests that administrators who are more prevention minded, as compared to those who prefer to use punishment as their primary strategy to manage behavior, tend to have less disproportionality in their school. Thus, training administrators to embrace a prevention oriented mindset that includes a focus on improving their engagement with families and fostering family endorsement of their school may be an effective way at reducing suspensions and the discipline gap within schools.

## **Conclusions**

Students whose school more actively engaged with their families and whose parents reported higher endorsements of their school were less likely to have been suspended in this study, regardless of their race/ethnicity. This suggests that higher levels school engagement with families and family endorsement is associated with reductions in suspensions overall, but not necessarily with reductions in the discipline gap. However, previous research has found that



African American families often experience substantial barriers to effectively partnering with their children's school and this study found that African American families reported less overall satisfactions with their child's school compared to Caucasian families. Thus, it is important for schools and clinicians working with families to ensure equal access to effective, amiable partnerships with schools. More research is needed to determine what family-school engagement strategies work and for whom they are most effective. In addition, considerable measurement invariance found in the home- and school-based family involvement scales underscores the need for more careful psychometric analysis of family-school engagement measures.

Table 1

*Demographic Characteristics of the Sample*

	Caucasian	African American
Number of Participants	2551 (81.0%)	598 (19.0%)
Male	1313 (51.3%)	283 (47.2%)
Below Federal Poverty Line	218 (8.5%)	204 (34.1%)
Grade		
<i>Kindergarten</i>	404 (15.8%)	95 (15.9%)
<i>First</i>	430 (16.9%)	115 (19.2%)
<i>Second</i>	413 (16.2%)	89 (14.9%)
<i>Third</i>	413 (16.2%)	88 (14.7%)
<i>Fourth</i>	448 (17.5%)	103 (17.2%)
<i>Fifth</i>	443 (17.4%)	108 (18.1%)
Parent status		
<i>Two-Parent</i>	2090 (81.9%)	231 (38.6%)
<i>One Parent</i>	416 (16.3%)	310 (51.8%)
<i>Other</i>	45 (1.8%)	57 (9.6%)
Highest Level of Parent Education		
<i>Less than HS Diploma</i>	57 (2.2%)	48 (8.0%)
<i>HS Graduate or Equivalent</i>	479 (18.8%)	179 (29.9%)
<i>Some College</i>	814 (31.9%)	237 (39.6%)
<i>College Graduate</i>	662 (26.0%)	76 (12.7%)
<i>Graduate/Professional School</i>	539 (21.1%)	58 (9.7%)
Received Suspension	69 (2.7%)	63 (10.5%)

*Note: n = 3149*

Table 2

*Definition of Poverty Status Based on U.S. Census Bureau Thresholds for 2003*

Household Size (HHTOTAL)	U.S Census Threshold	Income Categories in Variable (HINCOME)
2	\$12,015	Less than or equal to \$15,000 (HINCOME = 1,2,3)
3	\$14,680	Less than or equal to \$15,000 (HINCOME = 1, 2, 3)
4	\$18,810	Less than or equal to \$20,000 (HINCOME = 1, 2, 3, 4)
5	\$22,245	Less than or equal to \$25,000 (HINCOME = 1, 2, 3, 4, 5)
6	\$25,122	Less than or equal to \$30,000 (HINCOME = 1, 2, 3, 4, 5, 6)
7	\$28,544	Less than or equal to \$30,000 (HINCOME = 1, 2, 3, 4, 5, 6)
8	\$31,589	Less than or equal to \$35,000 (HINCOME = 1, 2, 3, 4, 5, 6, 7)

*Note:* The HINCOME variables 1-7 used are coded in \$5,000 increments with 1 = \$5,000 or less, 2 = \$10,000, 3 = \$15,000, 4 = \$20,000, 5 = \$25,000, 6 = \$30,000, and 7 = \$35,000.

Table 3

*Factor Loading Comparisons between Groups*

	Caucasian	African American	Difference
<b>School-Based Family Involvement</b>			
FEMEET	0.628	0.894	-0.266
FEATCNFN	0.485	0.830	-0.345
FESPT	0.701	0.752	-0.051
<b>Home-based Family Involvement</b>			
FOCRAFT	0.408	0.694	-0.286
FOCHORE	0.476	0.483	-0.007
FOHIST	0.363	0.524	-0.161
FOGAME	0.313	0.500	-0.187
FOCNRT	0.332	0.594	-0.262
FOZOO	0.477	0.683	-0.206
FORELIG	0.327	0.652	-0.325
FOCOM	0.373	0.482	-0.109
FORHW	0.288	0.536	-0.248
<b>School Engagement with Family</b>			
SEDEV	0.627	0.803	-0.176
SEVOLN	0.766	0.762	0.004
SEHOME	0.622	0.677	-0.055
SESERV	0.807	0.841	-0.034
SEHW	0.767	0.789	-0.022
SECOUR	0.861	0.947	-0.086

Table 4

*Comparisons of Model Fit between Model Revisions*

	RMSEA	CFI	TLI	$\chi^2$ (df)	$\Delta\chi^2$ (df)
<b>School-based Family Involvement</b>					
<i>Subsample A</i>					
Configural Model w/o FEFUN, FEVOL	.000	1.00	1.00	0 (0)	-
Measurement Invariance	-	-	-	-	21.541(3)***
<b>Home-based Family Involvement</b>					
<i>Subsample A</i>					
Configural	.021	.957	.943	72.620(54)***	-
Measurement Invariance	-	-	-	-	67.215 (9)***
<b>School Engagement with Families</b>					
<i>Subsample A</i>					
Configural w/o SEDEV	.046	.993	.993	54.162(20)***	-
Measurement Invariance w/o SEDEV	-	-	-	-	2.077 (5)
<i>Subsample B</i>					
Configural w/o SEDEV	.036	.996	.996	40.176(20)**	-
Measurement Invariance w/o SEDEV	-	-	-	-	7.259 (5)
<b>Parental Endorsement</b>					
<i>Subsample A</i>					
Configural Model	.065	.968	.986	52.888 (12)***	-
Measurement Invariance	-	-	-	-	4.302 (4)
<i>Subsample B</i>					
Configural Model	.072	.983	.983	59.693(12)***	-
Measurement Invariance	-	-	-	-	1.418 (4)

Note: \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ ;  $\Delta\chi^2$  represents the Satorra-Bentler scaled chi-square difference test for nested models (Muthen & Muthen, 2005; Satorra & Bentler, 2001)

Table 5

*Factor Loadings, Standard Errors, and Estimates/Standard Error for Final Models*

	<i>Caucasian</i>				<i>African American</i>			
	<i>B</i>	<i>SE</i>	<i>B/SE</i>	<i>R</i> <sup>2</sup>	<i>B</i>	<i>SE</i>	<i>B/SE</i>	<i>R</i> <sup>2</sup>
<i>Subsample A</i>								
<b>School Engagement (<math>\alpha = .795</math>)</b>								
Invitations to Volunteer	.686	.024	28.99	.471	.704	.053	13.20	.495
Home-based Strategies	.589	.041	14.28	.347	.670	.054	12.34	.449
Community Services	.846	.014	58.39	.716	.882	.028	31.72	.778
Homework Help	.784	.017	44.93	.614	.808	.032	25.27	.653
Class Placements	.868	.015	58.72	.754	.938	.023	40.41	.881
<b>Parental Endorsement (<math>\alpha = .807</math>)</b>								
Quality of School	.492	.037	13.29	.242	.691	.054	12.88	.477
Quality of Teachers	.941	.022	43.55	.886	.912	.031	29.81	.833
Quality of Academics	.734	.029	25.71	.539	.737	.042	17.67	.543
Quality of Discipline	.821	.023	36.37	.674	.892	.036	24.54	.795
<i>Subsample B</i>								
<b>School Engagement (<math>\alpha = .797</math>)</b>								
Invitations to Volunteer	.728	.021	34.21	.529	.765	.039	19.74	.585
Home-based Strategies	.647	.032	20.00	.418	.740	.048	15.26	.547
Community Services	.854	.016	54.19	.729	.881	.028	31.50	.777
Homework Help	.744	.020	37.57	.554	.795	.032	24.90	.632
Class Placements	.835	.018	47.33	.698	.887	.025	35.19	.786
<b>Parental Endorsement (<math>\alpha = .805</math>)</b>								
Quality of School	.461	.037	12.41	.213	.548	.065	8.39	.301
Quality of Teachers	.976	.023	42.65	.952	.939	.034	27.57	.881
Quality of Academics	.692	.031	22.21	.480	.755	.037	20.56	.570
Quality of Discipline	.778	.027	29.13	.605	.821	.041	20.17	.674

Table 6

*Bivariate Correlations between all Study Variables*

	1	2	3	4	5	6	7	8	9	10
1. Race	-	-	-	-	-	-	-	-	-	-
2. Sex	.03	-	-	-	-	-	-	-	-	-
3. Poverty	.29***	-.01	-	-	-	-	-	-	-	-
4. Family Structure	.38***	-.02	.30***	-	-	-	-	-	-	-
5. Parent Education	-.21***	-.00	-.34***	-.31***	-	-	-	-	-	-
6. SE total	.03	.01	.019	.000	.00	-	-	-	-	-
7. FE total	-.12***	-.05**	-.05**	-.05**	.07***	.52***	-	-	-	-
8. SBFI	-.18***	-.06***	-.18***	-.21**	.27***	.23***	.16***	-	-	-
9. HBFi	.05**	-.08***	-.01	-.02	.15***	.18***	.05**	.29***	-	-
10. Suspension	.15***	.13***	.13***	.17***	-.13***	-.07***	-.13***	-.13***	-.03	-
Mean	-	-	-	-	-	16.01	14.53	2.61	5.24	-
Range	-	-	-	-	-	5 - 20	4 - 16	0 - 3	0 - 9	-
SD	-	-	-	-	-	3.64	2.11	.650	1.49	-

*Note:* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . SE total = School Engagement with Families total score, PE total = Parental Endorsement total score, SBFI total score = School-Based Family Involvement total score, HBFi total score = Home-based Family Involvement total score

Table 7

*Comparison of Group Means and Standard Errors for Family-School Engagement Scales*

	School Engagement	Parental Endorsement	Home-Based	School-Based
Race				
<i>African American</i>	16.33 (.19)	14.09 (.11)	5.51 (.09)	2.47 (.04)
<i>Caucasian</i>	15.92 (.08)	14.65 (.05)	5.17 (.03)	2.65 (.01)
Sex				
<i>Male</i>	15.96 (.11)	14.42 (.06)	5.11 (.05)	2.58 (.02)
<i>Female</i>	16.07 (.11)	14.64 (.06)	5.38 (.04)	2.64 (.03)
Poverty				
<i>Below Poverty Line</i>	16.14 (.25)	14.28 (.14)	5.16 (.10)	2.35 (.05)
<i>Above Poverty Line</i>	15.98 (.08)	14.57 (.04)	5.25 (.03)	2.66 (.01)
Family Structure				
<i>Two Parent</i>	15.98 (.09)	14.57 (.05)	5.24 (.03)	2.66 (.02)
<i>Single Parent</i>	16.04 (.17)	14.42 (.10)	5.27 (.07)	2.51 (.03)
<i>Other</i>	16.42 (.45)	14.36 (.26)	5.05 (.18)	2.29 (.11)
Parent Education				
<i>Less than HS Diploma</i>	15.15 (.56)	13.89 (.29)	4.66 (.16)	1.88 (.12)
<i>HS Graduate or Equivalent</i>	16.42 (.17)	14.45 (.10)	5.05 (.08)	2.50 (.03)
<i>Some College</i>	15.77 (.14)	14.49 (.08)	5.19 (.05)	2.62 (.02)
<i>College Graduate</i>	16.00 (.15)	14.69 (.09)	5.43 (.06)	2.76 (.02)
<i>Graduate/Professional School</i>	16.19 (.15)	14.67 (.09)	5.60 (.07)	2.75 (.03)



Table 8

*Results of Hierarchical Logistic Regression Models*

	<i>B</i>	<i>SE</i>	OR	OR 95% CI
Model 1: Race				
Race	.73***	.11	4.34	2.84 – 6.62
Model 2: Full Demographics				
Race	.94***	.25	2.56	1.57 - 4.18
Sex	1.65***	.27	5.19	3.07 - 8.78
Poverty	.56*	.29	1.76	1.01 - 3.07
Family Status				
<i>Single vs. Two Parent</i>	0.35	.30	1.42	0.79 - 2.54
<i>Other vs. Two Parent</i>	1.41***	.40	4.10	1.89 - 8.93
Parent Education				
<i>HS vs. &lt; HS</i>	.16	.46	1.18	0.48 - 2.87
<i>Some College vs. &lt; HS</i>	.15	.47	1.16	0.46 - 2.90
<i>College Grad vs. &lt; HS</i>	-1.23	.69	0.29	0.08 - 1.13
<i>Graduate vs. &lt; HS</i>	-1.08	.61	0.34	0.10 - 1.12
Model 3a: School Engagement with Families (SE)				
Race	1.06***	.26	2.88	1.74 - 4.76
Sex	1.66***	.27	5.25	3.12 - 8.84
Poverty	0.57*	.28	1.77	1.01 - 3.09
Family Status				
<i>Single vs. Two Parent</i>	0.35	.30	1.42	0.79 - 2.56
<i>Other vs. Two Parent</i>	1.46***	.40	4.31	1.95 - 9.52
Parent Education				
<i>HS vs Less than HS</i>	-0.25	.44	0.78	0.32 - 1.86
<i>HS vs. Some College</i>	-0.07	.26	0.93	0.56 - 1.55
<i>HS vs. College</i>	-1.40	.52	0.25	0.09 - 0.69
<i>HS vs. Post Bachelor</i>	-1.24	.45	0.29	0.12 - 0.70
SE Scale	-0.10**	.08	0.90	0.85 – 0.97
SE Scale*Race	0.05	.05	1.05	0.94 - 1.61
Model 3b: Parental Endorsement (PE)				
Race	0.94***	.28	2.56	1.47-4.46
Sex	1.63***	.26	5.11	3.04-8.59
Poverty	0.58*	.28	1.78	1.02-3.13
Family Status				

<i>Single vs. Two Parent</i>	0.38	.31	1.47	0.80-2.70
<i>Other vs. Two Parent</i>	1.50***	.40	4.50	2.05-9.86
Parent Education				
<i>HS vs Less than HS</i>	-0.26	.44	0.77	0.32 - 1.84
<i>HS vs. Some College</i>	-0.04	.26	0.97	0.58 - 1.61
<i>HS vs. College</i>	-1.35	.53	0.26	0.09 - 0.74
<i>HS vs. Post Bachelor</i>	-1.21	.45	0.30	0.12 - 0.71
PE Scale	-0.20***	.04	0.82	0.75 - 0.89
PE Scale*Race	0.04	.07	1.04	0.91 - 1.19

---

*Note: \*p < .05, \*\*p < .01, \*\*\*p < .001, OR = Odds Ratio*

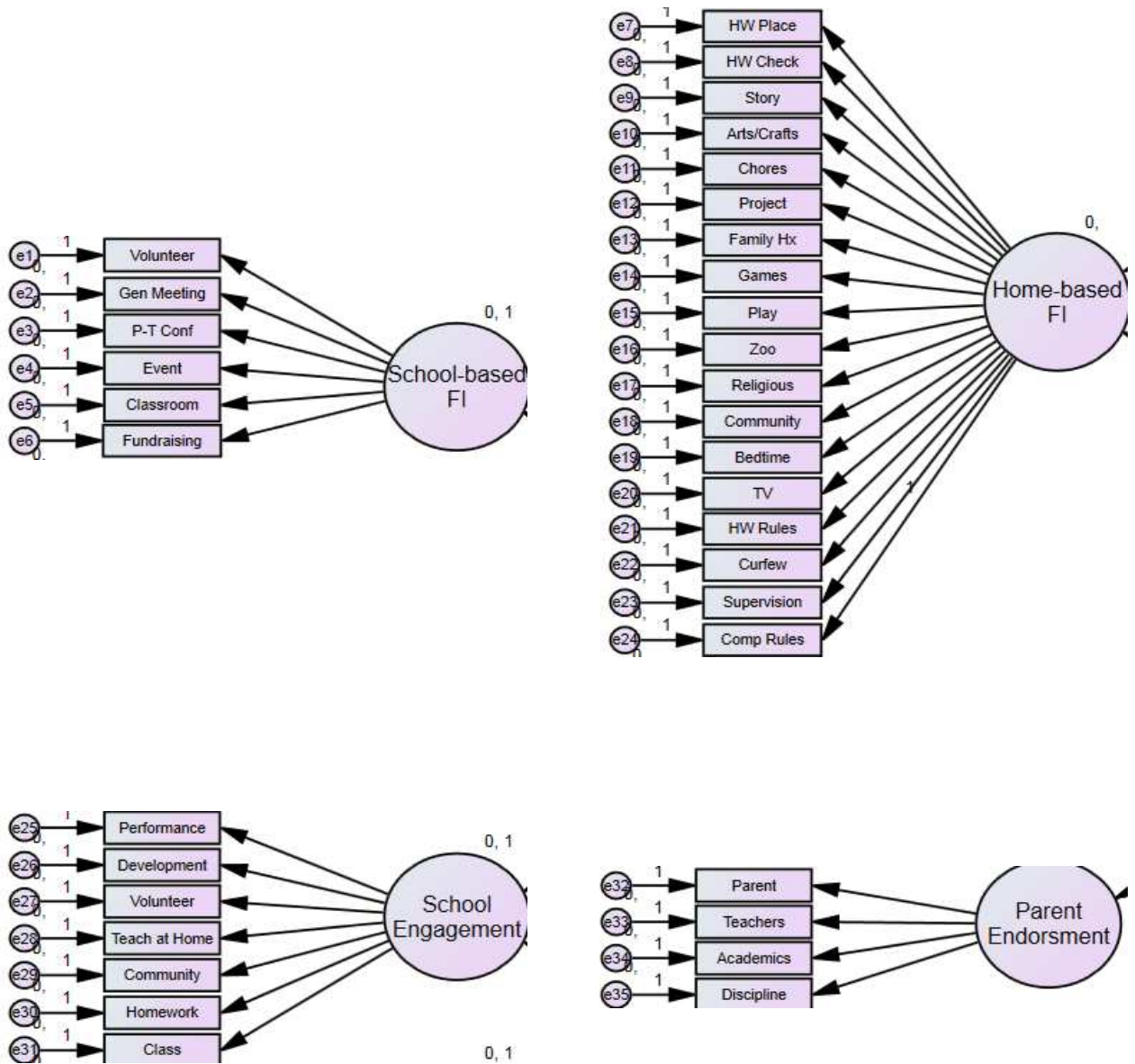


Figure 1: Model of variables to be included within each of the four MGCFAs

## Appendix A: List of Survey Items

### *Family-school engagement dimensions and their associated items*

---

#### **School-based Family Involvement**

1. (FEMEET) Have you or someone in your family attended a general school meeting (e.g., an open house, back-to-school night)
2. (FEPTCF) Have you or someone in your family attended to a regularly scheduled parent-teacher conference
3. (FESPT) Have you or someone in your family attended a school or class event such as a play, dance, sports event, or science fair
4. (FEVOL) Have you or someone in your family served as a volunteer in your child's classroom
5. (FEFUN) Have you or someone in your family participated in fundraising for the school

#### **Home-based Family Involvement**

1. (FOSTORY) Has someone in the household told [child] a story in the past week?
2. (FOCRAFT) In the past week, have someone in the household completed arts and crafts with [child], for example, coloring, painting, pasting, or using clay?
3. (FOCHORE) In the past week, was your child involved in household chores like cooking, cleaning, picking up clothes, setting the table, or caring for pets?
4. (FOBUILD) In the past week, have you worked on another type of project with [child] that you didn't think of as a chore, like building, making, or fixing something?
5. (FOHIST) In the past week, have you talked with [child] about (his/her) family or ethnic heritage?
6. (FOGAMES) Played board games or did puzzles with [child]?
7. (FOCNCRT) In the past month, has [child] gone to a play, concert, or other live show with someone in the household?
8. (FOZOO) In the past month, has [child] visited a zoo or aquarium with someone in the family?
9. (FORELIG) In the past month, has [child] attended an event sponsored by a religious group with someone in the household?
10. (FOCOM) In the past month, has [child] attended an event sponsored by a community or ethnic group with someone in the household?
11. (FORBED) Are there family rules about, what time [child] goes to bed on school nights?
12. (FORTV) Are there family rules about, what television programs or how much television [child] is allowed to watch?
13. (FORHW) Are there family rules about doing homework?

#### **School engagement with families**

1. (SEPERF) How well would you say that his or her school lets you know between report

cards how your child is doing in school

2. (SEDEV) How well would you say that his or her school helps you understand what children at your child's age are like
3. (SEVOLN) How well would you say that his or her school makes you aware of chances to volunteer at the school
4. (SEHOME) How well would you say that his or her school provides workshops, materials, or advice about how to help your child learn at home
5. (SESERV) How well would you say that his or her school ) provides information on community services to help your child or your family
6. (SEHW) How well would you say that his or her school provides information about how to help your child with his or her homework
7. (SECOUR) How well would you say that his or her school provides information about why your child is placed in particular groups or classes

**Parent endorsement of child's school**

1. (QLSCHL) Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with the way your child's school communicates with parents
  2. (WLTEACH) Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with the teachers your child has this year
  3. (QLSTDS) Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with the academic standards of the school
  4. (QLORDER) Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with the order and discipline at the school
-

APPENDIX B: Example of MPLUS Syntax for MGCFA – School-Based Family Involvement

TITLE:

School-Based Family Involvement in separate groups

DATA:

FILE IS H:\Dissertation\NHES 2003 Data\Data Files\MPLUS Data\2003NHES 2014 7 15  
SubA.csv;

VARIABLE:

NAMES ARE

FPWT NPSU PPSU PSTRATUM Race SEX Poverty GRADE ParStat

FEVOL FEMEET FEATCNFN FESPT FEFUN

FOSTORY FOCRFT FOCHORE FOBUILD FOHIST FOGAMES FOCNCRT FOZOO  
FORELIG FOCOM FORHW FORBED FORTV

SEPERF SEDEV SEVOLN SEHOME SESERV SEHW SECOUR

QLSCHL QLTEACH QLSTDS QLORDER;

USEVARIABLES ARE

FPWT NPSU PSTRATUM Race

FEVOL FEMEET FEATCNFN FESPT FEFUN

CATEGORICAL ARE

FEVOL FEMEET FEATCNFN FESPT FEFUN

Subpopulation IS Race==2; ! 2 indicates African American, also ran as 1 for Caucasian

WEIGHT = FPWT;

STRAT = PSTRATUM;

CLUSTER = NPSU;

ANALYSIS:

TYPE=COMPLEX;

MODEL:

f1 BY FEVOL\* FEMEET FEATCNFN FESPT FEFUN;

f1@1;

[f14@0];

OUTPUT:

TECH1 MODINDICES;

TITLE:

Configural Model for School-Based Family Involvement

DATA:

FILE IS H:\Dissertation\NHES 2003 Data\Data Files\MPLUS Data\2003NHES 2014 7  
15 SubA.csv;

VARIABLE:

NAMES ARE

FPWT NPSU PPSU PSTRATUM Race SEX Poverty GRADE ParStat

FEVOL FEMEET FEATCNFN FESPT FEFUN

FOSTORY FOCRFT FOCHORE FOBUILD FOHIST FOGAMES FOCNCRT FOZOO  
FORELIG FOCOM FORHW FORBED FORTV

SEPERF SEDEV SEVOLN SEHOME SESERV SEHW SECOUR

QLSCHL QLTEACH QLSTDS QLORDER;

USEVARIABLES ARE

FPWT NPSU PSTRATUM Race

FEVOL FEMEET FEATCNFN FESPT FEFUN

CATEGORICAL ARE

FEVOL FEMEET FEATCNFN FESPT FEFUN

GROUPING IS Race (1 = White 2 = Black);

WEIGHT = FPWT;

STRAT = PSTRATUM;

CLUSTER = NPSU;



ANALYSIS:

TYPE=COMPLEX;

MODEL:

f1 BY FEVOL\* FEMEET FEATCNFN FESPT FEFUN;

f1@1;

[f1@0];

{FEVOL@1 FEMEET@1 FEATCNFN@1 FESPT@1 FEFUN@1};

MODEL BLACK:

f1 BY FEVOL\* FEMEET FEATCNFN FESPT FEFUN;

f1@1;

[f1@0];

[FEVOL\$1 FEMEET\$1 FEATCNFN\$1 FESPT\$1 FEFUN\$1 FOSTORY\$1 FOCRFT\$1];

OUTPUT:

TECH1 MODINDICES;

SAVEDATA:

DIFFTEST is config.dat;

TITLE:

Measurement Invariance for School-Based Family Involvement Scale

DATA:

FILE IS H:\Dissertation\NHES 2003 Data\Data Files\MPLUS Data\2003NHES 2014 7  
15 SubA.csv;

VARIABLE:

NAMES ARE

FPWT NPSU PPSU PSTRATUM Race SEX Poverty GRADE ParStat

FEVOL FEMEET FEATCNFN FESPT FEFUN

USEVARIABLES ARE

FPWT NPSU PSTRATUM Race

FEVOL FEMEET FEATCNFN FESPT FEFUN

CATEGORICAL ARE

FEVOL FEMEET FEATCNFN FESPT FEFUN

GROUPING IS Race (1 = White 2 = Black);

WEIGHT = FPWT;

STRAT = PSTRATUM;

CLUSTER = NPSU;

ANALYSIS:

TYPE=COMPLEX;

DIFFTEST is config.dat;

MODEL:

f1 BY FEMEET\* FEATCNFN FESPT;

f1@1;

[f14@0];

OUTPUT:

TECH1 MODINDICES;

## APPENDIX C: SAS Syntax for ANOVAs

```
PROC SURVEYREG;  
STRATA PSTRATUM;  
CLUSTER PPSU;  
WEIGHT FPWT;  
class Race SEX Poverty ParStat PARGRADE;  
model SEtotal = Race SEX Poverty ParStat PARGRADE / ANOVA;  
contrast 'Two vs Single' ParStat -1 1 0;  
contrast 'Two vs Other' ParStat -1 0 1;  
contrast 'Single vs Other' ParStat 0 -1 1;  
contrast 'No HS vs HS' PARGRADE 1 -1 0 0 0;  
contrast 'No HS vs some college' PARGRADE 1 0 -1 0 0;  
contrast 'No HS vs college' PARGRADE 2 0 0 -1 -1;  
contrast 'HS vs some college' PARGRADE 0 1 -1 0 0;  
contrast 'HS vs college' PARGRADE 0 2 0 -1 -1;  
contrast 'Some college vs college' PARGRADE 0 0 2 -1 -1;  
run;
```

```
PROC SURVEYREG;  
STRATA PSTRATUM;  
CLUSTER PPSU;  
WEIGHT FPWT;  
class Race SEX Poverty ParStat PARGRADE;  
model PE_Log = Race SEX Poverty ParStat PARGRADE / ANOVA;  
contrast 'Two vs Single' ParStat -1 1 0;  
contrast 'Two vs Other' ParStat -1 0 1;  
contrast 'Single vs Other' ParStat 0 -1 1;  
contrast 'No HS vs HS' PARGRADE 1 -1 0 0 0;  
contrast 'No HS vs some college' PARGRADE 1 0 -1 0 0;
```

```
contrast 'No HS vs college' PARGRADE 2 0 0 -1 -1;  
contrast 'HS vs some college' PARGRADE 0 1 -1 0 0;  
contrast 'HS vs college' PARGRADE 0 2 0 -1 -1;  
contrast 'Some college vs college' PARGRADE 0 0 2 -1 -1;  
run;
```

## APPENDIX D: SAS Syntax for Logistic Regression

```
PROC SURVEYLOGISTIC;

STRATA PSTRATUM;

CLUSTER PPSU;

WEIGHT FPWT;

Class Race (ref='White, non-latino');

MODEL TOTsus (descending) = Race / RSQUARE;

Title1 'Logistic Regression: Block 1';

run;

PROC SURVEYLOGISTIC;

STRATA PSTRATUM;

CLUSTER PPSU;

WEIGHT FPWT;

Class Race (ref='White, non-latino') SEX (ref= '2 FEMALE') Poverty (ref=
'Non-Poverty') ParStat (ref= 'Two Parent') PARGRADE (ref= '1 LESS THAN HIGH
SCHOOL') / param=ref;

MODEL TOTsus (descending) = Race SEX Poverty ParStat PARGRADE / RSQUARE;

Title1 'Logistic Regression Block 2';

run;

PROC SURVEYLOGISTIC;

STRATA PSTRATUM;

CLUSTER PPSU;

WEIGHT FPWT;

Class SEX (ref= '2 FEMALE') Poverty (ref= 'Non-Poverty') ParStat (ref= 'Two
Parent') PARGRADE (ref= '1 LESS THAN HIGH SCHOOL') Race (ref='White, non-
latino') / param=ref;

MODEL TOTsus (descending)= Race SEX Poverty ParStat PARGRADE SETotal
raceXse;

Title1 'Logistic Regression: Block 3a';
```

```
run;
```

```
PROC SURVEYLOGISTIC;
```

```
STRATA PSTRATUM;
```

```
CLUSTER PPSU;
```

```
WEIGHT FPWT;
```

```
Class SEX (ref= '2 FEMALE') Poverty (ref= 'Non-Poverty') ParStat (ref= 'Two  
Parent') PARGRADE (ref= '1 LESS THAN HIGH SCHOOL') Race (ref='White, non-  
latino') / param=ref;
```

```
MODEL TOTsus (descending)= Race SEX Poverty ParStat PARGRADE PETotal_log  
raceXPETotal_log;
```

```
Title1 'Logistic Regression: Block 3b';
```

```
run;
```

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- Zumwalt, K., & Craig, E. (2005). Teachers’ characteristics: Research on the demographic profile. *Studying teacher education: The report of the AERA panel on research and teacher education*, 111-156.



## Curriculum Vitae

### EDUCATION

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- 2011 – Present**    **Lehigh University, Ph.D.**    **Bethlehem, PA**  
*APA Accredited (Full) & NASP Approved (Full) Program*  
Program: School Psychology, Pediatric School Psychology Track  
Subspecialization: Training under the federal *Leaders in Pediatric School Psychology* grant.
- 2009 - 2011**    **Miami University, M.S.**    **Oxford, OH**  
*NASP Approved (Full) & NCATE (Full) Accredited Program*  
Program: School Psychology
- 2004 - 2008**    **Miami University, B.A.**    **Oxford, OH**  
Major: Psychology  
Minor: Special Education

### CLINICAL EXPERIENCE

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#### **Internship**

- 2014 – 2015 Nemours/A.I. DuPont Hospital for Children**    **Wilmington, DE**  
*APA Accredited Internship (Full)*  
Track: Integrated Behavioral Health  
Supervisors: Cheyenne Hughes-Reid, Ph.D., Roger Harrison, Ph.D., Stephanie Chopko, Ph.D.,  
Laura Dewey, Ph.D.
- Two full days per week throughout the entire year in primary care: One site is located in an urban, predominately Spanish speaking population and the other in a diverse suburban community.
  - Outpatient assessment and therapy for diverse pediatric, developmental, and clinical presentations
  - Full year endocrinology rotation conducting group and individual therapy for children and adolescents diagnosed with diabetes and their families
  - Six month Behavior Consultation Clinic rotation providing short-term behavioral consultation to families of children one to six years of age. Included interprofessional training opportunities with pediatric medical residents
  - Co-facilitated parent-child disruptive behavior groups

#### **Externships**

- 2012 – 2013**    **Children’s Hospital of Philadelphia**    **Philadelphia, PA**  
*University City Primary Care, Partnering to Achieve School Success*  
Supervisor: Jennifer Mautone, Ph.D.
- Co-located ADHD treatment program within primary care.
  - Intervention components included modular family behavior therapy, school-based conjoint behavioral consultation, PCP consultation, and crisis management to improve children’s behavior, academic competence, and promote positive parent-child and family-school-pediatrician relationships.
  - Clients were elementary-aged, underserved, urban children and their families, teachers, and primary care physicians.

*Pediatric Sleep Clinic, Division of Pulmonary*

Supervisors: Melisa Moore, Ph.D. & Jodi Mindell, Ph.D.

- Interprofessional training in the assessment and intervention of pediatric sleep.
- Conducted comprehensive biopsychosocial intakes, interpreted sleep related tests (e.g., actigraphy, polysomnogram), and implemented behavioral interventions for sleep difficulties and treatment adherence.
- Clients included a culturally diverse sample of families with children ranging from infancy to young adult who were identified as having a wide range of emotional, behavioral, developmental, medical, neurological, and educational needs.

*Center for the Management of ADHD*

Supervisors: Jennifer Mautone, Ph.D.

- Conducted diagnostic evaluations of children exhibiting symptoms of ADHD.
- Co-facilitated three multi-family behavioral parent training groups with parents of children diagnosed with ADHD.
- Clients were a diverse sample of elementary-aged children with ADHD and their families.

**2012 – 2013 Drexel Hill Middle School**

**Upper Darby, PA**

*Upper Darby School District*

Supervisors: Glen Shenkman, Ed.S., Brenda Kabler, M.S., & Christine Novak, Ph.D.

- Conducted multidisciplinary psychoeducational assessments to determine special education and giftedness eligibility for middle school students.
- Consulted with teachers and families to develop, implement, and evaluate interventions and accommodations
- Provided individual and group cognitive-behavioral and solution-focused therapy to students with or at-risk for emotional and behavioral difficulties.
- Assisted in the development and implementation of school-wide multi-tiered behavioral interventions.

**2011 – 2012 Lehigh Valley Hospital**

**Allentown, PA**

*Pediatric Pulmonary Specialty Care and Sleep Center*

Supervisor: Patricia Manz, Ph.D.

- Interprofessional consultation (i.e., physicians, nurses, medical assistants, dieticians, respiratory therapists, schools) including warm hand-offs, curbside consults, and conjoint consultation with families and schools
- Developed screening and treatment protocols
- Conducted individual and group CBT, brief coping skills training, and behavioral adherence interventions across family and school systems
- Clients were children and adolescents diagnosed with pulmonary needs including cystic fibrosis, asthma, and sleep disorders.

**2011 – 2012 Sheridan & Muhlenberg Elementary**

**Allentown, PA**

*Allentown School District*

Supervisors: Deborah Cybuck, Ed.S., Jilda Hodges, Ph.D., & Christine Novak, Ph.D.

- Conducted multidisciplinary psychoeducational assessments to determine special education and giftedness eligibility.
- Consulted with teachers and families to develop, implement, and evaluate interventions and accommodations to improve students' academic and behavioral competence.
- Collaboratively developed, implemented, and evaluated health-promotion interventions with children, teachers, medical professionals, and parents.
- Clients included for a diverse range of urban, elementary-aged students.

**Spring 2011 Woodlawn Elementary**

**Cincinnati, OH**

*Princeton City Schools*

Supervisors: Denise Carrion, Ed.S. & Raymond Witte, Ph.D.

- Conducted multidisciplinary psychoeducational assessments to determine special education and giftedness eligibility
- Consulted with teachers and families to develop, implement, and evaluate interventions and accommodations at home and school to improve students' academic and behavioral competence.
- Clients included for a diverse range of urban, elementary-aged students.

**Spring 2011 Hamilton High School**

**Hamilton, OH**

*Hamilton City Schools*

Supervisors: Linda Mullholland, M.S. & Susan Mosely-Howard, Ph.D.

- Conducted individual and group cognitive behavioral therapy and consultation within a diverse group of high school students.
- Conducted risk assessments and crisis management interventions.

**RELEVANT WORK EXPERIENCE**

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**2009 – 2010 Miami University**

**Oxford, OH**

*Graduate Assistant to Dr. Jane Cole*

Mentored undergraduate research, assisted in the development of a special education assessment textbook, lectured in assessment and reading intervention courses, created assignments, graded tests/papers/projects, supported students in assignments, assisted in Dr. Cole's research.

**2009 Lebanon Junior High**

**Lebanon, OH**

*Full-Time Intervention Study Hall Instructor*

Monitored students' progress, assisted in intervention, helped develop and implement behavior management plans, designed collaborative learning opportunities, taught afterschool intervention classes for failing and at-risk students.

**2007 Victory Neighborhood Services**

**Cincinnati, OH**

*Youth Leader*

Worked in an urban Cincinnati community-based summer program to provide educational and mental health support to school-aged children.

**TEACHING EXPERIENCE**

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**2010 – 2011 Teaching Assistant**

**Oxford, OH**

*Miami University, College of Education, Health, and Society*

*EDP 201: Human Development and Learning in Social and Educational Contexts*

Supervisors: Doris Bergan, Ph.D. & Darrel Davis, Ph.D.

Taught 2 sections during the fall semester and 2 sections in the spring semester of the 2010-2011 academic year. Each section included 65-73 undergraduate students. Content included a survey of developmental and learning theories.

**2012 Guest Lecturer**

**Philadelphia, PA**

Invited by Dr. Nataliya Zelikovsky at La Salle University to conduct a lecture on School Consultation for the doctoral clinical psychology program.

## **2008 Distinguished Undergraduate Teaching Fellowship**

Oxford, OH

*Miami University, Psychology Department*

*PSY 333: Adolescent Development*

Supervisor: Carrie E. Hall, Ph.D.

Assisted in developing lesson plans, led review sessions, facilitated class-discussions, graded assignments, conducted an information seminar for students interested in school psychology, held office hours to provide additional support for students, and lectured on the School and Educational context within adolescent development.

## **SUPERVISION EXPERIENCE**

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### **Supervision Seminar and Practicum**

*Lehigh University*

Instructor/Supervisor: Christy Novak, Ph.D.

Provided direct instruction and experience supervising a 3<sup>rd</sup> year school psychology doctoral student's practicum activities. Grounded in a competency-based, scientist-practitioner model. Will conduct individual and group supervision. Supervision included didactic training, providing feedback on practica related tasks, observations of clinical skills, and development of supervisee's case conceptualization skills. Supervision skills will be evaluated using audio-taped sessions and documentation reviews.

## **AWARDS AND HONORS**

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### **Pediatric School Psychology Leadership Grant**

- Federally funded specialized leadership training grant, "Leadership Training in Pediatric School Psychology: Developing leaders for systemic change in high poverty, low performing schools with high need students with or at risk for Emotional\Behavior Disorders"

### **President of Student Affiliates for School Psychologists at Miami University (SASP)**

- Coordinating fundraising events and School Psychology Awareness Week activities, facilitating student program meetings, organizing conference trips, representing students at departmental meetings, planning and designing service learning and community engagement opportunities

### **Student Leader School Psychology Awareness Award (NASP)**

- Recipient of award for the 2009-2010 school year for professional leadership and increasing awareness of school psychology

### **Distinguished Undergraduate Teaching Fellowship**

- A highly competitive honor awarded to advanced undergraduate psychology students who demonstrate exceptional achievement in a particular domain. I was awarded the fellowship for my performance in developmental psychology.

## **PROFESSIONAL AFFILIATIONS**

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### **Affiliations**

- American Psychological Association (Division 16, School; Division 53, Child Clinical; Division 54, Pediatric)
  - *Student Representative* for Primary Care Special Interest Group (Division 54)
- Collaborative Family Healthcare Association
- National Association for School Psychologists

- Delaware and Pennsylvania Psychological Associations

## RESEARCH

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### **Research Assistant** (Undergraduate: 5 semesters)

*Department of Psychology, Miami University, Oxford, OH*

Advisor: Kurt Hugenberg, Ph.D.

Conducted experimental Social Cognition research on stereotypes, prejudice, discrimination, facial recognition, and ostracism. Activities included participating in weekly research discussion groups, developing research questions and hypotheses, implementing experiments, and analyzing data.

### **Master's Thesis**

*Department of School Psychology, Miami University, Oxford, OH*

Title: Motivational Profiles of Middle School Students within an RTI Model: Implicit Theories of Intelligence, Regulatory Focus, Goal Preference, Effort Attributions and Academic Self-Efficacy.

Advisor: Michael Woodin, Ph.D.

Successfully defended May 11, 2011.

### **Research Assistant**

*Department of School Psychology, Miami University, Oxford, OH*

Primary Investigators: Doris Bergen, Ph.D. & Michael Bush, Ph.D.

Collected, coded, analyzed, and disseminated data for two separate program evaluation projects.

### **Dissertation**

*Department of School Psychology, Lehigh University, Bethlehem, PA*

Title: Is family-school engagement a protective factor against racial disparities in discipline practices?

Advisor: Edward Shapiro, Ph.D.

To be defended when advisor returns from sabbatical in Spring 2015.

### **Co-investigator/Consultant**

Title: Utilizing Publicly Monitored Risks in the Study of Disproportionate Identification for Special Education

Primary Investigators: John Fantuzzo, Ph.D.; Whitney LeBoeuf, Ph.D.

Application of the KIDS Integrated Data System to identify publically monitored biological and social risks related to racial and ethnic disparities in identification for special education services.

### **Co-Investigator**

*College of Education, Lehigh University, Bethlehem, PA*

Primary Investigator: Bridget Dever, Ph.D

Examining effectiveness, utility, and feasibility of universal behavioral screening in high school. Investigating racial disparities in student-teacher relationships and how these differences affect behavioral risk, academic achievement, and motivation. Activities include participating in weekly research discussion groups, developing research questions and hypotheses based in literature, managing and analyzing large database, and dissemination through writing manuscripts and presenting at national conferences.

### **Accepted Publications**

Dever, B., Dowdy, E., Raines, T., **Hostutler, C.A.** (In Press). Addressing disproportionality in special education using a universal screening approach. *Journal of Negro Education*.

Pierce, S. J., **Hostutler, C. A.**, Watson, T. S. (2012). A pilot study using a computer-based rule following task to distinguish adolescents with and without a behavior disorder. *Computers in Human Behavior*,

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28(4), 1103-1108.

Noltemeyer, A. L., Sarr, B., Kunesh, C., **Hostutler, C. A.**, Frato, P. (2012). The effect of student and teacher characteristics on teacher impressions of- and responses to- student behaviors. *International Education Studies*, 5(4), 96-111.

Noltemeyer, A. L. & **Hostutler, C. A.** (2011). Systematic phonics instruction. *The Ohio School Psychologist*, 56(3), 24-26.

### **Manuscripts Under Review**

Brumley, B., LeBoeuf, W., Fantuzzo, J., **Hostutler, C.A.** (under review). Multiple early risks and special education diagnosis: Toward a better understanding of disproportionate identification. Manuscript submitted to *The Journal of Special Education* in August, 2014.

### **Peer-Reviewed Presentations**

**Hostutler, C.A.**, Fox, W.E., Jackelen, L.M., & Dever, B.V. (2014, August). Race and teacher caring: Attenuating effects on behavioral/emotional risk. Poster submitted to the annual meeting of the American Psychological Association (APA), Washington, DC. Manuscript in Prep.

**Hostutler, C.A.**, Hermetet-Lindsay, K.D., & Shapiro, E.S. (2014, August) Linking Specialty Care with School Services. In E.S. Shapiro (Chair), Putting the School into Pediatric Psychology. Collaborative programming symposium (Div. 16 & 54) to be presented at the annual meeting of the American Psychological Association, Washington, D.C.

Brumley, B., LeBoeuf, W., Fantuzzo, J., **Hostutler, C.A.** (2014, April). Utilizing publically monitored risks in the study of disproportionate identification for special education. Paper presented at the 2013 American Educational Research Association Conference in Philadelphia, PA.

**Hostutler, C. A.**, Hermetet-Lindsay, K.D., Miller, R. (2013, February). Adapting school psychologists' skills to target health care needs. Paper presented at the 2013 National Association of School Psychologists Annual Convention, Seattle, WA.

Hermetet-Lindsay, K.D., **Hostutler, C. A.**, Miller, R. (2013, February). Implementing a collaborative consultation model for integrated chronic illness care. Poster presented at the 2013 National Association of School Psychologists Annual Convention, Seattle, WA.

Pressimone, V., Krehbiel, C., **Hostutler, C. A.**, Hermetet-Lindsay, K., Gray, L., Carson, K., Shapiro, E., & DuPaul, G. (2012, June). Pediatric School Psychology: Advancing the training of doctoral level school psychologists. A poster presented at Pennsylvania Psychological Association's Annual Convention, Harrisburg, PA.

Kunesh, C., Noltemeyer, A., **Hostutler, C. A.**, Frato, P., & Sarr-Kerman, B. (2012, February). Bias in teachers' perceptions and decision making. Poster accepted for the 2012 National Association of School Psychologists Annual Convention, Philadelphia, PA.

**Hostutler, C. A.**, Sartor-Pierce, J., Watson, T. S. (2012, February). Pilot of a computer-based rule following assessment. Poster accepted for the 2012 National Association of School Psychologists Annual Convention, Philadelphia, PA.

**Hostutler, C. A.**, Timpone, L. A., Woodin, M. F. (2012, February). Motivational assessment within a Response to Intervention and Instruction Model. Paper session presented at the annual meeting of the

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National Association of School Psychologists, Philadelphia, PA.

**Hostutler, C. A.**, Timpone, L. A., Woodin, M. F. (2011, July). Motivational profiles of middle school students within an RTI Model. Poster session presented at the annual meeting of the American Psychological Association, Washington, D.C.

Flynn-Atkinson K. R., Woodin, M. F., **Hostutler, C. A.**, Timpone, L. A., (2011, February) Procedural integrity in the administration of curriculum-based measurement. Poster session presented at the annual meeting of the National Association for School Psychologists, San Francisco.

Cole, J. E., Owens, J., Miller, L. L., **Hostutler, C. A.**, & Terrill, P. (2010, April). Pre-service preparation of general education teachers for working with students with exceptionalities. Poster session presented at the annual meeting of the Council for Exceptional Children, Nashville, TN.