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## Racial Differences in Perceptions of Attention-Deficit/ Hyperactivity Disorder Behavior

Sungha Kang  
*University of Massachusetts Amherst*

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RACIAL DIFFERENCES IN PERCEPTIONS OF ATTENTION-  
DEFICIT/HYPERACTIVITY DISORDER BEHAVIOR

A Thesis Presented

By

SUNGHA KANG

Submitted to the Graduate School of the  
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of the requirements for the degree of

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SUNGHA KANG

Approved as to style and content by:

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Elizabeth Harvey, Chair

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Maureen Perry-Jenkins, Member

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Linda Isbell, Member

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Caren Rotello, Department Head  
Psychological and Brain Sciences

## ABSTRACT

### RACIAL DIFFERENCES IN PERCEPTIONS OF ATTENTION- DEFICIT/HYPERACTIVITY DISORDER BEHAVIOR

FEBRUARY 2019

SUNGHA KANG, B.A. UNIVERSITY OF IOWA

M.S. UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by Professor Elizabeth A. Harvey

Previous research has suggested there may be racial differences in how adults perceive and rate children's ADHD behavior (i.e., inattention, hyperactivity, impulsivity). The current study examined these differences between African-American/Black (AA/B) parents and European-American/White (EA/W) parents and teachers. Participants watched video clips of children in classrooms and rated their ADHD behaviors and their likelihood of having ADHD. Results showed that EA/W parents and teachers rated African-American boys' ADHD behaviors and their likelihood of having ADHD higher than AA/B parents. Mechanisms by which these differences exist were explored, including beliefs about stigma related to ADHD, values in movement and expressiveness, experiences with racism, and racial attitudes. Results suggested that EA/W teachers' racial attitudes toward African Americans were related to their ratings of African-American boys' ADHD behaviors and likelihood of having ADHD. More research is necessary to further explain the mechanisms by which such discrepancies in ratings of African-American boys' ADHD behaviors exist between African-American and European-American adults to inform culturally sensitive assessment and diagnosis of ADHD in African-American children.

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# CHAPTER 1

## INTRODUCTION

### a. Overview

Racial Differences in Perceptions of Attention-Deficit/Hyperactivity Disorder Behavior

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by developmentally deviant and pervasive symptoms of inattention, hyperactivity and/or impulsivity (American Psychiatric Association, 2013). ADHD is the most common childhood psychiatric condition in the United States, affecting 5 to 11% of children and adolescents (Center for Disease Control and Prevention, 2017). The diagnosis of ADHD relies on multimethod assessment of parent, teacher, and child reports of symptoms, allowing for input from different perspectives and from different contexts (Achenbach, McConaughy, & Howell, 1987; Kazdin, 2005). However, discrepancies between different informant ratings often occur in all forms of assessment (e.g., rating scales, structured interviews; Achenbach et al., 1987; Achenbach, 2011; De Los Reyes et al., 2011; Grills & Ollendick, 2002). Previous research has suggested there may be racial and ethnic differences in how adults perceive and rate children's ADHD-related behavior (Harvey et al., 2013, Lau et al., 2004). In particular, African-American adults have consistently rated African-American children's hyperactive, inattentive, and impulsive behaviors low compared to other raters (Harvey et al., 2013). On the other hand, European-American adults tend to rate African-American children's externalizing behaviors (e.g., hyperactivity, impulsivity, aggression) high compared to children of other races (DuPaul et al., 2014; DuPaul et al., 2015; Harvey et al., 2013; Hervey-Jumper, Douyon, & Franco, 2006; Lau et al., 2004; Samuel et al.,

1997). These discrepancies in ratings of children's behaviors may have implications for the accuracy with which African-American children receive diagnoses of ADHD.

However, little is known about why these racial differences exist. Such research is needed to inform culturally sensitive assessment and diagnosis of ADHD.

#### **b. Race and ADHD in the United States**

The rates of ADHD diagnosis in African-American children are estimated to be 65% to 75% of the rates for European-American children of similar socioeconomic backgrounds and symptom severity (Miller, Nigg, & Miller, 2008; Morgan, Hillemeier, Farkas, & Maczuga, 2014; Pastor, Duran, & Reuben, 2015). However, epidemiological studies suggest that the prevalence of ADHD is similar in African-American and European-American children (Costello, Keeler, & Angold, 2001). Researchers have posited that the low rate of diagnoses in African-American children could be due to lack of access to treatment and underutilization of health care services (Burgess, Ding, Hargreaves, van Ryn, & Phelan, 2008). Some have also argued that these differences may be a result of differences between African-American and European-American parents in beliefs about ADHD (Miller et al., 2008), familiarity with ADHD, and attributions for externalizing behavior (Bussing, Gary, Mills, & Garvan, 2007; Bussing, Schoenberg, & Perwien, 1998). These differences in beliefs, knowledge, and attitudes may not only play a role in different rates of parents seeking ADHD assessments for their children, but also may contribute to differences in perceptions and ratings of child behavior, which may result in differences in assessment results and rates of diagnosis. Thus, understanding racial differences in parents' perceptions and ratings of ADHD related behaviors may be key to understanding racial disparities in ADHD diagnoses.

### **c. Informant Discrepancies and Race in Ratings of Behavior Problems in Children**

Theoretical models have posited that informants' ratings of a child's behavior are likely affected by the actual symptoms (e.g., inattention and hyperactivity/impulsivity), the context (e.g., home or school), and informant characteristics (Dumenci, Achenbach, & Windle, 2011; Kraemer et al., 2003). Although the nature of the actual symptoms is likely to engender agreement among informants, the different contexts and informant characteristics may result in informant discrepancies in ratings of child behavior. A growing body of research has identified informant and child characteristics that are associated with informant discrepancy in ratings of externalizing behaviors. Race and ethnicity have emerged from this literature as a robust predictor of informant discrepancy (Harvey et al., 2013; Lau et al., 2004). In particular, studies have documented greater informant discrepancy in ratings of African-American children compared to European-American children across internalizing and externalizing developmental psychopathology (Kaufman, Swan, & Wood, 1980; Wachtel, Rodrigue, Geffken, Graham-Pole, & Turner, 1994; Walton, Johnson, & Algina, 1999; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Specifically, teachers tend to rate African-American children's externalizing behaviors high compared to African-American parents (Harvey et al. 2009; Lau et al., 2004; Lawson, Nissley-Tsiopinis, Nahmias, McConaughy, & Eiraldi, 2017), and compared to their own ratings of non-African-American children (DuPaul et al., 2015; Epstein et al., 2005; Lawson et al., 2017). Although much of this research has focused on externalizing problems broadly, teachers have also been found to consistently rate African-American children's behaviors related to ADHD (i.e., hyperactivity, attention problems) high compared to African-American parents (Harvey et al., 2013).

Furthermore, there is evidence that these racial differences in perception of child behavior are present even when adults are rating the same child behavior, suggesting that differences are not entirely a result of African-American children behaving differently with their teachers than with parents. In particular, when undergraduates of different races rated videotapes of children of different races, European-American observers rated African-American children as more defiant than European-American children. In contrast, African-American observers' mean ratings of European-American children's defiance were slightly (though not significantly) higher than their ratings of African-American children (Harvey et al., 2009). In sum, there is a compelling body of research suggesting that there are discrepancies in how adults of different races perceive and rate child behavior; however, the mechanisms underlying these discrepancies are not well understood.

#### **d. Factors that May Play a Role in Perceptions of ADHD Behavior**

Although little research has focused on identifying mechanisms that contribute to racial discrepancies in perceptions and ratings of ADHD behavior, theory and research point to a number of potential explanatory factors. In particular, stigma related to ADHD, parents' self-reported values in movement and expressiveness (i.e., *verve*), African-American parents' experiences with racial discrimination, and European-American teachers' racial attitudes are four factors that may play an important role in these disparities.

**i. Stigma related to ADHD.** Evidence suggests that African-American parents express more concerns with stigma associated with mental disorders (Corrigan, 2004; Corrigan & Watson, 2007; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). This

stigma is likely related to the label of a mental disorder that may negatively affect the public perception of that individual (Link et al., 1999), or the individual's self-stigma that is the product of internalizing the public's prejudicial attitudes (Corrigan & Watson, 2002). As members of an oppressed racial group in the United States, African Americans already face stigma in society (Gary, 2005). Therefore, the perceived social stigma of a mental disorder such as ADHD may be more salient to African Americans.

The nature of ADHD may be especially stigmatizing because it is a disorder that is not immediately visible, but can be severely impairing to the social and academic functioning of individuals with the diagnoses. Additionally, the chronic nature of ADHD exposes individuals with a diagnosis to stigma over the course of their development (Hinshaw, 2005). To date, only one study has examined stigma related to ADHD in African-American families; in a small qualitative study, Olaniyan et al. (2007) found that African-American parents reported concerns that ADHD would be stigmatizing for the children, believing that they would be "damaged" for the rest of their lives. This fear of stigma may keep them from seeking medical help for their children's behavior problems (Dempster, Whildman, & Keating, 2013), and might affect how they rate their children's behaviors. Research is needed to determine if in fact African-American parents hold more stigmatizing attitudes about ADHD compared to European-American parents and how these attitudes are related to their perceptions of ADHD related behavior.

**ii. Verve.** Cultural differences in valuing movement expressiveness may also play a role in discrepant ratings of children's ADHD behaviors. The African-American culture has traditionally valued movement and expressiveness, also known as verve (Boykin, 1983). African-American children display more verve behaviors with

greater variability in movement compared to their European-American counterparts (Carter, Hawkins, & Natesan, 2008; Guttentag, 1972). These tendencies for vevistic behaviors might reflect the home-rearing practices of African-American parents in which greater movement and expressiveness are encouraged in children (Boykin & Bailey, 2000). In a qualitative study examining African-American parents' perspectives on ADHD, one parent maintained that hyperactivity does not necessarily have to be an illness, but rather a normal child behavior (Olaniyan et al., 2007). These culturally constructed expectations and values for child behavior may influence the extent to which African-American parents perceive children's ADHD behaviors as problematic. More specifically, African Americans' cultural emphasis on movement and expressiveness is likely to lead African-American parents to perceive children's inattention and hyperactivity as being normal, and give lower ratings, compared to European-American parents and teachers. On the other hand, teachers may have different expectations of normal classroom behavior, and may be prone to perceiving these vevistic behaviors as defiance, hyperactivity, and/or impulsivity (Hale-Benson, 1986; Muhammad, 2003). Research is needed on how adults' experiences with respect to verve can influence their ratings of children's inattention and hyperactivity to elucidate the racial differences in ratings of children's ADHD behavior.

**iii. Experiences with racial discrimination.** Perceived racial discrimination has been associated with underutilization of medical and mental health care, even after controlling for sociodemographic characteristics and access to healthcare (Burgess et al., 2008). African-American children are estimated to use mental health services at half the rate of European-American children with similar diagnoses and SES, which likely in part



reflects the lower rate at which African-American parents seek help from mental health services (Coker et al., 2009; Wang, Olfson, Pincus, Wells, & Kessler, 2005). African-American parents report a greater level of distrust toward mental health professionals (McMiller & Weisz, 1996; Olaniyan et al., 2007), and greater concern about medication (Berger-Jenkins, McKay, Newcorn, Bannon, & Laraque, 2012). These are likely due in part to the historical mistreatment of African Americans in medical research (e.g., Tuskegee Study, Center for Disease Control and Prevention, 2016), which left a lasting scar and distrust toward healthcare professionals in the African-American community (See Luebbert & Perez, 2016 for review).

Evidence that perceived racial discrimination is associated with lower medical help-seeking behavior provides some indirect support for the notion that parents who have experienced greater discrimination may be hesitant to endorse problematic behavior in African-American children. Past experiences with racial discrimination may influence the degree to which African-American parents perceive and rate child behavior as problematic. Some African Americans report fearing that African Americans are more subject to overdiagnosis and misdiagnosis of mental disorders compared to European Americans (Bailey et al., 2010) and describe diagnoses of ADHD as “forcing African-American children to conform to a standard established by an oppressive social and racial hierarchy” (Davison & Ford, 2001, p. 268). These experiences with racism may make African-American parents more reluctant to endorse ADHD symptoms in African-American children. Research is needed to examine how parental experiences with racial discrimination can influence their ratings of children’s inattention and hyperactivity to better understand the racial differences in ratings of children’s ADHD behavior.

**iv. Racial Attitudes.** Discrepancies between teachers' and African-American parents' perceptions of child behavior may also be due to inflated ratings by teachers resulting from racial attitudes toward African Americans. These inflated ratings may directly contribute to parent-teacher discrepancies, but also may do so indirectly by causing African-American parents to protectively downplay problems. Teachers have been consistently found to rate African-American children as having more symptoms related to ADHD compared to European-American children (e.g., DuPaul et al., 2015; Epstein et al., 2005; Lau et al., 2004; Reid, 1998; Reid, Casat, Norton, Anastopoulos, & Temple, 2001; Samuel et al., 1997). It is unclear whether these differences are due to true behavioral differences or to teacher bias. Epstein et al. (2005) found that teachers rated African-American children's ADHD-related behaviors high compared to European American children, but argued that these ratings were corroborated by third-party observers, who also rated African-American children as showing a higher rate of activity in the classroom than European-American children. However, Epstein et al. (2005) did not report the observers' race, making it difficult to rule out the role of bias in observers' ratings.

Ingroup-outgroup bias theory suggests that individuals tend to perceive members of their own group more favorably than members of an outgroup (Tajfel, 1982). Thus, members of the dominant group (i.e., European Americans) are more likely to perpetrate bias toward members of the minority group (Devine, Plant, & Blair, 2001). This ingroup-outgroup bias theory may at least partially explain the phenomenon of adults of different races perceiving and rating children's inattentive, hyperactive, and impulsive behaviors differently. For example, a recent study of teachers' eye movements during observations

of children provides some indirect support for this notion. Researchers showed teachers a video of a multiracial classroom and instructed them to anticipate problematic behaviors. Teachers, who were predominantly European-American (66.7%), gazed significantly longer at African-American children, especially the African-American boys, when told to anticipate problematic behavior, though there were no differences in children's actual behavior (Gilliam, Maupin, Reyes, Accavitti, & Shic, 2016). Although this study did not directly measure teachers' racial attitudes, it suggests that teachers may expect problematic behaviors in African-American children which, in turn, may influence their ratings of African-American children's ADHD-related behavior. No studies to date have directly examined the role that racial attitudes play in teachers' ratings of children's behaviors, but these racial attitudes may influence the accuracy with which teachers rate African-American children's ADHD behaviors.

#### **e. Informant Discrepancies and Gender**

The informant discrepancy literature has also found parent-teacher discrepancies in ratings of children's behaviors as a function of child gender though the directionality of these discrepancies has varied across studies. For example, there were greater agreement in mothers' and teachers' ratings of boys' externalizing behaviors than ratings of girls' externalizing behaviors, but not in the ratings of their internalizing behaviors (Gagnon, Vitaro, & Tremblay, 1992). Similarly, others have found greater parent-teacher agreement in ratings of boys' emotional and behavioral difficulties than girls' (Collishaw, Goodman, Ford, Rabe-Hesketh, & Pickles, 2009). Others, however, have found no significant discrepancies in ways that parents and teachers rate children's behaviors as a function of child gender (e.g., Crane, Mincic, & Winsler, 2011). As such, although there

is mixed evidence in the role of child gender in parent-teacher agreements, child gender is an important factor to consider when studying informant discrepancies in ratings of child behavior.

#### **f. The Present Study**

In sum, there are racial disparities in the diagnosis of ADHD in children, and this may be due in part to differences in how African-American and European-American adults rate the presence of ADHD behavior in children. However, research has not generally moved beyond documenting these racial discrepancies to understand why these differences exist. In addition, most of the existing research on racial differences in perceptions of child behavior has not controlled for contextual differences in children's actual ADHD behavior. That is, differences in adults' perceptions of child behavior may be due to differences in how children of different races behave in the presence of adults of different races. This study aimed to fill these gaps in the literature and sought to identify factors that may explain the discrepancy between African-American parents' and European-American teachers' ratings of children's hyperactive, inattentive, and impulsive behaviors. To take into account differences in roles, this study compared African-American parents' ratings to both European American teachers and parents. In particular, the present study aimed to answer the following research questions:

**i. Question 1: Do African-American/Black parents rate children's ADHD behaviors differently than European-American/White teachers and parents? Do these differences vary as a function of child race?** Many studies have documented greater informant discrepancy between African-American parents and European-American teachers in ratings of child behavior. Specifically, African-American parents

consistently rate African-American children's ADHD behaviors lower than teachers do (Harvey et al., 2013; Lau et al., 2004). In the present study, I compared African-American and European-American adults' ratings of children's ADHD behavior, holding child behavior constant across rater to control for differences in how children of different races may behave with adults of different races. Based on existing theory and research reviewed above, I hypothesized that African-American parents will rate children as displaying fewer symptoms of ADHD compared to European-American parents and teachers, and that this difference will be larger when rating African-American children.

**ii. Question 2: Does ADHD stigma mediate the relation between adult race and ratings of child ADHD behaviors?** The invisible and chronic nature of ADHD may contribute to stigmatization of individuals with ADHD diagnoses (Hinshaw, 2005). African-American parents report fear of stigmatizing labels associated with ADHD (Olaniyan et al., 2007), and this fear for stigma may be related to how they perceive and rate children's behavior. Therefore, it is predicted that parents' stigma-related attitudes about ADHD will mediate the relation between adult race and their ratings of child behavior. Specifically, I hypothesized that African-American parents will report greater fear for stigma related to ADHD compared to European-American parents and teachers, and that greater fear for stigma related to ADHD will in turn be associated with lower ratings of ADHD behaviors for all children, regardless of child race.

**iii. Question 3: Does verve mediate the relation between adult race and ratings of child ADHD behaviors?** Adults' expectation of children's normal activity level may influence how they perceive and rate children's ADHD behavior. The African-American culture especially tends to value movement and expressiveness (i.e., verve;

Boykin & Bailey, 2000), which may affect the extent to which African-American parents perceive and rate children's inattention and hyperactivity as problematic. Therefore, I hypothesized that participants' self-reported verve will mediate the relation between adult race and their ratings of children's inattentive and hyperactive behaviors, regardless of child race.

**iv. Question 4: Are experiences with racism associated with African-American/Black parents' ratings of African-American children's ADHD behaviors?**

People who report greater prevalence of past experiences with racial discrimination also report using medical and mental health services less compared to those who report less experiences with discrimination (Burgess et al., 2008). The same processes through which experiences with discrimination make African Americans hesitant to seek mental health services may also lead African-American parents to be cautious about categorizing child behavior as problematic. Therefore, I hypothesized that African-American parents' past experiences with racial discrimination will be negatively correlated to their ratings of child behavior. Specifically, African-American parents who report having experienced greater prevalence of racial discrimination will rate African-American children's ADHD behavior lower than African-American parents who report less experience with racial discrimination.

**v. Question 5: Are racial attitudes associated with European-American/White adults' ratings of African-American children?** Although European-American teachers consistently rate African-American children's externalizing behavior high compared to non-African American children (DuPaul et al., 2015; Epstein et al., 2005; Lau et al., 2004; Reid, 1998; Reid et al., 2001; Samuel et al., 1997), it is unclear

whether their racial attitudes account for these discrepant ratings. In this study, I aimed to examine whether European-American teachers' ratings of African-American children's inattentive, hyperactive, and impulsive behaviors is related to their racial attitudes toward African-Americans. I hypothesized there will be a negative correlation between European-American teachers' racial attitudes toward African-Americans and their ratings of African-American children's inattentive and hyperactive behaviors.

## CHAPTER 2

### METHOD

#### a. Participants

Participants included 71 African-American parents (female  $n = 65$ ; male  $n = 6$ ), 65 European-American parents (female  $n = 49$ ; male  $n = 16$ ), and 60 European-American elementary school teachers (female  $n = 41$ ; male  $n = 19$ ). Five African-American parents, 14 European-American parents, and 8 European-American teachers reported having a child with ADHD. Eleven African-American parents, 24 European-American parents, and 21 European-American teachers reported having a family member with ADHD. Four African-American parents, 7 European-American parents, and 3 European-American teachers reported having ADHD themselves. All participants had at least a high school diploma or GED (see Table 1 for participant education and income). Most participants ( $n = 159$ ) reported being married or cohabiting. All participants were currently living in the United States and identified as either European-American/White (EA/W) or African-American/Black (AA/B). There was good regional representation with participants residing in 42 states (including District of Columbia).

#### b. Procedure

All participants were recruited from Amazon's Mechanical Turk (MTurk). Participants were screened twice through two identical surveys three weeks apart. During each screening, parents were asked to report the date of birth for each of their children, and teachers were asked the number of students in their classroom, the number of years they have been teaching, and the grade level at which they teach. Both parents and teachers were asked if they have heard of ADHD, and those who had not were not



invited to continue. This two-part screening procedure was designed to limit the number of MTurk workers who falsely claimed to meet participation criteria. If they met criteria through the two screening surveys and provided consistent responses over the two screenings, they were invited to participate in the full survey on Qualtrics.

In the full survey, all participants were presented with the consent form and were given the option to continue or to exit the survey. If they agreed to participate, they watched ten 1-minute video clips from classrooms of various age groups obtained from YouTube. After each clip, participants were asked to rate a designated child on their ADHD behaviors. Four video clips included two boys and two girls who appeared to be African-American, four video clips included two boys and two girls who appeared to be European-American, one video clip included an Asian-American boy, and one video clip included a Latina-American girl. Participants rated each child's behavior using selected items from the Vanderbilt Assessment Scale (Wolraich, 2003). They then rated the likelihood that each child in the video has ADHD on a 6-point Likert scale (*Very Unlikely* – *Very Likely*). To alleviate potential fatigue from consecutively watching ten video clips, participants were administered a demographic scale (part 1; see Appendix) after the fifth video clip. Moreover, to ensure participants were attending to each video clips carefully, they were asked to indicate the child that they just watched for four of the video clips. If they incorrectly indicated a different child, their survey was rerouted to have them watch the same child again. After rating the ten video clips, participants were asked to complete questionnaires examining their beliefs about stigma related to ADHD, verve, past experiences with racial discrimination, racial attitudes, and a demographic and family history scale (part 2; See Appendix).

The first screening compensated \$0.03 to each participant, and the second screening compensated \$0.05. For the full study, each participant was compensated \$4.00 upon correctly answering all eight attention check questions (e.g., “To show that you are reading each question carefully, please choose ‘disagree’ for this question.”) dispersed throughout the survey.

### **c. Materials**

The videos used to create the ten 1-minute clips were obtained from Youtube ([www.youtube.com](http://www.youtube.com)), and consisted of two preschool, one kindergarten, one second grade, and one third grade classroom containing a racially diverse group of children. These grade-levels were chosen because a review of videotapes across a wide range of grades indicated that children in the younger grades showed greater variability in observed activity level and inattention than children in older grades. From these videos, ten 1-minute segments were selected that displayed a child showing at least some ADHD-related behaviors. The two video clips displaying the Asian-American boy and Latina-American girl were included to make the objective of the study (i.e., comparing ratings of African-American children and European-American children) less apparent to the participants. Two clips were created from one preschool classroom (African-American girl, European-American girl), two were created from another preschool classroom (Latina girl, European-American girl), two were created from a kindergarten classroom (European-American boy, African-American boy), two were created from a second grade classroom (African-American girl, European-American boy), and two were created from a third grade classroom (Asian boy, African-American boy). In cases where more than one clip was created from the same classroom, none were identical segments.

Clips were displayed in an alternating order for race and gender of each children, so that no same-race children were shown consecutively. The order these video clips were shown was counterbalanced into two conditions, so that half of the participants watched an African-American child first, and the other half watched a European-American child first.

#### **d. Measures**

**i. Vanderbilt Assessment Scale.** The Vanderbilt Assessment Scale (Wolraich, 2003; See Appendix) is commonly utilized among clinicians, school psychologists, and pediatricians to assess ADHD in children and adolescents. The Vanderbilt Assessment Scale shows good to excellent internal consistency (Cronbach's alpha = .90 - .95; Wolraich et al., 2003), and includes 43 items, 18 of which apply to the diagnostic criteria of ADHD, which are rated on a 4-point Likert scale (*Never, Occasionally, Often, Very Often*). Participants rated children in the video clips using 11 items (4 from the inattention subscale, 7 from the hyperactivity/impulsivity subscale) from the Vanderbilt Assessment Scale Teacher Report Scale using a slider scale that ranged from 0 to 100, with the four anchors presented in the original Likert scale spaced evenly above the slider. These 11 items were selected based on what could be readily observed from the video clips. Using a slider scale instead of a 4-point Likert scale allowed for more precise comparison of participants' symptom endorsement for each child. The obtained value from this slider scale was averaged across items to yield a mean score for each participant's ratings of each child, where a higher score represents greater ADHD symptom endorsement. The selected items of the Vanderbilt for the current sample demonstrated good internal consistency (range of Cronbach's alpha = .86 - .94).

**ii. Child ADHD Stigma Questionnaire.** The 27-item Child ADHD Stigma Questionnaire (ASQ-C; See Appendix) assessed participants' beliefs about whether parents and children experience stigma if the child has ADHD (e.g., "Children who have ADHD feel embarrassed about it"; "Parents with a child who has ADHD feel guilty about it"). The Child ADHD Stigma Questionnaire was adapted from the ADHD Stigma Questionnaire (ASQ; Kellison, Bussing, Bell, & Garvan, 2010), which measures stigma regarding adult ADHD. Originally adapted from a 40-item HIV Stigma Scale (Berger, Ferrans, & Lashley, 2001), the 26-item ASQ asked questions about disclosure concerns, negative self-image, and concerns with public attitudes on a 4-point Likert scale (*Strongly disagree – Strongly agree*). The original ASQ demonstrated excellent internal consistency (Cronbach's alpha = .93; Kellison et al., 2010), and has shown convergent validity with self-reports of depression, self-esteem, and emotional symptoms (Kellison et al., 2010). Within the current sample, the ASQ also displayed excellent internal consistency (Cronbach's alpha = .94).

**iii. Home Movement Expressive Questionnaire (HMEQ).** The HMEQ (Boykin & Mungai-Kamau, 1997) was designed to assess the amount of movement expressiveness at children's home. The HMEQ consisted of 18 items rated on a 5-point Likert scale (*Almost Never – Almost Always*), and has demonstrated good reliability using children's self-report (Cronbach's alpha = .81; Boykin & Mungai-Kamau, 1997). Although the scale was designed to measure children's self-reports of verve, the items have face validity for adults (See Appendix). Within the current sample, the HMEQ demonstrated excellent internal consistency (Cronbach's alpha = .91).

**iv. Racial Attitudes Scale.** The Racial Attitudes Scale (Brigham, 1993; See Appendix) consisted of two scales, one for African-American respondents and one for European-American respondents, and was designed to assess prejudice and racial attitudes toward the other race. Each scale contained 20 items rated on a 7-point Likert scale (*Strongly disagree – Strongly agree*). The scale that measured Whites' Attitudes Toward Blacks (ATB) included 10 positively worded and 10 negative worded items with good reliability (e.g., "Black people are demanding too much too fast in their push for equal rights"; Cronbach's alpha = .88; Brigham, 1993). The scale that measures Blacks' Attitudes Toward Whites (ATW) included 6 positively worded and 14 negatively worded items with acceptable reliability (e.g., "Most white people feel that black people are getting too demanding in their push for equal rights"; Cronbach's alpha = .75; Brigham, 1993). The participants in the current study were administered the racial attitudes scale that corresponds to their self-identified race. Only the ATB was used in the proposed study but the ATW scale was also administered to African-American participants for exploratory purposes. For the current sample, the ATB and ATW both demonstrated acceptable reliability (ATB Cronbach's alpha = .88; ATW Cronbach's alpha = .78).

**v. Racial and Ethnic Microaggressions Scale (REMS).** REMS (Nadal, 2011; See Appendix) is a 45-item questionnaire that assesses participants' perceived discrimination on six factors: Assumptions of inferiority, Second-class citizen and assumptions of criminality; Microinvalidations; Exoticization/assumptions of similarity; Environmental microaggressions; and Workplace and school microaggressions. It asked participants to indicate the number of times (*0 times to more than 5 times*) in the past 6 months they experienced the event described by each item. Nadal (2011) found excellent

overall reliability from African Americans, Latina/os, Asian Americans, and multiracial participants ( $\alpha = .91$ ), and found good validity ( $r_s = .24 - .46, p < .01$ ) when compared to other scales that examine perceived discrimination (Racism and Life Experiences Scale-Brief; Utsey, 1998). Within the current sample, the REMS displayed excellent internal consistency (Cronbach's alpha = .90). African-American participants' ratings were used in the present study, though the scale was administered to all participants.

## CHAPTER 3

### RESULTS

#### a. Preliminary Analyses

Examination of skewness coefficients indicated that ratings of children's ADHD behavior were significantly skewed (skewness coefficient  $> 1.00$ ) for 5 of the 8 video clips, so square root transformations were applied to all ratings of children's ADHD symptoms. The skewness statistics for ratings of children's likelihood of having ADHD were acceptable, so those variables were not transformed. Eight variables were constructed (four for ADHD ratings and four for ADHD likelihood ratings) by averaging ratings within each race for boys and girls separately (African-American boys; African-American girls; European-American boys; European-American girls). All analyses were completed controlling for participant income and education level.

#### b. Descriptive Statistics

Table 1 presents means and standard deviations for all study variables separately for each group. There were no significant differences between African-American/Black (AA/B) parents', European-American/White (EA/W) parents', and European-American/White (EA/W) teachers' beliefs about stigma related to ADHD and values in movement and expressiveness (i.e., *verve*), all  $ps > .05$ . There were also no significant differences across groups in income, but EA/W teachers were significantly more educated than both AA/B parents ( $p < .001$ ) and EA/W parents ( $p < .001$ ), and EA/W parents were significantly older than AA/B parents ( $p = .02$ ) and EA/W teachers ( $p = .01$ ).

Intercorrelations are presented in Table 2. Ratings of ADHD symptoms and likelihood of having ADHD were significantly correlated with each other. Control variables (income and education) were significantly correlated with each other ( $p < .001$ ), but with no other study variables with the exception of the correlation between income and EA/W teachers' racial attitudes toward African Americans ( $r = -.28, p = .04$ ) and income and AA/B parents' experiences with racism ( $r = .25, p = .05$ ). In particular, teachers who earned greater income indicated more negative racial attitudes toward African Americans, and AA/B parents who earned greater income indicated more experiences with racism.

**c. Question 1. Do African-American/Black parents rate children's ADHD behaviors differently than European-American/White teachers and parents? Do these differences vary as a function of child race?**

**i. Ratings of ADHD behaviors.** In a mixed-designs ANOVA, participants' ratings of children's ADHD behavior was the dependent variable<sup>1</sup>, child race and child gender were two within-subjects factors, adult status (AA/B parent, EA/W parent, EA/W teacher) was a between-subjects factor, and participant education and income were entered as covariates. There was a significant child race by adult status interaction,  $F(2, 190) = 3.27, p = .04$ , indicating that there were significant differences in how AA/B parents, EA/W parents, and EA/W teachers rated children's ADHD behaviors as a function of children's race (See Table 3). Follow-up one-way ANOVAs with adult status as a between-subjects factor were completed separately for African-American boys,

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<sup>1</sup> Exploring ratings of inattention and hyperactivity/impulsivity separately showed similar patterns of findings so the combined ADHD symptoms variable was used for all analyses.



African-American girls, European-American boys, and European-American girls because inspection of means suggested that patterns differed across gender. There were no significant main effects of adult status for ratings of European-American boys,  $F(2, 193) = 0.57, p = .57$ , European-American girls,  $F(2, 193) = 0.15, p = .86$ , or African-American girls,  $F(2, 193) = 0.55, p = .58$ . However, there were significant differences in adults' ratings of African-American boys,  $F(2, 193) = 3.36, p = .04$ . A planned contrast comparing the two EA/W adult groups to AA/B parents was significant ( $p = .02$ ), indicating that EA/W parents ( $M = 4.98, SD = 1.15$ ) and teachers ( $M = 4.88, SD = 1.45$ ) rated African-American boys' ADHD behaviors significantly higher compared to AA/B parents ( $M = 4.37, SE = 1.74$ ; See Figure 1 for group comparisons of discrepancies for each pair of children). Planned contrasts comparing AA/B parents to each EA/W adult group separately showed a marginally significant difference for EA/W teachers ( $p = .07$ ) and a significant difference for EA/W parents ( $p = .02$ ).

**ii. Likelihood of having ADHD.** In a mixed-designs ANOVA, participants' ratings of children's likelihood of having ADHD was the dependent variable, child race and child gender were two within-subject factors, adult status (AA/B parent, EA/W parent, EA/W teacher) was a between-subjects factor, and participant education and income were entered as covariates. There was a significant child race by adult status interaction,  $F(2, 190) = 3.12, p = .05$ , indicating that there were significant differences in how AA/B parents, EA/W parents, and EA/W teachers rated children's likelihood of having ADHD as a function of children's race (See Table 3). Follow up one-way ANOVAs with adult status as a between-subjects factor were completed separately for African-American boys, African-American girls, European-American boys, and

European-American girls because descriptive statistics suggested that patterns differed across gender. There were no significant main effects of adult status for ratings of European-American boys,  $F(2, 195) = 1.59, p = .21$ , European-American girls,  $F(2, 193) = 0.94, p = .39$ , or African-American girls,  $F(2, 193) = 0.78, p = .46$ . However, there were significant differences in adults' ratings of African-American boys,  $F(2, 193) = 3.64, p = .03$ . A planned contrast comparing the two EA/W adult groups to AA/B parents was significant ( $p = .008$ ), indicating that EA/W parents ( $M = 3.07, SD = 0.97$ ) and teachers ( $M = 3.16, SD = 0.89$ ) rated African-American boys' likelihood of having ADHD significantly higher compared to AA/B parents ( $M = 2.74, SD = 0.99$ ; See Figure 2 for group comparisons of discrepancies for each pair of children). Planned contrasts comparing AA/B parents to each EA/W adult group separately showed significant difference between AA/B parents and EA/W teachers ( $p = .01$ ) as well as between AA/B parents and EA/W parents ( $p = .04$ ).

**d. Question 2. Does ADHD stigma mediate the relation between adult race and ratings of child ADHD behaviors?**

PROCESS (Hayes, 2014) was used to examine if participants' beliefs about stigma related to ADHD (which I will refer to as *stigma*) mediated the relation between race and ratings of children's ADHD behavior and their likelihood of having ADHD. Participants' race was dummy coded as European-American/White as a reference group and their income and education were entered as covariates. The direct path from adult race (AA/B vs. EA/W) to stigma ( $b = -0.04, SE = 0.11, p = .67$ ) was not significant nor was the direct path from stigma to ratings of children's ADHD behavior, controlling for adult race ( $b = -0.01, SE = 0.15, p = .95$ ). The indirect path from adult race to ratings of

children's ADHD behavior was also non-significant ( $b = .0004$ ; 95% CI [-0.64, 0.02]). Furthermore, the direct path from adult race to ratings of ADHD behavior was not significant controlling for stigma ( $b = -0.22$ ,  $SE = 0.21$ ,  $p = .30$ ). As for children's likelihood of having ADHD, the direct path from adult race to stigma ( $b = -0.04$ ,  $SE = 0.11$ ,  $p = .67$ ) was not significant nor was the direct path from stigma to ratings of children's likelihood of having ADHD, controlling for adult race ( $b = 0.10$ ,  $SE = 0.08$ ,  $p = .23$ ). The indirect path from adult race to ratings of children's likelihood of having ADHD was also non-significant ( $b = -0.004$ ; 95% CI [-0.38, 0.09]). The direct path from adult race to ratings of children's likelihood of having ADHD was marginally significant controlling for stigma ( $b = -0.15$ ,  $SE = 0.12$ ,  $p = .22$ )<sup>2</sup>. Taken together, these results suggest that participants' perceived stigma related to ADHD did not significantly differ as a function of their race, and this stigma did not significantly predict their ratings of children's ADHD behaviors or their likelihood of having ADHD.

Because racial differences in adults' perceptions identified in Question 1 were specific to parents' ratings of African-American boys, exploratory analyses examined whether stigma mediates this relation. Only the direct paths from parent race (AA/B parent vs. EA/W parent) to ratings of African-American boys' ADHD behaviors ( $b = -0.60$ ,  $SE = 0.27$ ,  $p = .03$ ) and their likelihood of having ADHD ( $b = -0.36$ ,  $SE = 0.17$ ,  $p = .04$ ) were significant. There was no evidence for mediational role of stigma (inattention and hyperactivity/impulsivity:  $ab = -0.001$ ; 95% CI [-0.05, 0.06]; likelihood of having ADHD:  $ab = 0.001$ ; 95% CI [-0.03, 0.05]).

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<sup>2</sup> Exploratory analyses examining the mediating effect of each of the subscales of the ADHD Stigma Questionnaire (Disclosure concerns; Negative self-image; Concerns with public attitudes) showed no significant effects.

**e. Question 3. Does verve mediate the relation between adult race and ratings of child ADHD behaviors?**

PROCESS (Hayes, 2014) was also used to examine if participants' values in movement and expressiveness (i.e., verve) mediates the relation between race and ratings of children's ADHD behavior and their likelihood of having ADHD. Participants' race was dummy coded as EA/W as the reference group and their income and education were entered as covariates. The direct path from adult race (AA/B vs. EA/W) to verve ( $b = 0.11, SE = 0.10, p = .25$ ) was not significant, but the direct path from verve to ratings of children's ADHD behavior was significant, controlling for adult race ( $b = .41, SE = .15, p = .008$ ). This indicates that participants who endorsed greater values in movement and expressiveness were significantly more likely to rate children's ADHD behavior higher. The indirect path from adult race to ratings of children's ADHD behavior was non-significant ( $b = 0.05; 95\% CI [-0.71, 0.10]$ ), as was the direct path from adult race to ADHD behavior ratings controlling for verve ( $b = -0.31, SE = 0.20, p = .13$ ). As for adults' ratings of children's likelihood of having ADHD, the direct path from adult race to verve ( $b = 0.11, SE = 0.10, p = .25$ ) was not significant nor was the direct path from verve to ratings of children's likelihood of having ADHD controlling for adult race ( $b = -0.04, SE = 0.09, p = .63$ ). The indirect path from adult race to ratings of children's likelihood of having ADHD was not significant ( $b = -0.005; 95\% CI [-0.06, 0.01]$ ), nor was the direct path from adult race to ratings of children's likelihood of having ADHD controlling for verve ( $b = -0.15, SE = 0.12, p = .21$ ). Taken together, these results suggest that participants' values in movement and expressiveness did not significantly

mediate the relation between adult race and ratings of children's ADHD behaviors or their likelihood of having ADHD.

**f. Question 4. Are experiences with racism associated with African-American (AA/B) parents' ratings of African-American children's ADHD behaviors?**

The relations between AA/B parents' past experiences with racial discrimination (REMS) and their ratings of children's ADHD behaviors were examined with Pearson correlations. Higher REMS scores indicated more experiences with racial discrimination. AA/B parents' reports of past experiences with racial discrimination were positively correlated with their ratings of African-American boys' ( $r = .28, p = .03$ ), African-American girls' ( $r = .25, p = .05$ ), European-American boys ( $r = .33, p = .008$ ), and European-American girls' ( $r = .34, p = .005$ ) ADHD behaviors. AA/B parents' reports of past experiences with racial discrimination was only positively correlated with their ratings of European-American girls' ( $r = .26, p = .04$ ) likelihood of having ADHD, and neither African-American boys ( $r = -.10, p = .45$ ) nor African-American girls ( $r = .08, p = .52$ ; See Table 4).

**g. Question 5. Are racial attitudes associated with European-American (EA/W) adults' ratings of African-American children?**

The relationship between EA/W adults' negative racial attitudes toward African Americans and their ratings of African-American children's ADHD behavior was examined with Pearson correlations. Results showed a significant relation between teachers' racial attitudes and their ratings of African-American children's ADHD behaviors. Specifically, teachers who reported more negative racial attitudes toward African Americans rated African-American boys' ADHD symptoms significantly higher

( $r = -.28, p = .04$ ), and rated African-American boys' likelihood of having ADHD significantly higher ( $r = -0.40, p = .002$ ). However, teachers who reported more negative racial attitudes toward African Americans also rated European-American boys' ADHD symptoms significantly higher ( $r = -.28, p = .03$ ). Teachers' racial attitudes were not significantly related to African-American girls' ( $r = .02, p = .86$ ) or European-American girls' ( $r = .13, p = .34$ ) ratings of ADHD behaviors or their likelihood of having ADHD (AA girls:  $r = -.15, p = .28$ ; EA girls:  $r = -.23, p = .09$ ; See Table 4). Exploratory analyses for European-American parents showed their racial attitudes were not significantly related to their ratings of African-American boys' ( $r = .06, p = .67$ ) or African-American girls' ( $r = .02, p = .90$ ) ADHD symptoms, or their likelihood of having ADHD (boys:  $r = .01, p = .92$ ; girls:  $r = -.15, p = .24$ ).

## CHAPTER 4

### DISCUSSION

The present study sought to examine whether there are racial differences in ways that adults perceive and rate children's ADHD-related behaviors as a function of child race. Further, it sought to test possible mechanisms by which these differences may occur including adults' beliefs about stigma related to ADHD, their values in movement and expressiveness (i.e., verve), their past experiences with racism, and their racial attitudes. The results revealed significant differences in ways that African-American/Black (AA/B) parents and European-American/White (EA/W) parents and teachers rate African-American boys' ADHD behaviors and their likelihood of having ADHD. Specifically, EA/W adults rated African-American boys' ADHD behaviors higher than AA/B parents, and they indicated greater likelihood that African-American boys might have ADHD than AA/B parents. There were no differences in their ratings of any other children's ADHD behaviors or their likelihood of having ADHD. Neither stigma nor verve explained these racial differences in adults' perception and ratings of ADHD behaviors. Teachers' racial attitudes, however, were related to their ratings such that teachers with more negative attitudes toward African Americans rated African-American boys' ADHD behaviors and their likelihood of having ADHD behaviors higher than teachers who reported less negative racial attitudes.

#### **a. Racial Differences in Ratings of ADHD Behaviors**

Observed racial differences in perceptions of African-American boys are consistent with past studies that have documented discrepancy in ratings of African-American children's externalizing behaviors (DuPaul et al., 2015; Epstein et al., 2005;

Harvey et al., 2013; Lawson et al., 2017; Lau et al., 2004). In the existing literature of informant discrepancies, however, children's behavior has not been held constant (with exception of Harvey et al., 2013), leaving the possibility of actual discrepancies in how children behave at home and at school. Results of the present study suggest that differences in adults' ratings of African-American boys are due at least in part to differences in perception rather than differences in how children of different races may behave in different settings. Moreover, these findings extend results of Harvey and colleagues by documenting discrepancies in ADHD behavior specifically (rather than other externalizing problems more generally) and by demonstrating these differences in teachers' and parents' perceptions (rather than undergraduate observers).

What remains unclear is whether observed discrepancies are due to AA/B parents underestimating African-American boys' ADHD symptoms or to EA/W parents and teachers overestimating symptoms. Findings by Gilliam et al. (2016) that preschool teachers are significantly more likely to gaze at African-American boys when told to expect challenging behaviors lend support to the latter. The fact that AA/B parents gave comparable ratings to European-American and African-American boys whereas EA/W parents and teachers gave higher ratings to African-American boys than to European-American boys is also consistent with EA/W parents and teachers overestimating. However, in the absence of an objective way to quantify ADHD behaviors, it is impossible to know if the African-American and European-American boys in the videos were in fact showing similar behaviors. It is also possible that discrepant reports are due to AA/B parents underestimating ADHD symptoms; however, the fact that AA/B parents perceived European-American children and African-American girls similarly to EA/W



adults suggests that AA/B parents do not underestimate ADHD symptoms in general. If they underestimate ADHD symptoms, this phenomenon is specific to African-American boys. This could be due to AA/B parents' understanding of the unique challenges that African-American men and boys face in society such as being perceived as threats (Todd, Thiem, & Neel, 2016), causing them to be inclined to protect African-American boys by underreporting their externalizing behaviors. It is also possible that AA/B parents have a higher baseline of expected activity level for African-American boys, leading them to give lower ratings of ADHD symptoms in African-American boys than EA/W adults.

Our findings may explain patterns of disparities in the diagnosis and treatment of African-American boys. On the one hand, African-American boys have lower rates of ADHD diagnosis (Miller, Nigg, & Miller, 2008; Morgan et al., 2014; Pastor, Duran, & Reuben, 2015) and are less likely to be treated for ADHD (Bussing et al., 1998; Morgan, Staff, Hillemeier, Farkas, & Maczuga, 2013; Sevens et al., 2005; Zarin et al., 1998; Zito et al., 1998). On the other hand, African-American boys are overrepresented in the special education system (Office of Special Education and Rehabilitative Services, 2018) and the school disciplinary system (e.g., suspensions; Losen & Martinez, 2013). It is likely that parents play a larger role in whether or not a child is diagnosed with ADHD, because receiving an ADHD diagnosis typically involves having parents consult with a pediatrician and/or seek an ADHD evaluation. In contrast, special education placement and school disciplinary actions lie in the hands of school professionals who are predominantly European-American in many schools. Thus, African-American parents may be less likely to identify and seek assessment for their children's ADHD behaviors because they are less likely than European-American adults to perceive their children to

be showing ADHD behaviors. In contrast, if European-American adults perceive higher ADHD behaviors in African-American boys, this may lead to higher rates of special education placement and disciplinary actions. Thus, it is important for psychologists and school personnel to be aware of these discrepancies and carefully consider what is at stake when assessing externalizing behaviors in African-American children.

### **b. Mechanisms of Racial Differences in Ratings of ADHD**

The results of the present study found insufficient evidence that participants' beliefs about stigma related to ADHD, differences in verve, or experiences with racism accounted for racial differences in ratings of children's ADHD behavior. In fact, there were no racial differences in beliefs about stigma related to ADHD or verve. Of note, verve was related to ratings of ADHD behavior such that participants who endorsed greater values in movement and expressiveness rated children's ADHD behavior significantly higher. It is possible that participants who endorsed greater values in verve are more likely to notice children's higher activity levels, though they may not necessarily perceive such behaviors to be problematic in children. Although AA/B parents' experiences with racism were related to their ratings of African-American children's ADHD behaviors, the relation was in the opposite direction than predicted. Reports of greater experiences with racism were associated with higher ratings of children's ADHD behaviors, regardless of race and gender. It is possible that experiences with adverse social experiences such as racism may cause adults to perceive the world through a more negative lens. In this case, AA/B adults who have experienced greater prevalence of racism may be more inclined to perceive and rate child behavior as problematic because of their past negative experiences and outlook of the world.

There was evidence that EA/W teachers' racial attitudes may play a role in their perceptions of ADHD behaviors. Specifically, EA/W teachers who reported more negative racial attitudes gave higher ratings of African-American boys' ADHD behaviors as well as their likelihood of having ADHD. Thus, the discrepant ratings between European-American teachers and African-American parents found in this and previous studies (Harvey et al. 2009; Lau et al., 2004; Lawson et al., 2017) may be largely driven by teachers who hold more negative racial attitudes. This highlights the importance of more systematic training on teachers' racial sensitivity and awareness to encourage more positive racial attitudes. Further research is necessary to elucidate the role of teachers' biases in their ratings of African-American students and to inform appropriate responses to such biases. Of note, teachers' racial attitudes were also negatively correlated with their ratings of European-American boys' ADHD behaviors but with no other children's ADHD behaviors or their likelihood of having ADHD. It may be that teachers' racial attitudes may be correlated with a third variable that may account for this relation. For example, more conservative beliefs may underlie both racial attitudes and expectations for appropriate child behavior, and thus account for the observed effect.

### **c. Limitations**

Though the present study was one of the few that examined racial discrepancies in adults' perception and reports of children's ADHD behaviors by holding children's actual behaviors constant, it is not without limitations. First, children's activity level or degree of ADHD symptoms were not held constant across the ten videos used in the study. Although I was primarily interested in the discrepancies between adults of different races' perception and rating of child behavior, the actual differences in children's ADHD

behaviors may have affected the results. Second, each video clip was only one minute long, which may have been insufficient for participants to accurately observe and rate ADHD behavior in each child. Third, participants observed and rated children's ADHD behaviors only in the classroom setting. The pattern of discrepancies in parent and teacher ratings of child behavior may be different if they observed children in familiar settings such as the home. Fourth, each race and gender was represented by only four children, so findings may not generalize to other children. Fifth, only European-American/White teachers were included in the study. Though 84% of elementary school teachers are European-American (Office of Planning, Evaluation, and Policy Development, 2016), inclusion of African-American/Black elementary school teachers would have provided deeper understanding of the parent-teacher discrepancies in ratings of African-American children's ADHD behaviors. Lastly, although the use of Amazon's Mechanical Turk (MTurk) allowed me to obtain a geographically diverse sample, there are some limitations to this method of recruitment. Although I employed a rigorous double-screening process over 3 weeks to ensure that all participants were either European-American/White or African-American/Black parents of elementary school-aged children or European-American/White elementary school teachers, the online data collection may have left room for fraudulent identification to meet participation criteria.

#### **d. Future Directions and Implications**

The present study sought to examine racial differences between adults' ratings of children's ADHD behaviors as a function of child race. Although clear racial differences were found, it remains unclear why these differences exist. Future studies should further explore mechanisms that explain these racial differences in adults' perception of African-

American boys' ADHD behaviors. This study did point to teachers' racial attitudes toward African Americans as a potentially important mechanism and this should be further explored.

These findings suggest several clinical and practical implications. For example, more systematic efforts and interventions to address the potential role of teachers' racial biases will be imperative in ensuring fair treatment of racial and ethnic minority children in the education system. In addition, clinicians using teacher reports in assessment of ADHD should be aware of these racial discrepancies in ratings of African-American boys and utilize those ratings with caution and sensitivity. Recognizing these findings and addressing these issues such as teachers' racial bias and systematic discrepancies in informant ratings will make important contribution to minimizing racial disparities in the assessment of ADHD.

Table 1. Descriptive Statistics of Study Variables

		AA Parents <i>M (SD)</i>	EA Parents <i>M (SD)</i>	EA Teachers <i>M (SD)</i>
ADHD ratings	AA boys	4.37 (1.74)	4.98 (1.15)	4.88 (1.45)
	AA girls	4.05 (1.84)	4.02 (1.45)	4.17 (1.59)
	EA boys	4.40 (1.88)	4.28 (1.62)	4.60 (1.57)
	EA girls	5.43 (1.84)	5.40 (1.45)	5.68 (1.57)
ADHD likelihood	AA boys	2.74 (0.99)	3.08 (0.97)	3.16 (0.89)
	AA girls	2.35 (1.05)	2.30 (0.91)	2.51 (0.92)
	EA boys	2.76 (1.01)	2.66 (1.08)	2.97 (0.79)
	EA girls	3.06 (1.09)	2.92 (1.10)	3.18 (0.86)
Stigma		2.80 (0.67)	2.82 (0.73)	2.83 (0.70)
Verve		3.19 (0.68)	3.09 (0.60)	3.01 (0.67)
Racial attitudes		--	5.58 (0.87)	5.77 (0.91)
Experiences with racism (REMS)		0.99 (0.64)	--	--
Demographic Variables				
	Income	3.20 (1.56)	3.68 (1.67)	3.55 (1.42)
	Education	7.10 (1.60)	6.72 (1.54)	8.41 (0.59)
	Age	33.92 (5.80)	36.83 (6.36)	33.60 (0.45)

Note. Income was coded 1) 0-\$19,999; 2) \$20,000-\$39,999; 3) \$40,000-\$59,999; 4) \$80,000-\$99,999; 5) \$100,000-\$119,999; 6) \$120,000-\$139,999; 7) \$140,000-\$159,999; 8) \$160,000-\$179,999; 9) \$180,000-\$199,999

Education was coded 1) 8<sup>th</sup> grade; 2) 9<sup>th</sup> grade; 3) 10<sup>th</sup> grade; 4) 11<sup>th</sup> grade; 5) H.S. Diploma or G.E.D.; 6) Associate degree; 7) Vocational degree; 8) Bachelor's degree; 9) Master's degree; 10) Ph.D., J.D., M.D.

Table 2. Intercorrelations of Study Variables

		AA <sub>b</sub>	AA <sub>g</sub>	EA <sub>b</sub>	EA <sub>g</sub>	AA <sub>b</sub>	AA <sub>g</sub>	EA <sub>b</sub>	EA <sub>g</sub>	Stigma	Verve	REMS	ATB <sub>P</sub>	ATB <sub>T</sub>	Income
ADHD behaviors	AA boys (AA <sub>b</sub> )	--													
	AA girls (AA <sub>g</sub> )	.59***	--												
	EA boys (EA <sub>b</sub> )	.57***	.66***	--											
	EA girls (EA <sub>g</sub> )	.63***	.66***	.64***	--										
ADHD likelihood	AA boys (AA <sub>b</sub> )	.57***	.35***	.28***	.29***	--									
	AA girls (AA <sub>g</sub> )	.26***	.58***	.26***	.31***	.51***	--								
	EA boys (EA <sub>b</sub> )	.31***	.38***	.58***	.27***	.47***	.46***	--							
	EA girls (EA <sub>g</sub> )	.27***	.36***	.30***	.52***	.47***	.61***	.42***	--						
Stigma		-.04	.04	.04	-.02	.03	.15*	.11	.05	--					
Verve		.14	.17*	.09	.20**	.007	-.06	-.09	.05	-.01	--				
Experiences with Racism (REMS; AA parents; <i>n</i> = 64)		.28*	.25*	.33**	.34**	-.10	.08	.13	.26*	-.14	.04	--			
Racial Attitudes toward Blacks (ATB <sub>P</sub> ; EA parents; <i>n</i> = 64)		.06	.02	.07	.06	.01	-.15	-.02	-.13	-.05	.01	--	--		
Racial Attitudes toward Blacks (ATB <sub>T</sub> ; EA teachers; <i>n</i> = 57)		-.28*	.02	-.28*	-.13	-.40**	-.15	-.21	-.23	-.22	.32*	--	--	--	
Income		-.07	-.06	-.05	-.09	-.09	-.03	.00	-.12	-.08	-.12	.25*	.01	-.18	--
Education		-.01	-.09	-.04	-.02	-.08	-.03	-.03	-.10	-.12	-.11	.17	-.03	-.28*	.39***

\**p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

Table 3. Interactions and Main Effects of Ratings of ADHD

	Dependent Variable: ADHD Behavior			Dependent Variable: Likelihood of Having ADHD		
	Adult status (AA, EA <sub>P</sub> , EA <sub>T</sub> )			Adult status (AA, EA <sub>P</sub> , EA <sub>T</sub> )		
	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Child race (CR)	4.54	1, 190	.03	119	1, 190	.28
CR*Income	1.32	1, 190	.23	1.14	1, 190	.29
CR*Education	1.48	1, 190	.25	0.41	1, 190	.52
CR*Adult status	3.27	2, 190	.04	3.12	2, 190	.05
Child gender (CG)	1.34	1, 190	.25	0.003	1, 190	.96
CG*Income	0.19	1, 190	.67	0.02	1, 190	.89
CG*Education	0.14	1, 190	.71	0.24	1, 190	.62
CG*Adult status	1.28	2, 190	.28	1.38	2, 190	.25
CR*CG	7.03	1, 190	.009	11.35	1, 190	.001
CR*CG*Income	1.39	1, 190	.24	0.12	1, 190	.73
CR*CG*Education	0.97	1, 190	.33	2.18	1, 190	.14
CR*CG*Adult status	1.84	2, 190	.16	1.22	2, 190	.30

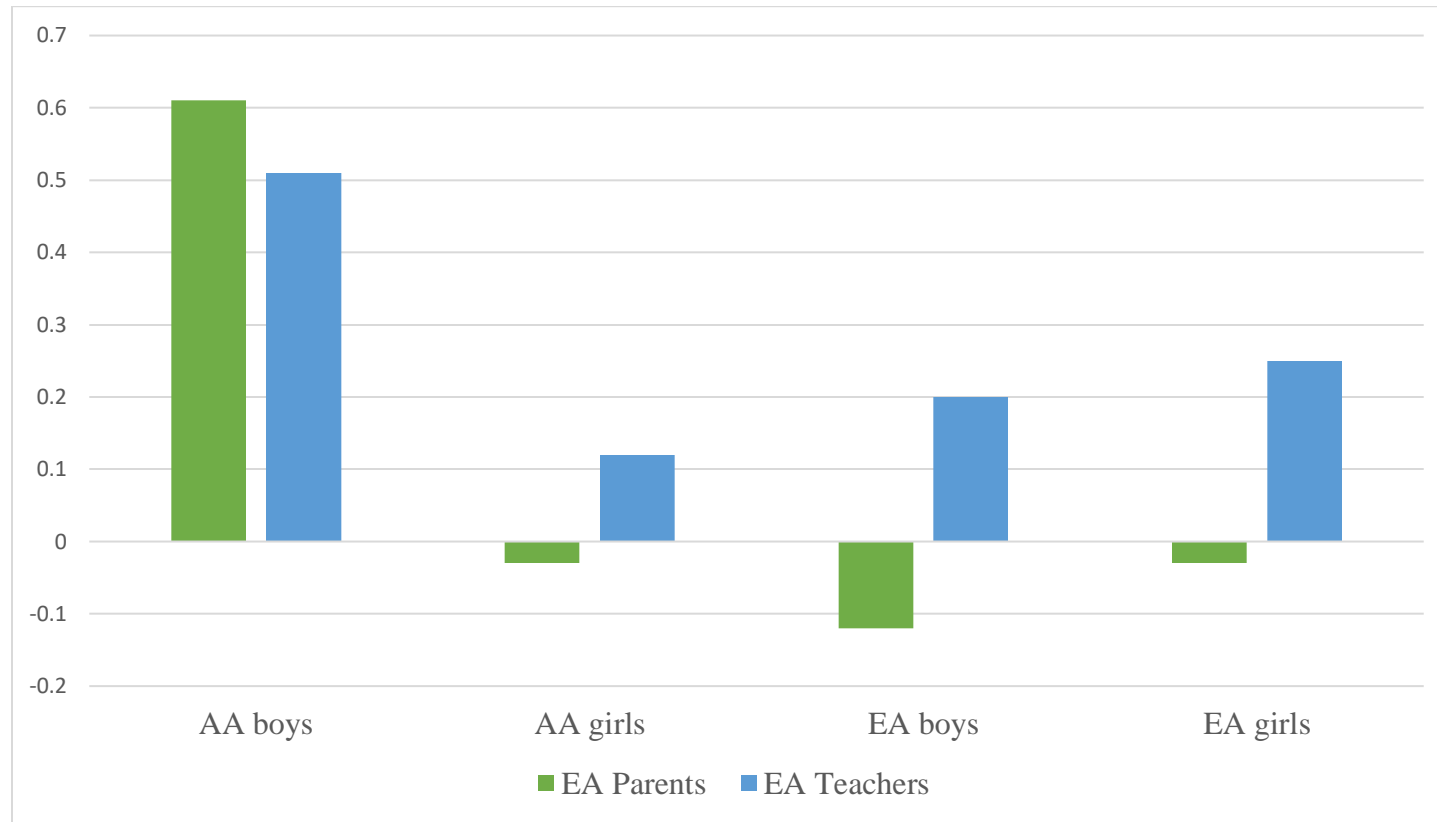


Table 4. Correlations Between Experiences with Racism, Racial Attitudes, and Ratings of ADHD

ADHD ratings		REMS	Racial Attitudes	
		AA parents	EA parents	EA teachers
		<i>r</i>	<i>r</i>	<i>r</i>
ADHD behaviors	AA boys	.28*	.05	-.28*
	AA girls	.25*	.02	.02
	EA boys	.33**	.07	-.28*
	EA girls	.34**	.06	-.13
ADHD likelihood	AA boys	-.10	.01	-.40**
	AA girls	.08	-.15	-.15
	EA boys	.13	-.02	-.21
	EA girls	.26*	-.13	-.23

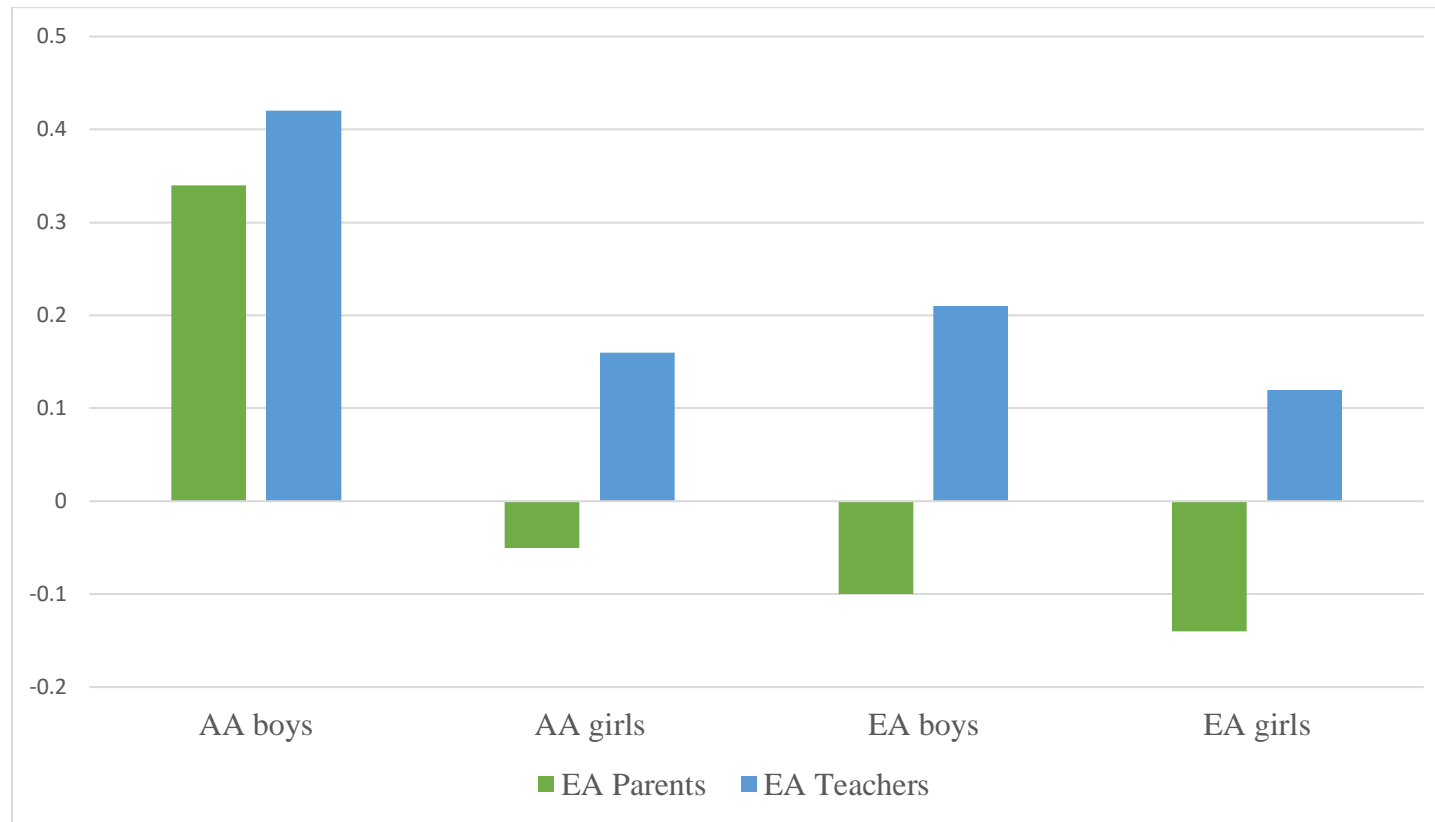
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Figure 1. Discrepancies in Ratings of ADHD Behaviors Between African-American/Black and European-American/White Adults



Difference scores were calculated by subtracting African-American/Black adults' ratings from European-American/White adults' ratings

Figure 2. Discrepancies in Ratings of ADHD Likelihood Between African-American/Black and European-American/White Adults



Difference scores were calculated by subtracting African-American/Black adults' ratings from European-American/White adults' ratings

## APPENDIX A

### VANDERBILT ASSESSMENT SCALE

Wolraich et al., 2003

How often does the child displays this behavior?

Never – 0, Occasionally – 1, Often – 2, Very often – 3

1. Fails to give attention to details or makes careless mistakes in schoolwork.	0	1	2	3
2. Has difficulty sustaining attention to tasks or activities. *	0	1	2	3
3. Does not seem to listen when spoken to directly. *	0	1	2	3
4. Does not follow through on instructions* and fails to finish schoolwork (not due to oppositional behavior or failure to understand).	0	1	2	3
5. Has difficulty organizing tasks and activities.	0	1	2	3
6. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort.	0	1	2	3
7. Loses things necessary for tasks or activates (school assignments, pencils, or books).	0	1	2	3
8. Is easily distracted* by extraneous stimuli.	0	1	2	3
9. Is forgetful in daily activities.	0	1	2	3
10. Fidgets with hands or feet or squirms in seat. *	0	1	2	3
11. Leaves seat in classroom or in other situations in which remaining seated is expected. *	0	1	2	3
12. Runs about or climbs excessively in situations in which remaining seated is expected.	0	1	2	3
13. Has difficulty playing or engaging in leisure activities quietly.	0	1	2	3
14. Is “on the go” or often acts as if “driven by a motor.” *	0	1	2	3
15. Talks excessively. *	0	1	2	3
16. Blurts out answers before questions have been completed.	0	1	2	3
17. Has difficulty waiting in line. *	0	1	2	3
18. Interrupts or intrudes on others (e.g., butts into conversations/games).	0	1	2	3

\*

\*indicates the 11 items selected for rating the videos

## APPENDIX B

### CHILD ADHD STIGMA QUESTIONNAIRE

Adapted from Kellison, Bussing, Bell, & Garvan, 2010

This set of questions asks about some of the experiences, feelings, and opinions parents and children with ADHD might have and how they are treated. Please indicate your beliefs about whether children with ADHD and their parents have these experiences. There are no right or wrong answers; we would just like your opinions.

	Strongly Disagree (SD)	Disagree (D)	Agree (A)	Strongly Agree (SA)
1. Children who have ADHD feel embarrassed about it	SD	D	A	SA
2. Parents with a child who has ADHD feel guilty about it	SD	D	A	SA
3. People's attitudes about ADHD may make children with ADHD feel worse about themselves	SD	D	A	SA
4. A parent with a child with ADHD would think it's risky to tell others about it	SD	D	A	SA
5. Teachers treat children with ADHD unfairly from the children without ADHD	SD	D	A	SA
6. Parents of children with ADHD work hard to keep it a secret	SD	D	A	SA
7. Children with ADHD feel they aren't as good a person as others because they have ADHD	SD	D	A	SA
8. Children with ADHD are treated like outcasts	SD	D	A	SA
9. Children with ADHD feel damaged because of it	SD	D	A	SA
10. After learning they have ADHD, a child may feel set apart and isolated from the rest of the world	SD	D	A	SA
11. Most people think that children with ADHD are damaged	SD	D	A	SA
12. A child with ADHD feels that they are bad because of it	SD	D	A	SA
13. Most children with ADHD are rejected by peers	SD	D	A	SA
14. Parents of children who have ADHD are very careful about who they tell	SD	D	A	SA

15. Some people who learn of another person having ADHD grow distant	SD	D	A	SA
16. People discriminate against children with ADHD	SD	D	A	SA
17. Most people are uncomfortable around a child with ADHD	SD	D	A	SA
18. Children with ADHD are judged by others when they learn the child has ADHD	SD	D	A	SA
19. Parents of children with ADHD regret having told some people that they have ADHD	SD	D	A	SA
20. As a rule, parents of children with ADHD feel that telling others that their child has ADHD was a mistake	SD	D	A	SA
21. People don't want someone with ADHD around their children once they know that person has ADHD	SD	D	A	SA
22. Some people act as though it's the child's fault that they have ADHD	SD	D	A	SA
23. Children with ADHD do not get invited to parties because they have ADHD	SD	D	A	SA
24. Parents of children with ADHD have told others close to them to keep the fact that they have ADHD a secret	SD	D	A	SA
25. People think a child with ADHD in the classroom will be a distraction or a bad influence to other children	SD	D	A	SA
26. Other children get annoyed with a child with ADHD	SD	D	A	SA
27. When people learn that a child has ADHD, they look for flaws in their character	SD	D	A	SA

## APPENDIX C

### HOME MOVEMENT EXPRESSIVE QUESTIONNAIRE

Boykin & Mungai-Kamau, 1997

1 = Almost never, 2 = Not much, 3 = Sometimes, 4 = Quite a lot, 5 = Almost always

1. Music is on at my house.	1	2	3	4	5
2. People in my house seem happier when music is on.	1	2	3	4	5
3. My family members move their hands a lot when they talk.	1	2	3	4	5
4. When people in my family feel sad, music and dancing seem to make them feel better.	1	2	3	4	5
5. People at my house dance a lot.	1	2	3	4	5
6. Active games like running and jumping are played in my house.	1	2	3	4	5
7. My family members move their body a lot when they talk.	1	2	3	4	5
8. My family members will clap their hands or tap their feet to music they like.	1	2	3	4	5
9. When my family wakes up, playing music seem to give them a lot of energy for the day.	1	2	3	4	5
10. Most people in my house dance and clap while moving around in the house.	1	2	3	4	5
11. It seems like my family members laugh more when music is on	1	2	3	4	5
12. There is a lot of movement in my house.	1	2	3	4	5
13. Listening and dancing to music seem to make my family members feel good.	1	2	3	4	5
14. When telling a story, people in my house imitate the body movements of the person they are talking about.	1	2	3	4	5
15. My family members snap their fingers, pat their feet, and move their hands to the beat of the music they are listening to.	1	2	3	4	5
16. My family members move their hands, and wiggle all at the same time.	1	2	3	4	5
17. When music is on, my family seem to have more energy in doing household chores.	1	2	3	4	5
18. My family members have to dance when music is on.	1	2	3	4	5

## APPENDIX D

### RACIAL ATTITUDES SCALE

Brigham, 1993

Please answer the following questions to the best of your abilities. Your answers will be kept anonymous, and it is important that your answers are honest and straightforward.

Whites' Attitudes Toward Blacks (ATB)	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Agree	Strongly Agree
If a black were put in charge of me, I would not mind taking advice and direction from him or her.	1	2	3	4	5	6	7
If I had a chance to introduce black visitors to my friends and neighbors, I would be pleased to do so.	1	2	3	4	5	6	7
I would rather not have blacks live in the same apartment building I live in.	1	2	3	4	5	6	7
I would probably feel somewhat self-conscious dancing with a black in a public place.	1	2	3	4	5	6	7
I would not mind it at all if a black family with about the same income and education as me moved in next door.	1	2	3	4	5	6	7
I think that black people look more similar to each other than white people do.	1	2	3	4	5	6	7



Interracial marriage should be discouraged to avoid the “who-am-I?” confusion which the children feel.	1	2	3	4	5	6	7
I get very upset when I hear a white make a prejudicial remark about blacks.	1	2	3	4	5	6	7
I favor open housing laws that allow more racial integration of neighborhoods.	1	2	3	4	5	6	7
It would not bother me if my new roommate was black.	1	2	3	4	5	6	7
It is likely that blacks will bring violence to neighborhoods when they move in.	1	2	3	4	5	6	7
I enjoy a funny racial joke, even if some people might find it offensive.	1	2	3	4	5	6	7
The federal government should take decisive steps to override the injustices blacks suffer at the hands of local authorities.	1	2	3	4	5	6	7
Black and white people are inherently equal.	1	2	3	4	5	6	7
Black people are demanding too much too fast in their push for equal rights.	1	2	3	4	5	6	7

Whites should support blacks in their struggle against discrimination and segregation.	1	2	3	4	5	6	7
Generally, blacks are not as smart as whites.	1	2	3	4	5	6	7
I worry that in the next few years I may be denied my application for a job or a promotion because of preferential treatment given to minority group members.	1	2	3	4	5	6	7
Racial integration (of schools, businesses, residences, etc.) has benefitted both whites and blacks.	1	2	3	4	5	6	7
Some blacks are so touchy about race that it is difficult to get along with them.	1	2	3	4	5	6	7

Blacks' Attitudes Toward Whites (ATW)							
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Agree	Strongly Agree
Most whites feel that blacks are getting too demanding in their push for equal rights.	1	2	3	4	5	6	7
I feel that black people's troubles in the past have built in them a stronger character than white people have.	1	2	3	4	5	6	7
Most whites can't be trusted to deal honestly with blacks.	1	2	3	4	5	6	7

Over the past few years, blacks have gotten more economically than they deserve.	1	2	3	4	5	6	7
Most whites can't understand what it's like to be black.	1	2	3	4	5	6	7
Some whites are so touchy about race that it is difficult to get along with them.	1	2	3	4	5	6	7
I would rather not have whites live in the same apartment building I live in.	1	2	3	4	5	6	7
I would accept an invitation to a New Year's Eve party given by a white couple in their own home.	1	2	3	4	5	6	7
It would not bother me if my new roommate was white.	1	2	3	4	5	6	7
Racial integration (of schools, businesses, residences, etc.) has benefitted both whites and blacks.	1	2	3	4	5	6	7
It's not right to ask Americans to accept integration if they honestly don't believe in it.	1	2	3	4	5	6	7
I favor open housing laws that allow more racial integration of neighborhoods.	1	2	3	4	5	6	7
Most whites fear that blacks will bring violence to neighborhoods when they move in.	1	2	3	4	5	6	7
By and large, I think blacks are better athletes than whites.	1	2	3	4	5	6	7

Local city officials often pay less attention to a request or complaint from a black person than from a white person.	1	2	3	4	5	6	7
When I see an interracial couple I feel that they are making a mistake in dating each other.	1	2	3	4	5	6	7
I have as much respect for whites as I do for some blacks, but the average white person and I share little in common.	1	2	3	4	5	6	7
I think that white people look more similar to each other than black people do.	1	2	3	4	5	6	7
Whites should support blacks in their struggle against discrimination and segregation.	1	2	3	4	5	6	7
If a white were put in charge of me, I would not mind taking advice and direction from him or her.	1	2	3	4	5	6	7

## APPENDIX E

### RACIAL AND ETHNIC MICROAGGRESSIONS SCALE (REMS)

Nadal, 2011

Please indicate the number of times that each of the following events occurred in the past six months.

0. I did not experience this event in the past six months
1. I experienced this event 1 time in the past six months
2. I experienced this event 2 times in the past six months
3. I experienced this event 3 times in the past six months
4. I experienced this event 4 times in the past 6 months
5. I experienced this event 5 or more times in the past six months

1. I was ignored at school or at work because of my race	0	1	2	3	4	5
2. Someone's body language showed they were scared of me, because of my race	0	1	2	3	4	5
3. Someone assumed that I spoke a language other than English.	0	1	2	3	4	5
4. I was told that I should not complain about race.	0	1	2	3	4	5
5. Someone assumed that I grew up in a particular neighborhood because of my race.	0	1	2	3	4	5
6. Someone avoided walking near me on the street because of my race.	0	1	2	3	4	5
7. Someone told me that she or he was color-blind.	0	1	2	3	4	5
8. Someone avoided sitting next to me in a public space (e.g., restaurants, movie theaters, subways, buses) because of my race.	0	1	2	3	4	5
9. Someone assumed that I would not be intelligent because of my race.	0	1	2	3	4	5
10. I was told that I complain about race too much.	0	1	2	3	4	5
11. I received substandard service in stores compared to customers of other racial groups.	0	1	2	3	4	5
12. I observed people of my race in prominent positions at my work places or school.	0	1	2	3	4	5
13. Someone wanted to date me only because of my race.	0	1	2	3	4	5
14. I was told that people of all racial groups experience the same obstacles.	0	1	2	3	4	5
15. My opinion was overlooked in a group discussion because of my race.	0	1	2	3	4	5
16. Someone assumed that my work would be inferior to people of other racial groups.	0	1	2	3	4	5
17. Someone acted surprised at my scholastic or professional success because of my race.	0	1	2	3	4	5
18. I observed that people of my race were the CEOs of major corporations.	0	1	2	3	4	5
19. I observed people of my race portrayed positively on television.	0	1	2	3	4	5
20. Someone did not believe me when I told them I was born in the U.S.	0	1	2	3	4	5
21. Someone assumed that I would not be educated because of my race.	0	1	2	3	4	5

22. Someone told me that I was “articulate” after she/he assumed I wouldn’t be.	0	1	2	3	4	5
23. Someone told me that all people in my racial group are all the same.	0	1	2	3	4	5
24. I observed people of my race portrayed positively in magazines.	0	1	2	3	4	5
25. An employer or co-worker was unfriendly or unwelcoming toward me because of my race.	0	1	2	3	4	5
26. I was told that people of color do not experience racism anymore.	0	1	2	3	4	5
27. Someone told me that they “don’t see color.”	0	1	2	3	4	5
28. I read popular books or magazines in which a majority of contributions featured people from my racial group.	0	1	2	3	4	5
29. Someone asked me to teach them words in my “native language.”	0	1	2	3	4	5
30. Someone told me that they do not see race.	0	1	2	3	4	5
31. Someone clenched her/his purse or wallet upon seeing me because of my race.	0	1	2	3	4	5
32. Someone assumed that I would have a lower education because of my race.	0	1	2	3	4	5
33. Someone of a different racial group has stated that there is no difference between the two of us.	0	1	2	3	4	5
34. Someone assumed that I would physically hurt them because of my race.	0	1	2	3	4	5
35. Someone assumed that I ate foods associated with my race/culture every day.	0	1	2	3	4	5
36. Someone assumed that I held a lower paying job because of my race.	0	1	2	3	4	5
37. I observed people of my race portrayed positively in movies.	0	1	2	3	4	5
38. Someone assumed that I was poor because of my race.	0	1	2	3	4	5
39. Someone told me that people should not think about race anymore.	0	1	2	3	4	5
40. Someone avoided eye contact with me because of my race.	0	1	2	3	4	5
41. I observed that someone of my race is a government official in my state.	0	1	2	3	4	5
42. Someone told me that all people in my racial group look alike.	0	1	2	3	4	5
43. Someone objectified one of my physical features because of my race.	0	1	2	3	4	5
44. An employer or co-worker treated me differently than White co-workers.	0	1	2	3	4	5
45. Someone assumed that I speak similar languages to other people in my race.	0	1	2	3	4	5

APPENDIX F

DEMOGRAPHIC SCALE – PARENT VERSION

Part 1

Please answer the following questions about each of your children.

	Age	Grade in school	Gender
Child 1			
Child 2			
Child 3			
Child 4			
Child 5			
Child 6			
Child 7			

What is your current age?

What is your gender?

What is your relationship to your each of your children? (drop down choices will be “biological mother,” “Stepmother,” “Adoptive mother,” “Biological fathers’ partner,” “Biological father,” “Stepfather,” “Adoptive father,” “Biological mothers’ partner,” “Other”):

Child 1	
Child 2	
Child 3	
Child 4	
Child 5	
Child 6	
Child 7	

What is the highest grade or educational degree you have completed?

8<sup>th</sup> grade      9<sup>th</sup> grade      10<sup>th</sup> grade      11<sup>th</sup> grade      H.S. Diploma      G.E.D.  
 Associate degree      Vocational degree      Bachelor's degree      Master's degree  
 Ph.D., J.D., M.D.      Other \_\_\_\_\_

How would you describe your current relationship status?

Married     Separated     Cohabiting     Divorced     Single     Other:

What is your approximate annual family income?

0-19,999  
 20,000- 39,999  
 40,000-59,999  
 80,000-99,999  
 100,000-119,999  
 120,000-139,999

140,000-159,999  
 160,000-179,999  
 180,000-199,999  
 200,000 or more

Are you employed?     Yes, Full time     Yes, Part time     No

Please indicate below the approximate ethnic makeup of your school while you were growing up by writing your estimate of the percentage of people from the following races/ethnic backgrounds:

\_\_\_\_\_ White                      \_\_\_\_\_ Black, African American                      \_\_\_\_\_ American Indian  
 \_\_\_\_\_ Asian                      \_\_\_\_\_ Pacific Islander                      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

Please indicate below the approximate ethnic makeup of your neighborhood while you were growing up by writing your estimate of the percentage of people from the following races/ethnic backgrounds:

\_\_\_\_\_ White                      \_\_\_\_\_ Black, African American                      \_\_\_\_\_ American Indian  
 \_\_\_\_\_ Asian                      \_\_\_\_\_ Pacific Islander                      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

Please indicate below the approxiamte ehnic make up of your current neighborhood by writing yoru estiamte of the percentage of people from the following races/ethnic backgrounds.

\_\_\_\_\_ White                      \_\_\_\_\_ Black, African American                      \_\_\_\_\_ American Indian  
 \_\_\_\_\_ Asian                      \_\_\_\_\_ Pacific Islander                      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

In which State do you currently live? \_\_\_\_\_

What country were you born in? \_\_\_\_\_

Are you a United States citizen? Yes    No  
 if no, what is your nationality? \_\_\_\_\_

**Part 2**

Please indicate whether each of your children has been diagnosed or is suspected of having any of the following (drop down choices will be “not diagnosed or suspected,” “yes, diagnosed,” “not diagnosed but suspected”):

	Age	Autism	Down’s Syndrome	Attention Deficit/Hyperactivity Disorder (ADHD)	Cerebral Palsy
Child 1					
Child 2					
Child 3					
Child 4					
Child 5					
Child 6					
Child 7					



Please rate how often each of your elementary school-aged children display the following behaviors. If you have only one elementary school-aged child, provide your responses under “Child1.” If you have more than two elementary school-aged children, please rate your youngest two children.

Never – 0, Occasionally – 1, Often – 2, Very often – 3

19. Fails to give attention to details or makes careless mistakes in schoolwork.	0	1	2	3
20. Has difficulty sustaining attention to tasks or activities.	0	1	2	3
21. Does not seem to listen when spoken to directly.	0	1	2	3
22. Does not follow through on instructions and fails to finish schoolwork (not due to oppositional behavior or failure to understand).	0	1	2	3
23. Has difficulty organizing tasks and activities.	0	1	2	3
24. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort.	0	1	2	3
25. Loses things necessary for tasks or activates (school assignments, pencils, or books).	0	1	2	3
26. Is easily distracted by extraneous stimuli.	0	1	2	3
27. Is forgetful in daily activities.	0	1	2	3
28. Fidgets with hands or feet or squirms in seat.	0	1	2	3
29. Leaves seat in classroom or in other situations in which remaining seated is expected.	0	1	2	3
30. Runs about or climbs excessively in situations in which remaining seated is expected.	0	1	2	3
31. Has difficulty playing or engaging in leisure activities quietly.	0	1	2	3
32. Is “on the go” or often acts as if “driven by a motor.”	0	1	2	3
33. Talks excessively.	0	1	2	3
34. Blurts out answers before questions have been completed.	0	1	2	3
35. Has difficulty waiting in line.	0	1	2	3
36. Interrupts or intrudes on others (e.g., butts into conversations/games).	0	1	2	3

Has anyone in your immediate family been diagnosed with ADHD?

Yes  No.

If Yes, specify each person’s age and relationship to you

Do any of your children take any medication for behavioral or emotional reasons?

Yes  No

If so, please specify the name of the medication and the age of the child who takes it:

\_\_\_\_\_

APPENDIX G

DEMOGRAPHIC SCALE – TEACHER VERSION

Part 1

What is your current age? \_\_\_\_\_

What is your gender? \_\_\_\_\_

What is the highest grade or educational degree you have completed?

8<sup>th</sup> grade      9<sup>th</sup> grade      10<sup>th</sup> grade      11<sup>th</sup> grade      H.S. Diploma      G.E.D.  
Associate degree      Vocational degree      Bachelor's degree      Master's  
degree  
Ph.D., J.D., M.D.      Other \_\_\_\_\_

How would you describe your current relationship status?

Married       Separated       Cohabiting       Divorced       Single       Other:

\_\_\_\_\_

What is your approximate annual family income?

0-19,999  
20,000- 39,999  
40,000-59,999  
80,000-99,999  
100,000-119,999  
120,000-139,999  
140,000-159,999  
160,000-179,999  
180,000-199,999  
200,000 or more

How long have you taught elementary school?

\_\_\_\_\_ years \_\_\_\_\_ month

Approximately what percent of the students in your school qualify for free/reduced lunch?

\_\_\_\_\_ %

Please indicate below the approximate ethnic makeup of the school where you are currently teaching by writing your estimate of the percentage of people from the following races/ethnic backgrounds:

\_\_\_\_\_ White      \_\_\_\_\_ Black, African American      \_\_\_\_\_ American Indian  
\_\_\_\_\_ Asian      \_\_\_\_\_ Pacific Islander      \_\_\_\_\_ Latino/Hispanic  
\_\_\_\_\_ Other: \_\_\_\_\_

Please indicate below the approximate ethnic makeup of your school while you were growing up by writing your estimate of the percentage of people from the following races/ethnic backgrounds:

\_\_\_\_\_ White      \_\_\_\_\_ Black, African American      \_\_\_\_\_ American Indian

\_\_\_\_\_ Asian      \_\_\_\_\_ Pacific Islander      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

Please indicate below the approximate ethnic makeup of your neighborhood while you were growing up by writing your estimate of the percentage of people from the following races/ethnic backgrounds:

\_\_\_\_\_ White      \_\_\_\_\_ Black, African American      \_\_\_\_\_ American Indian  
 \_\_\_\_\_ Asian      \_\_\_\_\_ Pacific Islander      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

Please indicate below the approxiamte ethnic make up of your current neighborhood by writing your estimate of the percentage of people from the following races/ethnic backgrounds.

\_\_\_\_\_ White      \_\_\_\_\_ Black, African American      \_\_\_\_\_ American Indian  
 \_\_\_\_\_ Asian      \_\_\_\_\_ Pacific Islander      \_\_\_\_\_ Latino/Hispanic  
 \_\_\_\_\_ Other: \_\_\_\_\_

In which State do you currently live? \_\_\_\_\_

What country were you born in? \_\_\_\_\_

Are you a United States citizen? Yes    No

if no, what is your nationality? \_\_\_\_\_

Part 2

Do you have any children? Yes No

If yes:

Please indicate whether each of your child has been diagnosed or is suspected of having any of the following (drop down choices will be “not diagnosed or suspected,” “yes, diagnosed,” “not diagnosed but suspected”):

	Age	Autism	Down’s Syndrome	Attention Deficit/Hyperactivity Disorder (ADHD)	Cerebral Palsy
Child 1					
Child 2					
Child 3					
Child 4					
Child 5					
Child 6					
Child 7					

Has anyone in your child’s immediate family been diagnosed with ADHD?

Yes       No.

If Yes, specify each person’s age and relationship to the child

\_\_\_\_\_

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