The relation between teacher and child race, teacher perceptions of disruptive behavior, and exclusionary discipline in preschool

Sarah C. Wymer [a,*], Catherine M. Corbin [b], Amanda P. Williford [a]

[a] *Center for Advanced Study of Teaching and Learning, University of Virginia, USA*
[b] *School Mental Health Assessment, Research, and Training (SMART) Center, University of Washington, USA*

ABSTRACT

In preschool, Black children are overrepresented in percentages of children suspended or expelled. Teachers' perceptions of and responses to children displaying disruptive behavior may be different depending on the race of the teacher and child. Although teacher-child race match is associated with a number of outcomes in K-12 students, research examining these links in preschool is limited. This study examined whether teachers' reported trajectories of children's disruptive behavior and use of discipline practices varied depending on teacher and child race in a sample of 349 preschoolers and their 144 teachers. Results indicated that teacher and child race were associated with teachers' ratings of children's disruptive behavior and reported use of exclusionary discipline practices.

The demographics of the United States are shifting rapidly. Racial and ethnic minority births now make up the majority of births in the United States (U.S. Census Bureau, 2012). White, English-speaking students comprise less than half of public-school enrollment (National Center for Education Statistics, 2017). In contrast, over 80% of public-school teachers are White. The expanding gap between the racial and ethnic composition of students and that of teachers has important implications for the education system; racial and ethnic minority students are very likely to be taught by teachers whose race and/or ethnicity does not match theirs. Race match, or mismatch, is related to academic achievement (Dee, 2004; Egalite et al., 2015), teacher expectations (Tenenbaum & Ruck, 2007), referrals to special education and gifted/talented programs (Elhoweris et al., 2005), and discipline (Skiba et al., 2011). In these studies, students, particularly Black students, tend to have better school outcomes when there is a race/ethnic match with their teacher.

Of particular concern are the negative effects on children perceived as displaying disruptive behaviors; minoritized students are disproportionately disciplined in school and are at a much higher risk of experiencing harsh exclusionary discipline (i.e., suspension or expulsion), which may be exacerbated when the student is in a classroom with a teacher of a different race (Gilliam, 2005; Skiba et al., 2014). These disparities in discipline use place certain children at risk for lower academic achievement, dropping out of school, and becoming involved in the criminal justice system (Carter et al., 2017).

The disproportionate rates of exclusionary discipline are found as early as preschool, where children are three times more likely to be expelled than children in K-12 (Gilliam, 2005). Black children attending state-funded preschools were twice as likely to be expelled as White children, and 42% of preschoolers suspended are Black, despite Black students making up only 18% of preschool enrollment (Gilliam, 2005; U.S. Department of Education, 2016). There has been limited research in preschool around teacher-child race match as

---

* Corresponding author at: University of Virginia, School of Education and Human Development, 417 Emmet St S, B212, PO Box 400267, Charlottesville, VA 22908-0784, USA.

E-mail address: scw2wf@virginia.edu (S.C. Wymer).

compared to research examining this issue in K-12 settings. In the present study, we examined how combinations of teacher and child race related to Black and White preschoolers' teacher-reported disruptive behavior across the preschool year and teachers' reported use of exclusionary discipline for children identified by their teachers as displaying elevated disruptive behaviors.

1. Teacher/child race match

Researchers have linked teacher and child race to a range of child outcomes, both academic and non-academic, with the majority of this research focused on elementary school grades and above. Research on K-12 students indicates that being randomly assigned to a same-race teacher improves academic achievement (Dee, 2004; Egalite et al., 2015; Gershenson et al., 2018). However, few studies have examined outcomes in preschool students as it relates to race. Much of the research on teacher/child race has focused on teacher perceptions of and expectations for children of a different race; many studies have shown that White teachers are more likely to rate Black students in a negative way, including being inattentive (Dee, 2005; McGrady & Reynolds, 2013), displaying behavior problems (Bates & Glick, 2013; Rimm-Kaufman et al., 2000), and having less academic potential (Oates, 2009; Tenenbaum & Ruck, 2007). Implicit racial biases, which are biases that an individual is unaware of but nevertheless influence how people think, are one possible explanation for these findings (Jacoby-Senghor et al., 2016; Neitzel, 2018). The idea that implicit racial bias may be foundational to how teachers interact with children's development aligns with García Coll et al.'s (1996) integrative model, which centers the development of minoritized children around social positionality, racism, and segregation. Importantly, it is not just implicit bias, which people of all racial/ethnic backgrounds are prone to, but also the shared experiences of those belonging to certain racial/ethnic groups that matters (Kozlowski, 2015). Gilliam et al. (2016) showed that providing information about a students' family resulted in less severe ratings of children's behavior when the child's race matched the teacher's race, but ratings were more severe when there was not a match. This finding suggests that teachers may make different assumptions of and affordances for students dependent on shared social positionality with the student (McGrady & Reynolds, 2013). Although researchers hypothesize that these discrepancies in how teachers perceive children translate to differences in how teachers interact with those children and the children's subsequent outcomes, this remains an understudied area, particularly in the preschool context.

1.1. Discipline disparities

Black students, and in particular Black male students, are significantly more likely to be disciplined at school (Gilliam, 2005; Skiba et al., 2014). Students who experience more punitive and exclusionary discipline are at an increased risk of failing future classes, becoming academically disengaged, dropping out of school, and coming into contact with the criminal justice system (Balfanz et al., 2014; Marchbanks III et al., 2014; Toldson et al., 2015). This trend begins as early as preschool, which may start affected children's education off with stressful, negative experiences (U.S. Department of Health and Human Services, 2016). Such early disparities in disciplinary practice lead to questions about their origins; teachers may be perceiving preschoolers' disruptive behavior differently depending on a child's race, or they may be responding differently to their disruptive behavior. Although overt racism may impact some teacher's perceptions and behaviors, much of the literature has focused on teachers' implicit biases (Staats, 2014). Research has shown that the majority of Americans hold an anti-Black implicit bias, despite the fact that such bias may be completely opposed to an individual's conscious beliefs and values, and that people may unconsciously make biased judgments and decisions, especially when that bias is unacknowledged (Carter et al., 2017; Staats, 2014). There have been some vignette- and lab-based experiments that provide evidence for the impact of implicit biases in education, showing that teachers tended to perceive and make recommendations differentially based solely on manipulations to the hypothetical child's race (e.g., Gilliam et al., 2016; Goff et al., 2014; Okonofua & Eberhardt, 2015). Many researchers have argued that implicit bias is a key underlying mechanism to teacher/child race effects (Cook et al., 2018; Gregory et al., 2017; Okonofua et al., 2016). These biases, in combination with any explicit biases a teacher holds, are important to consider because they impact how a teacher perceives a child; the way in which a teacher perceives a child substantially impacts how that teacher then behaves towards that child (Coplan et al., 2015; Dobbs & Arnold, 2009; Hamre et al., 2008; Myers & Pianta, 2008). Consequently, it is important to examine how teacher and child race combine to relate to the ways in which teachers perceive and respond to a child's behavior.

1.2. Relation between teacher and child race combinations and disruptive behavior

Limited research has been conducted on the relation between teacher and child race combinations and preschoolers' disruptive behavior. Disruptive behavior is a global term that includes low frustration tolerance, anger, impulsivity, hyperactivity, noncompliance, and aggression (Bufferd et al., 2012; Powell et al., 2003). When children display disruptive behaviors, teachers report being less effective in their teaching (Feil et al., 2005). These children are at a high risk for a host of negative outcomes, such as reduced academic achievement and highly conflictal relationship with their teachers (e.g., Doumen et al., 2008; Ladd & Burgess, 2001). Downer et al. (2016) found that Black preschool teachers reported fewer increases in Black students' behavior problems over the school year as compared to White teachers. Gilliam et al. (2016) asked teachers to view videos of preschoolers engaging in typical activities and watch for signs of challenging behavior; teachers, regardless of their own race, spent significantly more time watching Black children, especially Black boys, despite there being no challenging behavior depicted in the videos. However, in Graves and Howes (2011), Black male preschool students were no more likely to be rated as having behavior problems than male students of any other race.

Although there has been limited research conducted on preschool-aged children and disruptive behavior specifically, there has been some research focused on early elementary school. For example, Bates and Glick (2013) found that Black kindergarten students

were rated as having more externalizing behavior problems when being taught by White teachers than when taught by Black teachers. Similarly, Downey and Pribesh (2004) found that White kindergarten teachers rated Black students as having more externalizing behavior issues as compared to White students. Rimm-Kaufman et al. (2000) found that in schools with higher minority composition, White teachers were more likely than minority teachers to report certain problems for children entering kindergarten (e.g., "difficulty following directions" and "immaturity"). Taken together, these studies provide some preliminary evidence that teacher and child race matter when considering how young children's behavior is rated and responded to; however, there is still very little published research on this topic, particularly in the preschool population.

2. Present study

We examined whether teacher and child race combinations were associated with teachers' ratings of children's trajectories of disruptive behavior across the preschool year and teachers' report of disciplinary actions at the end of the preschool year for Black and White students using the following research questions and hypotheses. For children whose teachers report that they display elevated disruptive behaviors:

1. Do teachers' ratings of children's disruptive behavior differ across the year depending upon both teacher and child race? We expected that White teachers would rate Black students as having higher disruptive behavior on average, both in terms of the intensity of the behavior problems and the degree to which the teacher considers their behavior to be a problem, and that they would report less improvement (i.e., a flatter, but still decreasing, slope) over the course of the preschool year as compared to White teachers' ratings of White children. We did not expect Black teachers to rate White or Black children differently when compared to White teachers' ratings of White students.
2. Do teachers report using more exclusionary disciplinary practices based upon teacher and child race? We expected that both Black and White teachers would report using harsher disciplinary practices with Black students when compared to White teachers' reports of disciplinary practices with White children, with the highest rates expected for Black children who are being taught by White teachers. We did not expect there to be a difference in practices for White students with same- and different-race teachers.

3. Method

3.1. Participants

Data were collected from children and teachers participating in a large classroom randomized control trial of an attachment-based intervention, Banking Time, designed to improve the quality of a teacher's interactions with a specific child (Williford et al., 2016). The goal of Banking Time is to have teacher-child sessions in which children take the lead of the session where behavioral expectations are removed and the child is accepted unconditionally (Williford et al., 2016). The skills include observing the child's expressed emotion and behaviors, narrating what the child is doing, allowing the child to lead the activity, labelling the child's emotions, and being available as an emotional resource to the child (Williford et al., 2015). Participation in the intervention was not of primary interest in the current study; however, intervention status was controlled for in all models and we examined whether intervention status served as a moderator in any of the primary results.

Participants in the larger study included 183 teachers and 470 preschool children who participated across 173 classrooms at three sites over the course of the three-year study. Child participants were selected based on teacher's ratings of the child's externalizing behavior. The teacher rated all children in their classrooms on two scales: the Attention-Deficit/Hyperactivity Disorder Rating Scale-IV (ADHDRS-IV; DuPaul et al., 1998) and the Oppositional Defiant Disorder Rating Scale (ODDRS; Hommersen et al., 2006). The two boys and one girl in each classroom with the highest combined scores on those measures and whose parents had given consent for them to participate were selected for the study; selection based on gender was done in order to ensure that girls were represented in the sample as boys are significantly more likely to be rated as displaying disruptive behavior than girls (Nolan et al., 2001). The children selected for the study were an average 48.7 months old and 65% were boys. In terms of race, parents reported that 42% of the child sample was Black, 38% was White, 8% was Hispanic, and 12% was another or mixed race. Teachers were mostly female (96.1%) and had an average of 9.2 years of pre-K teaching experience. The majority of teachers identified as White (53%) or Black (41%). Because the percentages of students and teachers identifying as races other than White and Black were small enough that we did not have statistical power to examine separately, only data from White and Black students in classrooms with either White or Black teachers were analyzed, for a total of 187 Black students and 162 White students with 81 White teachers and 63 Black teachers. Most of the preschool teachers worked at private preschools (55%), followed by state-funded preschools (26%) and Head Start programs (19%). The demographic characteristics of the sub-sample were very similar to the overall sample.

3.2. Procedure

In the larger study, participant teachers were randomly assigned to one of three conditions: (a) Banking Time, (b) Child Time, or (c) Business-as-Usual (BAU). The three selected children within each classroom were randomly assigned to one of three, 7-week intervention/assessment windows. In the Banking Time condition, teachers implemented Banking Time sessions two to three times per week at school during the participating child's randomly selected window. Teachers worked with one child at a time (one child in Window 1, the next in Window 2, and the next in Window 3). Teachers in the Child Time condition followed the same schedule but

were not given specific instructions on how to spend the time. In the BAU condition, no treatment was provided and teachers were instructed to interact with children in their classroom as they typically would.

Data were collected on children and teachers at four points during the year: Baseline/Pre-Window 1, Pre-Window 2/Post-Window 1, Pre-Window 3/Post-Window 2, and Post-Window 3/End-of-Year (EOY). Not all data were collected at each time point; for example, teacher and child demographic information were only collected at baseline, whereas information on the disciplinary actions teachers used with students was collected only at the end of the year. Teacher-reported disruptive behaviors were collected for all children at baseline, their pre- and post-window, and EOY. Thus, for children assigned to Window 1, data were collected at Pre-Window 1, Post-Window 1, and EOY; for children in Window 2, the data were collected at Baseline, Pre-Window 2, Post-Window 2, and EOY; and for children assigned to Window 3 the data were collected at Baseline, Pre-Window 3, and EOY (Table 1 displays the data collection time points for each child).

3.3. Measures

3.3.1. Teacher and child demographics

At baseline, parents completed a demographic questionnaire that asked about children's race/ethnicity, gender, family income level, household size, and the child's age. Teachers completed a survey on their own demographic information, including race/ethnicity, years of teacher experience, and education levels.

3.3.2. Teacher-reported child behavior problems

The Sutter-Eyberg Student Behavior Inventory–Revised (SESBI-R; Eyberg & Pincus, 1999) was used to measure the frequency and severity of externalizing behaviors and to what degree the teacher finds those behaviors as being problematic in the classroom. The SESBI-R is a comprehensive measure of externalizing behavior that is widely used in research with both a parent- and teacher-report version. The 38 items yield an intensity scale and a problem scale; for the current study, we used both scales. The intensity indicates the severity of the behavior problem on a Likert-scale ranging from 1 (*Never Exhibits Behavior*) to 7 (*Always Exhibits Behavior*), whereas the problem scale indicates whether a specific behavior is a problem (*yes/no*), with higher scores indicating more severe externalizing behavior problems. There was high internal consistency in this sample for both the intensity ($\alpha = 0.97$) and problem ($\alpha = 0.95$) scales.

3.3.3. Teacher-reported exclusionary disciplinary actions

At the end of the year, teachers estimated the frequency with which they used certain exclusionary disciplinary techniques across the school year for all participating children. This measure was administered at the end of the year to measure the cumulative report of these practices during the year, many of which were low frequency events. The items were pulled from an end of year survey administered to all teachers and had acceptable internal consistency ($\alpha = 0.77$). Teachers rated the frequency with which they used the following practices, including putting a child in time out, removing a child from an activity, removing a child from the classroom temporarily, and sending a child home. Response options were on a 7-point scale ranging from *Never* to *Multiple times a day*.

3.4. Data analysis

For the first research question, the outcome variables were mean level of disruptive behavior and change in disruptive behavior over time and the predictor variable was teacher-child race combination. To examine how teacher and child race combinations were related to trajectories of children's disruptive behavior, multi-level modeling (MLM) data analysis techniques were used to account for the 3-level nesting of data: time (Level 1) nested within children (Level 2), nested within classrooms (Level 3). Because there were four time points during the preschool year at which children's disruptive behavior was reported by teachers, a growth curve model was used. The intercept, referred to in tables and text as the average, was set at the beginning of the year, and a decreasing linear slope best fit the data across time (Miner & Clarke-Stewart, 2008).

Depending on the window that a child was assigned to (see Table 1) as well as attrition over time, teachers did not rate children's disruptive behavior at all four time points. Missing data on disruptive behavior from baseline to Post-Window-3 ranged from 16% to 29%. Additionally, 32% of end of year discipline data were missing due to attrition or incomplete survey responding by teachers. A small percentage of missing demographic data (1%–6%) was present due to incomplete responding of teachers and caregivers to the baseline surveys. Analysis of missingness showed data to not be missing completely at random (Little, 1988). No evidence of missing not at random emerged. Because the study data provided a rich set of covariates shown by prior research to be associated with the outcomes of interest, reducing the likelihood that some unobserved characteristic exists that would exert influence on the outcomes, we assumed missing at random. Missing data were estimated using full information maximum likelihood (Enders & Bandalos, 2001). In the model, White children with White teachers were the reference group. Terms for being a Black child with a White teacher ("1" for Black child with a White teacher, "0" for any other combination), being a White child with a Black teacher, and being a Black child with a Black teacher were included. Variables for the teacher/child race combinations were entered at Level 2 (child-level). Covariates included child gender, child age, family income to needs ratio, teacher years of experience, teacher age, classroom racial composition, center type (with public not-for-profit as the referent), and intervention status.[1] These covariates were included due to prior research

---

[1] Sensitivity analyses were constructed to examine intervention status as a moderator of the association between teacher-child race combinations and all three outcomes of interest. The interaction was never significant and findings were robust to its inclusion.

Table 1
Time points for data collection for each of the three children in each classroom.

Window for which child was randomly selected	Time point 1 Beginning of school year	Time point 2 Winter	Time point 3 Early spring	Time point 4 End of school year
Window 1	Child and family demographic Teacher Demographic Teacher report of disruptive behavior	Teacher report of disruptive behavior	Data purposely missing	Teacher report of disruptive behavior Teacher report of exclusionary discipline practices
Window 2	Child and family demographic Teacher Demographic Teacher report of disruptive behavior	Teacher report of disruptive behavior	Teacher report of disruptive behavior	Teacher report of disruptive behavior Teacher report of exclusionary discipline practices
Window 3	Child and family demographic Teacher Demographic Teacher report of disruptive behavior	Data purposefully missing	Teacher report of disruptive behavior	Teacher report of disruptive behavior Teacher report of exclusionary discipline practices

indicating associations with disruptive behavior, discipline practices, or racial bias. Children's age, male gender, and poverty level are all associated with higher levels of disruptive behavior (Spieker et al., 1999). Teacher years of experience have been associated with reports of disruptive behavior, albeit inconsistently in the literature, and therefore was included to control for any potential association (DiCarlo et al., 2015; Pas & Bradshaw, 2014). Age is also associated with variations in implicit and explicit bias (Gonsalkorale et al., 2009). Racial composition was included as a covariate because it has been shown to relate to school suspension rates (e.g., Gregory et al., 2011; Skiba et al., 2014).

To examine how White and Black teachers apply disciplinary practices to Black and White children, the above analyses were replicated with the exception that the outcome in these analyses was only at end-of-year. Because these outcomes are only conducted at one point in time (EOY), we used a two-level model (children nested within classrooms).

4. Results

4.1. Teacher-child race combinations and teacher's ratings of disruptive behavior across the preschool year

Results are summarized in Table 2 and the trajectories of disruptive behavior over the year are displayed in Fig. 1. Throughout the preschool year, teachers' reports indicated that the intensity of children's disruptive behavior improved ($\beta = -3.34$, $p < .001$); that is, teachers rated children as displaying less intensive disruptive behavior as the preschool year progressed. Counter to our hypothesis, there was no significant difference between White teachers' ratings of Black children's improvement across the year when compared to White teachers' ratings of White students ($\beta = 3.07$, $p = .35$). Consistent with hypotheses, however, White teachers rated Black children as having more intense disruptive behavior on average when compared to White teachers' ratings of White children ($\beta = 16.18$, $p = .02$). This means that although White teachers' ratings of Black children showed the same rate of improvement in their disruptive behavior over the course of the year as White teachers' ratings of White children, White teachers rated Black children as having more intense disruptive behavior, on average, across the year. There were no significant differences between Black teachers' ratings of White or Black children when compared to White teachers' ratings of White children for average rated disruptive behavior over the year. Unexpectedly, Black teachers' ratings of White children showed less improvement across the year when compared to White teachers' ratings of White children ($\beta = 8.90$, $p = .002$).

The degree to which teachers considered children's behavior to be a problem also declined across the preschool year ($\beta = -1.26$, $p < .001$). Counter to hypotheses, White teachers did not rate Black children as displaying more problematic behaviors as compared to White teachers rating White children ($\beta = 2.58$, $p = .06$) on average over the year. Similarly, there was no significant difference between the improvement in White teachers' ratings of Black students' when compared to improvement in White teachers' ratings of White children ($\beta = 0.64$, $p = .33$). The rate of change in Black teachers' ratings of Black children's problem behaviors did not differ from change in White teachers' ratings of White children's problem behaviors across the year.

4.2. Teacher's report of exclusionary discipline practices at end of the year

Results (displayed in Table 3) showed that White teachers reported using higher rates of exclusionary discipline practices with Black children when compared to White teachers with White children ($\beta = 2.51$, $p = .01$). Black teachers also reported using higher rates of exclusionary discipline practices with White children as compared to White teachers with White Children ($\beta = 3.24$, $p = .01$). Black teachers did not report using exclusionary discipline practices with Black children at frequencies significantly different from the rates of White teachers with White children.

Table 2
Teacher ratings of disruptive behavior over the preschool year.

|	Intensity of Behavior				Degree to Which Behavior is a Problem			
	Slope	(SE)	Average	(SE)	Slope	(SE)	Average	(SE)
Level 1								
Time	−3.34***	(0.83)			−1.26	(0.20)		
Level 2								
Black Teacher/Black Child	1.12	(3.51)	7.32	(8.02)	−0.03	(0.75)	0.18	(1.95)
Black Teacher/White Child	8.90***	(2.89)	−1.62	(10.34)	1.01	(0.71)	−0.59	(2.03)
White Teacher/Black Child	3.07	(3.27)	16.19*	(7.12)	0.64	(0.66)	2.58	(1.37)
Child Age	0.20	(0.14)	−0.24	(0.45)	−0.01	(0.03)	0.07	(0.08)
Gender (Male)	0.04	(1.54)	12.09**	(4.87)	0.03	(0.30)	1.06	(0.89)
Income-to-needs Ratio	−1.01	(0.79)	−1.61	(2.64)	0.11	(0.16)	−0.61	(0.43)
Level 3								
Banking Time	−2.62	(1.87)	−0.57	(6.75)	−0.44	(0.49)	1.14	(1.73)
Child Time	−1.93	(1.95)	−7.99	(6.57)	0.11	(0.49)	0.69	(1.69)
Teacher Age	0.03	(0.10)	0.02	(0.28)	−0.02	(0.02)	0.00	(0.07)
Teacher Years of Education	1.46**	(0.53)	2.14	(2.09)	0.28*	(0.14)	0.66	(0.52)
Teacher Years of Experience	0.07	(0.13)	−0.61	(0.44)	0.04	(0.03)	−0.11	(0.10)
Classroom % Black	−1.10	(4.64)	−33.71	(18.01)	1.73	(1.13)	−12.27*	(5.43)
Classroom % White	0.96	(4.21)	−20.44	(17.42)	1.01	(1.18)	−10.63*	(4.51)
Center Type: Head Start	−2.28	(3.06)	1.98	(11.74)	0.62	(1.02)	−0.88	(2.80)
Center Type: State-Funded	−7.97**	(3.10)	1.88	(11.19)	−0.21	(0.80)	−1.82	(2.56)
Center Type: Public with State	−6.81	(5.70)	3.54	(13.63)	0.27	(0.81)	0.75	(2.56)
Center Type: Private for-Profit	4.91*	(2.45)	−6.20	(10.60)	1.50**	(0.56	−2.30	(2.23)

$* p < .05. ** p < .01. *** p < .001.$
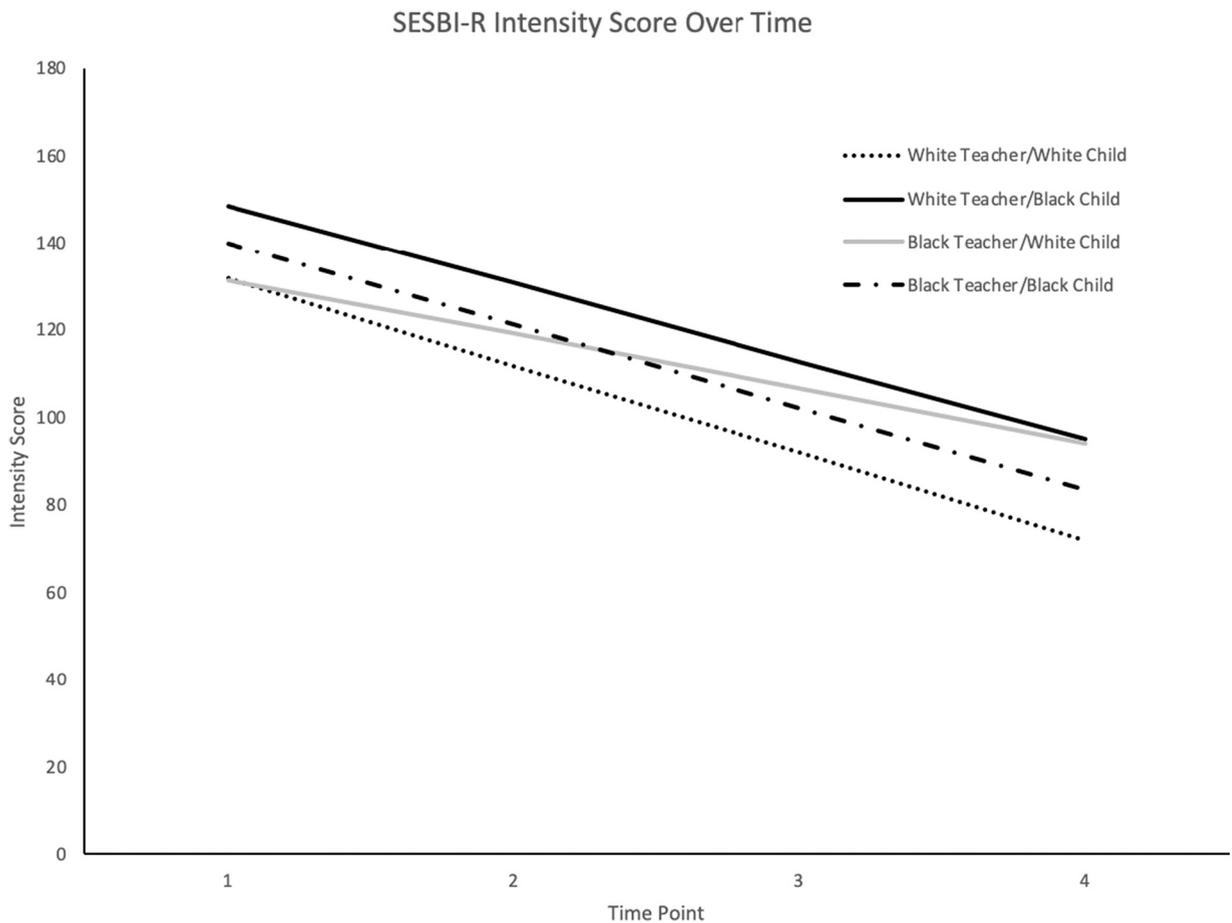
Fig. 1. Trajectories of disruptive behavior over the year by teacher/child race combinations.

Table 3
Teacher-reported use of exclusionary discipline practices at the end of the year.

	End of Year Exclusionary Discipline	
	Estimate	(SE)
Level 1		
Black Teacher/Black Child	1.77	(0.59)
Black Teacher/White Child	3.24**	(1.20)
White Teacher/Black Child	2.51**	(0.95)
Child Age	0.05	(0.04)
Gender (Male)	1.78***	(0.59)
Income-to-needs Ratio	−0.07	(0.32)
Level 2		
Banking Time	0.19	(0.80)
Child Time	−0.24	(0.74)
Teacher Age	−0.05	(0.04)
Teacher Years of Education	0.44	(0.25)
Teacher Years of Experience	−0.04	(0.05)
Classroom % Black	−0.80	(8.75)
Classroom % White	−0.01	(8.53)
Center Type: Head Start	−2.45	(1.61)
Center Type: State-Funded	0.23	(1.80)
Center Type: Public with State	−3.41	(1.95)
Center Type: Private for-Profit	1.36	(1.09)

$**p < .01. ***p < .001.$

5. Discussion

We examined how teacher-child race combinations related to teachers' ratings of children's disruptive behavior across the pre-school year and their reported use of exclusionary discipline practices at the end of the school year in a sample of Black and White preschoolers and Black and White teachers. We found that the combinations of teachers' and children's races were indeed associated with teachers' ratings of children's behavior.

As we hypothesized, White teachers rated Black children as having more intense behavior problems as compared to White teachers' ratings of White children on average (teachers' ratings averaged across the year). Race was also linked to ratings for White children being taught by Black teachers, who were rated as showing less improvement in their disruptive behavior across the year as compared to White teachers' ratings of White students, a result not found in previous studies. The potential relation between teacher and child race combinations and teachers' reported use of exclusionary discipline practices, such as removing children from their classroom, was also examined. White and Black teachers reported using exclusionary discipline practices more frequently with children who were not their same race (e.g., White teachers with Black children and Black teachers with White children) as compared to White teachers' reported use of exclusionary discipline practices with White children. This is an interesting finding because it indicates that both the teacher's race and the child's race in combination may be important to consider. Administrators' and practitioners' attempts to reduce the use of exclusionary discipline and address disparities in the application of those practices should therefore consider not only the race of the child, but also the race of the teacher.

The results are also unique in that, unlike previous work, the findings that some children are being disproportionately disciplined are extended to more minor, subtle forms of exclusionary discipline, not only for suspensions and expulsions. As more states and school districts move towards eliminating suspensions and expulsions for young children (Colombi & Osher, 2015), understanding the mechanisms behind this finding become even more important. These more minor, in-classroom exclusionary practices may be used even more frequently when teachers are no longer able to use out-of-classroom discipline practices as in the past, resulting in children continuing to lose instructional time and opportunities for engagement in the classroom.

The implications of this set of findings for potential intervention will be different based on the underlying reasons that teacher and child race combinations matter. Going forward, it will be important to determine whether these results might be replicated in other participant groups and to better understand the potential causal processes behind these findings. The increasing racial and ethnic diversity of children (and teachers, to a lesser extent) in schools will likely result in increasing numbers of students in classrooms with a teacher of a different race than their own. With the disproportionate rates of school discipline (Gilliam, 2005; Skiba et al., 2014) negatively impacting preschool children's educational experience, it is vital that we seek a deeper understanding of how and why these disparities occur.

Although these findings demonstrate that teacher and child race combinations matter, we were unable to address the potential underlying causal mechanisms in this study. It is possible that teachers' ratings were being influenced by implicit biases, and so the differences in ratings of their behavior problems may not have reflected an objective difference in the rate and severity of disruptive behavior, but rather differences in perceptions of and expectations for children's behavior (Gilliam et al., 2016). White teachers may be biased towards Black children and therefore rate their behavior more negatively than White children. This explanation aligns with the literature on bias in White teachers' perceptions and responses to Black students (e.g., Elhoweris et al., 2005; Skiba et al., 2011; Tenenbaum & Ruck, 2007). In addition, the shared experiences of those belonging to a specific racial/ethnic group may influence how

teachers interpret and respond to children's behavior. As such, White teachers may make more affordances for White children as compared to Black children (e.g., White teachers may temper their perceptions of White, but not Black students' disruptive behavior based on family or other contextual information; Gilliam et al., 2016). This may also explain our finding that Black teachers' ratings of White children showed less improvement. When compared to White teachers, Black teachers may make fewer affordances for White children and may be more attuned to more subtle disruptive behaviors. There may also be implicit biases underlying Black teachers' treatment of White students. However, given the novelty of this finding and the lack of research investigating related processes, it is difficult to gauge the meaning and importance of this result. Future work should attempt to replicate these findings and additional research is needed to explore potential underlying causal mechanisms.

An alternative to the possibility that differences in ratings reflect differences in perceptions of students is the idea that children may display more frequent or severe behavior problems when children's race does not match that of their teachers; teachers may respond to children's behavior problems in a way that does not support improvement in children's ability to regulate their behavior as effectively as they might with children of their own race. This could potentially be due to implicit bias or because the practices they are using to address their students' behavior problems may show disparate effectiveness for children from different backgrounds. Similarly, teachers' greater use of exclusionary discipline practices may be the result of implicit biases, or it could be that they lack the knowledge and tools to respond in a more culturally sensitive and effective way to children of a different racial background than their own (Dee, 2004). Importantly, although this work identifies patterns in how teachers are rating children, understanding the actual mechanisms that explain the effects is essential. There is currently not enough information about why teachers are rating or responding to children differently based on their own and the child's race. Future research may benefit from using alternative sources of information (e.g., classroom observations) to evaluate whether these teacher-reported differences reflect actual differences in how children are behaving in the classroom and/or how teachers are responding to those behaviors.

Some researchers argue that racial categories should be replaced as explanatory constructs due to the lack of consensual conceptual definition (e.g., Helms et al., 2005). Although results from this study are consistent with previous literature demonstrating that teacher and child race are related to teachers' ratings of children's behavior (e.g., Downer et al., 2016; Gilliam et al., 2016), these findings underscore the need for more research to better understand the specific social and cultural processes that may underlie the between group differences observed in this study, given the complexity embedded in the simple racial categories used in this and many other studies.

5.1. Limitations

There were a number of limitations to this study. One significant limitation is that the study is correlational in nature; children were not randomly assigned to White or Black teachers, so it is not possible to determine whether the teacher and child race combinations caused the differences in ratings. Similarly, as described above, we could not determine how or why race was linked to teachers' ratings of children's behavior or reported use of exclusionary discipline practices. Another limitation is that we only included Black and White children in our models. We also selected children for the study based on their teachers' initial ratings of their disruptive behavior, which would potentially be impacted by implicit bias. Although the proportions of White and Black children selected were similar to the overall proportions of White and Black children across the larger participant group, it is possible that there was bias in those initial ratings. The measure of exclusionary disciplinary actions consisted of teacher's self-report about the frequency with which they used discipline practices across the entire year, which relies on the accuracy of their memory. Finally, the outcome variables were teacher-reported; it is possible that teachers were reporting differences in how they employed discipline practices, but there may have been no actual differences in how they applied them in the classroom. Similarly, relying solely on teacher-reported outcomes means there is potential for shared method variance. It is not possible to know whether teacher's ratings reflect true differences in the intensity of children's behavior problems or bias in the ratings due to characteristics of teacher. These discipline practices are difficult to measure and, unlike official suspensions and expulsions, there are typically no records of less severe disciplinary actions such as time-out or phone calls home. Future work could expand measurement to rely less on teacher perception and memory by including additional informants (e.g., parents or independent observers). Additionally, a number of covariates that were not the focus of the current study were related to the outcomes, and so future work could further investigate the potential influence of those demographic factors.

5.2. Conclusion

Results from this study represent an important step in better understanding how preschoolers displaying disruptive behavior may be rated and disciplined differently based on their own and their teacher's race. This is an important area of investigation given the deeply concerning disparities in exclusionary discipline practices and the attendant removal of children from instructional time. Although our findings revealed a pattern of differences linked to teacher and child race, it will be important moving forward to begin to identify the mechanisms behind these differences in order to work more effectively towards closing the racial discipline gap.

Acknowledgements

References

Balfanz, R., Byrnes, V., & Fox, J. (2014). Sent home and put off-track: The antecedents, disproportionalities, and consequences of being suspended in the ninth grade. *Journal of Applied Research on Children: Informing Policy for Children at Risk, 5*, 17–30.

Bates, L., & Glick, J. (2013). Does it matter if teachers and schools match the student? Racial and ethnic disparities in problem behaviors. *Social Science Research, 42*, 1180–1190.

Bufferd, S., Dougherty, L., Carlson, G., Rose, S., & Klein, D. (2012). Psychiatric disorders in preschoolers: Continuity from ages 3 to 6. *American Journal of Psychiatry, 169*, 1157–1164.

Carter, P., Skiba, R., Arredondo, M., & Pollock, M. (2017). *You can't fix what you don't look at: Acknowledging race in addressing racial discipline disparities*. The Equity Project at Indiana University.

Colombi, G., & Osher, D. (2015). Advancing school discipline reform. *Education Leaders Report, 1*(2), 1–24.

Cook, C. R., Coco, S., Zhang, Y., Fiat, A. E., Duong, M. T., Renshaw, T. L., … Frank, S. (2018). Cultivating positive teacher–student relationships: Preliminary evaluation of the establish–maintain–restore (EMR) method. *School Psychology Review, 47*(3), 226–243.

Coplan, R. J., Bullock, A., Archbell, K. A., & Bosacki, S. (2015). Preschool teachers' attitudes, beliefs, and emotional reactions to young children's peer group behaviors. *Early Childhood Research Quarterly, 30*, 117–127.

Dee, T. (2004). Teachers, race, and student achievement in a randomized experiment. *Review of Economics and Statistics, 86*, 195–210.

Dee, T. S. (2005). A teacher like me: Does race, ethnicity, or gender matter? *American Economic Review, 95*(2), 158–165.

DiCarlo, C. F., Baumgartner, J., Ota, C., & Jenkins, C. (2015). Preschool teachers' perceptions of rough and tumble play vs. aggression in preschool-aged boys. *Early Child Development and Care, 185*(5), 779–790.

Dobbs, J., & Arnold, D. H. (2009). Relationship between preschool teachers' reports of children's behavior and their behavior toward those children. *School Psychology Quarterly, 24*(2), 95–105.

Doumen, S., Verschueren, K., Buyse, E., Germeijs, V., Luyckx, K., & Soenens, B. (2008). Reciprocal relations between teacher–child conflict and aggressive behavior in kindergarten: A three-wave longitudinal study. *Journal of Clinical Child & Adolescent Psychology, 37*, 588–599.

Downer, J., Goble, P., Myers, S., & Pianta, R. (2016). Teacher-child racial/ethnic match within pre-kindergarten classrooms and children's early school adjustment. *Early Childhood Research Quarterly, 37*, 26–38.

Downey, D., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. *Sociology of Education, 77*, 267–282.

DuPaul, G. J., Anastopoulos, A. D., Power, T. J., Reid, R., Ikeda, M. J., & McGoey, K. E. (1998). Parent ratings of attention-deficit/hyperactivity disorder symptoms: Factor structure and normative data. *Journal of Psychopathology and Behavioral Assessment, 20*, 83–102.

Egalite, A. J., Kisida, B., & Winters, M. A. (2015). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review, 45*, 44–52.

Elhoweris, H., Mutua, K., Alsheikh, N., & Holloway, P. (2005). Effect of children's ethnicity on teachers' referral and recommendation decisions in gifted and talented programs. *Remedial and Special Education, 26*, 25–31.

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling, 8*(3), 430–457.

Eyberg, S., & Pincus, D. (1999). *Eyberg child behavior inventory and Sutter-Eyberg student behavior inventory-revised: Professional manual.* Psychological Assessment Resources.

Feil, E., Small, J., Forness, S., Serna, L., Kaiser, A., Hancock, T., Brooks-Gunn, J., Bryant, D., Kuperschmidt, J., Burchinal, M., Boyce, C., & Lopez, M. (2005). Using different measures, informants, and clinical cut-off points to estimate prevalence of emotional or behavioral disorders in preschoolers: Effects on age, gender, and ethnicity. *Behavioral Disorders, 30*, 375–391.

García Coll, C., Crnic, K., Lamberty, G., Wasik, B. H., Jenkins, R., Vázquez García, H., & McAdoo, H. P. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development, 67*, 1891–1914.

Gershenson, S., Hart, C., Hyman, J., Lindsay, C., & Papageorge, N. W. (2018). *The long-run impacts of same-race teachers (no. w25254)*. National Bureau of Economic Research.

Gilliam, W. (2005). *Prekindergarteners left behind: Expulsion rates in state prekindergarten systems* (Foundation for Child Development).

Gilliam, W., Maupin, A., Reyes, C., Accavitti, M., & Shic, F. (2016). *Do early educators' implicit biases regarding sex and race relate to behavior expectations and recommendations of preschool expulsions and suspensions?* Yale University Child Study Center Research Brief.

Goff, P. A., Jackson, M. C., Di Leone, B. A. L., Culotta, C. M., & DiTomasso, N. A. (2014). The essence of innocence: Consequences of dehumanizing black children. *Journal of Personality and Social Psychology, 106*(4), 526–545.

Gonsalkorale, K., Sherman, J. W., & Klauer, K. C. (2009). Aging and prejudice: Diminished regulation of automatic race bias among older adults. *Journal of Experimental Social Psychology, 45*(2), 410–414.

Graves, S., & Howes, C. (2011). Ethnic differences in social-emotional development in preschool: The impact of teacher child relationships and classroom quality. *School Psychology Quarterly, 26*, 202–214.

Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for black and white high school students. *American Educational Research Journal, 48*(4), 904–934.

Gregory, A., Skiba, R. J., & Mediratta, K. (2017). Eliminating disparities in school discipline: A framework for intervention. *Review of Research in Education, 41*(1), 253–278.

Hamre, B. K., Pianta, R. C., Downer, J. T., & Mashburn, A. J. (2008). Teachers' perceptions of conflict with young students: Looking beyond problem behaviors. *Social Development, 17*(1), 115–136.

Helms, J. E., Jernigan, M., & Mascher, J. (2005). The meaning of race in psychology and how to change it: A methodological perspective. *American Psychologist, 60*(1), 27–36.

Hommersen, P., Murray, C., Ohan, J. L., & Johnston, C. (2006). Oppositional defiant disorder rating scale: Preliminary evidence of reliability and validity. *Journal of Emotional and Behavioral Disorders, 14*, 118–125.

Jacoby-Senghor, D. S., Sinclair, S., & Shelton, J. N. (2016). A lesson in bias: The relationship between implicit racial bias and performance in pedagogical contexts. *Journal of Experimental Social Psychology, 63*, 50–55.

Kozlowski, K. P. (2015). Culture or teacher bias? Racial and ethnic variation in student-teacher effort assessment match/mismatch. *Race and Social Problems, 7*, 43–59.

Ladd, G., & Burgess, K. (2001). Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment? *Child Development, 72*, 1579–1601.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198–1202.

Marchbanks, M., III, Blake, J., Booth, E., Carmichael, D., Seibert, A., & Fabelo, T. (2014). The economic effects of exclusionary discipline on grade retention and high school dropout. In D. J. Losen (Ed.), *Closing the school discipline gap: Equitable remedies for excessive exclusion (pp. 59–74)*. Teachers College Press.

McGrady, P. B., & Reynolds, J. R. (2013). Racial mismatch in the classroom: Beyond black-white differences. *Sociology of Education, 86*, 3–17.

Miner, J. L., & Clarke-Stewart, K. A. (2008). Trajectories of externalizing behavior from age 2 to age 9: Relations with gender, temperament, ethnicity, parenting, and rater. *Developmental Psychology, 44*, 771–786.

Myers, S. S., & Pianta, R. C. (2008). Developmental commentary: Individual and contextual influences on student–teacher relationships and children's early problem behaviors. *Journal of Clinical Child & Adolescent Psychology, 37*(3), 600–608.

National Center for Education Statistics. (2017). The condition of education 2017 (NCES 2017–144). National Center for Education Statistics https://nces.ed.gov/pubs2017/2017144.pdf.

Neitzel, J. (2018). Research to practice: Understanding the role of implicit bias in early childhood disciplinary practices. *Journal of Early Childhood Teacher Education, 39*, 232–242.

Nolan, E. E., Gadow, K. D., & Sprafkin, J. (2001). Teacher reports of DSM-IV ADHD, ODD, and CD symptoms in schoolchildren. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(2), 241–249.

Oates, G. L. S. C. (2009). An empirical test of five prominent explanations for the black–white academic performance gap. *Social Psychology of Education, 12*(4), 415–441.

Okonofua, J., & Eberhardt, J. (2015). Two strikes race and the disciplining of young students. *Psychological Science, 26*, 617–624.

Okonofua, J. A., Walton, G. M., & Eberhardt, J. L. (2016). A vicious cycle: A social–psychological account of extreme racial disparities in school discipline. *Perspectives on Psychological Science, 11*(3), 381–398.

Pas, E. T., & Bradshaw, C. P. (2014). What affects teacher ratings of student behaviors? The potential influence of teachers' perceptions of the school environment and experiences. *Prevention Science, 15*(6), 940–950.

Powell, D., Fixsen, D., & Dunlap, G. (2003). *Pathways to service utilization: A synthesis of evidence relevant to young children with challenging behavior*. Center for Evidence-Based Practice.

Rimm-Kaufman, S. E., Pianta, R. C., & Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly, 15*, 147–166.

Skiba, R., Arredondo, M., & Rausch, M. (2014). *New and developing research on disparities in discipline*. The Equity Project at Indiana University.

Skiba, R., Horner, R., Chung, C., Rausch, M., May, S., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review, 40*, 85–107.

Spieker, S. J., Larson, N. C., Lewis, S. M., Keller, T. E., & Gilchrist, L. (1999). Developmental trajectories of disruptive behavior problems in preschool children of adolescent mothers. *Child Development, 70*(2), 443–458.

Staats, C. (2014). *Implicit racial bias and school discipline disparities*. Kirwan Institute.

Tenenbaum, H., & Ruck, M. (2007). Are teachers' expectations different for racial minority than for European American students? A meta-analysis. *Journal of Educational Psychology, 99*, 253–272.

Toldson, I., McGee, T., & Lemmons, B. (2015). Reducing suspensions by improving academic engagement among school-age black males. In D. J. Losen (Ed.), *Closing the school discipline gap: Equitable remedies for excessive exclusion (pp. 107–117)*. Teachers College Press.

U.S. Census Bureau. (2012). *Most children younger than age 1 are minorities, Census Bureau Reports*. U.S. Census Bureau News Release.

U.S. Department of Education. (2016). *The state of racial diversity in the educator workforce*. Office of Planning, Evaluation, and Policy Development. https://www2.ed.gov/rschstat/eval/highered/racial-diversity/state-racial-diversity-workforce.pdf.

U.S. Department of Health and Human Services. (2016). *Policy statement on expulsion and suspension policies in early childhood settings*. Deputy Assistant Secretary's Office on Early Childhood Development. https://www.acf.hhs.gov/sites/default/files/documents/ecd/expulsion_ps_numbered.pdf.

Williford, A., LoCasale-Crouch, J., Whittaker, J., DeCoster, J., Hartz, K., Carter, L., Wolcott, C., & Hatfield, B. (2016). Changing teacher–child dyadic interactions to improve preschool children's externalizing behaviors. *Child Development, 88*(5), 1544–1553.

Williford, A. P., Wolcott, C. S., Whittaker, J. V., & Locasale-Crouch, J. (2015). Program and teacher characteristics predicting the implementation of banking time with preschoolers who display disruptive behaviors. *Prevention Science, 16*(8), 1054–1063.