Published in final edited form as:

Infant Ment Health J. 2019 January ; 40(1): 98–112. doi:10.1002/imhj.21752.

Considering the role of early discrimination experiences and the parent-child relationship in the development of disruptive behaviors in adolescence

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Abstract

Discrimination has been shown to be related to diminish psychological adjustment and greater risk for substance use when personally experienced by adolescents and when their caregivers experience discrimination. Our research considers the impact of primary caregiver experiences of racial and socioeconomic based discrimination in early- (age 3–5) and late-childhood (age 9.5) on adolescent disruptive behaviors (age 14) with a large sample of diverse caregiver-child dyads ($N = 634$). In addition, we examine the potential protective effects of parent-child relationship quality in early- and late-childhood in buffering the effects of caregiver discrimination on adolescent disruptive behaviors. We also explore possible gender differences in children's vulnerability to engage in disruptive behaviors in the context of caregiver experiences of discrimination. The findings from this study indicate that at trend level, early childhood experiences of primary caregiver discrimination (ages 3–5) predicted adolescent disruptive behaviors, accounting for the effects of more recent (age 9.5) caregiver discrimination. Additionally, parent-child relationship quality at age 9.5 was found to buffer the effects of late-childhood (age 9.5) primary caregiver discrimination on adolescent disruptive behaviors for both male and female youth. The findings highlight the need for prevention and intervention techniques that foster healthy positive primary caregiver-child relationships.

Keywords

discrimination; parent-child relationship; low income; diverse racial/ethnic backgrounds; disruptive behaviors

It is recognized that child rearing is greatly influenced by the context in which the family lives, and discrimination can negatively impact the child-rearing context (Anderson et al., 2015). Discrimination, or the unfair or prejudicial treatment of different groups of people based on features such as race, gender, religion, or income, is extremely prevalent in

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American society. In a nationwide poll from October 2015 conducted by CNN and the Kaiser Family Foundation, 49 percent of Americans said racism is “a big problem” in society today (Shoichet, 2015). Similarly, in a recent 2016 Gallup poll, 35 percent of Americans surveyed reported that they were “worried a great deal” about race relations, which has doubled since 2014 (Norman, 2016). Furthermore, in a nationally representative study, racial and socioeconomic discrimination were found to be quite pervasive in the United States (Ren, Amick, & Williams, 1999).

Experiencing discrimination during childhood and adolescence has been shown to be related to numerous detrimental outcomes in psychological and physical health domains (Clark, Coleman & Novak, 2004; Prelow, Danoff-Burg, Swenson, & Pulgiano, 2004; Priest et al., 2013), as well as in social and educational contexts (Neblett, Philip, Cogburn, & Sellers, 2006). Although adults and children may experience discrimination in different settings (e.g., workplace versus classroom), the negative effects for those who experience discrimination do not diminish with age (Mays, Cochran, & Barnes, 2007; Williams & Mohammed, 2009). García Coll and colleagues (1996) theorize that high-stress environments, such as those characterized by discrimination, have the potential to impact children and adolescents’ outcomes by altering family processes. The present study aims to extend findings of previous research on the impact of discrimination on behavior from early childhood to early adolescence. We also examine family processes that may attenuate the negative effects of discrimination.

Taking an ecological systems perspective (Bronfenbrenner, 1979), discrimination may be most impactful on child development via processes occurring at the level of the microsystem (e.g., parent-child relationships). For example, parents may become depressed in response to discrimination experiences and thus not be able to utilize as many positive parenting strategies, leading to maladaptive child behaviors (Anderson et al., 2015). However, Bronfenbrenner’s theory also recognizes the influence of macrosystem-level processes (e.g., social and economic conditions), which may allow discriminatory experiences to occur and may negatively impact the child’s environment. Thus, discrimination, whether experienced personally or vicariously through caregivers, may create a stressful environment, which in turn may play a key role in the development of children’s disruptive behavior.

Ford and colleagues (2013) suggest that the quality of the relationship between caregivers and children might affect the extent to which caregiver discrimination relates to child outcomes. High rates of parent-child conflict are associated with more externalizing symptoms (Burt, McGue, Iacono, & Krueger, 2006; Klahr, McGue, Iacono, & Burt, 2011). Numerous studies suggest positive parent-child relationship quality benefits adolescents’ psychological adjustment (Qu, Fuligni, Galvan, & Telzer, 2015) and brain structure development (Whittle et al., 2014).

Positive and supportive parenting techniques may buffer the negative effects of stress associated with experiencing discrimination (Neblett et al., 2008; Juang & Alvarez, 2010; Wang & Huguley, 2012), which may also extend to circumstances in which caregivers experience discrimination. In a moderation analysis involving parenting style, adolescents whose parents used a more supportive parenting style (i.e., warmth, communication and

consistent discipline) were less likely to report increased anger and less likely to report willingness to use substances after experiencing discrimination (Gibbons et al., 2010). However, uninvolved parenting, experiencing or witnessing discrimination and stressful life events (e.g., being a victim of a crime) all independently increase children's risk for developing depressive symptoms (Simons et al., 2002).

Furthermore, children experiencing vicarious racial discrimination through their caregivers are at increased risk of developing emotional and behavioral problems through less supportive parenting and/or changes in positive cultural messaging (Mays, Cochran, & Barnes, 2007). Thus, utilizing the quality of the parent-child relationship may be a means by which to assess whether positive and supportive parenting techniques are able to buffer the detrimental effects that children face when their caregivers experience discrimination and/or when they personally experience discrimination.

A majority of the current literature investigates the effects of experiencing discrimination with either adolescent or adult samples. However, few studies have assessed the effect of primary caregiver experience with discrimination on their child's development and its relation to the child's own experience with discrimination beginning during early childhood. In addition to initiating such research when youth are school-aged or older, the literature largely assesses the impact of discrimination on single targets and does not extend beyond the direct recipient of discrimination (Anderson et al., 2015). The few studies that have investigated the impact of caregiver experience of discrimination on child adjustment have consistently shown a strong association between caregiver's racially discriminatory experiences and poor mental health outcomes for African-American children during middle childhood (Anderson et al., 2015) and adolescence (Ford, Hurd, Jagers & Sellers, 2013). One exception is a study conducted by Caughy and colleagues (2004), which did not reveal a significant association between caregiver experiences of discrimination and internalizing problem behaviors for preschool-aged children. However, less is known about the relationship between caregiver discrimination and disruptive behaviors (Gibbons et al., 2004). The present study intends to contribute to the recently developing literature on the impact of discrimination on primary caregiver-child dyads, specifically by investigating the relationship between caregiver discrimination during early and late childhood and adolescent disruptive behavior.

Although previous research suggests that boys are at a greater risk than girls for engaging in externalizing behaviors (Brenan & Shaw, 2013; Keenan & Shaw, 1997; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999), less is known about gender differences in behaviors as a response to primary caregiver experiences of discrimination. In congruence with previous findings on gender differences, it may be that boys are more likely to externalize in response to experiences of discrimination and girls are more likely to internalize responses to experiences of discrimination. However, Ford and colleagues (2013) did not find gender differences in the relationship between caregiver experiences of discrimination and adolescent depressive symptoms and psychological well-being. The similarity in response to primary caregiver experience of discrimination across gender is consistent with previous research on adolescent experiences of discrimination, which suggests that boys and girls do not differ in their psychological responses to experiencing discrimination (Simons et al.,

2002). The present study explores potential moderation by gender on the relationship between caregiver discrimination and adolescent disruptive behavior.

An additional constraint of the current literature is the dearth of research that has examined discrimination based on socioeconomic status (SES) (Van Dyke, Vaccarino, Quyyumi, & Lewis, 2016). SES is one of the most widely accepted social determinants of physical health (Van Dyke et al., 2016) and psychological health (Braveman et al., 2010). There is a significant interplay between socioeconomic status and race for both health outcomes (Ren, Amick, & Williams, 1999; Williams, Priest, & Anderson, 2016) and educational outcomes (Sirin, 2005). In the classroom environment, previous research has shown that middle to high SES groups are given preferential treatment over low SES groups (Sirin, 2005). There are also differences in parenting practices and styles across socioeconomic status groups (Radziszewska, Richardson, Dent, & Flay, 1996; Spera, 2005). Based on the general influence of socioeconomic status on child and family development, it is important to address the gap in the literature by assessing the impact of both racial- and socioeconomic-based discrimination on disruptive behavior.

Present Study

The purpose of this study is to explore the role of primary caregiver (PC) perceived discrimination at different developmental periods in the emergence of disruptive behaviors in adolescence. We aim to extend previous findings (Anderson et al., 2015; Ford et al., 2013) that suggest caregiver experiences of discrimination predict target child (TC) behavior problems in late childhood and adolescence in four ways. First, we examined long-term implications of discrimination during early childhood (ages 3–5) on disruptive behaviors at age 14, accounting for the effects of discrimination in late-childhood. Second, we investigated the more recent effects of parental discrimination by investigating the association between parental discrimination at age 9.5 and disruptive behaviors at age 14, accounting for the effects of early childhood discrimination. Third, we investigated whether a positive parent-child relationship, characterized by high levels of warmth and communication, could attenuate the association between PC's experiences of discrimination and TC disruptive behaviors in adolescence both in early- and late-childhood. Specifically, we tested for an interaction between discrimination and parent-child relationship quality in early childhood (child ages 3–5) and adolescent disruptive behaviors and an interaction between discrimination and parent-child relationship quality in late childhood (child age 9.5) and adolescent disruptive behaviors, such that at high levels of parent-child relationship quality, the magnitude of the association between high levels of discrimination and adolescent disruptive behavior would be attenuated. Fourth, we tested if the interaction between discrimination and parent-child relationship quality and adolescent disruptive behaviors is moderated by target child gender. Specifically, the present study was guided by five hypotheses.

1. We expected PC's experiences of discrimination in early childhood (TC ages 3–5) would predict adolescent disruptive behaviors at age 14.
2. We hypothesized PC's experiences of discrimination in late childhood (TC age 9.5) would independently predict adolescent disruptive behaviors at age 14.

3. We postulated that a higher quality parent-child relationship in early childhood (ages 3–5) would attenuate the magnitude of associations between early childhood (ages 3–5) PC discrimination and age 14 adolescent disruptive behaviors.
4. Similarly, we hypothesized that a positive parent-child relationship would attenuate the magnitude of associations between late childhood (age 9.5) PC discrimination and age 14 adolescent disruptive behaviors.
5. We expected associations between PC discrimination, parent-child relationship quality, and the interaction between discrimination and relationship quality and adolescent disruptive behaviors to be equally strong for males and females.

Methods

Participants

Participants were 731 families in the Early Steps Multisite project. Caregiver-child dyads were initially recruited when the child was between 2 years 0 months and 2 years 11 months of age from Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in the metropolitan areas of Pittsburgh, PA, and Eugene, OR, and the city of Charlottesville, VA, and surrounding counties (Dishion et al., 2008). Primary caregivers (PCs) were typically the target children's mothers but could be any adult acting as the main provider of childcare. Alternate caregivers (ACs) were elected by the primary caregiver and were typically father figures but could also be any significant adult in the child's life, as recognized by the PC. Inclusion criteria for recruitment included risk factors within the following three domains: (a) child behavior (e.g., conduct problems, high-conflict relationships with adults), (b) family problems (i.e., maternal depression, daily parenting challenges, substance use problems, teen parent status) and (c) socio-demographic risk (i.e., no more than 2 years post high school education and low family income). Two or more of the three risk factors were required for inclusion in the sample. All children in the sample had above-normative levels of externalizing problems to increase parent's motivation for concern. For a detailed description of the Family Check-Up intervention, see Dishion et al. (2008).

Of the 1666 parents who were approached at WIC sites across the three study locations and had children in the appropriate age range, 879 families met the eligibility requirements, and 731 (82.3%) consented for participation. Of the 731 families (49% female children), 272 (37%) were recruited in Pittsburgh, 271 (37%) in the Eugene site and 188 (26%) in Charlottesville. Across sites, children were reported to belong to the following racial groups: 27.9% African American, 50.1% European American, 13.0% biracial and 8.9% other races (e.g., American Indian, Native Hawaiian). In terms of ethnicity, 13.4% of the sample reported being Hispanic American. The current study utilizes data collected at ages 2, 3, 4, 5, 9.5, 10.5 and 14 (waves 1, 2, 3, 4, 7, 8, and 9, respectively). The present study uses data from the 634 participants (86.7%) who completed either the age 9.5 or 14 assessment. Attrition analyses revealed no differences between attrited participants in baseline income, PC- or AC-reported oppositional/aggressive behaviors, positive parent-child relationship,

intervention status, TC gender, or site location. Retained participants were found to have a higher education at baseline ($t_{120,97} = 2.72, p < .01$).

Measures

Demographic Variables.—A semi-structured interview was administered at each assessment to the PC to assess demographic characteristics of the family, such as gender, race and ethnicity, household annual income, parent education, and household composition. For the present study, demographic information on gender, race and ethnicity, site location, and intervention status was collected at the age 2 assessment and information on household annual income and parent education was collected at age 9.5.

Experiences of discrimination.—PC and TC experiences of discrimination were measured using the Microaggression Scale (MIC; adapted from Walters, Simoni, & Evans-Campbell, 2002), administered at the age 9.5 assessment. The MIC is an eleven-item measure assessing experiences of ethnic/racial and income discrimination from others. Parents rated the frequency of discrimination in specific situations that they faced between child ages 7.5 and 9.5 (e.g., “Have you ever been expected to act in a stereotypical manner because of your ethnicity/race? because of your income?”) on a 5-point scale ranging from “almost never” to “almost always.” Nine of the eleven questions corresponded to PC’s experiences of discrimination and two of the questions asked about TC’s experiences of discrimination. Cronbach Alphas indicate excellent internal reliability for PC’s experiences ($\alpha = .925$) and acceptable reliability for TC’s experiences ($\alpha = .768$).

Caregiver-reported disruptive behaviors.—Caregiver assessments of adolescent disruptive behaviors were assessed using the Child Behavior Checklist (CBCL) at age 14. The CBCL is a 76-item parent report of emotional and behavior problems in children over the past 6 months (Achenbach & Rescorla, 2001). A 3-point Likert scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*) was used to assess parental perceptions of child behavior (e.g., “My child is inattentive or easily distracted”). For the present study, a subset of seven items matching DSM-IV-TR criteria for oppositional defiant disorder and aggressive items that form the conduct disorder diagnosis were used to assess caregiver-reported disruptive behaviors (Brennan, Shaw, Dishion, & Wilson, 2015). At the age 14 assessment, 553 PCs and 384 ACs completed the CBCL. Cronbach alphas for the oppositional/aggressive scale were .847 and .819 for PCs and ACs, respectively, indicating good internal consistency.

Youth-reported disruptive behaviors.—Target youth completed an adapted version of the Self Report of Deviance Questionnaire (SRD; Elliot, Huizinga, & Ageton, 1985). The 46-item SRD assesses the frequency of aggressive and delinquent behaviors an individual has engaged in over the past 12 months. Responses are coded on a 3-point Likert scale (0 = *never*, 1 = *once/twice*, 2 = *more often*). Sample items include, “Have you cheated on school tests?; Have you stolen or tried to steal a bicycle or skateboard?; Have you been arrested?” Cronbach alphas indicate good internal reliability ($\alpha = .897$).

Parent-child relationship quality.—PCs completed the Adult Child Relationship Scale (ACRS) at the age 9.5 assessment. The ACRS is a 15-item measure adapted from the Student-Teacher Relationship Scale (Pianta, Steinberg, & Rollins, 1995), which assesses the quality of the parent-child relationship and yields two scales: the positive relationship scale and the conflict relationship scale. To determine if a positive parent-child relationship could buffer the effects of discrimination, the 5-item positive relationship scale was used in the present study. A sample item from the positive relationship scale is “*If upset, this child seeks comfort from me.*” Responses were on a 5-point Likert scale ranging from *Definitely Not* to *Definitely*. Cronbach Alphas indicate acceptable internal consistency ($\alpha = .794$).

Data Analysis

Descriptive statistics and inter-correlations were calculated using the Base package in R (R Core Team, 2017). The primary study hypothesis was examined with structural equation models (SEM) in the ‘lavaan’ package version 0.523.1097 in R using maximum likelihood estimation with robust estimators (MLR; Rosseel, 2012). The lavaan package allowed us to estimate adolescent disruptive behaviors as a latent construct and examine predictors of the latent construct. Indicators of adolescent disruptive behaviors (i.e., PC and AC Opp/Agg scores and TC self-reported delinquency) were all positively skewed and demonstrated positive kurtosis, indicating non-normality. Indicator variables of adolescent disruptive behaviors were transformed using natural log transformations prior to estimation per recommendations by Tabachnick and Fidell (2007). Full information maximum likelihood estimation was used to account for missing data.

To test the five study hypotheses, a series of SEM models were fit with the predictor variables (i.e., PC discrimination and positive parent-child relationship), interaction term, and relevant covariates being regressed onto adolescent disruptive behaviors. Specifically, to test hypotheses 1 and 3, that there would be a main effect of early childhood discrimination on age 14 disruptive behaviors and an interaction between early childhood discrimination and parent-child relationship quality, an early-childhood model was fit regressing early childhood discrimination, parent-child relationship quality, and the interaction between early childhood discrimination and relationship quality on adolescent disruptive behaviors. Similarly, to test hypotheses 2 and 4, that there would be a main effect of late childhood discrimination on age 14 disruptive behaviors and an interaction between late childhood discrimination and parent-child relationship quality, a late-childhood model was fit regressing late childhood discrimination, parent-child relationship quality, and the interaction between late childhood discrimination and relationship quality on adolescent disruptive behaviors. Finally, a multi-group approach was utilized to test hypothesis 5, that the associations between discrimination, parent-child relationship, or the interaction term and adolescent disruptive behaviors differed by gender. Specifically, a full model was fit for male and female youth where all paths were allowed to be freely estimated. We then ran reduced models, separately constraining the paths between PC discrimination, parent-child relationship, and the interaction between PC discrimination and the parent-child relationship to be equal for males and females. The full and reduced models were then compared using a chi-square difference test. Significant differences between the full and reduced models would indicate that gender significantly moderated the constrained path.

Predictor variables (i.e., PC discrimination and positive parent child relationship) were grand-mean centered before creating the interaction term to reduce multicollinearity and improve interpretability (Aiken & West, 1991). All models controlled for intervention status, PC gender, TC gender, PC education, annual household income, and site location with Eugene used as the reference group. We entered the manifest predictor variables, interaction term, and relevant covariates into the model simultaneously to examine their role as predictors of the latent disruptive behavior construct. See Figure 1 for an example model. Model fit was assessed for the model using the following fit indices: Model Chi-Square, Root Mean Square Error of Approximation (RMSEA, $<.10$ indicates acceptable fit), Standardized Root Mean Square Residual (SRMR, $<.08$ indicates acceptable fit), and Comparative Fit Index (CFI, $>.90$ indicates acceptable fit; Hooper, Coughlan, & Mullen, 2008). R-square values were assessed to determine the model effect on the outcome variable.

In line with recommendations by Maxwell & Delaney (2003), main effects between discrimination and parent-child relationship quality and disruptive behaviors were only interpreted if the interaction term was non-significant. Significant interactions were explored and plotted at high (1 SD above the mean) and low (1 SD below the mean) positive parent-child relationship scores using the 'pequod' package in R (Mirisola & Seta, 2016).

Results

Descriptive Statistics and Intercorrelations

Descriptive analysis of discrimination experiences revealed that the average discrimination scores were 1.49 ($sd = 0.52$) for early-childhood and 1.34 ($sd = 0.50$) for late-childhood. Discrimination scores of 1.00 indicate no experiences of discrimination, while scores greater than 1.00 indicate that the individual has experienced discrimination. Among PCs, 573 (90.4%) had an early-childhood discrimination score greater than 1.00 and 326 (56.8%) had a late-childhood discrimination score greater than 1.00. See Table 1 for means and standard deviations of all continuous variables. See Table 2 for descriptive statistics of all categorical variables.

In terms of inter-correlations, PC, AC, and TC reports of TC's disruptive behaviors were significantly correlated with one another (r 's = .253-.625, p 's $< .01$). PC experiences of discrimination in early childhood were highly correlated with experiences of discrimination at age 9.5 ($r = .558$, $p < .001$), indicating that experiences of discrimination are relatively stable across time. See Table 3 for all intercorrelations between the study variables.

Hypotheses 1 and 3: Early-Childhood Discrimination as a Predictor of Disruptive Behaviors

The early-childhood discrimination model fit the data well $\chi^2_{df=20, n=694} = 37.51$, ($p = .01$), RMSEA = .036, and CFI = .949. Contrary to hypothesis 1, the main effect of parental experiences of discrimination on age 14 disruptive behaviors was not significant ($\beta = .074$, $p = 0.169$). The main effect of early childhood parent-child relationship quality was also not a significant predictor of age 14 disruptive behaviors ($\beta = -.072$, $p = 0.091$). Hypothesis 3 was also not supported as the interaction between early childhood parental discrimination and

early childhood parent-child relationship quality predicting adolescent disruptive behaviors was not significant ($\beta = -.037, p = 0.436$). See Table 4 for the model results and fit indices for the early-childhood discrimination model.

Hypotheses 2 and 4: Late-Childhood Discrimination as a Predictor of Disruptive Behaviors

The late-childhood discrimination model also fit the data well $X^2_{df=22, n=634} = 38.67, (p = .01)$, RMSEA = .035, and CFI = .956. Consistent with hypothesis 4, there was a significant interaction between age 9.5 PC experiences of discrimination and age 9.5 parent-child relationship ($\beta = -.087, p = 0.018$). The interaction suggests that the effect of discrimination on adolescent disruptive behaviors was significantly different at high (+1 SD) versus low (−1 SD) levels of parent-child relationship quality (see Figure 2). Because there was a significant interaction, we did not interpret main effects of age 9.5 discrimination (i.e., hypothesis 2) or parent-child relationship quality. However, there was a non-significant statistical trend of early childhood discrimination in this model indicating that higher levels of discrimination in early childhood predict higher levels of adolescent disruptive behaviors accounting for the effects of late-childhood discrimination. See Table 5 for the model results and fit indices for the early childhood discrimination model.

Hypothesis 5: Moderation by Gender

We first tested for a moderation effect of TC gender in the early childhood model. Child's gender was not found to moderate the paths between early-childhood parental discrimination, early-childhood parent-child relationship quality, or the interaction between early-childhood discrimination and parent-child relationship quality (see Table 6). Similarly, child's gender did not significantly moderate the paths between late-childhood parental discrimination, late-childhood parent-child relationship quality, or the interaction between late-childhood discrimination and parent-child relationship quality (see Table 7). The non-significant moderating effect of gender observed here supports our approach to examine the effects of discrimination and parent-child relationship quality among both males and females.

Discussion

Discrimination remains a prevalent issue in the United States, but it is a topic that continues to be understudied. There is an expanding body of research linking direct experiences of discrimination with negative outcomes for both adults (Williams & Mohammed, 2009) and youth (Neblett, Terzian, & Harriott, 2010; Prelow et al., 2004; Priest et al., 2013), but little is known about indirect effects of parent's experiences of discrimination on their children's development. We add to the growing body of literature on discrimination (Anderson et al., 2015, Ford et al., 2013, Gibbons et al., 2004) by examining associations between PC experiences of discrimination in early childhood (ages 3–5) and adolescent disruptive behaviors (age 14). Additionally, we focused in on more recent experiences of primary caregiver discrimination (e.g., target child age 9.5) to examine whether family processes, specifically a positive parent-child relationship, could attenuate this association. Further, when examining the influence of the parent-child relationship quality, we accounted for the effects of discrimination in early childhood (e.g., ages 3–5), a developmental period when

parents' experiences of discrimination is associated with depression symptoms and fewer positive parenting practices which in turn is related to maladaptive behaviors in children (Anderson et al., 2015).

Our findings indicate that more recent caregiver discrimination appears to be a risk factor for adolescent disruptive behaviors, above and beyond the effects of early childhood experiences. Consistent with previous research (Caughy et al., 2004), we found that early childhood experiences of primary caregiver discrimination (ages 3–5) are not reliably predictive of target child behavior. However, early childhood experiences of discrimination by primary caregivers may influence family processes (e.g., parenting practices), which can impact development of problem behaviors over time (Anderson et al., 2015). Thus, caregiver experiences of discrimination in children's early years (i.e., age 3–5) may indirectly contribute to risk for adolescents engaging in disruptive behaviors. Importantly, the vulnerability of this sample to engage in disruptive behaviors based on study inclusion criteria (e.g., conduct problems, high-conflict relationships with adults) is quite high and any additional elevation in risk to engage in disruptive behaviors (i.e., in the context of primary caregiver discrimination) is substantial. Furthermore, it is important to keep the vulnerability of the sample to engage in disruptive behaviors in mind when interpreting the trend level finding that early childhood experiences of primary caregiver discrimination (ages 3–5) are predictive of adolescent disruptive behaviors when accounting for the effects of more recent caregiver discrimination experiences in late childhood.

After accounting for the effects of early childhood discrimination, parent-child relationship quality was found to buffer the effects of late-childhood primary caregiver discrimination on adolescent disruptive behaviors. Based on our findings and previous research (Burt et al., 2006; Klahr et al., 2011), children who have poor relationships with their parents are already at an elevated risk to develop behavior problems in adolescence. For youth in poor relationships with their parents in late childhood, parental experiences of discrimination appear to heighten the risk for engaging in disruptive behaviors in adolescence. From a developmental perspective, this is critical as adolescence is a period where youth begin to engage in more serious antisocial behaviors (Moffitt, 2006; Shaw, Hyde, & Brennan, 2012) and identifying factors that increase this risk can be informative to intervention programs.

Consistent with study hypotheses, the association between parent's experiences of discrimination in late childhood and disruptive behavior in adolescence decreased in magnitude in the context of a positive parent-child relationship. The attenuating effect of a positive parent-child relationship is consistent with previous studies that indicate a more positive parent-child relationship is associated with fewer problem behaviors (Qu, Fuligni, Galvan, & Telzer, 2015). Parents that are able to foster positive relationships with their children may be better able to recognize and attend to emotional and conduct problems and alleviate issues that may be causing such problems.

Even in the face of frequent discrimination, a positive parent-child relationship can shield the child from some negative effects on behavior. As positive parent-child relationships are often characterized by warmth and communication (Gibbons et al., 2010), caregivers may be able to communicate effectively with their children about the discriminatory experiences and

provide support. Previous work has shown that a parenting style characterized by warmth and support buffered against discrimination effects on anger, hostile view of relationships and violence (Simons et al., 2006). This result is consistent with the current finding that a more positive parent-child relationship quality buffered the effects of discrimination on disruptive problem behavior.

Alternatively, it is possible that having a positive parent-child relationship may attenuate the parent's internal distress following experiences of discrimination. That is, having consistent positive interactions with one's children may foster resilience for the parent through increasing parenting self-efficacy, leading to a lower likelihood of developing depression and an increased likelihood of maintaining positive parenting practices. This, in turn, would serve to strengthen the positive parent-child relationship. Consistent with this hypothesis, parenting self-efficacy has been linked to better parental psychological functioning and more positive parenting practices (Jones & Prinz, 2005). However, to date no research has examined parenting self-efficacy as a factor moderating the relationship between parental discrimination and maladaptive behaviors in children.

Consistent with previous research we found that boys are at a greater risk than girls for engaging in disruptive behaviors (Brennan & Shaw, 2013; Leadbeater et al., 1999). However, and also consistent with previous research (Ford et al., 2013), in the context of primary caregiver experiences of discrimination we found that boys and girls were of equal likelihood to engage in disruptive behaviors. Therefore, the present study suggests that there is not a differential response to parental discrimination by gender, such that boys and girls are at equal risk for engaging in disruptive behaviors in response to caregiver discrimination.

Study Strengths and Limitations

Our findings are unique in that they address the impact of both racial discrimination and socioeconomic discrimination on behavior in a sample of children from diverse racial/ethnic backgrounds. Previous research has been focused on discriminatory experiences of African-American youth (Anderson et al., 2015; Ford et al., 2013) and has not assessed the role of socioeconomic discrimination in the development of disruptive behaviors. The present study provides clarity to the gap in the literature.

Additionally, we accounted for discrimination experiences earlier in the child's lifetime (i.e., beginning at age 3) than previous research (Anderson et al., 2015) and examined family processes (i.e., parent-child relationship) that attenuated the negative effects of discrimination. Incorporating parent experiences of discrimination when children were in the toddler period allowed us to account for unique variance associated with parent discrimination during the child's early years.

However, we do acknowledge the constraint of having only primary caregiver reports of discrimination and parent-child relationship quality. Having multiple reporters for both incidents of discrimination and parent-child relationship quality would be helpful in thoroughly examining the association between the two variables. Additionally, we did not collect reports of discrimination from the perception of the target child. Future research on

the impact of experiences of discrimination should incorporate multiple reporters and include the target child's report of their own perceived discrimination.

An additional constraint of the current study is the nature of reporting discrimination and the likelihood of the intersectionality of identity (gender, race/ethnicity, SES group) to influence the reports for discrimination based on race/ethnicity and SES. It may be difficult for participants to parse apart the sole reason for the experiences of discrimination they face. For example, the majority of the primary caregivers in this study are female and the sample is largely of low socioeconomic status. From the perspective of the victim of discrimination, it may not be possible to distinguish clear lines between parts of their identity for the sole reason for the experience of discrimination. Our attempt to address this concern was to combine the forms of discrimination because discrimination in any form can negatively influence well-being (Hershberger, Zapolski, & Aalsma, 2016).

Conclusions and Directions for Future Research

Whether experienced personally or vicariously, discrimination has been shown to be related to diminished psychological well-being (Clark, Coleman & Novak, 2004), negative physical health (Williams & Mohammed, 2009), and poor academic performance (Neblett, Philip, Cogburn, & Sellers, 2006). The association between discriminatory experiences and negative outcomes highlights the need to prevent discrimination and intervene in such experiences. Preventing discrimination is the optimal means by which to change outcomes. However, based on the current social and political climate, intervention techniques are also a necessary goal. Specifically, interventions that foster and promote the development of positive parent-child relationships may be one means by which to reduce the adverse effects of discriminatory experiences on child behavior. The findings presented in our study provide a new avenue by which to explore additional means for attenuating the association between discrimination and negative outcomes.

Future research should investigate other moderating variables for the relationship between discrimination and disruptive behaviors. Racial socialization represents one such protective factor frequently referenced in the literature as representing a means to ameliorate the negative outcomes associated with racial discrimination (Hughes, 2003; Neblett et al., 2006; Neblett et al., 2012). Parental positivity, involvement, and monitoring all have been associated with racial socialization (Frabutt, Walker & MacKinnon-Lewis, 2002). Parents who provide positive racial socialization frequently (e.g., race pride, racial barriers, and self-worth messages) are less likely to suffer from the negative effects of experiencing discrimination (Neblett et al., 2008; Neblett et al., 2012).

Overall, the present study contributes to the growing literature on the impact of discriminatory experiences on child behavior. In the context of a low positive parent-child relationship, caregiver experience of discrimination was significantly associated with adolescent disruptive problem behavior. The findings highlight the need for prevention and intervention techniques. Specifically, one means by which to intervene may be in fostering and promoting healthy positive caregiver-child relationships. Our study suggests that even in the face of frequent discrimination, a positive caregiver-child relationship can buffer negative effects on adolescent behavior.

Acknowledgements

Support for this research was provided by the National Institute on Drug Abuse to the third, fourth and fifth authors (R01 DA023245, R01 DA022773). We also wish to extend our appreciation to the staff and research participants of the Early Steps Multisite Study.

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Figure 1.
Full Model of discrimination and parent-child relationship quality as predictors of
adolescent disruptive behavior.

Figure 2.
PC Discrimination X Positive Parent-Child Relationship interaction.

Table 1

Descriptive Statistics of Continuous Measures

	Mean	(SD)	Range	Missing
PC Education (Age 9.5)	12.75	2.09	3–19	148
Annual Family Income (Age 9.5)	\$29,127	\$18,557.55	\$0 – \$115,000	156
PC Discrimination (Ages 3–5)	1.49	0.52	1–4.17	75
PC Discrimination (Age 9.5)	1.34	0.50	1.00–3.94	157
Positive Parent-Child Relationship (Ages 3–5)	21.57	2.61	8.67–25	111
Positive Parent-Child Relationship (Age 9.5)	21.43	3.40	5–25	154
PC Opp/Agg (14)	0.34	0.38	0–1.75	178
AC Opp/Agg (14)	0.29	0.34	0–1.75	347
TC Self-Reported Deviance (14)	5.75	7.15	0–64	180

Note. PC education is the number of years of education. Annual income is in US dollars.

Table 2

Descriptive Statistics of Categorical Measures

	Outcome Age					
	Age 9.5		Age 10.5		Age 14	
	N	%	N	%	N	%
Intervention Status						
Treatment Group	285	48.6%	274	48.8%	276	50.2%
Control Group	301	51.4%	287	51.2%	274	49.8%
Child Gender						
Male	295	50.3%	283	50.4%	274	49.8%
Female	291	49.7%	278	49.6%	276	50.2%
PC Gender						
Male	19	3.2%	17	3.0%	17	3.1%
Female	567	96.8%	544	97.0%	533	96.9%
Site Location						
Charlottesville, VA	148	25.3%	135	24.1%	132	24.0%
Eugene, OR	217	37.0%	219	39.0%	204	37.1%
Pittsburgh, PA	221	37.7%	207	36.9%	214	38.9%

Table 3

Intercorrelations between covariates, predictor variables, and outcome variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Intervention Status	1											
2. PC Gender	-.024	1										
3. TC Gender	.001	.088 *	1									
4. PC Education (9.5)	.017	-.022	.049	1								
5. Family Income (9.5)	.011	-.013	-.026	.222 ***	1							
6. PC Discrimination (3-5)	.033	-.022	.036	.126 **	-.068	1						
7. PC Discrimination (9.5)	.036	.002	.012	.125 **	-.171 ***	.558 ***	1					
8. Positive Parent-Child Relationship (3)	-.083 †	-.006	.001	.105 *	.047	.017	.072	1				
9. Positive Parent-Child Relationship (9.5)	.031	-.017	.020	.010	-.025	-.027	.018	.439 ***	1			
10. PC Opp/Agg (14)	-.031	.009	-.141 ***	-.130 **	-.082 †	.108 *	.058	-.100 *	-.223 ***	1		
11. AC Opp/Agg (14)	-.066	.074	-.123 *	-.154 **	-.067	-.034	-.072	-.122 *	-.135 *	.625 ***	1	
12. TC Self-Reported Deviance (14)	.004	.023	-.106 *	-.057	-.083 †	.031	.000	-.024	-.052	.417 ***	.253 ***	1

Note. PC and TC gender were coded as 0 = male, 1 = female. Intervention status was coded as 0 = control, 1 = Family Check-Up.

† denotes $p < 0.1$,

* denotes $p < 0.05$,

** denotes $p < 0.01$,

*** denotes $p < .001$.

Table 4

Early-Childhood Model of Discrimination and Relationship Quality

Predictors	TC Disruptive Behavior (14)	
	β	<i>p</i> -value
Covariates		
Education (3)	-.103	.014
Annual Family Income (3)	-.055	.287
Intervention Status	-.034	.413
PC Gender	.003	.937
TC Gender	-.150	< .001
Pittsburgh	.117	.014
Virginia	-.007	.873
PC Discrimination (3–5)	.074	.169
Parent-Child Relationship Quality (3–5)	-.072	.091
Discrimination X Relationship Quality	-.037	.436

Notes: $n = 634$.

Model fit indices: $\chi^2(20) = 37.51$, $p = 0.010$, CFI = 0.95, RMSEA = 0.04, SRMR = 0.02, model $R^2 = .064$

Table 5

Late-Childhood Model of Discrimination and Relationship Quality

Predictors	TC Disruptive Behavior (14)	
	β	<i>p</i> -value
Covariates		
Education (9.5)	-.129	.001
Annul Family Income (9.5)	-.048	.275
Intervention Status	-.024	.534
PC Gender	.010	.731
TC Gender	-.128	.002
Pittsburgh	.100	.025
Virginia	-.022	.602
PC Discrimination (3–5)	.102	.070
PC Discrimination (9.5)	.022	.698
Parent-Child Relationship Quality (9.5)	-.195	< .001
Discrimination X Relationship Quality	-.087	.018

Notes: $n = 634$.

Model fit indices: $\chi^2(22) = 38.67$, $p = 0.015$, CFI = 0.96, RMSEA = 0.04, SRMR = 0.03, model $R^2 = .110$

Table 6

Chi-Square Difference Tests Between Male and Female Youth (Early Childhood)

Path Constrained	Model	Chi Square	Chi-Square Difference	<i>p</i> -value
PC Discrimination (3–5) → Disruptive Behaviors (14)	Full	40.43	0.04	0.847
	Reduced	40.47		
Parent-Child Relationship (3–5) → Disruptive Behaviors (14)	Full	40.43	2.74	0.098
	Reduced	43.17		
Interaction (3–5) → Disruptive Behaviors (14)	Full	40.43	3.47	0.062
	Reduced	43.90		

Note. For parsimony, covariates are not included in this table. However, analyses accounted for family income (age 3), PC education (age 3), intervention status, PC gender, and site location.

Table 7

Chi-Square Difference Tests Between Male and Female Youth (Late Childhood)

Path Constrained	Model	Chi Square	Chi-Square Difference	<i>p</i> -value
PC Discrimination (9.5) → Disruptive Behaviors (14)	Full	38.75	0.15	0.696
	Reduced	38.90		
Parent-Child Relationship (9.5) → Disruptive Behaviors (14)	Full	38.75	0.85	0.355
	Reduced	39.60		
Interaction (9.5) → Disruptive Behaviors (14)	Full	38.75	1.33	0.249
	Reduced	40.08		

Note. For parsimony, covariates are not included in this table. However, analyses accounted for family income (age 9.5), PC education (age 9.5), intervention status, PC gender, site location, and early childhood PC discrimination (ages 3–5).