Profiles of ethnic-racial socialization from family, school, neighborhood, and the Internet: Relations to adolescent outcomes

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Abstract
Given that ecological models of development highlight the interacting influences of multiple environments, further research is needed that explores ethnic-racial socialization from multiple contexts. The current study explores how families, schools, neighborhoods, and the Internet jointly impact academic outcomes, critical consciousness, and psychological well-being in adolescents, both through socialization messages and experiences with racial discrimination. The research questions were: (a) What profiles of multiple contexts of socialization exist? and (b) How are the different profiles associated with academic outcomes, critical consciousness, and psychological well-being? The sample consisted of 1,084 U.S. adolescents aged 13–17 (M = 14.99, SD = 1.37; 49% girls) from four ethnic-racial groups: 25.6% Asian American, 26.3% Black/African American, 25.3% Latinx, and 22.9% White. The participants completed online surveys of socialization and discrimination from four contexts and three types of outcomes: academic outcomes, critical consciousness, and well-being. A latent profile analysis revealed three profiles: Average, High Discrimination, and Positive School. The Positive School class had the most positive academic outcomes and well-being. The High Discrimination class reported the highest critical consciousness. Their academic outcomes and well-being were similar to the Average group. The findings support
complexity in perceptions of socialization from different contexts and the associations of socialization with youth outcomes.

KEYWORDS
ethnic-racial socialization, latent profile analysis, online discrimination, parental socialization, school racial climate, school socialization

1 | INTRODUCTION

Ethnic-racial socialization (ERS) is a dynamic process in which multiple transmitters convey messages to youth about the role of race and culture in their lives and society, including the meaning of their ethnic-racial group membership, the history and values of their group, and the relationship between their group and others (Hughes, Watford, & Del Toro, 2016). Youth also learn about their group membership and relationships to others through their experiences with racial discrimination, which is unfair treatment based on group membership (Fisher, Wallace, & Fenton, 2000). Though ecological models of development include consideration of the interacting influences from multiple environments, few studies of ERS seek to capture such influences. Therefore, the current study explores how experiences with ERS and racial discrimination from families, schools, neighborhood, and the Internet are associated with a variety of adolescent outcomes. Many studies on ERS have focused on ethnic-racial identity (Hughes et al., 2016), but the current study focuses on critical consciousness, academic outcomes, and psychological well-being.

2 | THEORETICAL FRAMEWORKS

Parents and youth of color must navigate a society in which they face institutional and individual racial discrimination. In this context, parents strive to instill a healthy sense of self while their children make sense of messages from the various environments they move through that may be complementary or conflicting. A framework that acknowledges this complexity is the integrative model by Coll et al. (1996), which emphasizes the importance of social contexts for the development of children of color. The model notes that social position variables, like race and ethnicity, and the prejudice and discrimination associated with those variables influence the contexts in which children’s individual characteristics contribute to their developmental competencies. Specifically, this study focuses on the interactions between and within promoting/inhibiting environments (school, neighborhoods, and the Internet) and families.

The work is also guided by Bronfenbrenner’s (1979) ecological model, which proposes that children develop within nested structures. This study focuses on the mesosystem, which is composed of the links and processes taking place between two or more settings that the child is actively participating in. For example, parents may respond to their adolescent facing discrimination at school by increasing their socialization messages about pride and heritage. These messages might then lead the youth to seek out information about their ethnic-racial group online, but in the course of their search the youth might experience racism vicariously through videos of racist violence. The youth might then discuss what they have seen with their parents.

Bronfenbrenner’s model proposes that the ways a child’s settings interact have effects above and beyond any individual setting, but researchers have struggled to operationalize these complex mesosystem processes
Consequently, the research is guided by Hughes et al. (2016), who note that, when thinking about processes related to race and ethnicity, settings are interdependent and inseparable. As such, we use a person-centered approach (latent profile analysis) to operationalize the joint effects of multiple settings on adolescent development (e.g., Ayón, Williams, Marsiglia, Ayers, & Kiehne, 2015; Dishion, Mun, Ha, & Tein, 2019).

3 | CONTEXTS OF SOCIALIZATION

The current study examines ERS and discrimination-as-socialization in four contexts: families, schools, neighborhoods, and the Internet. In the following sections, we review the major dimensions of each context that are the focus of this study.

3.1 | Families

Parents are the most often studied source of ERS (Hughes et al., 2016). Scholars have identified four main areas of familial socialization (Hughes et al., 2006): (a) cultural socialization: practices that teach children about the heritage, customs, and traditions of their ethnic-racial group; (b) preparation for bias: practices that promote awareness of discrimination; (c) promotion of mistrust: messages encouraging caution in interracial interactions; and (d) pluralism (also called egalitarianism): messages focusing on integrating with mainstream society and getting along across race.

3.2 | Schools

As socializing agents, schools provide youth with opportunities to explore the history and traditions of their ethnic-racial group, to interact with same-race peers and adults, and to understand the current and historical relationships between their group and other ethnic-racial groups. Schools also offer youth the opportunity to interact with out-group members and to understand how they and their ethnic-racial group are seen by society. Previous research has focused on interactions between same- and other-race peers, with a particular focus on discrimination (e.g., Brown & Chu, 2012; Leath, Mathews, Harrison, & Chavous, 2019; Rivas-Drake, Saleem, Schaefer, Medina, & Jagers, 2018). The current study will expand our understanding of school socialization sources by focusing on school climate for diversity (Byrd, 2017). Personal experiences with discrimination socialize youth, but adolescents also learn from experiencing and interpreting norms around intergroup contact—that is, who is supposed to sit with whom at lunch, who is punished, and who is voted as class president. Furthermore, schools also convey socialization messages through the curriculum and teacher and peer talk. Recent work in this area (Aldana & Byrd, 2015; Byrd, 2015, 2017) has drawn on literatures in ERS and multicultural education to identify and measure five dimensions of school ERS: (a) cultural socialization: opportunities to learn about one’s own culture; (b) critical consciousness socialization: opportunities to learn about prejudice and discrimination; (c) promotion of cultural competence: opportunities to learn about other cultures; (d) mainstream socialization: messages about mainstream U.S. values and norms; and (e) colorblind socialization: messages encouraging students to ignore the role of race in their lives and society.

3.3 | Neighborhoods

Like schools, neighborhoods socialize through interactions with same- and other-race individuals and experiences with discrimination. Furthermore, structural characteristics, such as those indicated by neighborhood
socioeconomic status, can influence the availability of community centers and after-school activities where youth can learn about their own and other cultures (Stevenson & Arrington, 2009; White, Zeiders, Knight, Roosa, & Tein, 2014).

3.4 | Internet

Finally, the Internet is an increasingly important context for adolescents: 92% of teens report going online daily (Perrin, 2015), and youth of color consume more media compared to White youth (Rideout, Lauricella, & Warthella, 2011). Like schools and neighborhoods, the Internet offers opportunities for identity exploration and within- and cross-race interaction. Yet research from schools and neighborhoods may not generalize to the Internet because research suggests that online interactions across and about race are different from face-to-face interactions (Tynes, Lozada, Smith, & Stewart, 2018). Furthermore, the permanence of Internet interactions and the possibility of retweeting, reposting, and reblogging can expose youth to the same incident repeatedly (Tynes et al., 2018; Umana-Taylor, Tynes, Toomey, Williams, & Mitchell, 2015). Thus, greater research is needed to understand how online discrimination affects ERI differently compared to other contexts (Tynes, Giang, Williams, & Thompson, 2008; Tynes et al., 2018).

4 | ERS AND ADOLESCENT OUTCOMES

Many studies of ERS focus on a singular outcome, ethnic-racial identity (Hughes et al., 2016). However, the current study focuses on a wide variety of other outcomes to understand how combinations of contexts may have differential relations. The following sections summarize how critical consciousness, academic outcomes, and well-being are related to socialization from various contexts.

4.1 | Critical consciousness

In the past few years, scholars have called for examining ERS in relation to critical consciousness (Diemer & Li, 2011), that is, how individuals understand, analyze, and make changes to the current social conditions (Watts, Diemer, & Voight, 2011). Scholars have theorized that critical consciousness consists of (a) critical reflection, or awareness of social inequities such as racism, (b) critical agency, or the ability to push back against injustice, and (c) critical action, or taking action for societal change. In addition to these traditional components of critical consciousness, the current study examines how ERS is related to various components of critical action through interpersonal, communal, and political means (Aldana, Bañales, & Richards-Schuster, 2019).

Although parental preparation for bias and school critical consciousness socialization are most common for children's learning of critical consciousness, learning about historical figures (i.e., cultural socialization) may also serve to promote critical agency and action. Opportunities at school and home to practice analysis of and action to remedy societal inequality may be especially important for youth to gain a better understanding of themselves and the world around them (Watts et al., 2011). For ethnic minority youth, there is evidence that parental cultural pride and preparation for bias messages are linked with increased attributions of academic achievement gaps to structural issues rather than blaming themselves (Bañales, Marchand, et al., 2019). Furthermore, studies have found that when youth are encouraged to discuss race in schools, they are more likely to engage in interpersonal and communal/political antiracism action such as challenging racism and participating in community initiatives in school, although they are not necessarily more aware of inequalities (Bañales, Aldana, et al., 2019; see also Seider et al., 2016; Seider, Tamerat, Clark, & Soutter, 2017). Thus, we would expect that certain ERS messages are
associated with critical consciousness, but very few studies have investigated this question. There is even less evidence of how neighborhood features and the Internet promote critical consciousness development.

4.2 | Academic outcomes

Parental ERS can support positive school outcomes directly by helping youth understand the importance of academic success as an aspect of group identity and indirectly through promoting a positive ethnic-racial identity (Hughes, Witherspoon, Rivas-Drake, & West-Bey, 2009). ERS can provide role models, ways to understand events, and coping strategies. Extant research has shown that parental ERS is positively linked with academic outcomes in adolescents, such as academic performance and competence (Brown, Linver, Evans, & DeGennaro, 2009; Grindal & Nieri, 2015; Tang, McIoyd, & Hallman, 2016), academic attitudes (Tang et al., 2016), grade point average (Wang & Huguley, 2012), engagement (Hughes et al., 2009; Smalls, 2010; Smalls & Cooper, 2012), aspiration (Wang & Huguley, 2012), and curiosity (Neblett, Philip, Cogburn, & Sellers, 2006). Some work has found no effect on competence (Barbarin & Jean-Baptiste, 2013). However, a recent meta-analysis with 37 studies examining ERS and academic outcomes (academic performance, motivation, school engagement) found a modest, positive association between the two ($r = .08$; Wang, Smith, Miller-Cotto, & Huguley, 2019). Specifically, cultural socialization, preparation for bias, and egalitarian beliefs contributed to this positive relationship, but promotion of mistrust did not (Wang, Smith, et al., 2019).

In terms of school ERS and academic outcomes, theoretical work supports the benefits of adolescents being able to integrate their academic and cultural identities at school (Ladson-Billings, 1994; Paris, 2012; Morrison, 2008). Accordingly, evidence suggests that positive messages about race and culture in schools are linked to academic achievement (Chang & Le, 2010; Tan, 1999), interest (Tan, 1999), school values and expectations (Byrd, 2015; Golden, Griffin, Metzger, & Cooper, 2018; Rivas-Drake, 2011), and school belonging (Byrd, 2015; Dotterer, McHale, & Crouter, 2009; Schachner, Schwarzenthal, van de Vijver, & Noack, 2019). The current study includes traditional academic outcomes of academic performance and engagement in addition to belonging, interest, importance of school, academic self-concept, and utility value (how useful a task may be for an individual’s goals; Wigfield & Eccles, 2000).

Discrimination from domains such as schools and neighborhoods are also consistently linked with more negative academic outcomes (e.g., Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008), with the greatest impact being discrimination from school personnel (Benner & Graham, 2013). When youth experience discrimination, they feel disconnected from peers and adults in those settings and see less value in engaging in those settings (Wong, Eccles, & Sameroff, 2003). Evidence also links online discrimination to more negative academic outcomes (Tynes, et al., 2008; Tynes, Del Toro, & Lozada, 2015; Tynes, Rose, & Markoe, 2013).

4.3 | Well-being

Similar to what has been noted about academic outcomes, ERS can help youth to integrate their ethnic-racial group membership with other aspects of their lives and seek healthy relationships and a sense of purpose. A recent meta-analysis has modestly linked parental ERS with well-being, with particularly strong effects for cultural socialization (Wang, Henry, Smith, Huguley, & Guo, 2019). A positive school climate is also related to better psychological health (Loukas & Robinson, 2004; Way, Reddy, & Rhodes, 2007; Way & Robinson 2003), whereas school and neighborhood discrimination has been strongly linked to lower psychological well-being (e.g., Fisher et al., 2000; Huynh & Fuligni, 2010). Additionally, online individual experiences of racial discrimination have been associated with
negative psychological outcomes (Tynes et al., 2008). In sum, there is evidence that each context is individually associated with psychological well-being.

5 | UNDERSTANDING MULTIPLE CONTEXTS OF SOCIALIZATION WITH A PERSON-CENTERED APPROACH

The goal of the current study was to explore how families, schools, neighborhoods, and the Internet were jointly associated with youth outcomes by creating profiles of socialization and exploring associations with demographic variables and youth outcomes. Only a few studies have attempted to address how multiple contexts interact: Gharaei et al. (2019) found that the effect of teachers’ support for positive interactions on ERI varied by classroom composition. Studies of neighborhood characteristics and socialization also find interactions between parental socialization and neighborhood resources (Caughey, Nettles, O’Campo, & Lohrfink, 2006; Davis & Stevenson, 2006). For example, more cultural socialization in well-resourced neighborhoods was associated with better psychological well-being for adolescents compared to less-resourced neighborhoods (Davis & Stevenson, 2006). However, none of these studies looked at more than two contexts and all used variable-centered approaches.

There are some limitations with variable-centered approaches. First, significance tests for interactions tend to have low statistical power and a high risk of Type II errors (McClelland & Judd, 1993). Thus, very large sample sizes and highly reliable measures are needed to ensure that an effect can even be detected. Second, interactions become increasingly difficult to interpret when more variables are added (Meyer & Morin, 2016). The interaction effects are also assumed to be linear (Marsh, Hau, Wen, Nagengast, & Morin, 2013; McClelland & Judd, 1993) when the effects of socialization are not necessarily so. For instance, cultural socialization messages could have positive effects on identity exploration but become redundant after a certain point. This redundancy may be heightened when the same message is coming from multiple contexts. Finally, a variable-centered approach fails to fully represent the multidimensional complexity and deeply interconnected nature of ERS, racial discrimination, and ethnic-racial identity (Hughes et al., 2016; Neblett et al., 2016).

Given these limitations, the proposed study takes a person-centered approach. This approach assumes that individuals belong to multiple subpopulations instead of a single population (Meyer & Morin, 2016; Pastor, Barron, Miller, & Davis, 2007), which may be too strong of an assumption for diverse samples of adolescents. A person-centered approach instead has the assumption that youth encounter some combinations of socialization messages from the unique ethnic-racial settings in which they live.

Only one study has taken a person-centered approach to combining socialization and discrimination. Ajayi and Syed (2014) created three profiles of discrimination and parental barrier socialization (i.e., preparation for bias and promotion of mistrust) for 1st-year college students: A Low Barrier Socialization/Low Discrimination group, a High Barrier Socialization/Low Discrimination group, and a High Barrier Socialization/High Discrimination group. The authors tested for profile differences in psychological well-being, finding that the group that experienced high discrimination had worse well-being compared to the other two groups. The authors did not look at other outcomes. More important, the study only included socialization from one source. The current study is the first to combine multiple sources of socialization and discrimination.

6 | RESEARCH QUESTIONS AND HYPOTHESES

Our research questions were: (a) What profiles of multiple contexts of socialization exist? and (b) how are the different profiles associated with critical consciousness, academic outcomes, and psychological well-being? This study is exploratory, so we did not have specific hypotheses.
7 | METHOD

7.1 | Participants and procedures

The sample consisted of 1,084 U.S. adolescents (49% girls) aged 13–17 ($M = 14.99$, $SD = 1.37$) from four ethnic-racial groups: 25.6% Asian American, 26.3% Black/African American, 25.3% Latinx, and 22.9% White.

Procedures were approved by the Institutional Review Board at the first author’s university. Participants were recruited through Qualtrics Panels, an online survey delivery service that researchers can use to recruit study participants. Parents were recruited through an email invitation that included the expected duration of the study and the type of incentive available for participation. Parents completed a screening survey; if they had a child between the ages of 13 and 17 who attended public or private school, the parent was asked to give consent for their child to complete the study. The parent was then asked to have their child complete the rest of the survey online. Adolescents then completed demographic information; those who identified as White, African American, Asian American, or Latinx were allowed to continue to the rest of the survey until quotas for their ethnic-racial group (approximately 250 in each group) were filled. Participants who completed the survey too quickly (i.e., less than one-half of the median completion time) were excluded from the data ($n = 73$). Parents were compensated in credit that they could redeem through Qualtrics for gift cards and other awards.

7.2 | Measures

7.2.1 | Family

We measured parental socialization with Hughes and Johnson’s (2001) 15-item socialization scale. The scale includes three subscales: (a) cultural socialization (three items, $\alpha = .90$), (b) preparation for bias (six items, $\alpha = .90$), (c) promotion of mistrust (two items, $r = .72$), and (d) cultural pluralism (four items, $\alpha = .81$). Items were rated on a 5-point Likert scale ranging from 1 (never) to 4 (all the time). Composite scores were formed by taking the average of the items, with higher scores indicating more frequent socialization.

7.2.2 | School

School socialization and intergroup interactions were assessed using the School Climate for Diversity Scale—Secondary. The socialization subscales were cultural socialization (five items, $\alpha = .88$), promotion of cultural competence (six items, $\alpha = .89$), critical consciousness socialization (seven items, $\alpha = .80$), mainstream socialization (four items, $\alpha = .84$), and color-blind socialization (five items, $\alpha = .73$). The intergroup interactions subscales were quality of interaction (three items, $\alpha = .81$), frequency of interaction (three items, $\alpha = .81$), equal status (four items, $\alpha = .87$), support for positive interaction (four items, $\alpha = .83$), and stereotyping (five items, $\alpha = .86$). Items had a response scale of 1 (not at all true) to 5 (completely true). Composite scores were formed by taking the average of the items, with higher scores indicating higher values.

Furthermore, participants indicated their degree of intergroup contact at school (Crystal, Killen, & Ruck, 2008; Yip, Seaton, & Sellers, 2010): First, they indicated the racial makeup of students in most of their classes and most of their student organizations on a scale from 1 (almost all students of other races/ethnicities) to 5 (almost all your race/ethnicity). The participants then indicated how many of their friends from school were from different racial or ethnic groups on a scale of 1 (none) to 4 (many). Finally, students listed the races of their five best friends. The research team coded friends as same-race or other-race to create an index of other-race best friends ranging from 0 to 5.
Adolescents’ perceptions of in-person discrimination were measured using the Adolescent Discrimination Distress Index (Fisher et al., 2000). Participants responded to whether an incident has occurred because of their race or ethnicity and if so, how much it had upset them on a scale from 1 (not at all) to 5 (extremely). Scores were summed with higher scores indicated more bothersome discrimination. Educational discrimination focused on unfair treatment at school (four items, α = .81).

### 7.2.3 | Neighborhood

Participants completed measures of institutional discrimination (six items, α = .90) and peer discrimination (four items, α = .81) from the ADDDI. Participants were also asked “How many of your friends from your neighborhood are from different racial or ethnic groups?” on a response scale of 1 (none) to 4 (many). The research team was not allowed to collect personally identifiable information such as home address, so participants were asked for their ZIP code to approximate neighborhood influences. Census data was obtained for each ZIP code to identify neighborhood characteristics: percent of adults with a bachelor’s degree, median income, and racial composition, which was used to compute the percentage of same race (relative to the adolescent) neighbors and a neighborhood diversity index. Diversity index is computed using Census data about the percentage of African American, Asian American, White, Latinx, and other individuals to estimate the relative probability that two randomly selected individuals are from different ethnic-racial groups. Higher scores indicate more diversity (Juvonen, Nishina, & Graham, 2006).

### 7.2.4 | Online

Adolescents’ perceptions of online racial discrimination were measured using the Perceived Online Racism Scale (Keum & Miller, 2017). Responses are rated on a 5-point scale ranging from 1 (never) to 5 (all the time). The scale includes three subscales: (a) Personal experiences, direct experiences with racial aggression online (14 items, α = .97); (b) vicarious exposure to racial cyber-aggression (11 items, α = .94); (c) online-mediated exposure, which is exposure to content through which they may realize and witness the apparent reality of racism in society (5 items, α = .91). Scores are averaged with higher values indicating more exposure to racism. Adolescents also completed a one-item measure on how much they looked for information about their ethnic-racial group online in the last year on a response scale of 1 (never) to 5 (almost every day).

### 7.3 | Outcomes

#### 7.3.1 | Critical consciousness

Critical reflection and critical action were measured with subscales of the Critical Consciousness Scale (Diemer, Rapa, Park, & Perry, 2017); agency was measured with the critical agency subscale of the Measure of Adolescent Critical Consciousness (McWhirter & McWhirter, 2016). Critical reflection consists of eight items asking participants how much they agree with statements about social equality (e.g., “Certain racial or ethnic groups have fewer chances to get a good high school education”) on a scale of 1 (strongly disagree) to 5 (strongly agree) (α = .94). Critical

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1Because the Census uses different ethnic and racial categories from the current study, the following Census groups were counted as same-race: Asian: Non-Hispanic Asian, Non-Hispanic Native Hawaiian, and Other Pacific Islander; Black/African American: Non-Hispanic Black or African American; Latinx: Hispanic or Latino; White: Non-Hispanic White.
agency was measured with three items asking participants how much they felt they could make a difference in and contribute to their community on a scale of 1 (strongly disagree) to 5 (strongly agree) ($\alpha = .91$). Critical action consisted of nine items asking how often participants had been involved in activities such as political parties, protests, or discussions on social issues on a scale of 1 (never did this) to 5 (at least once a week) ($\alpha = .93$).

Additional dimensions of critical action were measured using the Anti-Racism Action Scale (Aldana et al., 2019). The interpersonal action subscale included five items about challenges and defense of friends, family members, and strangers ($\alpha = .85$). The communal action subscale included four items about participating in organizations related to antiracism ($\alpha = .80$). The political change action subscale included seven items on actions involving contacting media and elected officials, attending protests, and investigating social issues ($\alpha = .81$). Each item was answered “Yes” or “No.” Scores were summed so that higher scores indicated more action.

### 7.3.2 | Academic outcomes

Academic aspirations were measured with one item asking how often participants wanted to go in school, from 1 “some high school” to 6 “get a graduate degree (master’s, PhD).” Participants also indicated the grades they usually get in school with a single-item question ranging from 1 “all or mostly A’s” to 6 “mostly F’s.”

School belonging ($\alpha = .83$) was measured with the relatedness subscale of the Basic Needs Satisfaction scale adapted for school (Deci & Ryan, 2000). The scale includes eight items asking youth how many friends they have at school and how much others at the school like them, and was measured on a 1 (not at all true) to 5 (completely true) scale ($\alpha = .83$). Interest, utility value, and importance were measured using three scales from Eccles and Wigfield (1995) and Wigfield et al. (1997), all on a response scale from 1 (not at all true) to 5 (completely true). First, interest included three items about enjoying school ($\alpha = .91$). Second, utility value consisted of three items about how useful what was learned in school was for the future and daily life ($\alpha = .85$). Third, importance consisted of three items about how important being a good student and getting good grades was to them ($\alpha = .88$).

Adolescents’ perceptions of their academic competence were assessed with an academic self-concept scale based on a measure by Nicholls (1978). The scale included seven items asking youth to rate themselves on a 1 (below average) to 5 (above average) scale in several academic subjects, grades, and overall intelligence ($\alpha = .91$). Finally, engagement consisted of eight items measuring how much students participate in school and persist after failure ($\alpha = .82$).

### 7.3.3 | Well-being

Adolescent well-being was measured with the Ryff Scales of Psychological Well-Being (Ryff, 1989; Ryff & Keyes, 1995). There were four items on each subscale and the response scale for all items was 1 (strongly disagree) to 5 (strongly agree). The subscales were autonomy ($\alpha = .47$), environmental mastery ($\alpha = .67$), personal growth ($\alpha = .69$), purpose in life ($\alpha = .72$), personal relationships ($\alpha = .62$), and self-acceptance ($\alpha = .68$). The items were averaged and higher scores indicated better well-being.

## 8 | RESULTS

### 8.1 | Identifying profiles

Descriptive statistics for each variable used for classification are listed in Table 1. We used Mplus 7.4 (Muthén & Muthén, 2018) and the improved Latent Class Modeling 3-step approach (Vermunt, 2010) to generate the latent
classes. The first step was to identify the number of profiles by starting off with one profile and continuing to add profiles until the model fit is worsened. We used the following fit indices to determine the appropriate number of profiles: the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), sample size adjusted BIC, the Lo-Mendell-Rubin (LMR) Adjusted Likelihood ratio test, and entropy. AIC, BIC, and sample size adjusted BIC scores that are smaller represent better fit. A LMR test that is significant at \( p < .5 \) represents an improved model compared to the previous model with one less profile. Entropy represents whether there are clear profiles, with an entropy of over 0.8 indicating distinct classes (Celeux & Soromenho, 1996).

We found that the three-profile solution indicated best fit (see Table 2). The LMR test indicated that, at four profiles, the model did not fit the data as well as the three-profile solution given that \( p \) was greater than .05. In addition, although the AIC, BIC, and adjusted BIC still decreased, entropy also dropped by 0.01.

### 8.2 Labeling the profiles

The final proportions based on the estimated model indicated that 48% of the sample identified in one class, 16% in the second, and 37% in the third. Based on the data, we decided to label the three profiles: Average, High Discrimination, and Positive School. The standardized profile means are shown in Figure 1 and listed in Table 3. When examining the means of the Average profile, these adolescents were characterized by moderate levels of socialization messages across all indicators. The High Discrimination class was the smallest; the adolescents in this profile have high levels of ERS messages from their parents and schools but also reported high levels of in-person

### Table 1 Descriptive statistics

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<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Critical consciousness</td>
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<tr>
<td>Critical reflection</td>
<td>2.70</td>
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<td>Critical agency</td>
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<td>Political action</td>
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<td>Academic outcomes</td>
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<tr>
<td>Aspirations</td>
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<td>Academic grades ( ^a )</td>
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<td>Importance of school</td>
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<td>Engagement</td>
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<table>
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<th>Well-being</th>
<th>Mean</th>
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<td>Autonomy</td>
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<td>Environmental mastery</td>
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<td>Personal growth</td>
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<td>Positive relations</td>
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<tr>
<td>Self-acceptance</td>
<td>3.83</td>
<td>0.69</td>
</tr>
</tbody>
</table>

\( ^a \)Higher values indicate better grades.
and online racial discrimination. The Positive School profile represented over a third of the sample and reported high levels of school racial socialization messages, positive school intergroup interactions, and the lowest frequencies of experiencing in-person and online racial discrimination compared to the other two profiles.

### 8.3 Associations with predictors and outcomes

To test whether the classes were related to various predictors and outcomes, after creating the class memberships, we analyzed the data using SPSS 24.0. In line with a previous research (Clark & Muthén, 2009), we used analysis of variances to test how the predictors and outcomes differed between the three classes. The standardized mean differences in outcomes are displayed in Figure 2.

#### TABLE 2 Latent profile solutions

<table>
<thead>
<tr>
<th>Profile number</th>
<th>AIC</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>LMR</th>
<th>Entropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Profile</td>
<td>105,341.19</td>
<td>105,630.52</td>
<td>105,446.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Profiles</td>
<td>100,370.02</td>
<td>100,809.00</td>
<td>100,529.49</td>
<td>5,008.06 ($p = .02$)</td>
<td>0.96</td>
</tr>
<tr>
<td>3 Profiles</td>
<td>97,017.49</td>
<td>97,626.07</td>
<td>97,238.574</td>
<td>3,308.57 ($p = .001$)</td>
<td>0.94</td>
</tr>
<tr>
<td>4 Profiles</td>
<td>95,565.97</td>
<td>96,304.26</td>
<td>95,834.18</td>
<td>1,603.93 ($p = .22$)</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Note: Bold values indicate the chosen profile. Abbreviations: AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion; LMR, Lo-Mendell-Rubin.

#### FIGURE 1 Class membership and standardized means
Chi-square tests indicated no significant gender differences between the three classes, $\chi^2 = 4.22, p = .38$. For all three classes, the percentage of boys were comparable (Average: 49.7%; High Discrimination: 50.4%; Positive School: 43.6%). We did find racial group differences between the classes, $\chi^2 = 40.15, p < .001$. The Average class included 27.8% Asian, 26.1% Black, 26.1% Latinx, and 20.1% White. The High Discrimination class had 25.6% Asian, 26.3% Black, 25.3% Latinx, and 22.9% White adolescents. The Positive School group had 23.7% Asian, 21.4% Black, 23.4% Latinx, and 31.6% White. Thus, White students were overrepresented and Black students were
underrepresented in the Positive School group. Furthermore, we found that the adolescents in the Positive School
group (M = 14.80, SD = 1.38) were significantly younger than those in the Average (M = 15.09, SD = 1.34) and High
Discrimination class (M = 15.13, SD = 1.41), F(2) = 6.14, p = .002.

8.3.2 | Critical consciousness

Critical reflection differed based on class membership, F(2) = 37.80, p < .001. The High Discrimination class
reported a significantly higher critical reflection score (M = 3.66, SD = 0.98) than those in the Average class
(M = 2.75, SD = 1.00) and Positive School class (M = 2.47, SD = 1.12). All three classes differed on critical agency
scores, F(2) = 74.42, p < .001, with those in High Discrimination class reporting the highest score (M = 4.03,
SD = 0.77) followed by those in Positive School (M = 3.50, SD = 0.86) and then those in the Average class
(M = 2.92, SD = 0.82). Similar to critical reflection, those in High Discrimination indicated higher critical action
(M = 2.32, SD = 1.16) than those in Average (M = 1.25, SD = 0.49) and Positive School (M = 1.31, SD = 0.57) classes,
F(2) = 94.61, p < .001.

For interpersonal action, those in High Discrimination reported the highest amount (M = 3.02, SD = 1.76)
compared to those in Positive School (M = 1.86, SD = 1.91) and Average classes (M = 1.76, SD = 1.84), F(2) = 14.03,
p < .001. Similarly, there was a significant difference when examining communal action between High Dis-
crimination (M = 1.73, SD = 1.52), Positive School (M = 0.64, SD = 1.16) and Average (M = 0.40, SD = 0.88) classes, F
(2) = 45.07, p < .001. The High Discrimination class also indicated the highest amount of political action (M = 2.90,
SD = 2.19), then Positive School (M = 1.07, SD = 0.65) and then the Average class (M = 0.65, SD = 1.27), F(2) = 61.63,
p < .001. In sum, the results indicate that adolescents in the High Discrimination class were overall more critically
conscious, as they scored higher on critical reflection, critical agency, critical action, interpersonal action, communal
action, and political action compared to the other two groups.

FIGURE 2 Standardized mean differences in outcomes
8.3.3  | Academic outcomes

We found that aspirations differed depending on class membership, $F(2) = 70.57, p < .001$. A Scheffe posthoc test revealed that those in the Positive School class ($M = 4.95, SD = 1.30$) were more likely to report higher aspiration than those in Average class ($M = 4.57, SD = 1.44$), $p = .001$ and High Discrimination class ($M = 4.53, SD = 1.69$), $p = .006$. When examining grades, there was an overall significant difference in the three groups, $F(2) = 9.09, p < .001$. The Scheffe posthoc test indicated that grades in the Positive School class ($M = 1.90, SD = 0.89$) were meaningfully lower than those in the Average class ($M = 2.11, SD = 0.88$) but not the High Discrimination class ($M = 1.93, SD = 0.86$).

There were class differences with interest in school, $F(2) = 68.84, p < .001$. The Average class had significantly lower interest ($M = 3.04, SD = 0.96$) than the Positive School ($M = 3.85, SD = 1.01$) and High Discrimination class ($M = 3.74, SD = 1.03$). Differences in belonging, $F(2) = 127.38, p < .001$ indicate that the Positive School class ($M = 4.18, SD = 0.65$) is greater than the Average ($M = 3.47, SD = 0.67$) and High Discrimination classes ($M = 3.39, SD = 0.70$). We found a difference in utility value, $F(2) = 94.62, p < .001$ and specifically found that the Average class ($M = 3.01, SD = 0.80$) reported lower utility value for school than those in Positive School ($M = 3.85, SD = 0.90$) and High Discrimination ($M = 3.74, SD = 0.94$). In addition, those who were in the Average class ($M = 3.86, SD = 0.88$) felt school was less important than those in Positive School ($M = 4.37, SD = 0.80$). In addition, those in the Positive School group ($M = 4.37, SD = 0.80$) felt school was more important than those in High Discrimination group ($M = 4.06, SD = 0.81$), $F(2) = 36.36, p < .001$. Individuals in the Average class ($M = 3.77, SD = 0.81$) indicated lower academic self-concept than those in the Positive School ($M = 4.01, SD = 0.80$) and High Discrimination ($M = 4.00, SD = 0.74$), $F(2) = 10.09, p < .001$. Finally, engagement also differed based on class membership, $F(2) = 42.00, p < .001$. The High Discrimination group reported significantly lower levels of engagement ($M = 3.51, SD = 0.75$) compared to those in Average ($M = 3.73, SD = 0.69$) and Positive School ($M = 4.09, SD = 0.71$) groups. The Positive School and Average classes also demonstrated significant differences between the two.

In summary, the Positive School group tended to have better academic outcomes than the Average group: They reported higher aspirations, interest, belonging, utility value, school importance, and academic self-concept, and engagement but had lower grades. The Positive School group was also significantly higher than the High Discrimination group on aspirations, belonging, importance, and engagement. The High Discrimination group was similar to the Average group on the other academic outcomes.

8.3.4  | Well-being

We found that those in the Positive School class ($M = 3.57, SD = 0.74$) were more autonomous than the Average ($M = 3.36, SD = 0.66$) or High Discrimination class ($M = 3.31, SD = 0.69$), $F(2) = 9.60, p < .001$. Environmental mastery also was dependent on class, $F(2) = 18.58, p < .001$ with Positive School ($M = 3.70, SD = 0.85$) being higher than Average ($M = 3.40, SD = 0.71$) and High Discrimination ($M = 3.26, SD = 0.62$). Average reported lower personal growth ($M = 3.67, SD = 0.61$) compared to those in High Discrimination ($M = 3.99, SD = 0.76$) and Positive School ($M = 4.05, SD = 0.69$), $F(2) = 31.63, p < .001$. Positive School ($M = 4.06, SD = 0.75$) reported the greatest levels of purpose in life compared to High Discrimination ($M = 3.76, SD = 0.74$) and Average classes ($M = 3.64, SD = 0.70$), $F(2) = 30.24, p < .001$. Similarly, Positive School ($M = 3.99, SD = 0.76$) also indicated the greatest amount of positive personal relationships with others than Average ($M = 3.55, SD = 0.70$) and High Discrimination ($M = 3.44, SD = 0.83$), $F(2) = 40.53, p < .001$. Lastly, Positive School ($M = 3.98, SD = 0.72$) was greater than Average ($M = 3.73, SD = 0.61$) and High Discrimination ($M = 3.55, SD = 0.72$), $F(2) = 19.44, p < .001$ for self-acceptance.

In sum, the results demonstrated that those in the Positive School group were more autonomous, reported more environmental mastery, greater purpose in life, more positive personal relationships, and higher self-acceptance. The Average class indicated lower personal growth than the High Discrimination and Positive School classes.
In the current study, we explored how profiles of adolescent perceptions of ERS and discrimination from multiple contexts differed in critical consciousness, academic outcomes, and well-being. Three profiles were found in our sample of diverse adolescents. About half of the sample was in the Average group. They experienced low levels of ERS from family and school along with average levels of racial discrimination in person and online. The Positive School group was 37% of the sample and reported positive school intergroup interactions and high levels of positive school socialization along with low levels of stereotyping and discrimination in and outside of school. This group also reported low parental socialization and had the highest percentage of White students.

The High Discrimination group was 16% of the sample and reported very high levels of discrimination from multiple contexts. This group supports previous literature suggesting that youth who report discrimination online also experience it offline (Tynes et al., 2014; Umaña-Taylor et al., 2015). In contrast to the other groups, the High Discrimination group reported high levels of parental socialization. The cross-sectional nature of the study makes it difficult to determine whether discrimination is the source of the high parental socialization or whether the parental socialization is related to youth noticing more discrimination. The two are often related in the literature (e.g., Harris-Britt, Valrie, Kurtz-Costes, & Rowley, 2007; Huynh & Fuligni, 2010).

The High Discrimination group also reported high levels of school critical consciousness socialization, which again may be a product of or a catalyst to their reports of discrimination. Very little work has tested this association directly, but it would be consistent with the goals of educational programs seeking to make youth more aware of racism in society (e.g., Cammarota, 2011; Cammarota & Romero, 2011; Hope, Skoog, & Jagers, 2015; Morrell, 2015). Such programs teach youth to analyze the inequality present in their day-to-day lives, which make youth realize that interactions they previously saw as innocuous are actually tied to individual or structural racism. With these findings, our work supports Bronfenbrenner’s (1979) description of the mesosystem as processes taking place between two or more settings and Coll et al.’s (1996) description of social position relating to youths’ contexts. Youth in the High Discrimination group were above average in their perceptions of discrimination from multiple contexts and socialization messages from multiple contexts, and it is likely that the multiple influences shape each other and the adolescents’ outcomes.

In terms of outcomes, it is not surprising that the Positive School group had the best academic outcomes and psychological well-being. School climate research supports the benefits of a positive racial climate on a number of outcomes, particularly academic ones (e.g., Byrd, 2015; Leath et al., 2019). The current study’s Positive School group provides further evidence of these benefits.

What is surprising is that the High Discrimination group had few significant differences in well-being compared to the Average group. In terms of academic outcomes, the High Discrimination group was only lower on engagement. In contrast, the Average group was lower than the High Discrimination group on interest, utility value, and academic self-concept. These findings are unexpected given the research on the negative effects of discrimination (e.g., Huynh & Fuligni, 2010). However, it may be that students in the High Discrimination group have effective buffers and coping mechanisms that prevent the effects of discrimination from being worse. One buffer could be the high levels of parental socialization seen in the High Discrimination group, as research indicates that parental cultural socialization and preparation for bias can moderate the effects of discrimination in African American adolescents (Harris-Britt et al., 2007; Wang & Huguley, 2012) (although but not necessarily in other groups; Huynh & Fuligni, 2010).

Activism may be a coping method for youth in this group (Hope, Gugwor, Riddick, & Pender, 2019). Compared to the other groups, the High Discrimination group had extremely high scores on critical reflection, agency, and all forms of critical action. These scores suggest that the youth in the High Discrimination group believe they can address societal inequity and are actively involved in efforts to do so, with their activities ranging from traditional methods like participating in political and civil rights organizations to everyday efforts like challenging biased language.
Discrimination can lead to negative psychological outcomes and it is common for marginalized individuals to feel anger in response to learning about societal inequality (Montada & Schneider, 1989). However, for some, that anger can be an important motivator of critical action (Thomas, Mavor, & McGarty, 2012; Van Doorn, Zeelenberg, & Breugelmans, 2014; Wray-Lake et al., 2018). Although numerous studies have linked racial discrimination with devastating outcomes (e.g., Brondolo, Gallo, & Myers, 2009), our findings call upon scholars to further consider how socialization messages from parents and schools can transmute anger or other negative emotions into critical agency without harm to overall well-being. Parental preparation for bias and school critical consciousness socialization may be particularly important forms to examine in future studies.

The findings for high critical consciousness in the High Discrimination group also support Bañales, Aldana, et al. (2019), Bañales, Marchand, et al. (2019) and Seider et al. (2016, 2017) who found that parent and school discussions about inequality are correlated with increases in critical consciousness. Nevertheless, socialization from both home and school may be crucial in both youth's noticing of racial inequality and their action to remedy it. The Positive School group reported positive school socialization but did not have similarly high levels of critical consciousness, perhaps due to a lack of parental socialization messages.

We did not find that school and neighborhood racial composition and intergroup contact strongly differentiated between the three profiles. A number of studies have shown how same-race friends can support ERI (Douglass, Mirpuri, & Yip, 2017; Graham, Munnikisma, & Juvenon, 2014; Kiang, Witkow, Baldeomar, & Fuligni, 2010; Phinney, Horenczyk, Liebkind, & Vedder, 2001a; Phinney, Romero, Nava, & Huang, 2001b), but these studies did not measure the aspects of climate (i.e., socialization messages) that might have an even stronger relation with outcomes. Specifically, it is likely not the mere presence of same-race friends but the types of conversations that are had with those friends and the messages youth receive about those friendships that make the friendships meaningful for identity processes and content. Similarly, the absence of same-race individuals in a neighborhood or school can expose youth to bias and discrimination as well as send subtle messages about what it means to be a person of color. For example, Gharaei et al. (2019) found that teachers’ support of multiculturalism was only associated with private regard when students had few same-ethnic peers in their classroom, so it may be that the ethnic composition made the messages more meaningful. Therefore, future work should explore how youth perceive socialization messages from their neighborhoods and develop appropriate measures.

In sum, our findings show that ethnic-racial settings are indeed interdependent and inseparable (Hughes et al., 2016). Looking at just one context in our data would have revealed groups differentiated by higher or lower amounts of family socialization, school socialization, neighborhood discrimination, or online discrimination but would not have shown how some groups experience high (or low) amounts from multiple contexts. Such an analysis also would not have shown how some outcomes are more strongly linked to a singular context (i.e., school context and academic outcomes) whereas others can be similar even when the contexts differ (i.e., well-being).

9.1 | Strengths, limitations, and future directions

The strengths of this study were that the sample size is large and includes diverse youth from across the United States. Although the sample is not nationally representative, the sample overcomes limitations of previous studies focused on one geographic area. Furthermore, the use of person-centered analyses avoided the risk of Type II errors with multiple interactions and uninterpretable interaction terms.

One limitation of the study was that it was cross-sectional, which means it is not possible to determine the direction of the relationships between variables. Socialization is a bidirectional and reciprocal process, so it is important that longitudinal work explores this question. Future research could collect more specific information to examine variation in perceptions of school racial climate by school and community demographics.

The neighborhood variables were not a significant factor in the formation of the profiles. A limitation is that we used ZIP codes as a proxy for neighborhoods, but ZIP codes are inconsistently defined and do not necessarily
correspond to psychological perceptions of neighborhoods (Foster & Hipp, 2011). Future work should use smaller geographic areas, such as census tracts, as well as include perceptions of structural and social neighborhood characteristics that also provide additional opportunities for direct and indirect socialization and identity exploration. In terms of structural characteristics, resources like community centers and after-school activities can offer youths places to make friends, meet mentors, and participate in own-culture and cross-cultural activities (e.g., a Kwanzaa celebration). Social factors, such as neighborhood cohesion and social support, can also support youths’ connections to their ethnic-racial group and promote greater identity exploration and commitment (Stevenson & Arrington, 2009; White et al., 2014).

Furthermore, future research should investigate how the Internet functions as a source of learning about one’s group membership as well as a source of discrimination. The current study used one item for online identity search because there are no extant measures of this construct. Qualitative studies have shown that youth do seek out information about race online (Greenfield, Gross, Subrahmanyam, Suzuki, & Tynes, 2006; Tynes, 2007; Tynes, Reynolds, & Greenfield, 2004), so future studies should explore the Internet as a socialization source. Finally, it would be important for future studies to include additional reporters, such as parents, teachers, and neighborhood adults to provide a deeper picture of the socialization opportunities and youth experience.

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**How to cite this article:** Byrd CM, Ahn LH. Profiles of ethnic-racial socialization from family, school, neighborhood, and the Internet: Relations to adolescent outcomes. *J Community Psychol.* 2020;1–22. https://doi.org/10.1002/jcop.22393