



The moderating effect of perceived social support from friends in the associations between school-based racial discrimination and academic outcomes among Latinx adolescents

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Abstract

The purpose of this study was to investigate the associations between school-based racial discrimination by teachers and peers and academic outcomes (i.e., classroom misconduct, absenteeism, academic performance, school readiness, and school behavioral problems) over one year (Time 2) through the moderation of perceived social support from friends. Participants were 599 Latinx adolescents (56% girls; $M_{age} = 14.51$, $SD = .55$) from middle schools located in the suburbs of a large Midwestern United States city. They completed questionnaires on their perceived school-based racial discrimination and social support from friends. Their teachers completed questionnaires on classroom misconduct and school readiness, measured twice over one year. School records of academic performance, absenteeism, and school behavioral problems were also collected twice over one year. The findings indicated that social support from friends was negatively associated with Time 2 classroom misconduct, absenteeism, and school behavioral problem, but positively associated with Time 2 school readiness and academic performance. School-based racial discrimination by teachers and peers were both related positively to Time 2 classroom misconduct, absenteeism, and school behavioral problems, whereas both types of discrimination were related negatively to Time 2 school readiness and academic performance. Social support from friends buffered against academic outcomes associated with discrimination by teachers. Similar patterns were found for discrimination by peers, but only for Time 2 academic performance and absenteeism. These results suggest that high perceived social support from friends positively impacts Latinx adolescents' academic outcomes after experiencing school-based racial discrimination while low levels increase such negative outcomes.

Keywords Latinx · Adolescent · Racial discrimination · Social support · Academics

1 Introduction

Latinx adolescents are sometimes hindered by a social climate, where there is increasing intolerance directed to them (Seaton et al., 2013). Research has focused on how adolescents' experience of racial discrimination negatively impacts their academic achievement (Bogart et al., 2013; Chng & Tan, 2017). Although research has provided strong support for the relationship between racial discrimination and poor academic achievement, little attention has been given to longitudinal designs, studies that measure academic achievement through teacher and school reports, and examinations of factors that might mitigate the negative outcomes associated with racial discrimination. To address these gaps in the literature, the purpose of the present one-year longitudinal study was to investigate the moderating effect of social support from friends in the associations between school-based racial discrimination by teachers and peers, and academic outcomes, including classroom misconduct, school readiness, academic performance, absenteeism, and school behavioral problems. Important implications around this kind of work include illuminating the role of social support for buffering against the negative consequences associated with school-based racial discrimination during adolescence. Further, the study could also inform the development of intervention and prevention programs designed to reduce school-based racial discrimination.

1.1 School-based racial discrimination by teachers and peers

Defined as being the recipient of unfair and differential treatment because of one's race or ethnicity, ethnic or racial discrimination is experienced by ethnic minority adolescents daily, inside and outside of school (Fisher et al., 2000; Rosenbloom & Way, 2004; Szalacha et al., 2003; Williams et al., 2003). Fisher et al. (2000) found that 57% of their sample (i.e., Black, Latinx, White, East Asian, and South Asian adolescents) were called racially insulting names and 42% believed that their grades were lower due to their race or ethnicity. In other studies, findings revealed that 50% of Latinx adolescents experienced racial discrimination, 47% were worried that they could experience racial discrimination, and 12% indicated that they were discriminated against by adults in their communities (Huynh & Fuligni, 2010; Szalacha et al., 2003). Flores et al. (2010) also found that 94% of the Mexican–American adolescents in their study experienced at least one incident of racial discrimination and that 21% reported that they were racially discriminated against by teachers and peers.

As proposed by García et al. (1997), racial discrimination for children and adolescents of color should be considered an “unique ecological circumstance”. In their integrative ecological model, García et al. (1997) accounted for how discrimination, racism, prejudice, and segregation influence various developmental contexts, including adolescents' neighborhoods and their schools. The model provided a framework for understanding how the racial discrimination experiences of children and adolescents of color might negatively impact their well-being. Support for this model has

been demonstrated by studies finding positive associations between perceived discrimination and adolescents' negative well-being (Fisher et al., 2000; Wong et al., 2003).

During adolescence, adolescents are exploring the world around them and becoming increasingly exposed and integrated within their social world. Such an experience might increase their experience of and exposure to racial discrimination within their communities (Phinney & Chavira, 1995). Furthermore, increased cognitive abilities is a hallmark of adolescence, allowing them the ability to reflect on their experiences and roles within society. Ethnic identity is important to adolescents' identity development, and these adolescents are well-aware of how others treat them based on their race or ethnicity. In the literature, perceived racial discrimination by peers and adults are related to greater depression among Latinx adolescents (Greene et al., 2006; Hwang & Goto, 2008; Stein et al., 2012). In addition, school-based racial discrimination disrupts adolescents' school connectiveness and belongingness (Roche & Kuperminc, 2012). School-based racial discrimination also has the potential to impact adolescents' academic outcomes.

1.2 Association between academic outcomes and school-based racial discrimination

Studies have documented the association between academic outcomes and school-based discrimination from teachers and peers (Benner & Graham, 2013; Medvedeva, 2010). One study found that Latino, African American, and Asian American adolescents had lower grades and less school engagement when they experienced discrimination by adults (Benner & Graham, 2013). In addition, racial discrimination by peer was associated with poorer psychological well-being. In a sample of children of immigrants, adolescents reported poorer language skills when they experienced more discrimination by peers than adolescents who reported discrimination by teachers. Discrimination by teachers was associated with higher proficiency in language skills. Despite a handful of studies on this topic, more research is needed to better understand how negative academic outcomes might be mitigated by different factors in adolescents' lives, including perceived social support from friends. Such a focus is vital as it will shed light on the important role of successes and barriers in the academic outcomes of Latinx adolescents.

1.3 The role of perceived social support from friends

The knowledge that someone cares for, respects, and is concerned with one's welfare is referred to as social support, and it provides security, increases self-worth, and involves having someone who is there to provide support during negative situations (Davidson & Demaray, 2007). Adolescents often receive social support from their parents and friends (Marini et al., 2006). Having a solid network of individuals involved in adolescents' lives provides protection, support, and help (Fox & Boulton, 2005; Kendrick et al., 2012). Adolescents without supportive friendships might experience social isolation, leading to poorer peer

relationships and increases their vulnerability to negative outcomes. Because social support can increase self-worth and appreciation of one's own capacities, adolescents often experience better academic outcomes when they report greater social support (Demir & Leyendecker, 2018; Fang, 2016; Pyszczynski et al., 2004).

Few studies have examined the potential buffering effect of perceived social support from friends in the associations between school-based racial discrimination and academic outcomes. Friendships are a major source of well-being during adolescence (van der Horst & Coffee, 2012). Having good-quality friendships protects adolescents from developing symptoms of depression and reduces loneliness (Nangle et al., 2003). Therefore, social support from friends might be an important emotional and instrumental resource mitigating the effects of negative experiences. In one study, Mostert and Pienaar (2020) found that high perceived social support from parents and significant others mitigated the negative effects of burnout and intention to drop out of school. Another study revealed that perceived social support decreased the positive relationship between stress and depression among university students (Talwar, 2016). Clark et al. (2020) found that social support from teachers, classmates, and parents moderated the association between grit and academic achievement among high school students. In particular, greater perceived social support increased the positive relationship between grit and academic achievement, providing further evidence of the powerful role of social support in adolescents' academic outcomes.

The stress-buffering model proposes that undergoing high levels of stress, such as school-based racial discrimination, can be mitigated with high levels of social support (Cohen & Wills, 1985). According to the Cohen and Wills's stress-buffering model, social support is essential to health, especially under times of stress or adversity; social support mitigates the stressor-stress relationship, with individuals who report less social support, also reporting greater stressors. In one study on the buffering effects of social support, Seawell et al. (2014) found that general social support buffered against the negative effects of racial discrimination on African American women's well-being. Although the researchers utilized a generalized form of social support, it is reasonable to expect that specific types of social support, such as the support from friends, could have the same effect. Other studies utilizing the stress-buffering model as a framework have also found evidence of the buffering effect of social support in the relationship between stressful life transitions and well-being (Praharmo et al., 2017), COVID-19 news exposure and stress (Rui & Guo, 2022), stress and cortisol levels (Schmiedl et al., 2022). Taken together, the literature on the moderating effect of social support indicates that it can buffer against the negative academic outcomes associated with many negative experiences. The literature has revealed that social support can reduce the positive relationship between racial discrimination by peers and aggression among adolescents (Wright & Wachs, 2019). It might be likely that perceived social support could buffer against negative academic outcomes associated with school-based racial discrimination.

1.4 The present study

The stress-buffering model proposes that adolescents are protected from stress when they experience supportive relationships with others (Cohen & Wills, 1985). Employing this model as a framework, the goal of the present study was to investigate the potential moderating effect of social support from friends in the relationships among school-based racial discrimination from teachers and peers and academic outcomes, including classroom misconduct, school readiness, academic performance, absenteeism, and school behavioral problems among Latinx adolescents, utilizing a one-year longitudinal design. The following research questions guided the present study due to the exploratory nature of the study:

1. What are the relationships among school-based racial discrimination from teachers and peers, perceived social support from friends, and academic outcomes (i.e., classroom misconduct, school readiness, academic performance, absenteeism, school behavioral problems), as measured one year later, while controlling for previous academic outcomes?
2. What, if any, moderating effect does perceived social support from friends have in the associations between school-based racial discrimination from teachers and peers and academic outcomes, as measured one year later, while controlling for previous academic outcomes?

2 Method

2.1 Participants

There were 599 Latinx adolescents (56% girls) from middle schools located in the suburbs of a large Midwestern United States city included in this study. They were in the 8th grade, and their ages ranged from 13 to 15 ($M = 14.51$, $SD = 0.55$). Adolescents also self-reported their families' country of origin, with 80% from Mexico, 10% from Puerto Rico, 5% from Guatemala, and other (5%; e.g., Argentina, Brazil, Paraguay, Chile). Approximately 88% of adolescents were second generation, followed by 10% for first generation and 2% reported that they were born outside of the United States. Generally, families were from lower to middle class backgrounds and 61% of students at the middle schools received free or reduced cost lunch. No other demographic information was collected from adolescents.

2.2 Procedures

The study received ethical approval from the first author's institution and American Psychological Association standards were followed throughout the study. To recruit adolescents, a list of over 150 schools in the suburbs of the large city was created. From these schools, the researchers identified schools with students who were Latinx descent, resulting in six schools. In the six schools, students of Latinx descent

made up between 15 and 39% of the students at the schools. Emails were sent to school principals, which explained the purpose of the study, how adolescents could participate, and how long it would take to complete the study. All six school principals were interested in the study and agreed to allow their adolescents to participate in the study. Next, meetings were conducted between school principals, teachers, and the research personnel. The purpose of this meeting was to discuss the study's logistics and time commitment. Classroom announcements were made in adolescents' homeroom and explained the importance of the study, and how adolescents could participate. Parental permission slips were sent home to adolescents' parents/guardians and were available in both the Spanish and English language. The parental permission slip included a demographic survey for parents (e.g., first language, country of origin) and not only asked for permission to have their child participate but also asked for permission to request school records, including academic performance, absenteeism, and school behavioral problems; the parental permission slip also asked parents/guardians for their permission to allow their child's homeroom teacher to complete questionnaires on their child regarding classroom misconduct and school readiness. There were 700 parental permission slips distributed during Time 1. Of these permission slips, 624 parents/guardians provided their permission, 15 declined, and the rest of the slips were never returned. All adolescents with permission had their parents/guardians give permission to request school records and data to be collected from their child's homeroom teachers. On the day of data collection for Time 1 (spring of 2018; 7th grade), there were 5 adolescents who were not present (e.g., absent, moved away, suspension) and they did not participate in the study. Prior to data collection, adolescents provided their assent, and none declined to participate. The final total of adolescents participating at Time 1 was 619. They completed questionnaires on their demographic information (e.g., gender, age, ethnicity), perceived school-based racial discrimination from teachers and friends, and perceived social support from friends. Teachers completed questionnaires on classroom misconduct and school readiness, and school reports of academic performance, absenteeism, and school behavioral problems were collected.

At Time 2 (spring of 2019; 8th grade), approximately one year later, a reminder letter was sent home to adolescents' parents/guardians. The letter reminded parents/guardians about the study one year prior and asked again for permission to collect data from their child's homeroom teachers and school records. No letters of the reminder letters were returned to the school. At Time 2, school reports of academic performance, absenteeism, and school behavioral problems were collected, along with teacher reports of classroom misconduct and school readiness.

2.3 Adolescent measures

2.3.1 Perceived school-based racial discrimination by teachers and peers

This questionnaire asked adolescents about their perceptions of racial discrimination committed by their teachers and peers (Wong et al., 2003). The questionnaire includes two subscales: one for perceived teacher discrimination and one for

perceived peer discrimination. There were nine-items on this questionnaire, with five used for perceived teacher discrimination (e.g., How often have you not been called on by your teachers in the classroom because of your race/ethnicity) and four for perceived peer discrimination (e.g., How often have you not been picked for a team because of your race/ethnicity). Items were rated on a scale of 1 (*never*) to 5 (*almost every day*), with higher scores indicating greater perceived racial discrimination by teachers and peers. This questionnaire was administered at Time 1 only, with Cronbach's alpha of .86 for teachers and peers. Cronbach's alphas for other studies ranged from .86 to .94 (Banerjee et al., 2018; Leath et al., 2019; Wong et al., 2003), and were comparable to the present study's Cronbach's alphas.

2.3.2 Perceived social support from friends

To assess social support, adolescents were administered the Child and Adolescent Social Support Scale (Malecki et al., 2000). The subscale for close friends was used, which included 12 items and were rated on a scale of 1 (*never*) to 6 (*always*), with higher scores indicating greater perceived social support from friends. A sample item included: "My close friends understand my feelings". This questionnaire was administered at Time 1 only. Cronbach's alpha was .86 for close friends. Other studies have reported similar Cronbach's alphas between .89 and .97 (Albayrak et al., 2018; Chis et al., 2017; Ekwonye et al., 2017).

2.4 Teachers measures

2.4.1 Classroom misconduct

Students' engagement in disruptive behaviors in the classroom were rated by teachers on a scale of (*never true of this child*) to 7 (*almost always true of this child*) (DeRosier & Lloyd, 2011). Higher ratings indicate greater classroom misconduct. Teachers rated five items on the questionnaire, including bothers others while they are trying to work, acts silly or immature during class, makes off-task comments, behaves inappropriately, and makes odd noises during class. Schools were averaged to form one final score, with greater scores on this questionnaire indicating more classroom misconduct. Teachers rated adolescents in their homeroom during the spring of 2018 and 2019. Items for the spring of 2018 and spring of 2019 were averaged separately to form scores for Time 1 and Time 2. Cronbach's alphas were .87 for 7th grade and .85 for 8th grade.

2.4.2 School readiness

Teachers answered three questions regarding school readiness. They read the statement: "This student comes to class ready to learn by..." and then rated the three statements on a scale of 1 (*never true of this child*) to 7 (*almost always true of this child*) (Wright & Wachs, 2021), with higher scores indicating better school readiness. Higher ratings indicate greater school readiness. The three items included:

having all homework, readings, and other assignments completed, having all necessary school supplies for the day, and listening to teachers' instructions. Teachers answered this questionnaire during Time 1 and Time 2. All items were averaged to form separate scores for each time point. Cronbach's alphas were .84 for 7th grade and .86 for 8th grade, which were similar to the original study (Wright & Wachs, 2021).

2.5 School reports

2.5.1 Academic performance

Grade point averages (GPA) were taken from adolescents' report cards at the end of the 7th grade and the end of the 8th grade. GPAs were averaged from grades in reading, math, science, and social studies. Higher scores are indicative of better overall academic performance.

2.5.2 Absenteeism

The number of days absent and present at school as reported by school records were examined to assess adolescents' absenteeism. The number of days absent was divided by the total number of days in the school year during Time 1 and Time 2. There were two scores for absenteeism, one at Time 1 and one at Time 2.

2.5.3 School behavioral problems

The number of discipline referrals, in-school suspensions, and out-of-school suspensions were summed to measure school behavioral problems at Time 1 and Time 2. Cronbach's alphas were .83 for Time 1 and .86 for Time 2.

2.6 Analytic plan

To assess the study's research questions, a structural regression model was performed in *Mplus* software. For the model, paths were added from Time 1 perceived racial discrimination from teachers and peers to perceived social support from friends and Time 2 academic outcomes, including classroom misconduct, school readiness, academic performance, absenteeism, and school behavioral problems. Paths were added from perceived social support from friends to all Time 2 academic outcomes. Gender was included as a covariate, and it was allowed to predict all variables examined in the study. Time 1 academic outcomes were allowed to predict their respective Time 2 academic outcomes. Two-way interactions were included between perceived racial discrimination from teachers and perceived social support from friends, and from racial discrimination by peers and perceived social support from friends. The multilevel structure of the data was handled by correcting standard errors using the complex design option (type = complex; cluster = schools;

estimator=MLR). Significant interactions were examined as well. Missing data were analyzed.

3 Results

3.1 Correlations

Correlations were examined between all the study's variables. Social support from friends was related negatively to racial discrimination by teachers and peers, Time 1 and Time 2 classroom conduct, Time 1 and Time 2 absenteeism, and Time 1 and Time 2 school behavioral problems, while it was positively correlated with Time 1 and Time 2 school readiness and Time 1 and Time 2 academic performance. Racial discrimination by peers and teachers were related positively to Time 1 and Time 2 classroom conduct, Time 1 and Time 2 absenteeism, and Time 1 and Time 2 school behavioral problems, with negative associations with Time 1 and Time 2 school readiness and Time 1 and Time 2 academic performance. All academic outcome variables were related positively to each other, except for Time 1 and Time 2 school readiness and academic performance. Instead, Time 1 and Time 2 school readiness and academic performance were associated negatively with all other academic outcomes. Time 1 and Time 2 school readiness and Time 1 and Time 2 academic performance were related positively to each other.

3.2 Structural regression model

The structural regression model was conducted to examine both research questions. The structural regression model had good fit, $\chi^2 = 767.93$, $df = 601$, $p = n.s.$, CFI = .99, TLI = .99, RMSEA = .04, SRMR = .04. Social support from close friends was related negatively to racial discrimination by teachers ($\beta = -.20$, $p < .05$) and peers ($\beta = -.26$, $p < .01$). Social support from friends was related negatively to Time 2 classroom misconduct ($\beta = -.20$, $p < .05$), absenteeism ($\beta = -.20$, $p < .05$), and school behavioral problems ($\beta = -.23$, $p < .05$), but positively to Time 2 classroom misconduct ($\beta = .19$, $p < .05$) and academic performance ($\beta = .24$, $p < .05$). Racial discrimination by teachers was related negatively to Time 2 Time 2 school readiness ($\beta = -.30$, $p < .001$) and academic performance ($\beta = -.33$, $p < .001$), but positively related to Time 2 classroom misconduct ($\beta = .29$, $p < .001$), absenteeism ($\beta = .33$, $p < .001$), and school behavioral problems ($\beta = .31$, $p < .001$). Similarly, racial discrimination by peers was related negatively to Time 2 Time 2 school readiness ($\beta = -.23$, $p < .05$) and academic performance ($\beta = -.33$, $p < .05$), but positively related to Time 2 classroom misconduct ($\beta = .26$, $p < .01$), absenteeism ($\beta = .30$, $p < .001$), and school behavioral problems ($\beta = .23$, $p < .01$). Time 2 school readiness was related positively to Time 1 school readiness ($\beta = .33$, $p < .001$). Time 2 academic performance was related positively to Time 2 academic performance ($\beta = .36$, $p < .001$). Time 2 absenteeism was related positively to Time 1 absenteeism ($\beta = .29$, $p < .001$).

Time 2 school behavioral problems and Time 1 school behavioral problems ($\beta = .26, p < .01$). Gender was unrelated to all variables examined in the study.

All two-way interactions for social support from friends and racial discrimination by teachers were significant for all Time 2 academic outcomes (see Fig. 1 for a sample depiction of the significant interactions). Findings revealed that low levels of perceived social support from friends increased the positive relationship between racial discrimination by teachers and Time 2 classroom misconduct ($B = -.10, SE = .02, p < .01$), absenteeism ($B = -.16, SE = .04, p < .001$), and school behavioral problems ($B = -.12, SE = .03, p < .01$). Opposite patterns were found for high levels of perceived social support from friends such that the relationship was less positive (classroom misconduct: $B = .08, SE = .01, p < .05$; absenteeism: $B = .14, SE = .03, p < .01$; school behavioral problems: $B = .08, SE = .01, p < .05$). The negative associations between racial discrimination by teachers and Time 2 school readiness ($B = -.08, SE = .01, p < .05$) and academic performance ($B = -.11, SE = .02, p < .01$) were more negative at low levels of social support from friends, while the negative relationships were less negative for high levels of social support from friends (school readiness: $B = .07, SE = .02, p < .01$; academic performance: $B = .10, SE = .01, p < .05$).

Two-way interactions between social support from friends and racial discrimination by peers were significant for Time 2 academic performance and absenteeism. Probing the interaction revealed that the negative relationship between racial discrimination by peers and Time 2 academic performance ($B = .08, SE = .01, p < .05$) and absenteeism ($B = .09, SE = .01, p < .05$) were more negative at higher levels of perceived social support from friends, while the relationships were less

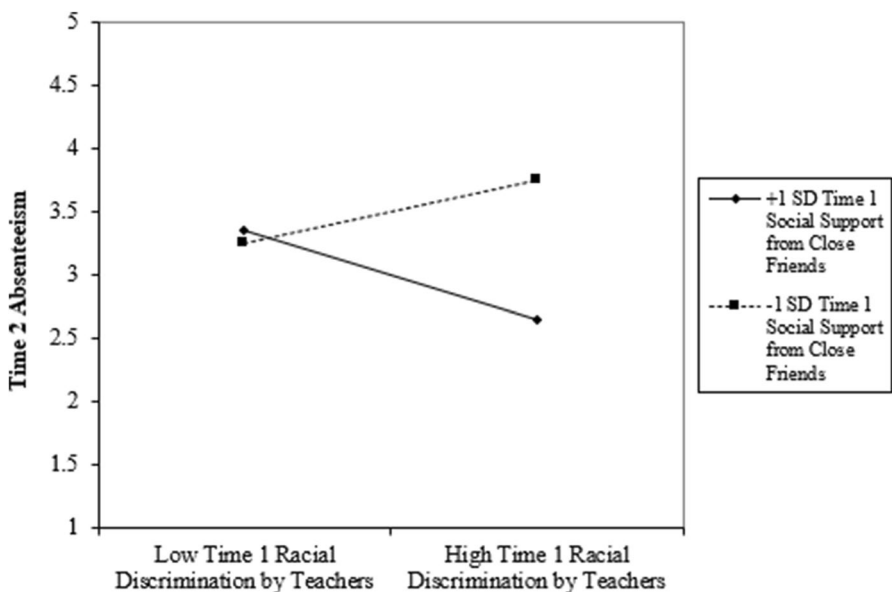


Fig. 1 Moderation of Time 1 social support from close friends in the associations between racial discrimination by teachers and Time 2 absenteeism

negative for lower levels of perceived social support from friends (academic performance: $B = -.10$, $SE = .02$, $p < .01$; absenteeism: $B = -.14$, $SE = .03$, $p < .001$) (Tables 1, 2).

4 Discussion

The experience of racial discrimination has a profound influence on Latinx adolescents' adjustment, and it is conceptualized as a chronic stressor, negatively impacting their psychological and academic adjustment (Fisher et al., 2000; Hwang & Goto, 2008; Stein et al., 2012; Umana-Taylor et al., 2015; Wong et al., 2003). Although research has documented the negative impact of school-based racial discrimination on adolescents' academic outcomes, little attention has been given to factors, such as perceived social support from friends, that might mitigate the consequences of racial discrimination. The present study provided a better understanding of how school-based racial discrimination might predict Latinx adolescents' academic outcomes, including classroom misconduct, absenteeism, school behavioral problems, school readiness, and academic performance.

Perceived social support from friends was associated positively with Time 2 school readiness and academic performance, but negatively related to classroom misconduct, absenteeism, and school behavioral problems. High levels of perceived social support might increase adolescents' ability to deal with school-based racial discrimination in an effective manner (Baldry & Farrington, 2005; Davidson & Demaray, 2007; Smokowski et al., 2014). Because adolescents with high levels of perceived social support feel more connected and supported by their friends, they might be more likely to rely on those friends during stressful situations, including experiencing school-based racial discrimination. Having someone to talk through during stressful situations could also increase their self-efficacy regarding dealing with such situations. In addition, social support increases self-worth and appreciation of one's own capacities. Thus, having high levels of perceived social support from friends might reduce adolescents' appraisal of racial discrimination as a significant threat (Miller, 2006). The association between high perceived social support and academic outcomes is supported by previous research (Demir & Leyendecker, 2018; Fang, 2016; Pyszczynski et al., 2004).

Results from the present study indicated that perceived racial discrimination by teachers and peers was related positively to Time 2 classroom misconduct, absenteeism, and school behavioral problems, whereas perceived racial discrimination by teachers and peers was associated negatively with Time 2 school readiness and academic performance, while controlling for academic outcomes one year prior. During adolescence, peer relationships are incredibly important and experiencing racial discrimination by peers might be detrimental to adolescents' academic performance (Greene et al., 2006). The findings from this study were consistent with research revealing positive associations between school-based racial discrimination and academic outcomes (Benner & Graham, 2013; Medvedeva, 2010).

The positive association between racial discrimination by teachers and Time 2 classroom misconduct, absenteeism, and school behavioral problems was more

Table 1 Correlations among social support from friends, racial discrimination by teachers and peers, and Time 1 and Time 2 academic outcomes

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SS from CF	–												
2. RD by TEA	–.24**	–											
3. RD by Peers	–.20*	.36***	–										
4. Time 1 CM	–.19*	.20*	.30***	–									
5. Time 2 CM	–.19*	.27**	.33***	.44***	–								
6. Time 1 SR	.22*	–.25**	–.26**	–.30***	–.32***	–							
7. Time 2 SR	.29***	–.21*	–.26**	–.29***	–.31***	.41***	–						
8. Time 1 AP	.18*	–.26**	–.20*	–.22*	–.25**	.30***	.24**	–					
9. Time 2 AP	.23*	–.32***	–.24**	–.20*	–.28**	.28**	.22*	.40***	–				
10. Time 1 ABS	–.19*	.30***	.19*	.26**	.22*	–.25**	–.20*	–.29***	–.30***	–			
11. Time 2 ABS	–.25**	.33***	.26**	.30***	.26**	–.30***	–.26**	–.33***	–.33***	.33***	–		
12. Time 1 SBP	–.26**	.31***	.29***	.25**	.30***	–.29***	–.23*	–.20*	–.25**	–.22*	.30***	–	
13. Time 2 SBP	–.30***	.30***	.31***	.29***	.31***	–.33***	–.26**	–.23*	–.27**	–.25**	.34***	.43***	–

SS, social support; CF, close friends; RD, racial discrimination; TEA, teachers; CM, classroom misconduct; SR, school readiness; AP, academic performance; ABS, absenteeism; SBP, school behavioral problems

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

Table 2 Standardized regression model for the relationships among perceived racial discrimination, social support, and Time 2 academic outcomes

	Time 2 classroom misconduct		Time 2 school readiness		Time 2 academic performance		Time 2 absenteeism		Time 2 school behavioral problems	
	β	SE	β	SE	β	SE	β	SE	β	SE
SS from CF	-.20*	.10	.19*	.10	.24**	.13	-.20*	.11	-.23*	.11
RD by TEA	.29***	.16	-.30***	.18	-.33***	.23	.33***	.24	.31***	.20
RD by Peers	.26**	.14	-.23*	.12	-.25**	.14	.30***	.19	.23*	.12
SS from CF x RD by TEA	-.18*	.08	.20*	.09	.22*	.12	-.23*	.12	-.20*	.10
SS from CF x RD by Peers	-.13	.04	.13	.05	.19*	.09	-.20*	.10	-.14	.05

Not displayed is the relationship between social support from close friends and racial discrimination by teachers and peers or between Time 1 academic outcomes and Time 2 academic outcomes. Social support from close friends was related negatively to racial discrimination by teachers ($\beta = -.20, p < .05$) and peers ($\beta = -.26, p < .01$). Time 2 classroom misconduct was related positively to Time 1 classroom misconduct ($\beta = .33, p < .001$). Time 2 school readiness was related positively to Time 1 school readiness ($\beta = .33, p < .001$). Time 2 academic performance was related positively to Time 2 academic performance ($\beta = .36, p < .001$). Time 2 absenteeism was related positively to Time 1 absenteeism ($\beta = .29, p < .001$). Time 2 school behavioral problems and Time 1 school behavioral problems ($\beta = .26, p < .01$)

SS, social support; CF, close friends; RD, racial discrimination; TEA, teachers

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

positive at lower levels of perceived social support from friends, though these patterns were less positive at higher levels of such support. For Time 2 school readiness and academic performance, the association between these academic outcomes and racial discrimination by teachers was more negative at high levels of perceived social support from friends, with opposite patterns found for low levels of perceived social support from friends. Social support can often prevent adolescents' appraisal of an event as stressful (Cohen & Wills, 1985). Thus, adolescents with high levels of social support from friends might feel efficacious when dealing with school-based racial discrimination because they know they have someone who will be there for help. In addition, social support has the potential to augment or diminish the effects of stress, including the stress experienced after experiencing school-based racial discrimination and for mitigating the negative outcomes, such as academic problems (Barrera, 1986). Thus, when Latinx adolescents are exposed to school-based racial discrimination, they have a social network of friends who mobilize to provide support. On the other hand, Latinx adolescents with lower levels of perceived social support from friends might have fewer effective coping resources to deal with school-based racial discrimination. Research provides support for the moderating role of perceived social support and indicates that perceived racial discrimination was associated lower perceptions of support among African American women (Prelow et al., 2004).

Unlike school-based racial discrimination by teachers, there were fewer patterns found racial discrimination by peers. The only significant moderation effects were found for Time 2 academic performance and absenteeism, while accounting for

Time 1 academic outcomes. High levels of perceived social support from friends decreased the positive relationship between racial discrimination by peers and Time 2 absenteeism, with low levels increasing this relationship. In addition, the negative relationship between racial discrimination by peers and Time 2 academic performance was less negative at high levels of social support from friends and more negative at low levels. As already described, social support from friends increases adolescents' self-efficacy and increases their ability to deal effectively with negative situations or stressors (Barrera, 1986; Davidson & Demaray, 2007; Smokowski et al., 2014). However, we found that such support did not moderate all associations, specifically Time 2 classroom misconduct, school readiness, and school behavioral problems. Some research has distinguished between the impact of different types of racial discrimination on academic outcomes (Benner & Graham, 2013; Medvedeva, 2010). In one study, discrimination from adults was associated with lower grades and less school engagement, while poorer psychological well-being was related to discrimination by peers (Benner & Graham, 2013). Therefore, it might be likely that we did not find significant moderation effects for all academic outcomes and school-based discrimination by peers because such discrimination might relate more to psychological adjustment than school adjustment. More research should focus on this topic, especially in relation to absenteeism and academic performance, which were protected when adolescents' experienced racial discrimination by peers and had high perceived social support from friends.

4.1 Limitations and future directions

There are some limitations and future directions of this research that should be discussed. We measured academic outcomes and teachers are often evaluators of these outcomes, including the ones examined in this study (i.e., GPA, absenteeism, school behavioral problems). Because some teachers might discriminate against their students, it could be likely that they might have biased reports of academic variables; follow-up research might consider examining specifics of discrimination by teachers, including the teacher's relationship to the student and what happened. Such a mechanism might make it possible to compare the teacher's report of academic outcomes and the student's report of the teacher who discriminated against them to determine if the teacher's report was biased.

Employing a short-term longitudinal design, it is difficult for the present study to draw long-term conclusions regarding the associations. It is not possible to understand the temporal ordering of school-based racial discrimination, social support from friends, and academic outcomes. Future research should utilize longer term designs, with more waves of data collection to better understand the buffering effects of perceived social support from friends in the associations between school-based racial discrimination and academic outcomes. In addition, only a few middle schools were included in this study, which might reduce the representative of the sample. Follow-up research should be conducted to improve the generalizability of the associations and moderating effects found in this study.

Although data was collected on the generation of the adolescents and their families' country of origin, we were not able to examine differences. Such a focus is important because not all Latinx adolescents' families are from the same country of origin, and therefore they might have different experiences regarding racial discrimination. Future research might aim to recruit enough adolescents with families from various countries to better understand how different contextual factors might impact the relationships examined in this study.

4.2 Conclusions

The purpose of the present study was to investigate the moderating effect of perceived social support in the relationship between school-based racial discrimination by teachers and peers and Latinx adolescents' academic outcomes. The results underscore the critical importance of understanding how school-based racial discrimination, as a chronic stressor in Latinx adolescents' lives, can profoundly disrupt their academic outcomes. Positive academic outcomes are important for success in school and college and can directly impact adolescents' work prospects and their subsequent economic background. Therefore, it is important for educators, including administrators, teachers, and school staff, to receive training on diversity, equity, and inclusion to change discriminatory behavior in the school. Educators might also benefit from empathy and implicit-bias training that could help reduce biases and narrow racial gaps in schools. Such a focus on educators' professional development might reduce their students' perceptions of racial discrimination at school, and thereby improve their educational experiences and outcomes. Similarly, adolescents should also receive similar training to reduce their negative attitudes toward others who are different than them and to reduce their engagement in discrimination.

Declarations

Conflict of interest We have no conflict of interests to declare.

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