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Social Support as a Buffer Between Discrimination and Cigarette Use in Juvenile Offenders

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Abstract

Cigarette use is a prominent problem in juvenile offenders, leading to negative health outcomes and substance use. One interesting precipitator of cigarette use in this population is discrimination. Social support could potentially buffer the positive relationship between cigarette use and discrimination in juvenile offenders, which could be dependent on the context in which the discrimination is experienced, such as peer, institutional (e.g., stores, restaurants), or educational contexts. The present study explored the relationship between three types of discrimination, social support, and smoking outcomes among 112 detained and probated juvenile offenders (mean age = 16.24, SD = 2.11, 29.2% female, 54.9% Caucasian, 40.4% detention, 53.8% smokers). Results indicated that the relationship between institutional discrimination (OR = −0.10, $p = 0.005$) and peer discrimination (OR = −0.11, $p = 0.01$) were significantly moderated by social support, with a higher likelihood of being a smoker, compared to a non-smoker at higher levels of peer and institutional discrimination. Further, based on a moderated regression analysis, results indicated that youth who experienced greater educational discrimination and lower levels of social support, they were at higher risk of nicotine addiction ($b = −0.09$, $p = 0.03$). Overall, results indicate that varying avenues of social support, such as parent, peer, and teacher support, can mitigate negative effects of discrimination on juvenile offenders, particularly cigarette use. Addressing discrimination in smoking treatment and prevention in juvenile offenders may be of great utility. Future studies should examine the potential mechanisms underlying the discrimination and cigarette use connection in juvenile offenders.

Keywords

juvenile offenders; cigarettes; discrimination; social support

1. Introduction

Cigarette use is a prominent health problem among juvenile offenders (Chassin, 2008), and both heightens risk for and leads to other social, behavioral, and psychological issues, such

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as other substance use and related problems and externalizing disorders (Helstrom, Bryan, Hutchison, Riggs & Clechman, 2004). Additionally, given limited access to healthcare within the justice system (Morris, Harrison, Knox, Tromanhauser, Marquis & Watts, 1995; Thornberry, Huizinga & Loeber, 2004), the health consequences associated with nicotine use among this population may be more severe than youth in the general population (Laub & Vaillant, 2000). Thus, not only are juvenile offenders at greater risk for cigarette use, but also are likely to experience more severe long-term health consequences due to limited access to treatment resources.

There is, however, the possibility for positive health outcomes that could be achieved through properly addressing smoking in juvenile offenders. In fact, smoking cessation treatment in youth reduces other substance use (Myers, Doran & Brown, 2007). Recent studies indicate that parental or family factors on cessation efforts are important (Curry, Mermelstein, Emery, Sporer, Berbaum, Camplbell & Warnecke, 2013), and research outside of the juvenile justice literature have found that youth who report receiving support from family, teachers and peers are at reduced risk for internalizing behavior and poor health status (e.g. sleep difficulties, physical issues; Solberg, Carlstom, Howard & Jones, 2007).

Youths' support networks not only directly reduce risk for behavioral and health outcomes, but may also work as a protective factor by buffering the effect of various other risk factors on these behavioral outcomes (Smokowski, Guo, Rose, Evans, Cotter & Cacallao, 2014). For example, perceived discrimination serves as a stressor (e.g. Clark, Anderson, Clark & Williams, 1999) that is associated with several negative health youth outcomes, including conduct problems (Brody, Chen, Murry, De, Simmons, Gibbons & Cutrona, 2006), violence (Choi, Harachi, Gillmore & Catalano, 2006), and depression (Gibbons, Yeh, Gerrard, Cleveland, Cutrona, Simons, & Brody, 2007), cigarette use (Wiehe, Aalsma, Liu & Fortenberry, 2010). Though studies are limited, findings suggest that parental support may play an integral protective role in reducing the impact of discrimination and negative outcomes and behavior. For example, Simons and colleagues (2006) found that parental social support reduced the probability that discrimination will lead to violence in male youth. Similarly, studies have shown that emotional support can reduce the impact of discrimination on psychological distress among youth populations (Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010; Gonzalez, Stein, Kiang, & Cupito, 2014). However, to date, no study has been conducted examining whether parental support buffers the effect of racial discrimination on these health outcomes.

For the current study we will fill the gaps in the literature by examining the buffering effect of discrimination of cigarette use among a juvenile offender population. It is also important to consider the context in which discrimination is experienced, as suggested by Williams and Mohammed (2009), it is likely that varying domains of discrimination differentially produce such negative outcomes. Previous work has identified several domains of discrimination which may pose a particular threat to the emotion health of youth: Institutional discrimination (e.g. stores, restaurants), educational discrimination (e.g. teachers), and peer discrimination (Fisher, Wallace & Fenton, 2000). For juvenile offenders specifically, delineating which domains of discrimination may be linked to negative externalizing behaviors (e.g. cigarette use) would both inform areas of intervention for smoking cessation

in this population as well as serve as targets for preventative strategies. No research to date has examined how varying domains of discrimination are differentially related to cigarette use and addiction severity, or the positive role social support could play in buffering this relationship among juvenile offenders. Such information is integral in designing effective smoking cessation programs, particularly in identifying targets in treatment, such as coping with varying types of discrimination.

The present study aimed to examine the relationship between overall social support, and experiences of discrimination (institutional, peer, and educational) as related to cigarette use in juvenile offenders. Specifically, we hypothesized that, in juvenile offenders, 1) discrimination is related to cigarette use and addiction severity, 2) overall social support is related to cigarette use and addiction severity, and 3) social support moderates the relationships between discrimination and cigarette use, as well as discrimination and addiction severity.

2. Methods

2.1 Participants and Procedures

Data collection commenced after receiving approval from the University Institutional Review Board. Juvenile offenders were recruited, as part of a larger study, through which court records were collected for every case referred to county juvenile courts across 92 counties over a 5-year period (2005–2009). The current study is based on follow-up data gathered by researchers who worked directly with local justice actors to recruit system-involved youth on probation and in detention centers in three counties, which were selected based on their geographic and population variability. Data collections occurred over a 2 to 3 days in each jurisdiction, thus data collection was time limited.

Juvenile offenders on probation and in detention in the three target counties were eligible to participate if they met the following inclusion criteria: (1) the juvenile was present at the detention center or at their scheduled appointment with a probation officer during the days of data collection, (2) parental consent was received prior to the data collection, and (3) the juvenile voluntarily agreed to participate in the study after reading informed consent information. The study questionnaire was programmed into a web-based survey tool, Qualtrics, and was administered via a WiFi-enabled iPad. Research staff informed the participants that the normal procedure was to read the questions aloud, but participants could choose to “opt-out” if they preferred to complete the questionnaire on their own. Upon completion of the survey, participants received a $10 Wal-Mart gift card (given immediately to those on probation and placed in the personal belongings of those in detention).

Of the potential participants recruited for the study, a total of 112 juvenile offenders between the ages of 10 to 18 met inclusion criteria and completed the survey (a 53% response rate). Reasons for non-participation included: disconnected phone numbers; subjects were not present at the probation offices or in detention centers during the span of time that the data was collected; and parent(s) or youth refused to participate.

2.2 Materials

Demographics—Juveniles were asked to provide their age, gender, and ethnicity (Caucasian, African American, American Indiana or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, Hispanic, Other), and responded to 4 items with the latent construct of socioeconomic status (SES; "Does your family own a car, van or truck?"; "Do you have a bedroom for yourself?"; "During the past 12 months, how many times did you travel away on holiday with your family?"; "How many computers does your family own?") which were created for the present study. A composite SES score was created by summing responses. Participant's setting (probation or detention) was also recorded.

Discrimination—Discrimination Distress During Adolescence (DDDS; Fisher, et al. 2000) is a 15-item measure that assesses juvenile's perceptions of discrimination in three life domains (response options 1-Never, 2-A few times, 3-A lot): Institutional Discrimination (e.g. "You were hassled by a store clerk or store guard"; 6 items; alpha=0.67), Educational Discrimination (e.g. "You were discouraged from joining an advanced level course"; 4 items; alpha=0.45), and Peer Discrimination (e.g. "Others your age did not include you in their activities"; 5 items; alpha=0.63). The DDDS has been validated for use in 9^{th} to 12^{th} graders of varying ethnic backgrounds (Fisher, et al., 2000). One item on the DDDS refers to race, while the remaining items are left up to participant interpretation.

Social Support—Vaux Social Support Record (VSSR; Vaux, 1988) is a nine-item measure that assesses juvenile's satisfaction with perceived emotional advice, guidance, and practical social support from both adults and peers (e.g. "At school, there are adults I can talk to, who care about my feelings and what happens to me.") on a 3-point Likert scale (0-Not at all, 1-Some, 2- A lot). Reliability was good in the present sample (alpha=0.81).

Cigarette Use—Cigarette use was conceptualized in two ways for the present study.

Smoking Status: Participants' responded to one dichotomous face-valid cigarette use item ("Do you currently smoke cigarettes?).

Addiction Severity: Participants' response to one item from the CDS-5 scale ("Please rate your addiction to cigarettes on a scale of 1–100"). Higher scores indicate higher addiction severity. Individual items on the CDS-5 have shown good test-retest reliability (Etter, Houezec & Perneger, 2003).

3. Results

3.1 Preliminary Analyses

A total of 112 juveniles either detained or on probation participated in the present study (mean age = 16.24, SD = 2.11, 29.2% female, 54.9% Caucasian, 40.4% detention). Just over 50% of the sample (53.8%) endorsed using cigarettes. Smokers ($n = 62$) and non-smokers ($n = 50$) did not vary in gender, setting, or age. However, groups did vary by Caucasian race ($\chi^2 = 18.33$, $p < .001$), with 69.4% of Caucasians endorsing smoking. Additionally, those of

African American race differed from the sample in smoking ($\chi^2 = 7.58$, $p = 0.01$), with 62.8% of African Americans endorsing smoking.

All study variables were normally distributed: DDDS scores on the overall scale (mean=24.15, SD=4.41); institutional discrimination (mean=10.25, SD=2.35); education discrimination (mean=6.58, SD=1.50); peer discrimination (mean=7.32, SD=1.87); social support (mean=12.82, SD=3.45). For smokers, addiction severity (mean=51.28, SD=29.25) was approximately normally distributed.

Smoking status was significantly related to addiction severity (point biserial correlation = 0.76, $p < .001$). Addiction severity was significantly related to social support ($r = -0.21$, p=0.03), institutional discrimination ($r = 0.30$, $p = 0.001$), and peer discrimination ($r = 0.19$, $p = 0.05$). DDDS scales were all significantly and moderately intercorrelated (r's 0.30 – 0.42, p's < .01).

3.2 Hypothesis Testing

Moderated regression was conducted to examine the interactive effects of social support on the relationship between discrimination domains (institutional, peer, and educational; each run in a separate model) on both smoking status (0-non-smoker, 1-smoker) and nicotine addiction severity using Andrew Hayes' PROCESS (Hayes, 2012) controlling for ethnicity, age, gender (0-male, 1-female), setting (0-detention, 1-probation), and SES.

Cigarette Use—Results indicated that the relationship between institutional discrimination and smoking status was significantly moderated by social support, OR=−0.10, p=.008. The significant interaction was probed, revealing a higher likelihood of being a smoker, compared to a non-smoker at higher levels of institutional discrimination and lower levels of social support, while at higher levels of social support the odds of being a smoker or a non-smoker were similar (Figure 1). The relationship between peer discrimination and smoking status was also significantly moderated by social support (OR = −0.11, p =. 01). The significant interaction was probed, revealing a higher likelihood of being a smoker at higher levels of peer discrimination and lower levels of social support, a similar likelihood of being a smoker or non-smoker at medium levels, and a higher likelihood of being a non-smoker at high levels of social support (Figure 1). There was no significant interaction for educational discrimination and social support as related to smoking status (OR = −.02, p = .66). See Table 1 further details.

Addiction severity—Results indicated that the relationship between educational discrimination and addiction severity was significantly moderated by social support (b = −0.09, p = .03). The significant interaction was probed using the Johnsons-Neyman technique, which revealed that at low levels of social support (social support = 6–7), higher educational discrimination is associated with higher levels of addiction severity (b = 0.34, p = .05). This effect disappears at medium levels of social support (social support = 8–12; b=0.11, *ns*), but at high levels of social support (social support =13–18) higher educational discrimination is associated with lower addiction severity (b = −0.72, p =.05). See Table 2 for further details.

4. Discussion

Juvenile offenders are at a disproportionate risk for negative health outcomes, exacerbated by their limited access to proper healthcare (Morris, et al., 1995; Thornberry, et al 2004). It is thus troubling that a large proportion of these juvenile's report smoking cigarettes (Chassin, 2008), making smoking cessation treatment for juvenile offenders essential. One important aspect to address in cessation treatment with juvenile offenders, as highlighted in the present study, is discrimination. Discrimination is associated negative health outcomes and negative affect, and is therefore a likely trigger for substance use, particularly cigarette use. The study further highlights the importance of distinguishing how different types of discrimination may affect cigarette use, as well the positive effects social support may have on this relationship.

The relationship of institutional (e.g. being hassled by the police, hassled by a store clerk, receiving poor service at a restaurant) and peer discrimination (e.g. you were called racially insulting names, others your age did not include you in their activities, you were discouraged from joining a club) to cigarette use was buffered by social support. Thus addressing these types of discrimination in both preventative (both within the community and with juvenile offenders) and smoking cessation efforts is likely of great utility. Specifically, psychoeducation concerning the negative health impacts of discrimination may be targeted at students, in general, such as through programs in the classroom, as well as for those that frequently interact with these juveniles (e.g. police, teachers, parents), such as through training seminars, in aims of decreasing discriminatory practices. Further, preventative strategies targeted at detained and probated juvenile offenders, such as providing mandatory psychoeducation on discrimination as part of probation requirements, could potentially buffer negative health effects. Additionally, in cessation treatment, clinicians should assess for the potential of these discriminatory experiences and address them directly, particularly aiding these juveniles in managing negative affect and restructuring negative beliefs they may have developed as a result of discrimination.

The relationships between peer discrimination and institutional discrimination with addiction severity was not protected by social support. It is possible that, though initiation of cigarette use could be prevented through social support, the severity of cigarette use likely requires other interventions; if support does not aid the juvenile offender in managing these harmful discriminatory experiences, it may be necessary to introduce effective strategies to cope with these discriminatory experiences and reduce the potential internalization of such experiences. Educational discrimination and addiction severity was, however, buffered by social support. One potential reason for this could be that educational discrimination items may be perceived more subjectively (unfairly receiving a bad grade), while other forms of discrimination may be more objective (being excluded by peers, being hassled by police or in stores), thus subjective discrimination could be more malleable to positive support from others. These findings give promise to reshaping these negative discriminatory experiences in the process of cessation treatment, and may even suggest those experiencing these forms of discrimination may be more resilient when given support.

Though these findings make a great contribution to better understanding the link between discrimination and negative health behaviors, as well as potential protective factors for these behaviors, there are some limitations to discuss. First, the overall sample size of 112, with 62 juvenile offenders being smokers, may have made our analyses underpowered. Though some potential effects may not have been detected, it speaks to the likely strength of the effects that were detected using this sample, and the great potential that targeting these effects in smoking cessation treatment may have. Additionally, this study was cross-sectional in nature, thus no causal or directional inferences may be made. It could be that discrimination leads to smoking or that smoking leads to discrimination in the first place. It is likely that these juvenile offenders do experience discrimination due to their smoking; however there are likely other factors that preceded smoking related discrimination, such as race and SES, increasing confidence in a discrimination to smoking direction, although this is beyond the data of the present study. It is further possible that juvenile offenders are separately at risk for both discrimination and smoking and the observed relationships were spurious; however, given previous literature citing this relationship (e.g. Wiehe, et al., 2010) and the variability in our discrimination measures, it is likely there is a true relationship between discrimination and cigarette use. Future research should elucidate the direction of the discrimination-smoking relationship.

Juveniles in the present study completed self-report measures, which can be susceptible to some social desirability bias; however given the present results in light of this potential issue, it seems likely that youth generally answered cooperatively. Additionally, the discrimination measure used in this study only referenced race for one item, thus it is unclear what type of discrimination may be most important in these found relationships (e.g. race, gender, offender status). Also, approximately 45% of the sample was non-white, thus if discrimination is racially driven, there may have been an underrepresentation of minority groups to detect some relationships. Given the promising findings, future studies should examine if some of these types of discrimination are more predictive of negative health behaviors, particularly smoking. Cigarette use in the present study was assessed using two face-valid items. Though not uncommon in the smoking literature (e.g. Hershberger, et al., 2016), it is possible that other measures of cigarette use could yield different results.

The present study draws important attention to the far reaching negative consequences of discrimination experienced by juvenile offenders. This study also opens the door for a wide area of research examining the potential mechanisms driving the relationships between cigarette use and discrimination (e.g. negative affect, other psychological disorders, personality factors), clinical research examining the efficacy of targeting discrimination in smoking cessation treatment for juvenile offenders, and research on the relationship between distinct types of discrimination and other negative behaviors among juvenile offenders, such as drug and alcohol use, aggression, violence, and gang involvement. Smoking cessation treatment providers, particularly those working with juvenile offenders, should target beliefs associated with discrimination, and preventative strategies, particularly psychoeducation, should be disseminated to individuals in close contact with such juveniles, such as police, probation officers, teachers, and other school officials.

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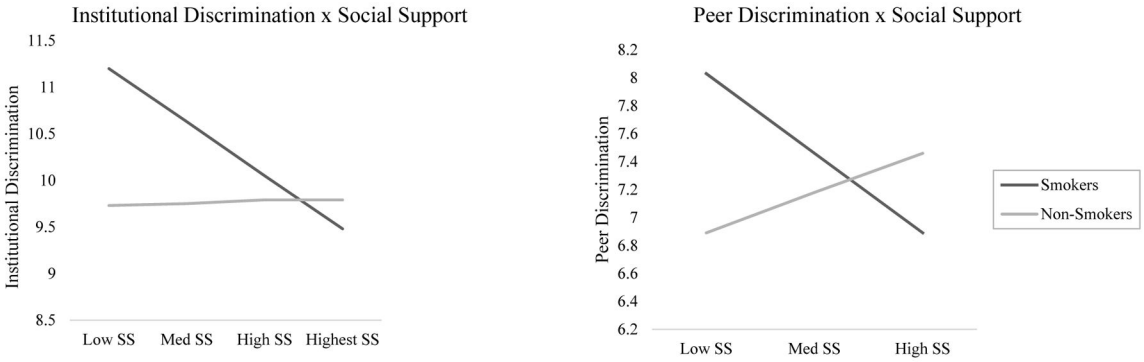

Figure 1.

Effect of social support (SS) on the relationship between institutional discrimination (left) and peer discrimination (right) on cigarette smoking status.

Table 1

The effect of social support on the relationship between domains of discrimination and smoking status.

	OR (95% CI Lower bound to Upper Bound)	*z*	*p*
Race (ref: Caucasian)			
African American	−1.67 (−2.65 to −0.68)	−3.32	.0009
American Indian/Native Alaskan	−1.78 (−5.48 to 1.92)	−0.94	.35
Hispanic	0.10 (−1.69 to 1.88)	0.11	.92
Other/Multiracial	−0.78 (−3.42 to 1.82)	−0.58	.56
Gender (ref: male)	−0.90 (−1.92 to 0.15)	−1.72	.08
Age	0.54 (0.19 to 0.88)	3.03	.002
Setting (ref: detention)	−0.29 (−1.24 to 0.66)	−0.59	.55
SES	−0.08 (−0.28 to 0.12)	−0.76	.45
Institutional Discrimination	1.49 (0.15 to 2.52)	2.82	.005
Social Support	0.99 (0.22 to 1.75)	2.53	.01
Institutional Discrimination X Social Support	−0.10 (−0.17 to −0.03)	−2.65	.008
Race (ref: Caucasian)			
African American	−1.53 (−2.46 to 0.59)	−3.19	.001
American Indian/Native Alaskan	−0.87 (−3.84 to 2.11)	−0.57	.57
Hispanic	0.53 (−1.30 to 5.36)	0.57	.57
Other/Multiracial	−0.84 (−3.40 to 1.72)	−0.64	.52
Gender (ref: male)	−0.81 (−1.80 to 0.18)	−1.61	.11
Age	0.51 (0.14 to 0.88)	2.68	.007
Setting (ref: detention)	−0.41 (−1.33 to 0.51)	−0.88	.38
SES	−0.05 (−0.24 to 0.14)	−0.48	.63
Education Discrimination	0.35 (−0.84 to 1.54)	0.57	.57
Social Support	0.11 (−0.51 to 0.73)	0.34	.74
Education Discrimination X Social Support	−0.02 (−0.11 to 0.07)	−0.45	.66
Race (ref: Caucasian)			
African American	1.69 (−2.66 to −0.71)	−3.38	.0007
American Indian/Native Alaskan	−0.71 (−3.59 to 2.16)	−0.49	.63
Hispanic	0.49 (−1.33 to 2.31)	0.53	.60
Other/Multiracial	−1.28 (−3.96 to 1.40)	−0.94	.35
Gender (ref: male)	−0.59 (−1.64 to 0.46)	−1.10	.27
Age	0.49 (0.10 to 0.87)	2.48	.01
Setting (ref: detention)	−0.55 (−1.50 to 0.39)	−1.15	.25
SES	−0.08 (−0.28 to 0.12)	−0.83	.41
Peer Discrimination	1.59 (0.34 to 3.84)	2.49	.01
Social Support	0.80 (0.14 to 1.47)	2.35	.02
Peer Discrimination X Social Support	−0.11 (−.20 to −0.02)	−2.47	0.01

Note. Cigarettes smoking status (Yes-1, No-0) was the outcome variable for each model. Significance was evaluated on a $p<.05$ level. Nagelkerke R^2: Institutional Discrimination=0.37, Educational Discrimination=.29, Peer Discrimination=0.35

Table 2

The effect of social support on the relationship between domains of discrimination and nicotine addiction severity.

	b (95% CI Lower bound to Upper Bound)	t	p	ΔR^2	F
Race					
African American	−0.59 (−1.37 to 0.20)	−1.5	.14		
American Indian/Native Alaskan	0.96 (−1.79 to 3.72)	0.7	.49		
Hispanic	−0.40 (−1.55 to 0.76)	−0.69	.50		
Other/Multiracial	0.37 (−2.34 to 3.07)	0.27	.79		
Gender	0.03 (−0.77 to 0.82	0.07	.95		
Age	0.22 (−0.05 to 0.50)	1.62	.11		
Setting	0.27 (−0.44 to 0.97)	0.76	.45		
SES	0.02 (−0.15 to 0.19)	0.25	.81		
Institutional Discrimination	0.39 (−0.30 to 1.07)	1.14	.27		
Social Support	0.07 (−0.46 to 0.60)	0.26	.79		
Institutional Discrimination X Social Support	−0.02 (−0.07 to 0.03)	−0.73	.47	0.007	0.54
Race					
African American	−0.43 (−1.21 to 0.34)	−1.11	.27		
American Indian/Native Alaskan	2.57 (0.06 to 5.08)	2.06	.05		
Hispanic	−0.24 (−1.31 to 0.83)	−0.45	.65		
Other/Multiracial	−0.77 (−3.38 to 1.84)	−0.59	.56		
Gender	0.37 (−0.40 to 1.15)	0.97	.34		
Age	0.35 (0.06 to 0.63)	247	.02		
Setting	0.14 (−0.53 to 0.81)	0.42	.68		
SES	0.14 (−0.03 to 0.32)	1.62	.11		
Education Discrimination	0.94 (−0.08 to 1.96)	1.85	.07		
Social Support	0.47 (−0.09 to 1.02)	1.69	.10		
Education Discrimination X Social Support	−0.09 (−0.17 to −0.01)	−2.26	.03	0.06	5.12
Race					
African American	−0.44 (−1.23 to 0.34)	−1.14	.26		
American Indian/Native Alaskan	2.27 (−0.31 to 4.84)	1.77	.08		

	b (95% CI Lower bound to Upper Bound)	t	p	ΔR^2	F
Hispanic	−0.21 (−1.37 to 0.94)	−0.37	.71		
Other/Multiracial	0.43 (−2.31 to 3.17)	0.32	.75		
Gender	0.15 (−0.66 to 0.96)	0.37	.72		
Age	0.23 (−0.05 to 0.51)	1.68	.10		
Setting	0.10 (−0.61 to 0.82)	0.29	.78		
SES	0.06 (−0.11 to 0.23)	0.66	.51		
Peer Discrimination	0.22 (0.56 to 1.00)	0.56	.58		
Social Support	−0.08 (−0.57 to 0.42)	−0.62	.75		
Peer Discrimination X Social Support	−0.004 (−0.06 to 0.05)	−0.13	.90	0.0002	0.02

Note. Nicotine addiction severity was the outcome variable for each model. Race: dummy coded with Caucasian as reference group. Gender: male=0, female=1; setting: detention=0, probation=1. Significance was evaluated on a $p<.05$ level