

Neighborhood Contexts and Marijuana Use Among Urban Dwelling Emerging Adult Men

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Abstract

Neighborhoods are key socio-environmental contexts for marijuana use during emerging adulthood. This study examined the relationships between neighborhood context, traditional masculine norms (status, toughness, and anti-femininity), and marijuana use among 119 majority African American emerging adult men in a small urban community. Poisson regression models were used to determine the associations between neighborhood problems, social cohesion, and marijuana use. Moderator effects were examined to determine if masculinities modified these associations. Neighborhood problems and social cohesion were positively associated with marijuana use. Men who had a lower endorsement of some traditional masculine norms had greater marijuana use compared to men with a higher endorsement of these norms. These findings have implications for intervention strategies and policies.

Keywords

neighborhood context, masculinity, marijuana use, emerging adults

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Marijuana is the most commonly used illicit drug in the United States (National Institute on Drug Abuse (NIDA), 2015). Its use is most widespread among emerging adults of ages 18–25 years (NIDA, 2015). While marijuana use is prevalent among emerging adults of all genders and races, Black and Latino emerging adults are more likely to experience negative health and social consequences (e.g., incarceration, interpersonal conflict, injury, dependence) from use compared to their White peers (Keyes et al., 2015). Similarly, emerging adult males experience accelerated use-to-dependence trajectories and greater health and social consequences of marijuana use when compared to their female counterparts (NIDA, 2016). The prevalence of marijuana use and the resulting negative consequences for male emerging adults, particularly Black and Latino males, makes the population at the intersection of these two groups important to public health research and interventions targeting substance use. Although previous research has primarily focused on individual characteristics that might explain racial disparities in substance use, more research has emerged exploring structural determinants of use. One potential determinant is neighborhood context (Hallfors, Iritani, Miller, & Bauer, 2007).

Neighborhoods and Health

Extant investigations suggest that neighborhood context influences individual health behaviors and outcomes. Two characteristics of neighborhood context, neighborhood problems and neighborhood social cohesion, are of particular importance to investigations of neighborhood context and substance use (Powell, Taggart, Richmond, Adams, & Brown, 2016; Stone, Becker, Huber, & Catalano, 2012). Neighborhood problems is a broad term used to describe the distressed physical and social features of a neighborhood (e.g., abandoned buildings, litter, crime, drug trades, loitering, and violence) (Ross &

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Mirowsky, 2001). Neighborhood problems are concomitant with health-promoting resources in an area, are a source of daily and chronic stress, and subsequently impede residents from achieving optimal health and social standing (Kogan, Cho, Brody, & Beach, 2017; Powell et al., 2016). Social cohesion, defined as the presence of strong social bonds and the lack of social conflict, influences health by promoting the adoption of health-promoting behaviors, increasing access to health and social services, and through psychosocial processes that are associated with positive well-being and optimal health (Kawachi & Berkman, 2000; Uphoff, Pickett, Cabieses, Small, & Wright, 2013). Neighborhoods with lower social cohesion are associated with negative health impacts including more violent crime, substance use, and mortality (Kawachi & Berkman, 2000; Reboussin et al., 2015; Sampson, Raudenbush, & Earls, 1997). Disadvantaged neighborhood contexts (i.e., neighborhoods characterized by neighborhood problems and lower social cohesion) are consistently linked to health vulnerability and health-restrictive behaviors (Clarke et al., 2014; Kogan et al., 2017; Uphoff et al., 2013). Prior studies report that minority emerging adults often reside in disadvantaged neighborhoods making them more susceptible to engaging in problematic substance use (Kogan et al., 2017; Powell et al., 2016; Reboussin et al., 2015).

Neighborhoods and Marijuana Use

Among emerging adults, disadvantaged neighborhood contexts are linked to increased marijuana use and escalation into problematic marijuana use (i.e., using marijuana more than once a day) (Goldstick et al., 2016; Green et al., 2016; Reboussin, Milam, Green, Ialongo, & Furr-Holden, 2016; Schneiderman, Kennedy, Negriff, Jones, & Trickett, 2016). For minority emerging adult males, neighborhood problems increase their vulnerability to engaging in marijuana use (Furr-Holden et al., 2015; Green et al., 2016). Not all emerging adult males in disadvantaged neighborhood contexts engage in marijuana use, which suggests that other factors exert an important influence on their use. Identifying these additional factors may facilitate a better understanding of the myriad ways neighborhood context works individually and in concert with other factors to impact health outcomes.

Marijuana Use and Masculinity

Manhood/masculinity is one factor which may interact with neighborhood conditions to influence marijuana use. Males are more likely to engage in marijuana use and suffer negative consequences from this behavior than females (NIDA, 2016; Substance Abuse and Mental Health Services Administration, 2013; Mukku, Benson,

Alam, Richie, & Bailey, 2012; Reboussin et al., 2016; Schneiderman et al., 2016). This gendered phenomenon may reflect men's attempts to demonstrate their manhood through the performance of masculinity. Masculinity refers to a man's internalization and endorsement of socially constructed norms and beliefs about what constitutes ideal attributes, characteristics, and behaviors of their sex—including health behaviors (Levant & Richmond, 2008). Definitions of and social norms around masculinity vary by race, class, ethnicity, sexual orientation, life stage, and historical era. Common use of the term "masculinities" by researchers conveys that masculinity definitions and beliefs are not universal to all men (Levant, 1996; Rogers, Sperry, & Levant, 2015). Nevertheless, while masculinities may vary by sociodemographic group, they are still informed and influenced by hegemonic and traditional masculinity norms and ideologies which promote status, toughness, and anti-femininity norms (Bowman, 1989; Levant, 1996).

Masculinities have been reported to both impede and facilitate health-promoting behaviors among men (Mahalik, Lombardi, Sims, Coley, & Lynch, 2015). While it is clear that marijuana use has health and social consequences, especially for minority emerging adult men, the role masculinities play in determining marijuana use trajectories for this vulnerable population remains unclear. Few studies have examined the impact of masculinities on marijuana use among males, in general, or minority emerging adult males, specifically (Gordon et al., 2013; Guxensa, Nebot, Ariza, & Ochoa, 2007; Mahalik et al., 2015). The studies that have examined this relationship reported an association between traditional masculinity ideologies (i.e., toughness) and marijuana use (Gordon et al., 2013; Guxensa et al., 2007; Mahalik et al., 2015). Although neighborhood context can influence the development of masculinities and subsequent health outcomes, none of the aforementioned studies examined the interaction between neighborhoods and masculinities and their impact on marijuana use (Harding, 2009; Lei, Simons, Simons, & Edmond, 2014). The independent associations between masculinities, neighborhood context, and marijuana use reinforce the importance of examining the interactive effects of these factors when seeking to understand and intervene on the drivers of marijuana use among minority emerging adult males.

The Current Study

Emerging adulthood is a unique period when men navigate and experience neighborhoods more autonomously, and continue to construct their masculinity. Although the associations between neighborhood context and marijuana use is established for adolescents (Furr-Holden et al., 2011; Tucker, Pollard, De La Haye, Kennedy, &

Green, 2013), little is known about these relationships among minority emerging adult males, or how masculinities affect these relationships. This paper will address an important gap in the literature, which will provide support for the development of prevention strategies that focus on socio-contextual risk and protective factors. Given that status, toughness, and anti-femininity are among the most widely used and theorized norms connecting (hegemonic) masculinities to health (Thompson Jr & Pleck, 1986), the current study hypotheses are: (a) neighborhood context will be associated with marijuana use—neighborhood problems will be positively associated with marijuana use while neighborhood social cohesion will be negatively associated with marijuana use; (b) masculinity norms of status, toughness, and anti-femininity will moderate the association between neighborhood context and marijuana use, such that the association between neighborhood problems and marijuana use will be stronger for those men with higher endorsement of these norms when compared to those men with lower endorsement of these norms; and (c) masculinity norms of status, toughness, and anti-femininity will moderate the association between neighborhood context and marijuana use, such that the relationship between neighborhood social cohesion and marijuana use will be stronger for those men with lower endorsement of these norms when compared to those men with higher endorsement of these norms.

Methods

Study Sample and Procedures

Data for this study were from emerging adult males who participated in the Cell Phone Research to Enhance Wellness (CREW) study, a study on social networks, cellular phones, and health behavior (Gibson, Perley, Bailey, Barbour, & Kershaw, 2015). Participants were recruited to the study using time–location and snowball sampling. Epidemiologic assessments were conducted using U.S. Census and Connecticut Department of Health data to identify high risk (e.g., high sexually transmitted infection (STI) rates, poverty, and violent crime) neighborhoods. Research assistants then conducted ethnographic mapping of these neighborhoods to detail the activities of emerging adult men in the area. Trained research assistants approached men in these locations (e.g., barbershops, street corners, basketball courts, and community centers) and told them about the study. Once a man agreed to participate, snowball sampling was used to recruit additional participants from the participants' social circle. Participants received \$10 for every participant they referred to the study. Inclusion criteria for all participants included: male gender, age 18–25 years, English-speaking, heterosexual, and having a

working cellular phone. The final sample consisted of 119 emerging adult men from New Haven, CT.

Trained research staff obtained written informed consent, and participants completed study measures using audio computer-assisted self-interviews (ACASI). Participants received \$35 for their participation. All study procedures were approved by the Yale University Human Investigation Committee.

Measures

Demographic characteristics. Standard questions were used to measure participant age, race, household income (defined as total income of all members living in the same household as the participant), and education.

Neighborhood context. The survey used a 16-item adapted version of the Perceived Neighborhood Problems Scale (Ellaway, Macintyre, & Kearns, 2001), which assessed participants' response to how much various neighborhood problems were an issue in their neighborhood, on a 3-point scale ranging from *not a problem* to *serious problem*. Then, participants responded to statements about their level of comfort and attachment in their neighborhood, and indicated their agreement on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. Items from this scale loaded onto two subscales: neighborhood problems and social cohesion. Neighborhood problems had nine items (e.g., my neighborhood is noisy), while social cohesion had five items (e.g., I can trust most people in my neighborhood). Mean scores for each subscale were calculated and higher scores indicated more neighborhood problems and social cohesion. Results indicated good internal consistency for neighborhood problems ($\alpha = .92$) and social cohesion ($\alpha = .76$).

Masculine ideology. The Male Role Norms Scale (MRNS) was used to measure masculinity (Thompson Jr & Pleck, 1986). This scale measures three masculinity norms: status, toughness, and anti-femininity. Masculinity norm status was assessed with 11 items (e.g., the best way for a young man to get the respect of other people is to get a job, take it seriously, and do it well). Masculinity norm toughness was assessed with eight items (e.g., nobody respects a man very much who frequently talks about his worries, fears, and problems). Masculinity norm anti-femininity was assessed with five items (e.g., it is a bit embarrassing for a man to have a job that is usually filled by a woman). Participants responded using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Mean scores were calculated for each subscale and higher scores indicated greater endorsement of the norms status, toughness, and anti-femininity. Results indicated good internal consistency for masculinity norm

status ($\alpha = .86$), toughness ($\alpha = .71$), and anti-femininity ($\alpha = .67$).

Marijuana use. Participants reported the number of days they used marijuana in the past 30 days.

Data Analysis

Descriptive statistics were conducted for all study variables. Poisson regression models were generated to regress the count outcome of number of days of marijuana use in the past 30 days on neighborhood problems and social cohesion. Tests for moderation were conducted to determine whether masculinity subscales moderated statistically significant relationships. Simple effects were conducted to interpret significant interactions. Race, age, income, and education were controlled for in all regression models. Analyses were conducted using SAS v 9.4.

Results

The sample consisted of heterosexual emerging adult males residing in New Haven, CT. Most of the participants identified as African American (79.0%, $n = 94$) followed by Latino (16.8%, $n = 20$) (see Table 1). The average age was 20 years ($SD = 1.97$), the average household income was \$20,965 ($SD = 24,484$), and the average level of education reached was Grade 12; 75% ($n = 90$) reported using marijuana at least once in the past 30 days.

Results from the Poisson regression models are reported in Tables 2 (number of days of marijuana use in the past 30 days regressed on neighborhood problems, controlling for race, age, income, and education) and Table 3 (number of days of marijuana use in the past 30 days regressed on social cohesion, controlling for race, age, income, and education). The number of days of marijuana use increases with increasing neighborhood problems ($\beta = 0.0074, p < .0001$) (see Table 2) and social cohesion ($\beta = 0.0252, p = .0027$) (see Table 3). Masculinity norms were assessed to determine if they modified these associations, while controlling for race, age, income, and education. Results indicated significant interactions between neighborhood problems, social cohesion, and masculinity norms on the number of days of marijuana use in the past 30 days (see Table 4). Specifically, the positive association between neighborhood problems and days of marijuana use was stronger for men with lower endorsement of status, compared to men at the mean and higher endorsement of status ($\beta = -0.1822, p < .0001$). Additionally, more neighborhood problems were related to more days of marijuana use for men who have a lower endorsement of toughness ($\beta = -0.1075, p = .0004$), compared to men at the mean and higher endorsement of toughness. More neighborhood problems were related to

Table 1. Participant Demographics and Characteristics ($n = 119$).

Characteristic	Mean (SD)	N (%)
<i>Race</i>		
African American		94 (79.0)
Latino/Hispanic		20 (16.8)
Mixed race or White		5 (4.2)
Age (years)	20.00 (1.97)	
Income	\$20,965 (\$24,484)	
Education (years)	12.00 (1.68)	
Marijuana use (once in the past 30 days)		90 (75%)

Table 2. Regression Analyses of Neighborhood Problems Predicting Days of Marijuana Use ($n = 119$).

	β	SE β	p value
<i>Demographic variables</i>			
Race	-0.175	0.086	.0418
Age	-0.0711	0.0189	.0002
Income	-0.0231	0.0127	.0679
Education	-0.1038	0.0333	.0018
<i>Neighborhood context</i>			
Neighborhood problems	0.0074	0.0054	< .0001

Table 3. Regression Analyses of Social Cohesion Predicting Days of Marijuana Use ($n = 119$).

	β	SE β	p value
<i>Demographic variables</i>			
Race	-0.2076	0.0753	.0058
Age	-0.0637	0.0187	.0006
Income	-0.0260	0.0128	.0419
Education	-0.1155	0.0334	.0005
<i>Neighborhood context</i>			
Social cohesion	0.0252	0.0084	.0027

more days of marijuana use for men who have a lower endorsement of anti-femininity ($\beta = 0.0586, p = .0164$), compared to men with mean and higher endorsement of anti-femininity.

Turning to whether masculine norms modified the association between social cohesion and marijuana use, there were significant interactions between social cohesion and masculinity norms on the number of days of marijuana use in the past 30 days. The positive association between social cohesion and days of marijuana use was stronger among men who have a lower endorsement of status ($\beta = -0.0923, p = .0109$), compared to those with mean and higher endorsement of status. Finally, greater social cohesion was related to more days of marijuana use

Table 4. Interaction Effects Neighborhood Problems, Social Cohesion, and Masculine Norms on Days of Marijuana Use ($n = 119$).

	β	SE β	p value
Neighborhood problems X status	-0.1822	0.0004	< .0001
Neighborhood problems X toughness	-0.1075	0.0306	.0004
Neighborhood problems X anti-femininity	0.0586	0.0244	.0164
Social cohesion X status	-0.0923	0.0363	.0109
Social cohesion X toughness	0.0443	0.0401	.2693
Social cohesion X anti-femininity	0.1912	0.0303	< .0001

Note. "X" denotes interaction between two variables.

for men who have a higher endorsement of anti-femininity ($\beta = 0.1912$, $p < .0001$), compared to men with mean and lower endorsement of anti-femininity. There was no significant interaction between social cohesion and masculinity norm toughness ($\beta = 0.0443$, $p = .2693$).

Discussion

This study sought to examine the associations between neighborhood context and marijuana use, and examine whether masculinity status, toughness, and anti-femininity norms moderated these associations. Consistent with previous studies (Goldstick et al., 2016; Green et al., 2016; Reboussin et al., 2016; Schneiderman et al., 2016) on neighborhood context and substance use, there was a positive association between neighborhood problems and marijuana use. This positive association supports previous assertions that disadvantaged neighborhood context can increase minority emerging adult males' health vulnerability and risk of marijuana use (Clarke et al., 2014; Furr-Holden et al., 2015; Green et al., 2016; Kogan et al., 2017; Powell et al., 2016; Stone et al., 2012; Uphoff et al., 2013). One possible explanation for this relationship is that minority emerging adult males may engage in marijuana use to mitigate their experiences of psychological distress elicited by residing in disadvantaged neighborhoods (Parker, Benjamin, Archibald, & Thorpe, 2016; Preston, 2006). The chronic stress of residing in neighborhoods wrought with physical and social problems can lead to depression and anxiety and incite minority emerging adult males to use marijuana as an externalizing coping mechanism (Hurd, Stoddard, & Zimmerman, 2012; Reboussin et al., 2015).

Interestingly, in addition to a correlation with neighborhood problems, social cohesion was positively associated with marijuana use. Prior research on social cohesion and health suggests that it has an inhibiting effect on

substance use (Reboussin et al., 2015; Stock & Ellaway, 2013). As such, the current finding that more social cohesion is related to more days of marijuana use is surprising, and raises questions about how social ties to others within a disadvantaged neighborhood may increase marijuana use. One possible explanation for this association is more permissive social norms around marijuana use. That is, while most research supports that social cohesion protects against substance use in communities with social norms that prohibit substance use (Fagan, Wright, & Pinchevsky, 2014; Musick, Seltzer, & Schwartz, 2008), others have reported that this inhibitory affect is lessened or nonexistent in neighborhoods with more permissive norms (Ahern, Galea, Hubbard, & Syme, 2009; Portes, 1998). Moreover, social cohesion among substance users may in fact be stronger than among nonusers, which may contribute to the trade and use of substances like marijuana (Duff, 2010; Lee, 2004). Nevertheless, more research is needed to better understand the mechanisms connecting social cohesion, generally hypothesized to promote the adoption of health protective behaviors, to increased marijuana use among emerging adult males.

Turning to whether masculinities moderate the observed associations, lower endorsement of masculine status, toughness, and anti-femininity norms had an enhancing effect on the association between neighborhood problems and days of marijuana use. This association is in contrast to other studies that report that men who endorse more traditional masculine norms are more likely to engage in risky behaviors (Courtenay, 2000; Mahalik, Lagan, & Morrison, 2006). Perhaps, greater endorsement of traditional masculinity norms protect against marijuana use in disadvantaged neighborhoods because these norms are consistent with self-control and regulation. Previous studies examining masculinity and manhood among men of color identify responsibility and accountability to one's self, family, and community as key characteristics in these men's definition of masculinity (Hammond & Mattis, 2005; Hurtado & Sinha, 2016). Young men in disadvantaged neighborhoods who conform to masculine norms around status, toughness, and anti-femininity may also subscribe to masculinities promoting responsibility and accountability (Flores & Hondagneu-Sotelo, 2013; Unger et al., 2002). These men may have more motivation not to use marijuana to demonstrate their masculinities, as compared to those who do not endorse these norms.

While the association between social cohesion and marijuana use was surprising, the effects of masculine norms status and anti-femininity on this association are in line with previous research. Status norms are often more closely tied to achieving success in work, productivity, and contributions to family and society (Hammond & Mattis, 2005; Hurtado & Sinha, 2016). As such, men who

endorse these norms may place a greater emphasis on having steady employment, and being regarded as a productive member of their community, which contrasts with marijuana use. Associations for anti-femininity norms reflect that more socially connected men may view marijuana use as a way to enact their masculinity and establish a stable identity (Arnett, 2005; Mahalik et al., 2015; Sanders, 2011). On the other hand, it may be that the resources developed through social cohesion may be used to produce more social disorder or acceptance of marijuana use (Portes, 1998). That is, men who endorse more anti-femininity norms may use marijuana to appear more masculine—increasing the salience of more disordered social connections, such as those centered on substance use.

Limitations

Several limitations should be noted when interpreting findings. The cross-sectional nature of the data currently limits conclusions regarding causal relationships. Findings from this study may not be generalizable as this sample was drawn from a small, majority racial/ethnic minority, urban community with high rates of substance use and abuse. Lastly, there are other factors associated with marijuana use that were not assessed in these analyses (e.g., joblessness and anxiety). Such factors are important to the study of marijuana use to the extent that they may be confounders.

Implications

Despite these limitations, this study provides significant contributions to the literature on neighborhood context, masculinities, and marijuana use among emerging adult males. This study demonstrates the importance of conceptualizing neighborhood context, vis-à-vis neighborhood problems and social cohesion, as a structural determinant of marijuana use. The interactions between neighborhood context and masculinities provide valuable insight into the factors driving poor marijuana-related health and social outcomes among this population. Given the positive association between social cohesion and marijuana use, future research should work to clarify the role of social cohesion on emerging adult men's substance use trajectories. Prevention strategies aimed at curbing marijuana use among emerging adult men may want to focus on minimizing neighborhood problems and disadvantage in an effort to reduce their negative impact on marijuana use. The negative health and social consequences of marijuana use for this group demands research and interventions which identify and intercede on individual and structural drivers of the behavior such as the endorsement of certain masculinity norms or specific types of neighborhood

disadvantage. The information provided from this study more clearly explicates the individual and collective influences of masculinities and neighborhood contexts on marijuana use among emerging adult males of color, and provides a roadmap for future research and intervention activities designed to minimize the negative impact of marijuana use on the health and social well-being of this vulnerable population of substance users.

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