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Neighborhood Environment and Urban African American Marijuana Use during High School

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ABSTRACT *African American male high school students have the highest rates of marijuana use among all racial, ethnic, and gender groups, yet there is limited research examining contextual factors salient to the African American community. The purpose of this study was to examine how neighborhood environment measured in 8th grade is related to longitudinal transitions in marijuana use during high school (9th to 12th grades) in a sample of urban African Americans. Four hundred and fifty-two African American children were interviewed annually beginning in 1st grade as part of a longitudinal field study in Baltimore city. Latent transition analysis indicated early in high school posed the greatest risk for initiation and progression of marijuana use. Community violence exposure was associated with an increased likelihood of transitioning from no marijuana use to infrequent use (adjusted odds ratios (AOR)=2.40, $p<0.001$). Higher perceived neighborhood disorder (AOR=3.20, $p=0.004$), drug activity and sales in the neighborhood (AOR=2.28, $p=0.028$), and community violence exposure (AOR=4.54, $p<0.001$) were associated with an increased risk of transitioning from no use to frequent/problematic marijuana use. There was evidence for partial mediation of these associations by perceptions of harm and depressed mood. Drug activity and sales was associated with progression from infrequent to frequent and problematic use (AOR=2.87, $p=0.029$). African American youth living in urban environments with exposure to drug activity, violence, and neighborhood disorder are at increased risk for both initiation and progression to more frequent and problematic marijuana use during high school. These findings highlight the need to develop interventions for African American youth that are mindful of the impact of the additional stressors of living in a high-risk urban environment during a critical developmental transition period. Reducing exposure to drug activity and violence in high-risk urban neighborhoods may be the first step to potentially halt increasing rates of marijuana use among African Americans.*

KEYWORDS *African American, Marijuana, Neighborhood environment*

INTRODUCTION

While rates of alcohol and cigarette use are significantly lower in African American compared to White high school students, African American male high school students now have the highest rate of current marijuana use compared to all other

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racial, ethnic, and gender groups.[1,2] Data from the most recent National Household Survey on Drug Use and Health show that rates of marijuana use are higher for African Americans aged 12 and older than Whites.[3] Although rates of marijuana use have historically been higher in Whites, increases in African American marijuana use and abuse in the 1990s, particularly among younger African Americans, narrowed this difference.[4] The health and social consequences from marijuana use are a serious concern for developing adolescents and in particular urban-dwelling African Americans who often face other vulnerabilities that hinder their ability to successfully transition to adulthood. As reported in a recent review of the literature, regular use of marijuana in adolescence has been shown to be associated with increased rates of addiction, cognitive impairments (e.g., lower IQ), poor educational outcomes (e.g., school dropout), altered brain development, and diminished achievement.[5] In addition, acute effects such as motor vehicle crashes and engaging in risky sexual behaviors are especially salient for this age group.[5] Despite this trend for higher rates of use among younger African Americans, there is limited research that has examined within-group differences among at-risk African Americans. Those that have are focused on traditional, often individual-level, predictors of drug use found to be important in White populations even though evidence suggests these factors are not necessarily generalizable to African American populations.[6,7] In contrast, neighborhood and contextual factors unique to the African American community that might be associated with drug use have received little attention.

African American youth disproportionately reside in urban neighborhoods with high levels of neighborhood disorder where the ability to monitor and maintain informal social controls over youth activities is compromised.[8–10] This results in neighborhoods wherein a wide array of illegal behavior, including drug use, may be reinforced.[11,12] Neighborhood disorganization can also lead to a lack of trust and solidarity among residents, making it unlikely that neighbors will intervene on behalf of the community.[13] In some instances where neighborhood disorder becomes severe, "the law of the streets" may prevail over the will of the residents.[14] Recent research supports an association between urban neighborhood disorder and drug use. In a community sample of urban African Americans in Baltimore city, perceptions of neighborhood disorder in 7th grade were associated with 9th grade drug use (defined as alcohol, tobacco, or marijuana use).[15] In this same sample but not restricted to African Americans, youth living in neighborhoods with an increasing presence of abandoned buildings over time were more likely to use marijuana 2 years after high school compared to youth living in "always-good" neighborhoods.[16] More recently, in a small study of young adult African American men in Chicago, those reporting high levels of neighborhood disorder were more likely to report a history of marijuana use.[17]

African Americans also rate their communities as more threatening than adolescents of other racial groups.[17] Exposure to crime and violence in one's neighborhood has been shown to be associated with increased levels of stress.[18,19] This chronic stress can result in feelings of hopelessness and helplessness which can lead to adverse psychological outcomes such as depressed mood. According to the stress reduction hypothesis, drug use may be a means of coping with or alleviating the depressed mood that accompanies the stress of living in a violent neighborhood.[20–22] As seen in a cohort of urban African Americans residing in Chicago, violent victimization in young adulthood is associated with increased alcohol, marijuana, and cocaine use.[23] In the Baltimore city sample, contextual stress in 8th grade, which included exposure to community violence, was shown to be associated with drug use in 10th grade.[24]

Research suggests that illegal drugs are more prevalent in African American neighborhoods, and African American youth are more likely to witness drug sales and drug activity in their neighborhoods.[7,25,26] In one study, youth living in the most disadvantaged neighborhoods were more likely to be offered cocaine than youth living in relatively advantaged neighborhoods.[27] Social learning theory suggests that youth can learn about drugs and substance use by seeing substance use and drug selling in their immediate social environments.[28] In addition to providing more opportunities for experimentation, increased exposure to drug use may weaken beliefs about the potential harm of drug use and strengthen positive expectancies of use.

The purpose of the current study is to expand upon earlier findings using the urban sample of African Americans in Baltimore city but focusing on longitudinal transitions in marijuana use specifically and across the entire high school career (9th through 12th grade). We use latent transition analysis (LTA) to examine the influence of perceptions of neighborhood environment as reported in 8th grade on transitions in marijuana use from 9th through 12th grade. The transition concept, which was introduced in the 1990s, depicts drug involvement as a sequence of transitions from earliest opportunities to try a drug to first use and its consequences, followed by drug dependence with the potential for different influences of at each stage.[29] LTA is an empirically based procedure that allows the data to guide our understanding of how marijuana use progresses in African Americans as well as accounts for the measurement error that is often found in self-reported substance use data.[30,31] The objectives of this study are to: (1) identify stages of marijuana involvement from 9th through 12th grade in a sample of primarily low-income, urban-dwelling African Americans; (2) examine the probability of transitions between stages; (3) investigate the influence of perceptions of neighborhood environment in 8th grade on transitions in marijuana involvement during high school; and (4) examine risk perceptions about marijuana use and depressed mood as possible mediators of these relationships.

METHODS

Participants and Procedures

Data were drawn from a longitudinal, school-based prevention trial conducted by the Baltimore Prevention Research Center at Johns Hopkins University.[32] In 1993, 798 1st graders were recruited from 27 classrooms in 9 Baltimore city public elementary schools. Written consent was obtained from parents and verbal assent from youth in accord with the requirements of the Johns Hopkins Bloomberg School of Public Health Committee on Human Research. Interventions targeting early learning and aggressive and disruptive behavior were provided over the 1st grade year, following a pretest assessment in the early fall. Students and their families were interviewed annually, although no assessments were conducted in 4th and 5th grades. Beginning in 6th grade, parental consent was obtained to participate in middle and high school assessments in which youth would be asked about their experiences with drugs. Of the original 798 adolescents recruited in 1st grade, 678 were African American (85 %). Approximately 67 % of the African American students (n=452) completed face-to-face interviews in 8th grade that included questions about neighborhood environment and questions about marijuana use in 9th and 10th grades to examine at least the first transition in marijuana

involvement. These 452 youth comprised the sample of interest for studying transitions in high school marijuana use.

As seen in Table 1, approximately 54 % of the sample is male and 62 % received free or reduced price lunch. Chi-squared and *t* tests revealed no differences between the 452 African American youth participating in the study and the 226 African American youth not participating in this study in terms of gender, percentage receiving free and reduced lunch in 1st grade, and 1st grade behavioral measures of self-reported anxious and depressive symptoms or teacher ratings of concentration problems and aggressive/disruptive or oppositional behaviors. The sample of 452 African American youth with data available in 9th and 10th grade decreased to 403 youth in 11th grade and 390 youth in 12th grade. Chi-squared tests revealed no differences in terms of measures of marijuana use in 9th and 10th grades between the 390 youth with complete data and the 62 youth with missing assessments in 11th and 12th grades.

Measures

Marijuana Involvement. For characterizing marijuana involvement, we considered responses to five questions about extent of marijuana use and problems associated with marijuana use gathered in the spring of 9th, 10th, 11th, and 12th grades:

1. Have you used marijuana since this time last year?
2. Did you use marijuana in the last month?

TABLE 1 Sample characteristics in 8th grade (*N*=452)

Characteristic	Mean/median (SD) or *N* (%)
Sex	
Male	246 (54.4)
Female	206 (45.6)
Free/reduced lunch	
Yes	278 (61.5)
No	174 (38.5)
Intervention group	
Yes	308 (68.1)
No	144 (31.9)
Neighborhood disorder	17.4/16.0 (6.4)
Drug activity and sales	
Not at all true	226 (50.0)
A little true	75 (16.6)
Sort of true	42 (9.3)
Very true	109 (24.1)
Community violence exposure	
Yes	265 (58.6)
No	187 (41.4)
Perceived marijuana use risk	
No risk	15 (3.3)
Slight risk	40 (8.8)
Moderate risk	105 (23.2)
Great risk	292 (64.6)
Depressed mood	0.6/0.5 (0.4)

3. How many times have you used marijuana in the past month?
4. Have you ever used marijuana every day or almost every day for two or more weeks?
5. During the past 12 months, have you gotten into trouble at home, at school, or with the police because you used marijuana?

For analysis, we dichotomized the third question as three or more times in the past month versus two or fewer to represent someone who has used marijuana more than just a couple of times in the past month. The last question combined responses to three separate yes/no questions about getting into trouble at home, school, or with police into a single indicator of social problems. A positive response to any of the three questions was coded as a 1 and 0 otherwise. The rest of the questions had binary responses (1=yes, 0=no).

Perceptions of Neighborhood Disorder. Neighborhood disorder was measured using 10 items from the Neighborhood Environment Scale (NES).[33] The NES contains true-false items that assess neighborhood disorder, including questions about neighborhood safety, violent crime, and drug use and sales (e.g., "I feel safe when I walk around my neighborhood at night by myself"). Youth rate each item on a 4-point Likert scale (1= not at all true; 4=very true). Cronbach alpha for this scale in 8th grade is 0.85. We used a median split to divide the total scale score into a binary item to indicate those youth living in the most disordered neighborhoods (i.e., the top 50 % for neighborhood disorder) versus those youth living in less disordered neighborhoods.

Exposure to Drug Activity and Sales. We also examined the individual NES scale item, "I have seen people using or selling drugs in my neighborhood," which we hypothesized may most directly influence transitions in marijuana use. This item was measured on a 4-point Likert scale (1=not all true, 2=a little true, 3=sort of true, 4= very true). We created a binary item where 1=sort of true or very true and 0=a little true or not at all true.

Community Violence Exposure. Exposure to violence in the community was measured using the Children's Report of Violence Exposure (CREV).[34] This is a self-report measure of exposure to violence that is directly witnessed, as well as victimization. The events include being beaten up, robbed or mugged, and stabbed or shot; witnessing someone else experience one of these events; or witnessing a murder in the community. Youth who experienced any exposure to violence were compared to all others using a binary indicator. The CREV has proven to be highly reliable in urban African American youth and to be related to psychological well-being.[34]

Perceptions of Risk. The measure of perceived risk associated with marijuana use comes from the Monitoring the Future study.[2] The question used was "How much do people harm themselves physically or in other ways when they use marijuana occasionally?" Response categories were 1=no risk, 2=slight risk, 3=moderate risk, and 4=great risk. We compared those who perceived there was great risk when using marijuana occasionally to those that thought there was no risk to a moderate risk using a binary indicator.

Depressed Mood. The depression subscale of the Baltimore How I Feel (BHIF) scale was used to measure depressed mood. The BHIF is a youth self-report scale of

depressive and anxious symptoms over the last 2 weeks measured on a 4-point frequency scale.[32] The depressed mood subscale consists of 19 items. The Cronbach alpha in 8th grade for the depressed mood subscale is 0.85. We used the mean item score for analysis.

Demographic Information. The school district provided information on the students' sex and ethnicity. School records indicating each student's free and reduced cost lunch status were collapsed into a dichotomous variable of free or reduced cost lunch versus self-paid lunch as an individual indicator of student socioeconomic status. Intervention status was coded as 1 for youth who were in a 1st grade intervention classroom and 0 otherwise.

Data Analysis Plan

First, we fit a longitudinal latent class model to examine the structure underlying the five behaviors comprising the marijuana use profile in 9th to 12th grades estimated using generalized estimating equations.[34] While in principle it is possible to allow the item probabilities, and hence class structure, to vary over time for the 9th to 12th grade marijuana binary indicators, this implies that the definition of marijuana involvement is changing, which would substantially complicate the interpretation of a longitudinal model. Therefore, we constrained the item probabilities to be constant over time, i.e., the probability of reporting a behavior within a latent class was the same in each grade. This is analogous to constraining the factor loadings to be equal over time in a longitudinal factor analysis model (sometimes referred to as factor invariance). The latent class prevalences, however, were allowed to vary over time, i.e., the proportion of youth in each class (or in each stage) could change over time. We started with the most parsimonious one-stage model ("all marijuana use the same") with progression to a less parsimonious model with three stages of marijuana use. Because models with different numbers of stages are not nested, this precludes the use of a difference likelihood ratio test. Thus, we must rely on measures of fit such as Akaike's information criterion (AIC), which is a global fit index that combines goodness of fit and parsimony. In comparing different sets of models with the same set of data, models with lower values are preferred. We use a modified version of the AIC for models estimated using the generalized estimating equations approach in which a likelihood is not available.[35,36] For latent class models, there are considerations other than global goodness-of-fit indices. In particular, an examination of the validity of the local independence assumption, which is the hallmark of LCA, is critical. We perform a log odds ratio check that involves calculating the log odds ratio in both the observed and expected two-way tables for pairs of behaviors.[37] The observed data log odds ratio is then expressed as a z-score relative to the expected data log odds ratio. The z-value is then used as a guide to detect items that are locally dependent. A threshold of ± 1.5 was conservatively chosen as suggestive of local dependence.

Next, we estimated the probability of transitioning between the latent stages of marijuana involvement from 9th through 12th grade and the influence of neighborhood environment on transition rates using latent transition analysis (LTA).[35] LTA is an extension of latent class analysis to the longitudinal framework which expresses change over time in terms of transition probabilities and models the impact of covariates on transitions using a multinomial logistic regression formulation. It has been used extensively to estimate stage-sequential models of

drug use over time.[38–41] We controlled for student-level covariates of sex and free or reduced cost lunch status, as well as intervention status in the LTA model. Mediation by perceived harm and depressed mood was assessed by including, separately, each variable in a LTA model with measures of neighborhood environment and potential confounders between the relationship of transitions in marijuana use and neighborhood environment. If the effect of neighborhood environment is greatly reduced, or non-significant, after inclusion of the potential mediator in the LTA model and there is a significant relationship between the mediator and both neighborhood environment and transitions in marijuana use, then we consider there to be evidence for mediation of the effect.

RESULTS

The prevalence of the individual marijuana use behaviors is presented in Table 2. Although the AIC suggested a best fitting model based on two stages of marijuana use for the five behaviors (AIC1 = 103,554, AIC2 = 94,546, AIC3 = 108,123), *z*-values exceeding the threshold under the two-stage model provided evidence for violation of the local independence assumption. The addition of a third stage removed all local dependencies. To probe further whether introduction of a third stage yielded a model that was clinically meaningful in addition to its ability to improve the local independence assumption over the two class model, we examined the resultant latent structure to evaluate its interpretability and clinical meaningfulness and determined this to be the most appropriate model. As shown in Fig. 1, the most prevalent stage is a class with no marijuana use. We refer to this as the "no use" stage. The estimated prevalence of this stage was 89 % in 9th grade, 76 % in 10th grade, 75 % in 11th grade, and 75 % in 12th grade. The next most prevalent stage is one in which almost everyone has used marijuana in the past year but the probability of using marijuana in the past month is only 30 % and experiencing social problems is 20 %. We refer to this as the "infrequent use" stage; the prevalence was 7 % in 9th grade, 17 % in 10th grade, 14 % in 11th grade, and 18 % in 12th grade. The third stage is a class of youth who are current marijuana users that have used more than a few times in the past month with more than 50 % having a period where they used marijuana every day for 2 weeks and experiencing social problems from use. We refer to this as the "frequent use and problems" stage. The prevalence of this stage was 4 % in 9th grade, 7 % in 10th grade, 11 % in 11th grade, and 7 % in 12th grade.

TABLE 2 Prevalence (%) of marijuana use behaviors from 9th through 12th grades

	9th grade	10th grade	11th grade	12th grade
Behavior	*N* = 452	*N* = 452	*N* = 403	*N* = 390
Past year use	10.6	23.4	24.8	25.1
Past month use	5.7	11.7	14.6	12.6
Used three or more times in the past month	3.3	6.9	10.7	7.4
Ever used almost every day for two or more weeks	3.1	7.1	7.4	7.2
Gotten into trouble at home, school, or with police for using marijuana in the past year	4.0	7.7	8.9	6.7

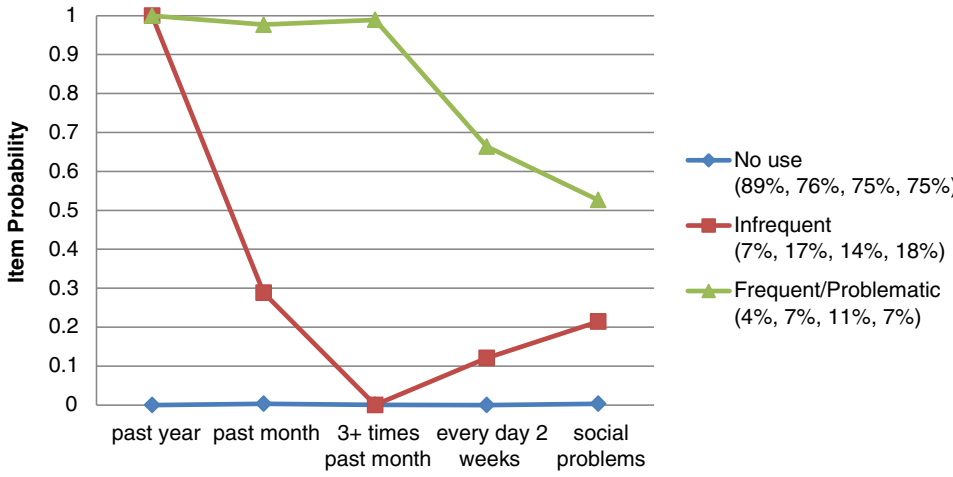

FIG. 1 Estimated stages of marijuana involvement among 9th to 12th grade students and percentage of youth in each stage from 9th to 12th grade in *parentheses*.

Table 3 shows the overall probabilities of transitioning across stages of marijuana involvement from 9th through 12th grades estimated from the LTA. Overall, the probability of transitioning from no marijuana use to infrequent marijuana use is greatest between 9th and 10th grade. The odds of transitioning are approximately 35 % less between 10th and 11th (OR=0.65, 95 % CI=0.41, 1.03) and 11th and 12th grades (OR=0.65, 95 % CI=0.41, 1.02) compared to 9th and 10th grades. These differences are marginally significant ($p<0.07$). The likelihood of transitioning from no use to frequent use and problems and from infrequent use to frequent use and problems is also significantly greater between 9th and 10th grades compared to 11th and 12th grades. The odds of making this transition are approximately 75 % less between 11th and 12th grades compared to between 9th and 10th (OR=0.26, 95 % CI=0.08, 0.83 and OR=0.24, 95 % CI=0.06, 0.91, respectively).

Table 4 reports the adjusted odds ratios (AOR) for neighborhood environment predicting transitions between stages of marijuana involvement from 9th through

TABLE 3 Estimated probability of transitioning between stages of marijuana use and odds ratios by grade

	Estimated transition probability			Odds ratio (95 % CI) *p* value	
	9th to 10th	10th to 11th	11th to 12th	10th to 11th vs. 9th to 10th	11th to 12th vs. 9th to 10th
No use to infrequent use	0.14	0.10	0.10	0.65 (0.41, 1.03) $p=0.068$	0.65 (0.41, 1.02) $p=0.062$
No use to frequent use and problems	0.03	0.05	0.01	1.35 (0.67, 2.74) $p=0.408$	0.26 (0.08, 0.83) $p=0.023$
Infrequent to frequent use and problems	0.24	0.15	0.07	0.72 (0.22, 2.36) $p=0.593$	0.24 (0.06, 0.91) $p=0.036$

TABLE 4 Adjusted odds ratios and 95 % confidence intervals of transitioning between stages of marijuana use by perceptions of neighborhood environment

	No use to infrequent use	No use to frequent/ problematic use	Infrequent use to frequent/problematic use
Neighborhood disorder	1.04 (0.70, 1.54) $p=0.854$	3.20 (1.46, 7.01) $p=0.004$	0.96 (0.37, 2.52) $p=0.941$
Drug activity and sales	1.25 (0.82, 1.89) $p=0.298$	2.28 (1.09, 4.74) $p=0.028$	2.87 (1.11, 7.38) $p=0.029$
Community violence exposure	2.40 (1.57, 3.66) $p<0.001$	4.54 (1.94, 10.60) $p<0.001$	1.01 (0.30, 3.43) $p=0.992$

12th grades relative to remaining in the same stage. Youth exposed to violence in their community were significantly more likely to transition from no marijuana use to infrequent marijuana use relative to youth not exposed to violence (AOR=2.40; 95 % CI=1.57, 3.66). Youth who reported witnessing drug activity and sales in their neighborhood were significantly more likely to transition from infrequent use to frequent marijuana use and problems (AOR=2.87; 95 % CI=1.11, 7.38) relative to staying in the infrequent use stage relative to youth who did not report seeing drug activity and sales. Neighborhood disorder (AOR=3.20; 95 % CI=1.46, 7.01), drug activity and sales (AOR=2.28; 95 % CI=1.09, 4.74), and exposure to violence (AOR=4.54; 95 % CI=1.94, 10.60) were all significantly associated with transitioning from no marijuana use to frequent use and problems.

Lower perceived risk and depressed mood were both significantly associated with neighborhood environment, specifically living in more disordered neighborhoods ($\chi^2=8.2$, $p=0.004$; $T=-6.61$; $p<0.001$), exposure to drug activity and sales ($\chi^2=9.2$; $p=0.002$; $T=-3.68$; $p<0.001$), and community violence exposure ($\chi^2=4.1$; $p=0.041$; $T=-3.2$; $p<0.001$). They were both significantly associated with an increased likelihood of transitioning from no marijuana use to frequent use and problems (AOR=2.96; 95 % CI=1.49, 5.88 and AOR=3.58; 95 % CI=1.62, 7.93). Depressed mood was also associated with an increased risk of transitioning from no use to infrequent use (AOR=1.80; 95 % CI=1.14, 2.83). When perceived risk was included in the respective LTA models, there was evidence that it partially mediated the effect of neighborhood disorder (AOR=2.81; $p<0.05$) and community violence exposure (AOR=4.17; $p<0.05$) and completely mediated the effect of drug activity and sales (AOR=2.07, $p>0.05$) on the transition from no marijuana use to frequent use and problems. Depressed mood also partially mediated the effects of neighborhood disorder (AOR=2.57; $p<0.05$) and exposure to violence (AOR=4.04; $p<0.05$) and completely mediated the effect of drug activity and sales (AOR=2.04; $p>0.05$) on this same transition. There was no evidence that depressed mood mediated the effects of neighborhood perceptions on the transition from no use to infrequent use (data not shown).

DISCUSSION

Our findings highlight that the greatest risk period for both initiation and progression of marijuana use in this sample of primarily low-income, urban-dwelling African Americans was early in high school. For most youth, entry into

high school brings the normative challenges of increased academic rigor and social demands. Although there is little research about the high school transition of African American adolescents, we know that ethnic minorities do more poorly in high school and are at greater risk of school dropout.[42] While each student brings a unique set of past experiences and personal resources, the transition to high school occurs within the larger context of neighborhood. African American youth living in urban environments in particular face additional challenges that may influence their ability to navigate the transition to high school successfully.

It may be especially difficult for youth living in disordered neighborhoods to adapt to the social task demands of high school and cope with the high school transition. Disordered neighborhoods that lack social control are unable to monitor youth behaviors and therefore provide favorable conditions for illegal behaviors such as marijuana use.[8–10] As we saw in our data, African American youth living in disordered neighborhoods were more likely to transition from no marijuana use to frequent use and problems than youth living in less disordered neighborhoods. Disordered neighborhoods also support drug use beyond social networks by providing a visible market for drug activity and sales and increased opportunities for use.[27] We found that African American youth living in neighborhoods where they specifically witnessed drug activity and sales were more likely to make this same transition.

Whether it is through their social networks or the larger drug market, youth living in disordered neighborhoods are in environments that both promote and normalize drug use. As evidenced in our data, youth who live in more disordered neighborhoods or witnessed drug activity and sales in their neighborhood perceived less harm from using marijuana. In turn, youth who perceived less harm were more likely to transition from no use to frequent marijuana use and problems. As a result, we found that risk perceptions partially mediated the influence of neighborhood disorder and completely mediated the influence of drug activity and sales on the transition from no use to frequent marijuana use and problems. Risk perceptions are not, however, associated with progression from infrequent to frequent marijuana use and did not mediate the influence of drug activity and sales on this progression. It is likely that once youth have tried marijuana, they have already made the decision that marijuana is not harmful and the increased availability of drug sales in these neighborhoods promotes the maintenance of current marijuana use and the progression to more frequent and problematic use.

Marijuana use may also provide youth with a means of coping with the chronic stress of living in disordered and violent neighborhoods consistent with the stress reduction hypothesis.[21,22] It may be a means of coping with the stress of the high school transition in the absence of protective neighborhood social supports. Similar to risk perceptions, we found that living in disordered neighborhoods, exposure to drug activity and sales, and exposure to violence in the community were associated with higher levels of depressed mood as well as an increased likelihood of transitioning from no use to infrequent and frequent use and problems. Higher levels of depression then partially mediated the relationship between disordered neighborhoods and exposure to community violence and completely mediated the relationship between drug activity and sales and initiation of more frequent use. The finding that depressed mood does not play a role in the relation between community violence exposure and the transition to infrequent marijuana use suggests a lack of evidence for a self-medication hypothesis for explaining the association between community violence exposure and experimentation with marijuana.

Limitations of the study should be noted. We relied on a single method (participant report) and reporter (child report) for the data used in this study. Multiple methods (e.g., biological assays of drug use, objective measures of neighborhood) and reporters (peer

reports of participant drug use) would have strengthened this study. In addition, as is the case with most longitudinal studies, approximately 33 % of the original African American study population was lost to follow-up, i.e., participated in the 1st grade assessments but not the high school assessments. However, these youth did not differ on 1st grade behavioral measures such as self-reports of anxious and depressive symptoms or teacher ratings of aggressive/disruptive behaviors.

The greatest strength of this study is the availability of a large sample of African Americans participating in a longitudinal study designed to be sensitive to ethnic minority populations with annual data collection. While a larger and more diverse sample may have allowed for identifying more subgroups, cohort differences, and ethnic comparisons, a community cohort has the benefit of identifying within-group differences in a highly vulnerable and under-investigated population, not always fully captured in national surveys. Although national probability studies have provided critical information on drug use in the US population as a whole, they are less informative in understanding prevalence in subgroups, particularly socioeconomically disadvantaged, ethnic minority populations living in large urban areas. Our ability to more accurately reflect the true nature of African American drug use in the context of the urban neighborhoods where they live is what makes this a unique contribution to the literature. Community epidemiologic studies like this one facilitate the study of factors operating at the neighborhood level. National probability samples tend to have too few cases in any one ecological context to study the effects of that context on development and often have less extensive measurement of ecological context. Additionally, they are often cross-sectional and do not have a wealth of data over different developmental periods to enable the examination of transitions in drug use.

With rates of marijuana use in young African Americans now exceeding rates in Whites and rates of abuse and dependence increasing, new understandings of the course of marijuana use and the influence of factors that are more salient in this population are critical to the development of effective and culturally appropriate prevention programs. This study offers insight into both the timing of intervention programs (the critical transition to high school) and the audience for intervention programs (youth in disorganized, violent neighborhoods with high rates of drug trafficking). Reducing exposure to drug activity and violence in high-risk urban neighborhoods may be the first step to potentially halt increasing rates of marijuana use among African Americans.

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