Original Study

Psychosocial Correlates of Marijuana Use among Pregnant and Nonpregnant Adolescent Girls

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A B S T R A C T

Study Objective: Pregnant and nonpregnant populations in the United States report marijuana as the most commonly used illicit drug. Patterns of marijuana use and psychosocial correlates are unclear among non–treatment-seeking teenage girls.
Design, Setting, Participants, Interventions, and Main Outcome Measures: The objective of this study was to use cross-sectional data to examine the psychosocial correlates of recent marijuana use among a sample of 646 pregnant and nonpregnant adolescent girls presenting to urban primary care clinics (mean age = 15.6 years, SD = 1.9 years; 65% African American; 8.8% pregnant).
Results: In Poisson regression analysis, frequency of marijuana use was significantly associated with greater likelihood of pregnancy (incident rate ratio [IRR], 1.30; 95% CI, 1.03-1.65), alcohol use (IRR, 1.11; 95% CI, 10.08-1.14), condomless sex (IRR, 1.95; 95% CI, 1.61-2.37), parents' drug use (IRR, 1.04; 95% CI, 1.02-1.05), and negative peer influences (IRR, 1.12; 95% CI, 1.10-1.16).
Conclusion: Marijuana use among adolescent girls in this sample was associated with a number of risk behaviors as well as parental and peer influences. Culturally sensitive screening and intervention approaches for marijuana use among adolescent girls should address multiple individual, relationship, and community factors, to prevent unwanted pregnancy as well as to reduce marijuana use during this vulnerable time.
Key Words: Marijuana, Adolescent, Pregnant, Risky sex, Psychosocial

Introduction

Marijuana is the most prevalent illicit drug used among adolescent girls and its use is on the rise.[1] National surveys have shown that approximately 6.5% of adolescent girls between the ages of 12 and 17 years reported current marijuana use, and 12.3% reported past year use.[2] A significant number of pregnant adolescents continue to use marijuana throughout their pregnancy and their use is greater than same-age, nonpregnant peers—recent data from a large national survey of 14,400 pregnant and 395,600 non-pregnant female respondents showed that a staggering 14% of pregnant adolescent girls (ages 12-17 years), compared with 6.45% of nonpregnant girls, reported past month marijuana use.[3] Adolescent women, compared with adults 18 years and older, comprised the only age group for whom marijuana prevalence was higher during pregnancy, with non-Hispanic African American pregnant women reporting the highest prevalence (6.45%).[3]

Although the literature yields equivocal findings, research has shown associations between marijuana use and adverse fetal outcomes, including increased odds of being placed in the neonatal intensive unit after birth.[4] Furthermore, the American College of Obstetricians and Gynecologists recommends abstinence from marijuana for women who are pregnant or breastfeeding.[5] Compared with adolescent girls who do not use marijuana, those who do are more likely to engage in risky sexual behavior. Studies support an association between marijuana use and an increased risk of sexually transmitted infections (STIs) among adolescents, particularly through increased risky behaviors, including condomless sex or multiple sex partners.[6] Among the 20 million new STIs each year, almost half occur in adolescents and young adults.[7]

Social–ecological frameworks, such as the Ecodevelopmental model, can provide an understanding of the interplay among individual risk and social context associated with substance use, and can inform intervention efforts.[8,9] Risk factors associated with marijuana use in youth include individual level factors of age, race/ethnicity, health including mental health concerns (ie, anxiety and depression symptoms), and risk behaviors (eg, alcohol and other drug use; risky sex). Relationship-level risk factors include social and family risk factors (eg, parental drug use and peer influences). Previous work has identified protective factors including school and religious involvement, perceived parental disapproval, and high level of parental monitoring. Nonetheless, although previous research has studied these in adolescents more broadly,[9] psychosocial correlates associated with marijuana use in pregnant and nonpregnant adolescent girls remain unclear. In the current study,

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guided by the ecodevelopmental framework and previous literature in adolescents, we conducted secondary data analyses to examine the demographic characteristics, psychosocial, and risk behavior correlates in relation to past 3-month marijuana use among adolescent girls presenting to urban primary care clinics.

Materials and Methods

Participants and Procedure

Participants were 646 female patients (ages 12-18 years old) who presented for primary care services to 7 federally qualified community health centers located in urban areas of the Midwestern United States. A total of 1664 female patients were approached for the study and 248 (14.9%) declined participation. Data collection took place between April 2007 and December 2009. Informed consent/assent was obtained from all individual participants and their parents. Adolescents who were 18 years old provided consent to be included in the study.

Research staff approached patients in the waiting rooms or exam rooms and asked if they were interested in participating in a randomized controlled trial of brief interventions for marijuana use (see Walton et al[10,11] for study description). Briefly, interested girls self-administered a 10-minute computerized screening survey to determine study eligibility. The study sample included those who screened positive for past year marijuana use as well as a random sample of those who screened negative. Participants completed the following well validated measures using a computer with audio via headphones (Table 1): demographic information was assessed with selected items from the Add Health. Past 3-month frequency of marijuana, other drugs, and alcohol use was assessed with standardized self-reported questions from the National Longitudinal Study of Adolescent Health (Add Health). Responses included: never = 0; 1 to 2 days = 1; once a month or less = 2; 2 to 3 days per month and 1 to 2 days per week = 4; 3 to 5 days per week = 5; and every day or almost every day = 6. Alcohol misuse was assessed with the Alcohol Use Disorders Identification Test-Consumption. Past-week psychological distress (ie, depressive and anxiety symptoms) was on the basis of the Brief Symptoms Inventory.[12] As in our previous work,[13] we included 11 items from the anxiety and depression subscales; this scale has good reliability (Cronbach $\alpha = 0.88$). Participants scoring 2 SDs above the sample mean on this scale suggested clinically meaningful levels of depression and anxiety. Frequency of participation in school activities in the past 3 months, positive and negative peer influences, parental support, religious or community activities, and number of sexual partners and condom use were assessed with questions taken from larger surveys.

Bivariate and Poisson regression analyses were used to identify correlates of marijuana use frequency. Poisson regression analyses provide an incident rate ratio (IRR) for each independent variable such that IRRs greater than 1.0 reflect increased marijuana use risk and IRRs less than 1.0 reflect decreased marijuana use risk. The model fit statistics (variance inflation factors) indicated no evidence of multicollinearity.[14] All data were analyzed using SAS version 9.2. statistical software (SAS Institute, Inc, Cary, NC). This study was conducted in compliance with the Institutional Review Board for Human Subjects guidelines at the University of Michigan.

Table 1
Study Sample Characteristics (N = 646)

Variable	Value
Mean age (SD), years	15.6 (1.9), range 12-17
Race/ethnicity	
African American	64.6 (417)
Caucasian	15.5 (100)
Latina	9.6 (62)
Other	20 (129)
Other risk factors	
Pregnancy	8.8 (57)
Condomless sex	51.4 (332)
Marijuana use frequency*	33.8 (218)
AUDIT-C†	1.88 (0.93)
Parent drug use	4.3 (2.9)
Strong parent relationship	1.9 (6.5)
Psychological distress‡	5.9 (6.4)
Sex active	59.9 (384)
School, community, and religious involvement	77.7 (502)
Number of sexual partners	1.1 (0.9)
Negative peer influences	3.5 (7.3)
Positive peer influence	2.6 (2.2)
Parental monitoring	4.3 (22.1)
School activities	52.5 (339)
Community activities	37.0 (239)
Religious activities	60.8 (393)

AUDIT-C, Alcohol Use Disorders Identification Test-Consumption.
Data are presented as % (n), except where otherwise noted.
* Past 3 months; assessed with standardized self-reported questions from the National Longitudinal Study of Adolescent Health (Add Health).
† AUDIT-C total score.
‡ Past week symptoms on the basis of the Brief Symptoms Inventory.

Results

Our sample included 646 adolescent girls, with an average age of 14.6 years (SD = 1.9 years), 64.6% of the sample identified as African American, and 8.8% (n = 57) of the sample was pregnant (Table 1). Bivariate correlates showed past 3-month frequency of marijuana use was positively associated with: pregnancy, older age, alcohol use, other drug use, depression and anxiety symptoms, condomless sex, negative peer influences, and parents' drug use (Table 1). Marijuana frequency was negatively associated with the following variables: positive peer influences, parental monitoring, and involvement with school, community, and religious activities. In Poisson regression analysis including these variables, frequency of marijuana use was significantly associated with greater likelihood of pregnancy (IRR, 1.30; 95% CI, 1.03-1.65), alcohol use (IRR, 1.11; 95% CI, 1.08-1.14), condomless sex (IRR, 1.95; 95% CI, 1.61-2.37), parents' drug use (IRR, 1.04; 95% CI, 1.02-1.05), and negative peer influences (IRR, 1.12; 95% CI, 1.10-1.16; Table 2).

Discussion

The current study examined demographic, psychosocial, and risk behavior correlates of recent marijuana use among