

Prevalence of Illicit Substance Use among Women at First Prenatal Visit Comparing Insurance, Race, Marital Status, Age, and Employment Status.

Abstract: Prenatal drug abuse has been associated with potentially devastating and even life-long effects on exposed children with an estimated \$605 million associated with healthcare cost for drug-exposed newborns (1). The National Survey on Drug Use and Health from 2008 and 2009 found that within pregnant women ages 15-44 the younger women have a higher prevalence of reported substance use (2), and national estimates of pregnant women ages 15-44 with substance use suggests 1 in 4 pregnant women have used a substance within the past 30 days (3). In order to determine the prevalence of drug abuse in the Family Medical Center, Carver Clinic, and Havana Clinic, a retrospective cohort study of women drug screened at their first prenatal visit at the Family Medical Center, Havana, and Carver clinics from May 2013 through the end of April 2014 was performed. Chart review was performed to identify presence of/type of substance used along with race, type of insurance, marital status, age, and employment status as well as the response to illicit drug use question. Race and smoking status were the only factors that showed significance for illicit substance use with Hispanic and other races being a protective factor and smoking tobacco as a risk factor for using illicit substances. Compared to the national data of 25% illicit substance use among pregnant women, there was a 9% increase in illicit substance use with 34% of pregnant women using illicit substances in the Family Medical Center, Carver Clinic and Havana Clinic combined. 78% of pregnant women using illicit substances in these clinics answered their substance use question as “NO”. The need for universal drug screening was illustrated by the overwhelming results that pregnant women using illicit substances are not forthcoming with that information to their providers.

Introduction: According to the National Institute on Drug Abuse, \$11 billion dollars is spent on healthcare due to illicit drug use with an overall cost of \$193 billion a year. Prenatal drug abuse has been associated with potentially devastating and even life-long effects on exposed children with an estimated \$605 million associated with healthcare cost for drug-exposed newborns (1). The National Survey on Drug Use and Health from 2008 and 2009 found that within pregnant women ages 15-44 the younger women have a higher prevalence of reported substance use (2), and national estimates of pregnant women ages 15-44 with substance use suggests 1 in 4 pregnant women have used a substance within the past 30 days (3). These data are mainly from surveys and are most likely higher in prevalence due to not all pregnant women admitting to their substance use. This study will determine the actual prevalence of substance use in pregnant women at their first prenatal visit at the Family Medical Center, Carver clinic, and Havana clinic and from there be compared with the national estimates. With this information, the importance of universal screening will become apparent, as many pregnant women do not report substance use to their providers.

Methods: The study was a retrospective cohort study of women drug screened at their first prenatal visit at the Family Medical Center, Havana clinic, and Carver clinic from May 2013 through the end of April 2014. Chart review was performed to identify presence of/type of substance used along with race, type of insurance, marital status, age, and employment status as well as response to illicit substance use question. Fifty-five Carver clinic and 22 Havana clinic charts were manually reviewed and data placed into an excel sheet with presence of/type of substance used along with race, type of insurance, marital status, age, employment status, and illicit substance response. Two-hundred and sixteen Family Medical Center charts were pulled electronically from HAC (electronic records) for first prenatal visits that occurred from May 2013 through the end of April 2014 with race, age, and marital status pulled from the data and entered into an excel file. Each chart was then manually reviewed to extrapolate the DAU results as well as type of insurance and the illicit substance use response. Forty-three charts were excluded due to missing information as 14 patients transferred care, 25 charts had no DAU results in the chart, and 4 charts had no drug use question response documented.

Results:

Family Medical Center: One-hundred and seventy-three Family Medical Center charts were reviewed with THC used by 52 patients, cocaine and THC use by 2 patients, amphetamine use by 2 patients, and benzodiazepine and opiate use by 1 patient. Thirty-three percent of charts reviewed from the Family Medical Center were noted to have illicit substance use. Eighty-six percent of those using illicit substances replied “NO” to their substance use question at the Family Medical Center.

Carver Clinic: Fifty-five Carver clinic charts were reviewed with THC used by 22 (40%) patients. No other illicit drug use occurred. Insurance at the Carver Clinic was entirely Public Aid. Fifty-nine percent of those using illicit substances replied “NO” to their substance use question at the Carver clinic.

Havana Clinic: Twenty-two Havana clinic charts were reviewed with THC use by 6 (27%) patients. No other illicit drug use occurred. Race was noted to be entirely Caucasian and insurance was entirely Public Aid at the Havana clinic. Sixty-seven percent of those using illicit substances replied “NO” to their substance use question at the Havana clinic.

Compiled data from these clinics were placed in figures 1-6 which illustrate that the majority of patients in the clinics were Public Aid patients as well as African American, single, and unemployed. Figure 4 demonstrates the majority of patients were age 12-25. While Figure 6 shows that the majority of patients were non-smokers.

In order to assess the effects of insurance, race, marital status, age, employment status and smoking status on illicit substance use, a logistical regression model was used via SAS program 9.4. Initially all variables were included in the model. After the stepwise selection of covariates, only the significant ones were retained in the model. As shown in table 1, Race has a statistically

significant effect on illicit substance use at a significance level of 0.05. Hispanic and other races have a 0.07 times the odds of using illicit substances. There was no statistical significance between Caucasian race vs African American race for using illicit substances. Table 2 shows that smoking status has a statistically significant effect on illicit substance use. The odds of using illicit substances for smokers are 3.24 times the odds of using illicit substances for non-smokers, holding the race at a fixed category.

Discussion: Race and smoking status were the only factors that showed significance for illicit substance use with Hispanic and other races being a protective factor and smoking tobacco as a risk factor for using illicit substances. Compared to the national data of 25% illicit substance use among pregnant women, there was a 9% increase in illicit substance use with 34% of pregnant women using illicit substances in our clinics. Seventy-eight percent of pregnant women using illicit substances in our clinics answered their substance use question as “NO”. The need for universal drug screening was illustrated by these overwhelming results that pregnant women using illicit substances are not forthcoming with that information to their providers. Limitations of the study included small study group, mainly public aid population in all clinics and the inability to take into account who asked the substance use questions (nurse vs physician). Future research is needed in the private sector with larger study groups to determine if the prevalence of illicit substance use is similar and if the need for universal screening is noted in that population as well. Once universal drug screens are in place, research to determine if outcomes improve with education of patients especially those who had a positive DAU at their first prenatal visit.

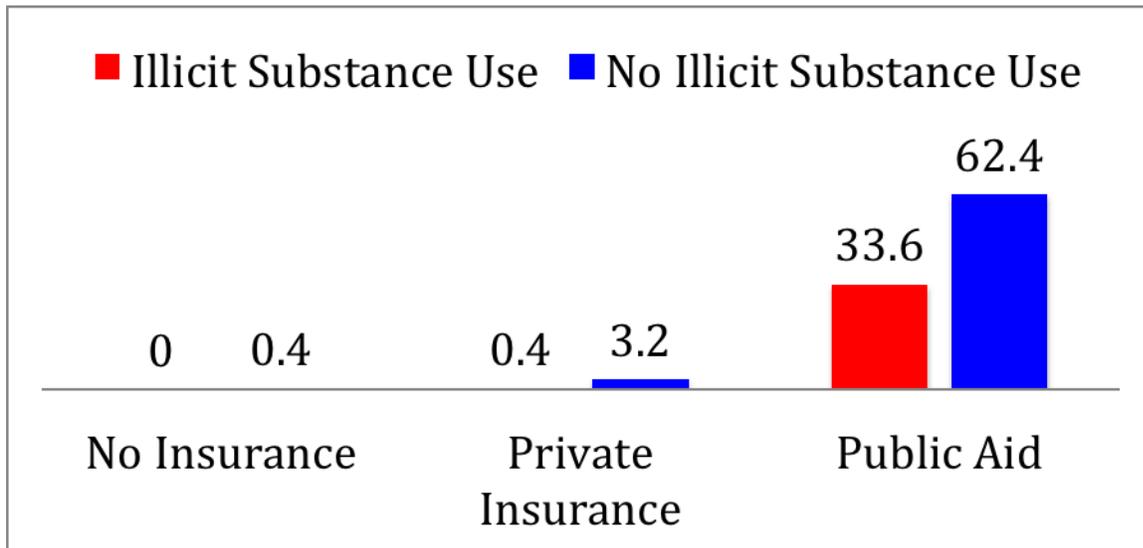


Figure 1. Effect of insurance on illicit substance use in percentage of patients

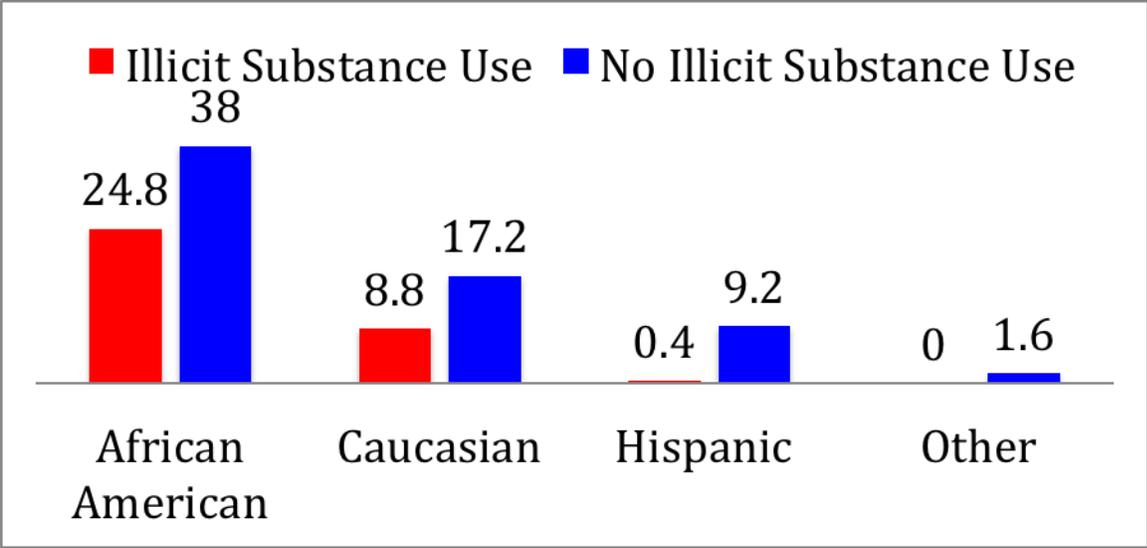


Figure 2. Effect of race on illicit substance use

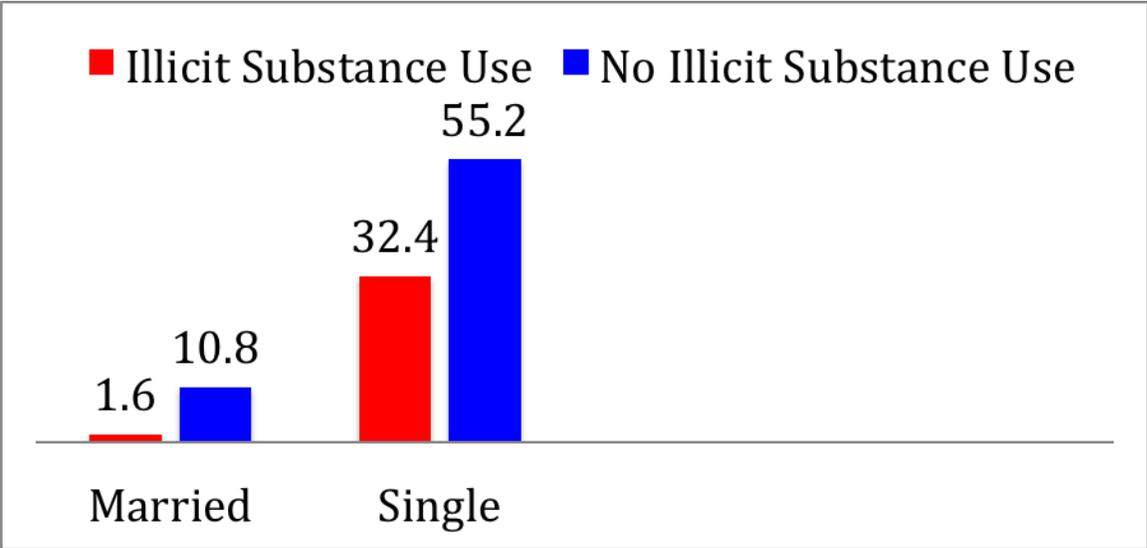


Figure 3. Effect of marital status on illicit substance use in percentage of patients

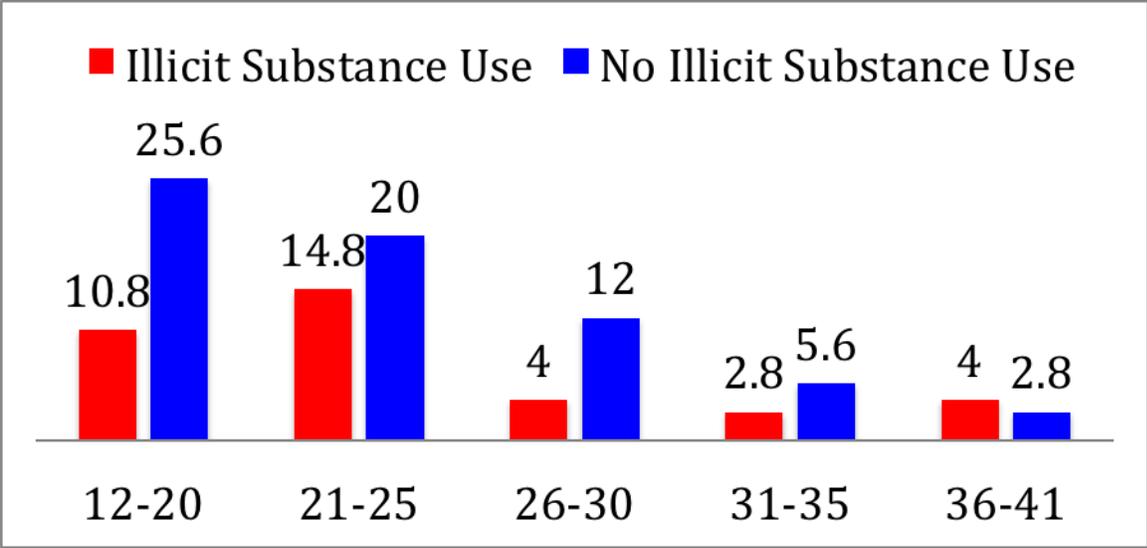


Figure 4. Effect of age group on illicit substance use in percentage of patients

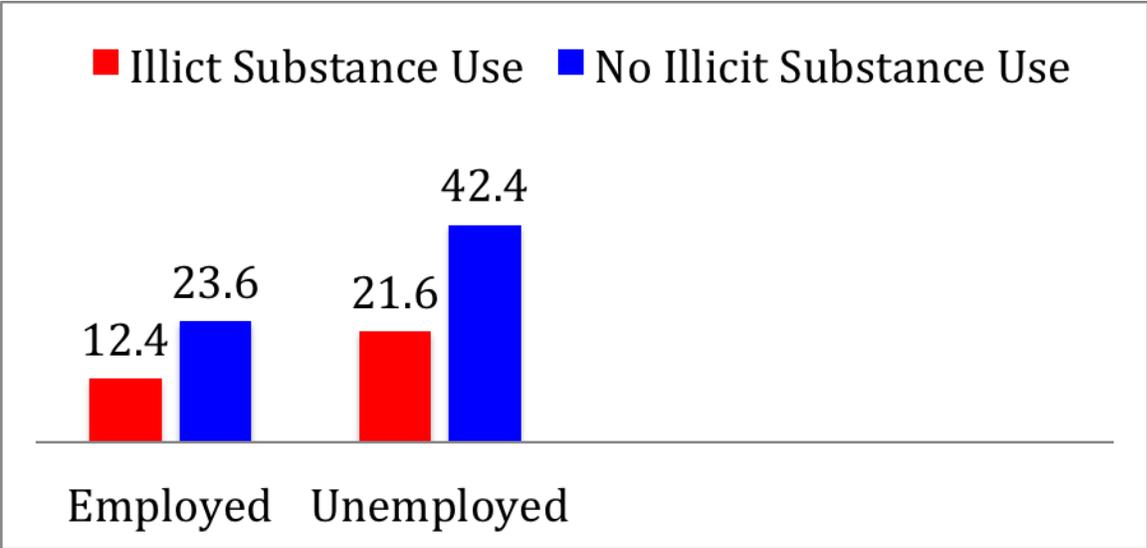


Figure 5. Effect of employment status on illicit substance use in the percentage of patients

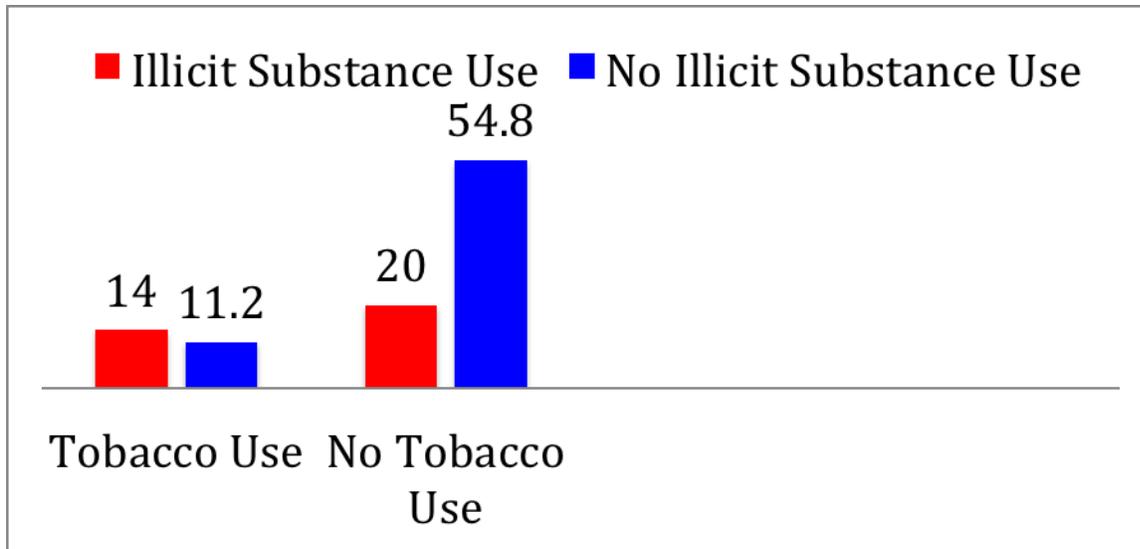


Figure 6. Effect of smoking status on illicit substance use in percentage of patients

Variable	Sample Number	Odds Ratio (95% CI)	P-Value
Race			0.0137
African American	157	1	
Caucasian	65	0.57 (0.30- 1.11)	0.0982
Hispanic and other	28	0.07 (0.01- 0.56)	0.0119

Table 1. Effect of race on illicit substance use in patients at first prenatal visit

	Sample Number	Odds Ratio (95% CI)	P-Value
Smoker			0.0003
No	187	1	
Yes	63	3.24 (1.72- 6.12)	0.0003

Table 2. Effect of smoking on illicit substance use in patients at first prenatal visit

Sources:

1. ACOG.: At-risk drinking and illicit drug use: ethical issues in obstetric and gynecologic practice. ACOG committee opinion number 422. *Obstet Gynecol.* 2008; 112: 1449-1460.
2. Prenatal Exposure to Drugs of Abuse. National Institute on Drug Abuse. May 2011.

3. Havens, J., L.A. Simmons, L. Shannon, and W.F. Hansen. 2009. Factors associated with substance use during pregnancy.: Results from a national sample. *Drug Alcohol Depend* 99 (1-3): 89-95.