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Health insurance, alcohol and tobacco use among pregnant and non-pregnant women of reproductive age

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ABSTRACT

Background: Understanding the relationship between health insurance coverage and tobacco and alcohol use among reproductive age women can provide important insight into the role of access to care in preventing tobacco and alcohol use among pregnant women and women planning to become pregnant.
Methods: We examined the association between health insurance coverage and both past month alcohol use and past month tobacco use in a nationally representative sample of women age 12–44 years old, by pregnancy status. The women (n = 97,788) were participants in the National Survey of Drug Use and Health (NSDUH) in 2010–2013. Logistic regression models assessed the association between health insurance (insured versus uninsured), past month tobacco and alcohol use, and whether this was modified by pregnancy status.
Results: Pregnancy status significantly moderated the relationship between health insurance and tobacco use (p-value ≤ 0.01) and alcohol use (p-value ≤ 0.01). Among pregnant women, being insured was associated with lower odds of alcohol use (adjusted odds ratio [AOR] = 0.47; 95% confidence interval [CI] = 0.27–0.82), but not associated with tobacco use (AOR = 1.14; 95% CI = 0.73–1.76). Among non-pregnant women, being insured was associated with lower odds of tobacco use (AOR = 0.67; 95% CI = 0.63–0.72), but higher odds of alcohol use (AOR = 1.23; 95% CI = 1.15–1.32).
Conclusion: Access to health care, via health insurance coverage is a promising method to help reduce alcohol use during pregnancy. However, despite health insurance coverage, tobacco use persists during pregnancy, suggesting missed opportunities for prevention during prenatal visits.

1. Background

Tobacco and alcohol are the most commonly used substances among women of childbearing age including those who are pregnant (Floyd et al., 2008). During pregnancy, both alcohol use (Hankin, 2002; Li et al., 2012; Maier and West, 2001; Terplan et al., 2014) and tobacco use (Coleman-Cowger et al., 2014; Holtrop et al., 2010; Mund et al., 2013) are leading causes of preventable adverse health outcomes for mothers and babies. Of the most severe (and preventable) health outcomes associated with prenatal alcohol exposure is fetal alcohol syndrome (FAS; Hankin, 2002; Maier and West, 2001). In addition, prenatal alcohol use is associated with a host of other poor health outcomes including, spontaneous abortion, neurodevelopment problems, and pre- and post-natal growth deficits (Floyd et al., 2008). Similarly, prenatal tobacco use is associated with pre-term and low birth-weight deliveries and infant mortality (Dietz et al., 2010). During pregnancy, there is no safe level of alcohol consumption (Floyd et al., 2008), and regardless of pregnancy status, there is no safe level of exposure to smoke from tobacco products (US Department of Health and Human Services, 2010). Therefore, identifying factors that may reduce the risk of tobacco and alcohol use among reproductive age women, especially those who are already pregnant, is crucial to promoting the health of mother and child. The access to health care provided by insurance may be an important factor to consider in efforts to reduce alcohol and tobacco use among this population.

Health insurance is an important element in one's access to health care (Chen et al., 2015; Newacheck et al., 1998; Zuvekas and

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Taliaferro, 2003). Insurance coverage and health care access among women of reproductive age could improve maternal and child health (D'Angelo et al., 2015) by improving access to timely and adequate prenatal care (D'Angelo et al., 2007; Egerter et al., 2002; Jarvis et al., 2011). For example, an estimated 30% of women receive preconception provider-delivered health counseling on preparing for a healthy pregnancy and baby, and approximately 90% of women receive health check-ups postpartum and between pregnancies (D'Angelo et al., 2007). Furthermore, pregnant women may be more motivated to stop using tobacco and alcohol than non-pregnant women (Ethen et al., 2009; Floyd et al., 2008; Havens et al., 2009; Terplan et al., 2012; Tong et al., 2009), and access to health care through health insurance may help facilitate this process by increasing exposure to prenatal visits, which present opportunities for providers to engage patients in alcohol and tobacco use prevention interventions. Therefore, health insurance coverage may be indirectly associated with reductions in tobacco and alcohol use via increased access to prenatal care where substance use prevention can occur. However, investigating a potential direct effect between health insurance coverage and tobacco and alcohol use among reproductive age women is an essential first step in helping to determine if there is an effect to be mediated. Furthermore, given that substance use disorder treatment, as well as maternal and child health care are part of the Essential Health Benefits covered by the Affordable Care Act (Beronio et al., 2013; Department of the Treasury et al., 2013; Office of Legislative Counsel, 2010), this may encourage both patients and providers to engage in discussions around alcohol and tobacco use prevention during prenatal visits.

Several studies that examined tobacco and alcohol use during pregnancy did not incorporate information on insurance status (Ethen et al., 2009; Havens et al., 2009; Kratz and Vaughan, 2012; Muhuri and Gfroerer, 2009). In a study that did explore health insurance and substance use in pregnant and non-pregnant women of reproductive age (Terplan et al., 2012), alcohol and illicit drug use were pooled, and tobacco was not addressed. In another study, the prevalence of tobacco use by insurance status was reported, pooling use during, before, and after pregnancy (Tong et al., 2009). However, this study did not adjust for potential confounding. Furthermore, clinical implications and health risk of use during pregnancy differs compared to use before or after pregnancy. Other studies have focused specifically on low-income pregnant women or emphasized the role of Medicaid in tobacco use during pregnancy (Adams et al., 2013; Jarlenski et al., 2014; Ma et al., 2005). Thus, little is known about the role that health insurance plays in tobacco and alcohol use among pregnant and non-pregnant women of reproductive age. Given the widespread availability of health insurance coverage in the United States through the Affordable Care Act and the substance use prevention services covered (Beronio et al., 2013; Department of the Treasury et al., 2013; Office of Legislative Counsel, 2010), understanding the relationship of health insurance to tobacco and alcohol use among pregnant women and reproductive age women who may become pregnant can have important implications for maternal and child health. Specifically, insurance coverage may serve as a universal prevention intervention to reduce tobacco and alcohol use among pregnant women and women contemplating pregnancy. Therefore, we conducted a study to fill this gap in knowledge. In this study, we investigated the relationship between health insurance and both past month tobacco use and past month alcohol use among a nationally representative sample of reproductive age women in the United States, controlling for important covariates (e.g., age, race/ethnicity, education, marital status, poverty). We examined whether the relationship between health insurance and alcohol or tobacco use differed between pregnant and non-pregnant women. We hypothesized that pregnancy status would moderate the relationship between health insurance status and tobacco and alcohol use, such that having health insurance would be associated with lower odds of tobacco and alcohol use among both pregnant and non-pregnant women, and that this inverse relationship would be stronger among pregnant women, given that pregnant women may be more motivated to quit substance use than non-pregnant women (Ethen et al., 2009; Floyd et al., 2008; Havens et al., 2009; Terplan et al., 2012; Tong et al., 2009).

2. Methods

2.1. Data source

We used data from the National Survey of Drug Use and Health (NSDUH) public use files (Substance Abuse and Mental Health Services Administration (SAMHSA), 2012). The NSDUH annual surveys assess substance use and other behaviors in nationally representative samples of the non-institutionalized U.S. citizen population aged 12 years and older. Each year, participants are selected via independent multistage area probability samples in each of the 50 States and the District of Columbia. Trained interviewers explained all study procedures to respondents and obtained informed consent before starting the interviews. Surveys were administered using computer-assisted personal interviewing (CAPI) and audio computer-assisted self-interviewing (ACASI). The combined use of CAPI and ACASI increases the validity of self-reported data by providing a confidential means for the interviewees to respond to sensitive questions about embarrassing or illegal behaviors (Biondo and Chilcoat, 2014; SAMHSA, 2012). All procedures were approved by the Institutional Review Boards at the Research Triangle Institute (RTI; SAMHSA, 2010, 2011, 2012, 2013a).

For the present analysis, women of reproductive age (12–44 years) were sampled from the NSDUH surveys conducted in 2010 (pregnant n = 899; not pregnant n = 23,988; pregnancy status unknown n = 129), 2011 (pregnant n = 830; not pregnant n = 24,027; pregnancy status unknown n = 115), 2012 (pregnant n = 776; not pregnant n = 22,938; pregnancy status unknown n = 122) and 2013 (pregnant n = 762; not pregnant n = 23,102; pregnancy status unknown n = 100). Pooling these participants yielded a final sample of 94,055 non-pregnant women, 3267 pregnant women, and 466 women of unknown pregnancy status for a total sample of 97,788 women. The age range 12–44 years old was selected because the NSDUH only assesses pregnancy status among women in this age group. Survey years 2010–2013 were used because they were the latest waves available at the time of the analyses, and 2010 marks a significant policy shift regarding health insurance availability with the passing of the Affordable Care Act (Department of the Treasury et al., 2013; Office of Legislative Counsel, 2010).

2.2. Measures

2.2.1. Outcomes. Two binary outcomes were analyzed – past month tobacco use and past month alcohol use. Past month tobacco use included cigarettes, cigars, pipes, or smokeless tobacco use – approximately 84% of those who reported past month tobacco use reported cigarette use only (i.e., not cigars, pipes, or smokeless tobacco). Respondents endorsing any of these types of tobacco use in the past 30 days were classified as past month tobacco users. Past month alcohol use included any alcohol use. Respondents endorsing use during the past 30 days were classified as past month drinkers.

2.2.2. Exposure. Current health insurance status was the exposure of interest. A binary variable was created to indicate whether participants reported being covered by any health insurance (private