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Predictors of Smoking in Northern Plains Indians

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Rates of tobacco use, the leading cause of preventable death in the U.S., are high among lower socioeconomic groups, people of color and other minority populations. American Indian adults and youth had the highest rates of tobacco use in the US in 1999-2000 (CDC, MMWR, 2004, cited in Fagan, 2007). Tobacco use (for non-sacred purposes) is exceptionally high among Northern Plains Indians, reported at 44 % (CDC, 2004, cited in Baezconde-Garbanti et al. 2007). Such high rates point to a need for health psychology to continue to build competencies in collecting culturally appropriate data upon which to base risk reduction and prevention programs at both community and individual levels. Recent findings that highlight this need are that smoking rates were 2-3 times higher for all ages among American Indians with diabetes than those without diabetes, while most general population studies have found no difference in tobacco use between those with or without diabetes (Morton, et al. 2008). Diabetes is the fourth leading cause of death for American Indians and the major independent risk factor for cardiovascular disease.

In this current analysis, we used data from 458 Northern Plains Indian to investigate predictors of smoking. Data were originally collected in an USDA study designed to look at dietary and other factors. Data was collected in writing or orally using self-report questionnaires from the participants who attended powwows and other events at five reservations and three tribal colleges. Analyses were conducted for the entire study sample, and separately for men and women using logistic regression analysis. Predictors included age, education, marital status, cultural identification as measured by the Northern Plains Bicultural Inventory (NPBI, Frisch,1992), native language use, and poverty as measured by food security. The outcome variable, smoking, was measured as either 'yes' or 'no.' Statistical significance levels were set at $p <= .05$.

For the entire study sample, significant predictors of smoking were age, education, and poverty. Older individuals had decreased odds of smoking relative to younger individuals ($?2 = 6.73$, $df = 1$, $p = .009$). The age findings are of some concern when taken together with national data that shows that prevalence rates for American Indians/Alaskan Natives have not declined since the 1970s and that there is little trend data available for American Indian/Alaskan Native youth (Fagan et al. 2007).

Individuals who completed graduate school had higher odds of smoking relative to individuals who completed high school or less, some college, or a bachelors degree ($?2 = 4.54$, $df = 1$, $p = .033$). Individuals who were living in poverty had increased odds of smoking relative to individuals who did not live in poverty ($?2 = 15.38$, $df = 1$, $p = .000$). National prevalence rates for American Indian men are higher than for women (37.3% vs. 28.5%; Fagan et al. 2007). Among the Northern Plains Indians in this sample, 57.2 % of men used tobacco and 48.9% of women used tobacco. For men, significant predictors of smoking were poverty and age. Men living in poverty had increased odds of smoking relative to men who were not living in poverty ($?2 = 10.78$, $df = 1$, $p = .001$), and men who were older had decreased odds of smoking relative to younger men ($?2 = 5.90$, $df = 2$, $p = .015$). For women, significant predictors of smoking were marital status and poverty. Women who cohabitated had increased odds of smoking relative to women who were married, separated, single, or widowed ($?2 = 7.01$, $df = 1$, $p = .008$), and women who lived in poverty had increased odds of smoking relative to women who were not living in poverty ($?2 = 10.569$, $df = 1$, $p = .001$).

Overall, our analysis indicates that age, education, and poverty are significant predictors of smoking in Northern Plains Indians. Cultural identification did not predict smoking in this sample. These factors all need to be considered when designing smoking cessation programs for American Indians. We will discuss future research needs upon which to build competent prevention and smoking cessation programs for Native American, particularly for the predominantly rural Northern Plains Indians.