



Problem-gambling severity and psychiatric disorders among American-Indian/Alaska native adults



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ABSTRACT

Introduction: Little is known about the association between problem-gambling severity and psychiatric disorders among American-Indian/Alaska-Native (AI/AN) individuals. Thus, we examined these factors among a nationally representative sample of AI/AN and other American adults in the USA.

Method: Using the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) data, we conducted separate Wald tests and multinomial logistic regression analyses comparing AI/AN to black/African American, white/Caucasian, and all other racial/ethnic groups, respectively.

Results: Relative to other American adults, AI/AN adults were least likely to report non-/low-frequency gambling (NG: AI/AN 66.5%, white/Caucasian 70.5%, black/African American 72.8%, other racial/ethnic group 72.3%) and most likely to report low-risk gambling (LRG: AI/AN 30.1%, white/Caucasian 26.5%, black/African American 23.4%, other racial/ethnic group 24.7%). The association between at-risk/problem-gambling (ARPG) and any past-year Axis-I disorder was stronger among AI/AN versus other American adults. Although ARPG and LRG were associated with multiple past-year Axis-I and lifetime Axis-II psychiatric disorders in both AI/AN and other American adults, LRG was more strongly associated with both Axis-I disorders (particularly major depression, generalized anxiety disorder and nicotine dependence) and Cluster-B Axis-II (particularly antisocial personality disorder) disorders in AI/AN versus other American adults.

Discussion: A stronger association between problem-gambling severity and past-year psychiatric disorders among AI/AN relative to other American adults suggests the importance of enhancing mental health and problem-gambling prevention and treatment strategies that may help AI/AN individuals.

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1. Introduction

There are 5.2 million American-Indian/Alaska-Native (AI/AN) individuals living in the USA, and the US Census shows a 39% increase in AI/AN individuals since 2000 (Norris et al., 2012). As descendants of the indigenous people, AI/AN individuals are a diverse population with more than 500 federally recognized tribes in the USA. These individuals have experienced intergenerational trauma, discrimination and racism, which have accumulated into emotional and psychological suffering. Relative to the general population, AI/

AN individuals are disproportionately affected by mood, anxiety, and substance-use disorders (Beals et al., 2005; Gone and Trimble, 2012), as well as interpersonal violence (Gone and Trimble, 2012; Oetzel and Duran, 2004), child maltreatment (Duran et al., 2004), and suicide (Gone and Trimble, 2012).

Rates of disordered gambling, including pathological gambling (PG; endorsement of 5 or more criteria of the Diagnostic and Statistical Manual of Mental Disorders [DSM-IV]) and problem gambling (PrG; which typically employs a lower threshold than PG) among AI/AN individuals are also high. A review of the extant literature on gambling among AI/AN individuals in 2001 found PrG rates of 5.8–19% and PG rates of 6.6–22% (Wardman et al., 2001). These rates are two to five times higher than the PrG rates and four to 16 times higher than the PG rates found among non-AI/AN

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American adults (Wardman et al., 2001). Since publication of this review, three studies have examined disordered gambling among AI/AN adults. The first study examined PG rates among 3007 residents in New Mexico by oversampling American-Indian individuals and found that the PG rate among American-Indian residents was higher (2.2%) than that of non-American-Indian residents (0.9%) (Volberg and Bernhard, 2006). The second study showed that the PG rate among American-Indian veterans sampled from southwest and north central regions of the USA was higher than the PG rate detected among Hispanic veterans from the same region (9.9% vs. 4.3%) (Westermeyer et al., 2005). The third study showed that in the USA, PrG rates among American-Indian individuals were higher than in the general population (18% vs. 8%) (Patterson-Silver Wolf et al., 2014). In sum, the studies-to-date show varied rates of disordered gambling among AI/AN adults depending on the sample; however, the overall disordered gambling rates are uniformly higher than those of non-AI/AN groups.

Prior studies have described that the high prevalence estimates of psychiatric problems, including addictive behaviors such as disordered gambling, among AI/AN individuals is not inherently attributable to “race” *per se*, but reflects a consequence of pervasive and systematic exposure to poverty, racism and discrimination, and historical and social trauma that members of this group have experienced through generations (Brave Heart et al., 2011; Whitesell et al., 2012). Historical trauma includes multigenerational forced assimilation, such as removal from native lands, coerced placement of children into boarding schools, and laws prohibiting indigenous practices (Brave Heart, Chase, 2011; Duran et al., 1998; Evans-Campbell, 2008; Whitesell et al., 2012). These traumatic experiences may have both specific and cumulative effect on the mental health of AI/AN individuals (Brave Heart, Chase, 2011; Duran et al., 1998). For instance, social factors such as experiencing racial discrimination has been associated with problematic gambling among Aboriginal populations (Currie et al., 2013). Specifically, experiencing racial discriminations led to subjective distress among AI/AN individuals, leading to engagement in problematic gambling to escape negative emotional reactions to these experiences.

The role of gambling is particularly complex within the contemporary AI/AN communities because of economic ties to casinos that exist on some AI/AN reservations. Approximately, 240 of the 562 AI/AN tribes in 28 states operate some level of gambling facilities (National Indian Gaming Commission, 2011). Gambling facilities allowed on native lands offer opportunity for economic growth as well as positive social change by providing job opportunities and decreasing rates of poverty (Evans and Topoleski, 2002; Gerdes et al., 1997). The Indian Gaming Regulatory Act (Public Law 100-497-Oct 17, 1988 100th Congress Sec 2701) mandates that profits from gambling operations on reservations (1) fund tribal government operations or programs, (2) provide for the general welfare of the Indian Tribe and its members, (3) promote tribal economic development, (4) donate to charitable organizations, (5) help fund operations of local government agencies, or (6) be used when the above are adequately provided for a revenue allocation plan. The potential economic benefits made possible by gambling facilities are particularly important for AI/AN communities because their poverty rates double those of the general population, and the poverty rates are even higher for individuals living on reservations and rural locations (DeVoe and Darling-Churchill, 2008). However, despite the opportunity for positive economic growth and social benefits, the outcome is controvertible. Economic analyses show that casinos on reservations increase employment and health benefits and decrease poverty rates; however, the increase in economic growth appears to be driven by non-AI/AN employment (Evans and Topoleski, 2002). Furthermore,

AI/AN communities surrounding casinos experience higher bankruptcy and reports of crimes (Evans and Topoleski, 2002). There is also a concern that the increased number of gambling facilities may increase the risk for gambling-related pathology. Thus, an examination of disordered gambling among AI/AN groups continues to be an important public-health objective.

Despite the unique role of gambling enterprises on native lands, relatively few studies have examined the prevalence and patterns of disordered gambling in the context of other psychiatric disorders among AI/AN individuals in the USA. This examination is important given that population studies have shown high rates of co-occurrence of psychiatric disorders with disordered gambling (Chou and Afifi, 2011; Lorains et al., 2011; Petry et al., 2005).

The few existing studies examining psychiatric comorbidity with disordered gambling among AI/AN groups indicate that AI/AN individuals with PG may experience higher rates of comorbidity relative to non-AI/AN individuals. For example, AI/AN adults receiving treatment for alcohol dependence were more likely to also have PG (22%) compared to white/Caucasian adults receiving similar alcohol-related treatment (7.3%) (Elia and Jacobs, 1993). Another study showed that the prevalence of lifetime Axis-I disorder among AI/AN and Hispanic veterans with PG was 70% compared to 46% among those without PG (Westermeyer et al., 2005). Given these studies findings that show comorbidity between problem-gambling severity and psychiatric disorders in samples of AI/AN individuals, there is a need to examine this association among a nationally representative sample of AI/AN individuals to assess whether these high associations detected in previous studies are not artifact of sampling limitation. An important shortcoming of the literature examining AI/AN individuals is that sampling is limited to rural reservations and specific tribes, which limits the generalizability of the findings (Atkins et al., 2013). Additionally, comparative analyses examining AI/AN groups with other ethnic/racial groups have been generally difficult because of the small sample size and reliance on convenience samples.

In this study, we sought to examine the associations between problem-gambling severity and psychiatric disorders among AI/AN and other American adults using the data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) study. We hypothesized that (1) AI/AN relative to other American adults would display higher rates of problem-gambling severity, (2) problem-gambling severity would be associated with psychiatric disorders in all Americans, including AI/AN adults, and (3) these associations would be stronger among AI/AN relative to other American adults.

2. Methods

2.1. Participants

We analyzed the data from the NESARC (2001–2002). Detailed methods are described elsewhere (e.g., Grant et al., 2004, 2003b). In brief, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the US Census Bureau sampled a nationally representative group of US citizens and non-citizens aged 18 and older. Respondents were interviewed in their homes by trained research staff. The NESARC study over-sampled Hispanic and African American households, as well as individuals aged 18 to 24, to allow for sufficient statistical power to perform meaningful statistical analyses on these populations. Multi-stage cluster sampling identified respondents by first sampling Census sampling units, followed by households, and then household members. Although individuals residing in jails, prisons, or hospitals were not included, members of group living environments, such as group homes, shelters, dormitories, and facilities for housing workers were

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