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MENOMINEE PERSPECTIVES ON COMMERCIAL AND SACRED TOBACCO USE

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Abstract: The Menominee Indian Tribe of Wisconsin has the highest smoking rate in the state. To address the resultant health disparities, the tribe conducted a qualitative pilot project to examine tobacco use. The findings indicated mainstream models of addiction did not capture the tribe's context well; the Indigenist Stress-Coping Model was most applicable. Participants suggested that Menominee-centric ways of knowing related to commercial and sacred tobacco use should be included in all levels of prevention as a key strategy. Recommendations include primary prevention targeted specifically to youth, pregnant women, and adults who care for children, as well as access to commercial tobacco products.

INTRODUCTION

Smoking rates in American Indian/Alaska Native (AI/AN) communities are among the highest in the U.S., with overall prevalence at 31.4% in 2010, as compared to 21.0% for Whites and 20.6% for African Americans (Centers for Disease Control and Prevention [CDC], 2011). Many tribes in the five-state Indian Health Services (IHS) Bemidji area (Illinois, Indiana, Michigan, Minnesota, Wisconsin) have smoking rates that exceed 50% (CDC, 1996). Data published by the Great Lakes Intertribal Council Epidemiology Center (2010), based on recent CDC Behavioral Risk Factor Surveillance Survey results, indicate 82 of 141 participants (58%) reported current smoking (aggregated over five years) in the tri-state area of Michigan, Minnesota, and Wisconsin. One Bemidji-area tribe, the Menominee Indian Tribe of Wisconsin, has over 8,700 members and the highest smoking prevalence rate in the state, at roughly 34% (Palmersheim, Voskuil, & Glysch, 2011). The high prevalence of smoking among the Menominee is also a likely contributor to the

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197% increase in lung cancer mortality (from 37.4 to 111.2 deaths per 100,000) in Menominee County between the years 1979-1983 and 1994-1998. This increase was also the largest in Wisconsin for that timeframe (Ostenso, Remington, & Ahrens, 2001).

Researchers have already made a case in the literature for the impact of historical trauma on AI/AN health disparities, such as high smoking and alcohol abuse rates (e.g., Duran & Duran, 1995; Duran, Duran, Brave Heart, & Yellow Horse-Davis, 1998). For the Menominee, perhaps the most clear and far-reaching impact of colonization and historical trauma is the 1954 Indian Termination Act (Public Law 108). Termination reconstituted Menominee tribal lands into the 72nd county in the State of Wisconsin on July 3, 1959, and resulted in the abject poverty of the Menominee people. After a series of legal maneuvers by tribal leadership, the Menominee Restoration Act was signed into law in December 1973 and finalized in 1975, reestablishing Menominee identity and reservation lands.

After restoration, the tribe found itself more dependent on the Bureau of Indian Affairs and IHS for funding, and was forced to close its tribal hospital and clinic due to a lack of funding for state-mandated improvements. The clinic was not reopened until 1977. During that time period, health care disparities for the Menominee rose precipitously compared with those of other races in Wisconsin. Presently, Menominee County ranks 72nd among the 72 Wisconsin counties for health outcomes (e.g., mortality rate), health determinants, including overall health behaviors (e.g., cigarette smoking in general, smoking during pregnancy), and socioeconomic factors (e.g., income; household poverty, for which the Menominee rate is 31.6%, while the overall rate in Wisconsin is 11.6%; Menominee Indian Tribe of Wisconsin, 2005; 2011). In 2008 the Menominee Tribal Clinic conducted an exploratory pilot project to address one of its most disparate health outcomes—high smoking rates for commercial tobacco. The clinic partnered with two academic institutions, as well as with the Spirit of EAGLES Project/Mayo Clinic, to conduct its own examination of tobacco use and addiction patterns, related health outcomes, and possible treatment strategies—both mainstream and Menominee-centric—for the tribe. The researchers expected the data would inform prevention and intervention efforts on a community-wide level, given that cancer has now passed heart disease as the leading cause of death for the Menominee (Wisconsin Department of Health Services, 2012), and lung cancer is the most prevalent cancer (Wisconsin Bureau of Health Information, 2008).

Models of Smoking Cessation Treatment

Cessation treatment is an important secondary prevention approach that can affect smoking prevalence rates, and may also help to reduce the health disparities associated with smoking-related diseases (Cox, Okuyemi, Choi, & Ahluwalia, 2011). Models to understand and treat tobacco addiction and cessation generally fall within three orientations: (1) negative reinforcement models,

(2) positive reinforcement models, and (3) cognitive-social learning models. However, none of these models accommodate the broader historical contexts of AI/AN persons and communities, or the connection of these contexts with commercial tobacco use rates. Nor do these models account for the core role sacred tobacco has played in many AI populations' Indigenous ways of knowing regarding wellness.

The Indigenist Stress-Coping Model (Walters & Simoni, 2002) was developed to address these contexts. The model "posits that the effect of life stressors (e.g., historical trauma) on health is moderated by cultural factors…that function as buffers, strengthening psychological and emotional health and mitigating the effects of stressors" (p. 521). These cultural buffers can mediate the development of particular negative health outcomes, such as nicotine addiction. This model both brings an Indigenist perspective and acknowledges the existence and possible impact of Indigenous knowledge, understanding, and science—in the present case, traditional teachings about and manners of using sacred tobacco.

Many Indigenous populations consider the tobacco plant a sacred means of communicating with the spirit world; it is not to be ingested via the forms available for commercial use. Further, the Menominee have Original Instructions, or teachings that formalize covenants with the plants used in sacred tobacco, to invoke their medicinal energies. Indigenous ways of knowing emphasize a reciprocal relationship of respect when using the medicinal properties of plants (Cajete, 1999). These plant medicines (e.g., the red or white willow barks in Kinnickinnick, or sacred pipe tobacco, which contain salicin, a chemical similar to aspirin [acetylsalisylic acid]) have been used for thousands of years without the addictive nature of commercial tobacco. This knowledge is indeed important for anyone working to reduce health disparities among Indigenous populations, as the understanding of substance abuse, addiction, and intervention is embedded within a historical-cultural knowledge base. The Indigenist Stress-Coping Model articulates the relationship among stress and trauma; coping (e.g., cultural buffers); and medical, behavioral, and mental health conditions (e.g., substance abuse, such as smoking commercial tobacco; anxiety disorders).

Cessation Treatment with AI/ANs

There is little extant research on cessation treatment among AI/ANs (e.g., Choi et al., 2006; Daley et al., 2012), with fewer than a dozen studies in AI communities overall (for more see Henderson, Rhoades, Henderson, Welty, & Buchwald, 2004), and virtually none examining such from an ethnocentric or culturally adapted mainstream framework. New evidence-based cessation treatments (including medications and counseling techniques) may increase the likelihood of successful quitting (Fiore et al., 2008), but these have not been tested with AI/AN smokers.

A small number of randomized clinical trials are examining cultural tailoring of cessation treatments for AI/AN smokers (e.g., Choi et al., 2011; Smith et al., 2010); however, final results are not yet available. Additionally, cultural and historical aspects of tobacco use by AI/ANs, such as those discussed earlier, must be considered (Pego, Hill, Solomon, Chisholm, & Ivey, 1995; Struthers & Hodge, 2004), and challenges to conducting research in AI/AN communities (e.g., lack of trust, inadequate funding) must be overcome (Burhansstipanov, Christopher, & Schumacher, 2005; Norton & Manson, 1996; Oberly & Macedo, 2004; Petereit & Burhansstipanov, 2008).

In response to this paucity of research and evidence-based treatments, the Menominee Tribe and the Menominee Tribal Clinic (MTC) initiated the present qualitative exploratory pilot project with a sample of 14 Menominee participants to examine perceptions of commercial and sacred tobacco use. Using the four aforementioned models, the researchers aimed to explore points of prevention and intervention related to commercial tobacco use, addiction, health outcomes, and treatment; they also sought to identify Menominee-specific needs and strengths. The team also explored the utility of these models in addressing smoking cessation with AI/AN communities.

The project's specific goals included discerning: (1) the individual smoking stories of Menominee participants; (2) the individual smoking cessation stories of Menominee participants; (3) participants' perceptions of the Menominee community context regarding tobacco, and (4) what role, if any, sacred tobacco use may play for participants. The Indigenist Stress-Coping Model provided a theoretical framework for examining participants' stories. Findings were also examined using the negative and positive reinforcement models, as well as the cognitive-social learning model.

METHOD

The Extended Case Method (ECM; Burawoy, 1991; 1998) was selected as the analytic framework for this project due to its congruence with traditional AI/AN information-gathering and meaning-making processes (Rouse Arndt & Davis, 2011). The ECM accommodates both micro- (e.g., individual) and macro- (e.g., tribal ecology) level exploration, offering the opportunity to fully examine participants' historical and sociopolitical contexts. Emphasis is placed on anomalous cases as possible exemplars of gaps in current theories or models that might require reconstruction (i.e., adding new and critical elements, or further delineating the theory or model with new details on existing elements). Thus, sample size is determined by social significance, or the broadly defined cultural relevance of the data possessed by the participants, rather than by numerical or statistical significance. The role of the researcher is that of insider-participant-expert, collaborating with the community and participants in the data collection and knowledge construction processes. Reflexive and reflective processes (described below) are utilized throughout ECM to affect triangulation and trustworthiness.

Participants and sample characteristics

Fourteen Menominee participants were interviewed for this pilot project. They were identified and recruited by the MTC Wellness Director and staff via nomination sampling (i.e., social significance) and due to their non-smoking status. Inclusion criteria consisted of self-identification as Menominee, being 18 years of age or older, and having a history of smoking cigarettes. Six participants were female and eight were male. All were non-smokers at the time of their interview, but had smoking histories ranging from a low of 9 years to a high of 51 years (mode, 45 years). Participant ages ranged from 42-75 years.

Interview protocol

The interview instrument was a semi-structured protocol developed by MTC staff who consulted with university-based researchers on methodology. The instrument reflected diverse perspectives regarding both commercial and sacred tobacco use. Additionally, a Menominee traditional knowledge holder provided consultation regarding the use of sacred tobacco. He guided the interviewers in developing the questions and also provided cultural context for analysis. A total of 40 questions were used to stimulate conversation, and participants were encouraged to express themselves with minimal influence by the interviewer. The interview questions addressed the project's four aims, discerning: (1) the individual smoking stories of Menominee participants (e.g., "Please talk about the reasons you do/did smoke."); (2) the individual smoking cessation stories of Menominee participants (e.g., "What resources have you/would you used/use for a quit attempt?"); (3) participants' perceptions of the Menominee community context for tobacco use (e.g., "What are the strengths of the Menominee community that can help people to quit smoking?"); and (4) what role, if any, sacred tobacco use may play in participants' smoking and cessation stories (e.g., "Do you use tobacco for spiritual/ceremonial purposes? Please describe."). MTC staff obtained tribal approval for the interviews. University-based researchers were not involved in the data collection process, but were later invited by the Menominee Tribe to collaborate on the formal qualitative analysis of the interview data reported here, as a secondary data set.

Research team and consultant characteristics and biases

The qualitative analysis research team included seven enrolled Menominee (four women and three men, three of whom never smoked). The team consisted of the primary investigator (PI), who was an RN and the MTC Wellness Director; the tobacco cessation counselor (enrolled Menominee); two doctoral-level trainees in Counseling Psychology (one of Métis heritage); a bachelors-level intern (enrolled Menominee); a university-based outreach specialist funded by

the Spirit of EAGLES project (Kaur, Dignan, Burhansstipanov, Baukol, & Claus, 2006); the MTC Director (enrolled Menominee); an associate professor of Clinical Psychology specializing in smoking cessation research; and an assistant professor trained in Counseling Psychology and ECM (of Métis heritage). A Community Advisory Board (CAB) of Menominee Tribe members also provided input to the analytic processes. All CAB members were non-smokers while serving and were selected for their respected roles within the community, with three having significant knowledge of sacred tobacco use.

Procedure

Thirteen interviews were conducted by the PI alone. The fourteenth was conducted by the Menominee intern under the supervision of the PI. All interviews were conducted at the MTC to provide comfort and confidentiality, were audiotaped (with participant consent), and ranged from 1.5 to 2 hours in length. Participants received $50 for their participation. Audio recordings were transcribed and individually coded by four team members, then audited by the assistant professor, who served as the qualitative analyst.

Procedural Reflexivity and Trustworthiness

The project incorporated ECM's reflective and reflexive processes in conjunction with Lincoln and Guba's (1985) recommendations for trustworthiness and generalizability, and in consultation with insider-experts such as the traditional knowledge holder. These procedures helped ensure trustworthiness in data analysis. Reflexivity was benchmarked via two reflexive process meetings, one with the entire research team and one with only the analysts. During the group sessions, which resembled talking circles, research team members shared personal and professional perspectives that could affect research and analysis. Topics included ethnic/cultural and professional background, personal smoking/nonsmoking/cessation history, the Menominee community and its views on commercial and sacred tobacco, and analysis methods. During the sessions, the PI took notes, which were used to triangulate findings and check for biases in final outcomes.

The assistant professor who led the analysis consulted with the research team and four CAB members to develop the project's inductive data analysis, focusing on themes that emerged from the data. The deductive domains of analysis were imposed on the data; these domains were driven by the mainstream models of tobacco addiction and cessation (negative reinforcement, positive reinforcement, and cognitive-social) and the Indigenist Stress-Coping Model, as well as by deductive paradigms—commercial tobacco prevention, use, addiction, health outcomes, and

treatment—found in existing literature on smoking cessation. Reflexivity in negative case analysis (important in ECM) and triangulation were also emphasized in the design via consultation with research team and CAB members.

Analysis

The assistant professor, cessation counselor, and two doctoral trainee team members each individually read and coded the transcripts, first within and then across cases. Data were first categorized by abstracting large domains for the aims identified deductively, utilizing an ecological perspective to find information related to the project's paradigms of prevention, use, addiction, health outcomes, and treatment. Once the data were analyzed for the deductive domains, the aforementioned team members conducted an inductive analysis on the data and found no additional large domains.

Each participant case was analyzed independently by the cessation counselor and the assistant professor; data were then merged across cases. Domains were further rendered to themes utilizing an inductive analysis process; thus, themes were not imposed by the researchers, but emerged from the Menominee-centric data. The final phase of analysis involved auditing checks by two team members (the two doctoral students). The data were then analyzed with respect to the mainstream models (negative and positive reinforcement, and cognitive-social). While ECM offers the researcher the opportunity to remain the "expert scientist" and take a position on data analysis based on theory that may be contrary to that of the analysis team, there was no divergence among the analysis in this project.

FINDINGS

The data were examined for the core tenets of the deductive paradigms (prevention, use, addiction, health outcomes, and treatment), revealing that 4 of the 14 participants had a first smoking experience at 12 years of age. Two indicated 13 or 14 years of age, and six reported 15 or 16 years of age. Only two did not first use commercial tobacco until 18 years of age. Most participants indicated they were introduced to smoking by a relative, often smoking first with a sibling or cousin and obtaining cigarettes from an adult caretaker. Total years smoking were reported as <10 for one participant, 10-19 for one individual, 20-29 for two participants, 30-39 for three participants, 40-49 for five individuals, and >50 for one participant. Aside from their own stories, participants perceived a generally elevated smoking rate within the Menominee community, exposing younger generations to the habit (e.g., "I see that a lot" [#8, 12, 16]; "Pretty common. Always has been." [#1]).[1]

Participants reported similar struggles to those of other populations experiencing tobacco addiction, particularly around smoking-related habits (e.g., driving [#3], eating meals [#1, 2, 3, 5, 11, 15], drinking coffee [#1, 3, 11, 12, 14, 16, 17]). These findings also demonstrated expected health outcomes for smokers, given the Menominee Tribe's low health rankings, with participants reporting difficulty breathing and concerns for coronary and overall health due to smoking. Perhaps most noteworthy is the frequency with which these data appeared and the sense of urgency participants felt about their health (e.g., "…scared straight. Doctor said there was something wrong…the only thing I could do better is by quitting smoking, so I quit" [#10]). The frequency of these data reflects the overall health disparities reported for Menominee County and the Menominee Tribe.

Participants related data regarding their quit stories and cessation treatment, including information from the six women regarding their smoking practices during pregnancy. Three reported complete abstinence during each of their pregnancies (e.g., "Oh, I quit completely with both pregnancies" [#4]), and three indicated partial abstinence (e.g., "…my first baby I never smoked. My second baby very little…" [#14]). Finally, participants shared stories of successful cessation, including a variety of pharmacological means. Chantix (Varenicline) was mentioned most commonly [#2, 4, 13, 14, 15], with patches [#13, 15] and inhalers [#15] also reported.

Seven themes emerged from the inductive (Menominee-centric) data: Menominee Tribal Community, Family, Remarkable Stressors, Alcohol, Financial Issues, Menominee Culture, and Sacred Tobacco.

Menominee Tribal Community

Participants discussed how the Menominee tribal community provided both risk and buffering factors for cigarette smoking. Risk factors included the community's overall high smoking prevalence, which was understood in a more specific manner than just the number of smokers and was identified as a potential trigger for a relapse or a first-time smoking opportunity. Participants commented on the variety of locations in which they and others were exposed to secondhand smoke (e.g., "…smoke everyplace you go" [#15]; "...being around it in the community" [#1]; "...bad for everybody around you" [#12]). Specific locations were mentioned as particularly troubling, including workplaces that were not smoke-free (e.g., "Work meetings" [#11]; "Being around it at work" [#1]) and the tribal casino (e.g., "Gambling" [#12]; "...at the bingo hall and the friend I was with left her cigarettes on the table and they went to the other room so I grabbed one" [#8]).

Participants also viewed the high prevalence of smoking as a contributor to abuse rates for other substances (e.g., "I think a lot of it has to do with probably the drugs on the reservation, which is horrible…very few that don't…a lot of drinking on the reservation" [#17]; "…a lot of people chew in addition to smoking" [#2]; "...a normal part of life up here" [#4]). Participants recognized

the toll of poor health outcomes on the entire community due to smoking (e.g., "…to see how much they suffer…asthma…diseases" [#3]; "…we need to realize the importance of our non-smoking habits [impact on entire community]" [#2]).

According to participants, the Menominee community also provided buffering factors. They recognized that the programming and staff at the MTC were critical elements in the prevention process. Participants acknowledged the MTC's trusted status and established successes in prevention and intervention efforts, mentioning specifically the Wellness Director and physicians (e.g., "… people can go to you [Wellness Director] *and* doctors turn them [patients] over to you" [#14]). MTC programming was broadly recognized as effective in addressing secondary and tertiary health outcomes related to smoking, as well (e.g., "...this reservation here is really blessed with the things that they got"; "...here on this reservation have got so many different things going for [smoking cessation]" [#14]).

Participants also shared recommendations, including continued and pervasive education efforts (e.g., "...community-specific education campaign…tribal newspaper or maybe billboards or posters or anything like that. Education in primary and middle school age" [#11]; "Keeping that information out there…learning what it does to unborn children…premature babies" [#3]; "Pound it into their heads from kindergarten…educate them" [#17]). They also made recommendations regarding community-wide policy issues that could help curb smoking rates and exposure to secondhand smoke (e.g., "...settin' laws for tobacco on the reservation…making all the buildings smoke free which they never were in the past…make them [cigarettes] illegal" [#16]). An overarching perspective was that the community can capably address its own smoking rates and related health disparities in a Menominee-centric way (e.g., "…being a tribal member. We can do it if we stick together. There is power in numbers as a community" [#10]).

Family

Family presented both risk and buffering factors, according to participants. They discussed risk related to secondhand smoke exposure (e.g., "The secondhand smoke is bad. Children get more ear infections…more colds and lung diseases…get cancer from secondhand smoke. It makes them grumpy…" [#8]). Participants indicated that youth were often subjected to parents and/or grandparents who smoked, and that these influences gave the impression that commercial tobacco is harmless (e.g., "…parents are going to smoke in the house, so are the children" [#3]). They also detailed the burden on families caring for smokers who suffered related health consequences (e.g., "My heart attack affected my family…worrying about me. I'm sure that's likewise for other people" [#11]). There was a pervasive recognition that quit attempts and smoke-free homes created significant health benefits, particularly for children (e.g., "…makes it better for your kids" [#16]).

Participants often cited buffering factors related to family. Many detailed the emotional and practical support that family members could provide to a relative trying to quit smoking (e.g., "… by being involved with the person, giving them family support, not just specific to smoking, but supporting them in all ways because when we give up that addiction we do need help" [#2]; "Tell them that they love them and they want them to stay around" [#10]; "…leave them alone, don't drink around them, don't argue or nothing…" [#5] ; "If you get family and friends to back you up on that you can do it and you straighten your mind out that you want to quit yourself" [#12]). Participants related that support could be helpful even if other family members chose to continue smoking (e.g., "...not smoking around them [other family/friends] if they continue to choose to smoke themselves" [#2]). A role-modeling responsibility to others was also noted in this theme, focusing heavily on responsibility to next generations: "...[by] setting examples [as non-smokers]" [#17]; "I tried with my grandson…to talk to him [about a healthy lifestyle]"[#5]). Likewise, participants reported the family was a primary motivation to quit smoking, explicitly citing the positive impact of children and/or grandchildren (e.g., "My family and my wife…grandkids" [#12]).

Remarkable Stressors

Participants shared data on how stress was connected to their smoking stories; the stressors discussed were remarkable in their magnitude, and often traumatic. Some participants indicated traumatic backgrounds due to family violence (e.g., "…when I was growing up…my father…used to always beat up my mother, and…we'd seen that since we were day-one. I could say…we didn't care, we just started [smoking], 12 years old I think we [siblings] all started" [#5]). Others shared histories of traumatic stress due to military service (e.g., "...one was my PTSD [post-traumatic stress disorder]" [#13])—not surprising given that the Menominee serve in the military at the highest per capita rates of all races/ethnicities in the U.S., including other AI/AN populations (Warrington, 2011). This theme also involved the common experience of losing loved ones—a unique risk factor given the Menominees' high rate of completed suicide as well (e.g., "stress…suicide of a youth caused a relapse" [#4]; "...death of a family member" [#2]).

The reality of historical trauma and colonization effects was not lost on participants. There was an understanding that disruption of enculturation had negative consequences for the Nation, families, and individuals. Participants acknowledged the resilience of the Menominee as a primary buffer and asset in the fight to reduce smoking-related health disparities, e.g.,

> The price that Menominee people have paid and hung onto their [way of life], part of their original land base, faced with such vast overwhelming opposition. I think

> they could tie that into maintaining Menominee people in looking for longevity?... Long life, trying to obtain that would be a real spark I guess to try to stop smoking and help others to stop smoking to keep the Menominee Nation strong. [#11]

Alcohol

As with many studies of disparities in Indian Country, particularly in the Plains regions, alcohol emerged as a theme and an ever-present risk factor (Beals et al., 2003). Participants perceived alcohol not just as a social trigger for smoking, but as a distinct health disparity. They shared the need to address abstinence for both substances (e.g., "…drinking will get me into smoking…" [#13]; "…if I spent time in the tavern…cigarette tastes better with a beer…drinking" [#3]).

Financial Issues

Menominee County is the poorest in Wisconsin, and the financial toll caused by participants' smoking habits was noted in the data (e.g., "...I don't have money" [#8]; "Cost and money!"[#1]). Consequently, participants related stories of the joy they felt when they quit, in saving the money they had previously spent on cigarettes. They also shared data detailing their excitement in being able to purchase things they couldn't afford before (e.g., "you save money" [#8]; "extra money" [#14]).

Menominee Culture

The protective nature of traditional Menominee culture was well articulated by several participants. An interesting element of this theme was the view of first-time smoking as a "rite of passage" [#2]. In accordance with ECM's focus on anomalous data and cases, the research team found that this wording (rather than, for example, the more common "to be grown up") resonated with the loss of traditional ways of marking the developmental transition to adulthood. Some participants recognized that the loss of ceremonial rituals marking life events (e.g., puberty rites)—particularly in a culture like Menominee that might have incorporated sacred tobacco into many such events—created large-scale disruption for the Menominee Tribe as a whole.

Likewise, some participants recognized that they could act as role models by having a traditional cultural or spiritual relationship with sacred tobacco. For example, one individual stated:

> Well, I think our traditional cultural way of looking at life[...]we are all connected and I think whether we are grandparents, aunts, uncles, as adults we are role-modeling to our young people and it is important for us—we want people not to smoke and to be non-smokers ourselves, to show them we chose the lifestyle—that I *chose* and *this is what I choose for you*. [#2]

Many participants shared their perspectives on cultural buffers that they viewed as either AI/AN- or Menominee-specific, including a strong sense of community and ethnic identity, a hard-won battle for sovereignty, and an Indigenous or traditional orientation. Overall, participants reported that their ability to quit smoking was strongly tied to both community and familial support. Participants noted that community support was bolstered by the sovereign status of the Menominee Tribe (e.g., the tribe's ability to influence local tobacco laws). They also highly valued their tribal resources, both modern (e.g., the MTC) and, at times, those rooted in Original Instructions (e.g., sacred tobacco use).

Sacred Tobacco

Two-thirds of participants reported that they used sacred tobacco. Participants acknowledged that the relationship with sacred tobacco differs from use of commercial tobacco: the former is healthy and the latter is abusive. Some noted that there is a belief that tobacco used outside of sacred customs harmed the traditional ways of the Menominee. Most who used sacred tobacco reported having a spiritual relationship with the plant:

> I use tobacco [if] something is going on with the family or something like that…, grandchildren getting sick or [someone] gonna pass on…I'll grab some tobacco out of mine [tobacco pouch] and I'll face the [cardinal direction] and I'll hold it in my… hand and I'll pray to the Great Spirit and to the spirits around and I'll ask them for help in a situation that I'm in. I'll just offer it and put it down by a tree. [#13]

> …with the spiritual pipe...you don't inhale and it is herbs from the earth and when you smoke the pipe you are making that connection from Mother Earth to the Creator on behalf of the person you are praying for. [#2]

One individual detailed a cultural (rather than spiritual) practice of using tobacco to respect another's spiritual practice at an event or ceremony (e.g., "No, just at funerals [to be respectful of others' practices]" [#17]). Two participants indicated they used sacred tobacco specifically to aid them in their quit attempts, indicating prayer for cessation (e.g., "It's what got me off of smoking the last [final] time" [#3]).

Many commented on how sacred tobacco use could play a role in addressing Menominees' commercial tobacco-related health disparities (e.g., "I would go back to our basic teaching that we were told by our elder—if you pray sincerely with your tobacco your prayers will be answered, and not enough people pray with tobacco today" [#2]). Others stated:

> I had...[my]...grandchildren with me, they're all teenagers, and I told them that I wanted to quit smoking and, um, they all, the oldest one said "Grandma, we'll help you." So I said, "Let's [offer]...the tobacco...and offer it to the Great Spirit and you guys say some really good prayers so that I'll quit smoking." So we actually did…everybody said their own prayers and just like that the next day I didn't even crave, I have not craved, and it's been going on 5 years…the other day I asked my one granddaughter, I said, um, "Do you think you, did you pray really hard for me when I, when you helped me to quit smoking?" She says, "I prayed really hard Grandma." So they helped me spiritually and I think the tobacco helped too, offering the tobacco. [#3]

> The Menominees do different things with tobacco...I just put mine out in the morning or if there are hard times for someone then I will put tobacco out and pray...Everybody else has different ways of doing their tobacco. Through prayer. [#4]

> In the lodge they tell that, tobacco is sacred, it's supposed to be used in a, in a sacred way. That's why the Great Spirit gave it to us and to use it like people do around here [commercial tobacco]...that ain't right...You're supposed to use it in a sacred way. [#13]

And "...[they explain] why it's being used the ceremonies and not to carry it into society, that's for ceremony use only." [#16]

A number of participants also pointed out that many individuals use commercial tobacco in place of sacred tobacco, and may not understand the differences between the two, possibly never having learned the Original Instructions about sacred tobacco. Participants noted that this use was prevalent at funerals, and presented a danger and potential relapse trigger for some:

> ...the cigarettes were in a bowl at the funeral home by the door....I tried that [pray for the deceased with a commercial cigarette instead of sacred tobacco]...at a friend's funeral and I got so ill after I lit up a cigarette and I took a couple of puffs. I had the most horrible headache and stomachache and I was nauseous and I just felt totally ill, physically, mentally, spiritually, and every which way. [#2]

Additional Information

Finally, the closing interview question asked participants to share anything additional they wanted to discuss, that had not been asked by the interviewer. This opportunity yielded considerable additional information, beyond what the researchers had seen in other such projects. This information included participants' accounts of interactions with spirit beings via both waking and dream events, as well as details regarding traditional teachings and learning processes. Details are not included here because much of the information was of a sacred nature. These data were detailed for the Menominee Tribe's confidential use only.

DISCUSSION

The primary purpose of this project was to examine points of prevention and intervention related to commercial tobacco use, addiction, health outcomes, and treatment. We used ECM to explore mainstream models of addiction and cessation (negative reinforcement, positive reinforcement, and cognitive-social) and to elucidate our deductive findings. While many of the findings mirrored those found in other racial/ethnic populations, some were unique to AI/AN populations and to the Menominee in particular.

Although many participants saw the Menominee community as presenting particular risks for smoking (e.g., the casino and other workplaces allow smoking), the Menominee Tribe's sovereign status also well positions it to manage its high smoking rate by instituting bans and promoting tribal clinic resources, especially prevention and intervention services. Likewise, the emphasis on family as both a buffer and a risk factor for smoking for this sample implies that making these prevention and intervention efforts family-focused will be beneficial. The family unit can promote long-lasting change and development of healthy coping strategies. Such prevention and intervention efforts also can have intergenerational impact and can contribute to the healthy management of the remarkable stressors faced by many participants. Given the number of individuals who expressed that alcohol exposure and use were risk factors for smoking, healthy habits regarding both substances could be taught within the family unit. And given the Menominee Tribe's high poverty rate and the toll that both smoking and alcohol use can take on individual and family finances—which in turn negatively affects the entire community—such education seems especially important.

Some participants viewed Menominee traditional teachings as a primary aspect of prevention and intervention for cessation, and reported that tribal collectivism and relationships were the most elemental of their Menominee values, closely followed by the responsibilities that each generation has to others (a Seventh Generation perspective).

In addition to bolstering family-focused services, the idea of intergenerational prevention and intervention is embedded within traditional teachings. While details about tobacco and spirit interactions could not be reported in the findings, it is clear that many participants have a core reverence for traditional teachings, regardless of their religious or spiritual orientation. This finding suggests that integration of traditional teachings into commercial tobacco use prevention and intervention programs offers a primary avenue for addressing the Menominee Tribe's high smoking prevalence and resultant health outcomes.

Community role models and knowledge holders could be incorporated into both new and existing (e.g., youth and school outreach) prevention and intervention efforts to offer traditional options for healthy lifestyles and coping strategies. These efforts could also incorporate input from those who manage the traditional tobacco program at the Historic Preservation Department.

Models of Tobacco Addiction and Cessation

The negative reinforcement model did help explain smoking as a stress reliever, but no data were identified that could contribute to further reconstruction of this model. The positive reinforcement model of smoking cessation seemed to garner more data from participants. The findings on first use, positive social experiences with peers, family and community role models, and habits (e.g., caffeine or alcohol use), and participants' reports of conscious and informed decision-making regarding smoking, may encourage researchers and treatment professionals to examine current prevention and intervention efforts to add to the understanding of commercial tobacco use from a positive reinforcement perspective. Treatment plans for Menominee smokers should acknowledge the impact of both historical trauma and present-day stressors to fully understand the positive reinforcement cycle for effective treatment.

The cognitive-social learning model seemed to accommodate some of the findings of this project, but not the deeper contextual issues unique to the population, its complex tribal community setting, or the historical factors influencing its many present-day health disparities. Thus, while the model did provide a framework for understanding the social reinforcement for smoking behavior (e.g., exposure to smoking in social situations like the casino), it did not effectively accommodate the historical, cultural, or spiritual contexts of Menominee smokers (e.g., loss and reestablishment of sovereign tribal recognition, importance of tribal community and family, role of sacred tobacco and use of cigarettes in its place at funerals).

The Indigenist Stress-Coping Model was the primary theoretical orientation used for this project and did present an intriguing forum for analysis. It accommodated many of the data reported (e.g., regarding stressors unique to the Menominee), but did not especially address the more biological elements included in the other models (e.g., accounting for cravings).

While the project was not designed to gather information specific to all three health areas of the Indigenist Stress-Coping Model (i.e., stressors, buffers, and outcomes), data were reported in each area. The findings indicate that commercial tobacco use had been part of stress-coping efforts to manage negative colonization effects for many participants. Further, Menominee County's low rankings in a variety of biopsychosocial measures demonstrate the resultant negative health outcomes (often related to historical factors), many of which were identified by participants. However, most participants also shared data relating the strength of their tribal community and the strength available through traditional ways in coping with challenges.

The full contextual-sociological perspective reported by participants was also difficult to address within the Indigenist Stress-Coping Model as it currently exists. Participants perceived some behaviors (e.g., pervasive smoking within the community) as cultural, despite the fact that such behaviors are not traditional, but reflect colonization's impact on the culture.

Future Research

It may be useful for future researchers to gather information on Menominees' traditional ways in relationship to their health and other habits. For example, findings from this project suggest that clinicians need to assess for smoking settings and triggers that may be unique to Menominee, such as the use of tobacco for hunting or during recreational activities such as camping. Cessation therapists and MTC would benefit from gaining knowledge of such activities and settings, which can aid them in providing skills training to manage the temptation to use commercial tobacco. In addition, it may be helpful for researchers to adapt and test the models, particularly the cognitive-social learning and Indigenist Stress-Coping models. All the models examined for this project would benefit from exploring how such culturally specific findings might further inform their structures.

Implications for Commercial Tobacco Cessation

There was no paucity of information shared in this project on health outcomes, and their devastating impact on Menominee families and the entire community, as a result of commercial tobacco. The results indicated that the Menominee participants in this study experienced many of the same issues related to tobacco addiction faced by White smokers (e.g., cravings, alcohol use associated with smoking), although the Menominee tend to have higher prevalence rates, which may be related to younger first use experiences. This prevalence finding is noteworthy, particularly given that cancer is now the leading cause of death for the Menominee (Wisconsin Department of Health Services, 2012), and that lung cancer is the most prevalent form (Wisconsin Bureau of Health Information, 2012). A recent trend analysis (1992-2003) by Davis, Hartman, and Gibson

(2012) has suggested that, as a group, Native Hawaiians, American Indians, and Alaska Natives had the largest decrease in current smoking by race, and, should that pattern continue, they could have smoking prevalence rates in line with those of the general population in the years to come. The data reported here, however, seem to reflect an increase.

These data imply that primary prevention efforts will be essential in addressing the health needs of the Menominee, and should start with early elementary school youth and proceed throughout the lifespan, with special attention to pregnant women and families. A strong link has been established between prevention efforts with youth and reduced risk for tobacco addiction (U.S. Food and Drug Administration, 2012). Important aims for primary prevention also include educating adults—particularly parents and caretakers of youth—to control access to commercial tobacco products, and to raise awareness of the effects of secondhand smoke exposure.

Regarding cessation, many tribal members likely have had lengthy tobacco addiction periods, as did many of the participants before they quit. Thus, they may require long periods of treatment to address their more established smoking habits. Given the abundance of data that participants shared about the benefits of traditional teachings (e.g., regarding medicinal properties of plants), a logical next step would be to include such knowledge in cessation efforts in a meaningful and coordinated manner. For example, traditional knowledge holders could teach about the medicinal properties of plants used in ceremony, as well as about the harmful qualities of commercial tobacco. Finding ways to share traditional teachings on plant relationships may provide a needed bridge back from commercial tobacco use to sacred tobacco use. Participants also noted the utility of many mainstream cessation strategies, including medications. However, since the Menominee continue to face a variety of stressors and challenges, commercial tobacco prevention and intervention efforts must be holistic, addressing factors such as polysubstance abuse and co-occurring disorders. These data directly affected the tribe's decision to next engage academic partners in a tribally driven smoking cessation clinical trial—the first of its kind—comparing standard treatment (ST; counseling + Varenicline) and a culturally tailored intervention (ST + cultural elements such as traditional tobacco stories and a pouch for sacred tobacco). That project is currently underway.

It was also clear that participants thought the tribe and tribal leaders had a responsibility to regulate commercial tobacco use, particularly in settings that they considered more likely to encourage smoking. For example, many felt that working at or frequenting the tribal casino subjected them to smoking triggers or dangerous levels of secondhand smoke.

It is likely that the Menominee Tribe will benefit from addressing the issue through policy efforts, although some actions could lead to conflict, and economic consequences (e.g., loss of revenue caused by regulation of tobacco sales on tribal lands) will need to be considered. However, options such as smoke-free environments and regulations on sales and display of tobacco could

help to change a culture that, according to participants, facilitates tobacco addiction. Such issues will become increasingly relevant, given that U.S. Food and Drug and Administration regulations now apply to sovereign nations (unless restricted by a specific treaty), creating a forum for nations to implement new prevention efforts.

Limitations

The initial design of this project had limitations in that the qualitative expert was not originally involved in developing the interview, but was asked by the Menominee researchers to serve as a consultant after the data were collected. However, the project design represents best practices in community-driven research, particularly given the goal of examining both mainstream models (negative and positive reinforcement, cognitive-social learning) and a model that seems more congruent with AI/AN worldviews (Indigenist Stress-Coping). Given the socially selected sample, it would be beneficial to conduct additional interviews to explore the additional themes that might emerge through a larger sample. In addition, the questions asked participants to think retrospectively. Certainly memory may be flawed, though the team remains convinced that the essential validity of the data is not affected (particularly within a community such as Menominee with an oral history orientation). Finally, the need to keep confidential some of the data on sacred tobacco use constrained the full reporting of findings and comprehensive reconstruction of the models. These data are available to the responsible individuals within the Menominee Tribe and will help guide services at the MTC, but will not be shared through publication.

CONCLUSION

Smoking prevalence for AI/ANs remains disproportionately high compared to that of other races. The MTC staff conducted this pilot project as an initial exploration to help them develop a prevention and intervention program for the community, which has seen a steady increase in poor health outcomes related to smoking. The findings illuminate the Menominees' unique traditional ways of managing the health crisis, which are rooted in traditional teachings on establishing a healthy relationship with tobacco. Participants shared their belief that, as a community, the Menominee will overcome their high rates of commercial tobacco use and related health disparities using mainstream prevention and intervention efforts, informed by traditional teachings and supported by Menominee leadership. Such efforts may include employment of the Menominee Tribe's sovereign status to engage needed changes in treatment and policy on commercial tobacco.

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FOOTNOTE

[1] Participant codes appear after quotations. Participants were not coded numerically from 1-14, but received numbers from 1-17.

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RATES OF DELAY AND PROBABILITY DISCOUNTING OF NORTHERN PLAINS AMERICAN INDIANS DISCOUNTING INDIAN AND MAJORITY CULTURE-SPECIFIC OUTCOMES

Jeffrey N. Weatherly, PhD, J. Douglas McDonald, PhD, and Adam Derenne, PhD

Abstract: Discounting occurs when the value of an outcome changes because its delivery is delayed or uncertain. Discounting provides insight into how individuals make decisions, with rates of discounting being related to a number of behavioral disorders. In this study, 39 American Indians (AIs), 29 female, were recruited from the psychology department participant pool at a university in the Northern Plains to complete an acculturation inventory and delay- and probability-discounting tasks related to money, health care, and education reform. Results from ANOVAs showed that participants did not differentially discount the delayed outcomes, but discounted the probabilistic monetary outcomes to a greater extent than probabilistic outcomes involving education reform, suggesting that participants were more risk averse with the monetary, than the education, outcomes. Differences in discounting were not observed as a function of whether the outcome would occur on or off a tribal reservation. Results from regression analyses showed that participants' affiliation with the majority culture was also related to how they discounted probabilistic monetary outcomes. The present study represents the first attempt to measure probability discounting in AI participants and is the first to show differences in this type of decision making. The results, therefore, represent a step forward in understanding when risk-averse versus risk-prone decisions (i.e., a small but certain outcome vs. a better but uncertain outcome) may be made, and how those decisions are related to acculturation in AIs.

American Indian and Alaska Native Mental Health Research

Discounting refers to the finding that the subjective value of an outcome is altered if its delivery is either delayed or uncertain (i.e., delay or probability discounting, respectively; Madden & Bickel, 2010). For instance, if a person won a sum of money, but could not collect it for a certain amount of time, then s/he would likely be willing to accept a lesser amount to get the money immediately. Research on discounting has shown that, in general, as the full outcome is increasingly delayed or becomes increasingly improbable, a person is willing to accept less of the full amount to get the outcome immediately or with certainty, respectively (see Madden & Bickel, 2010, for a review).

How quickly the subjective value of the delayed or uncertain outcome decreases is known as the "rate" of discounting. Rates of delay discounting can be said to measure a person's tendency toward impulsivity versus self-control. Rates of probability discounting, on the other hand, can be said to measure a person's tendency toward risk aversion versus risk proneness.

Some researchers have argued that these types of discounting are related to one another (e.g., Green & Myerson, 1996; Rachlin, Logue, Gibbon, & Frankel, 1986), as the same mathematical model (i.e., a hyperbolic function; Mazur, 1987) describes well the data from both types of discounting, and some researchers have reported that one can determine a constant for the same outcome when it is either delayed or probabilistic (Rachlin, Raineri, & Cross, 1991; Yi, de la Piedad, & Bickel, 2006). However, others have argued that they are at least somewhat distinct (e.g., Green & Myerson, 2004; Rachlin, Brown, & Cross, 2000; Reynolds, Patak, Shroff, Penfold, Melanko, & Duhig, 2007), for several reasons. For example, the same manipulations (e.g., changing the magnitude of the outcome) can produce different changes in the two types of discounting (e.g., Estle, Green, Myerson, & Holt, 2006), changes in delay alter probability discounting differently than changes in probability alter delay discounting (Weatherly, Petros, Jónsdóttir, Derenne, & Miller, in press), and the two types of discounting appear to activate different neural pathways (Mobini, Chiang, Ho, Bradshaw, & Szabadi, 2000).

Psychologists are interested in how people make decisions about discounting for a number of reasons. Steep rates of delay discounting, and shallow rates of probability discounting, have been associated with psychological disorders (see Odum, 2011b), including substance abuse and dependence (see Yi, Mitchell, & Bickel, 2010) and pathological gambling (see Petry & Madden, 2010). Further, researchers have suggested that the process of discounting may be involved in important individual decision-making situations (e.g., regarding one's own health; see Tucker, Simpson, & Khodneva, 2010) or in policy makers' decisions pertaining to social issues (e.g., Hardisty & Weber, 2009).

There are several other important reasons to study discounting within American Indian (AI) populations. First, some of the disorders that have been associated with both delay and probability discounting are found at higher rates among some AI populations than in the majority population (e.g., McDonald & Chaney, 2003; Wardman, el-Gueblay, & Hodgins, 2001). Understanding discounting within AI populations may help explain why some disorders occur at higher rates, and how to prevent or treat them. For example, if rates of discounting certain outcomes are shown to be predictive of certain disorders (e.g., substance abuse), then educators and counselors can focus their efforts on altering how people make decisions about those outcomes. However, to date, no such studies have examined these possibilities in AI populations.

Second, cultural perspective may influence how people discount certain outcomes. Du, Green, and Myerson (2002) reported differences in how American, Chinese, and Japanese participants discounted delayed and probabilistic hypothetical monetary outcomes. For example, American participants discounted probabilistic rewards most steeply, whereas Chinese participants discounted such rewards the least steeply. Perhaps more relevant to the present study, Weatherly and McDonald (2011) asked Northern Plains AI university students, and a matched sample of Caucasian students, to discount a variety of delayed outcomes. Results demonstrated that differences in discounting were sometimes observed between the groups, with the direction of the difference (i.e., toward impulsivity or self-control) varying as a function of the type of hypothetical outcome being discounted. Studying discounting across different cultures has the potential both to inform us as to the process of discounting and to help identify exactly how similar decisions may be framed within different cultures.

Third, a multicultural perspective may influence how people make decisions about discounting. Most, if not all, AIs are immersed in two different cultures: their traditional tribal/community culture and the majority U.S. culture. However, that fact does not necessarily mean that particular outcomes will be equally valued within both cultures. Research has shown repeatedly that rates of discounting can vary as a function of the magnitude of the outcome (e.g., the larger the monetary amount, the longer people tend to be willing to wait for it; Chapman, 1996; Thaler, 1981) and/or the type of outcome being discounted (e.g., money vs. medical treatment; Weatherly & Terrell, 2011; Weatherly, Terrell, & Derenne, 2010). Thus, one might predict that AIs would display different rates of discounting for different outcomes as a function of the cultural context in which the outcome occurs. One might also predict that this difference would vary as a function of how strongly an AI participant identifies with his/her AI culture and the majority culture.

This last reason also has implications for research on AI mental health issues. For instance, Oetting and Beauvais (1990) theorized that a multicultural orientation can be viewed as orthogonal. That is, it is possible for AIs to be highly competent in both their traditional culture and the majority

culture (bicultural), highly competent in one culture but not the other, or highly competent in neither culture. They argued that being bicultural is associated with good mental health and generally positive social functioning. Subsequent researchers have made a similar argument (e.g., McDonald & Chaney, 2003). Conversely, those AIs who have less competence in both cultural orientations may be at risk for greater psychopathology and lower social functioning. Given that rates of discounting have been associated with a number of psychological disorders (e.g., steep rates of delay discounting and shallow rates of probability discounting have been linked to pathological gambling; Petry & Madden, 2010), one might therefore predict that measures of biculturalism in AI participants would be associated with how those participants discount delayed or uncertain outcomes.

To date, only one study (Weatherly & McDonald, 2011) has investigated discounting in AI participants. However, that study had a fairly small sample of AIs (8 and 18 in two separate groups), and the focus of the study was to compare rates of discounting of the AI participants to those of a matched sample of Caucasian participants. The goal of the present study was to focus solely on discounting behavior of AI participants. Furthermore, Weatherly and McDonald only investigated differences in rates of delay discounting. To date, no published studies have investigated rates of probability discounting in AI participants. Likewise, no study has considered the potential relationship between bicultural orientation and discounting. The present study did so.

Thirty-nine AIs attending a university in the Northern Plains were recruited to participate in the present study. The participants completed several measures: a demographic questionnaire, a bicultural orientation questionnaire, and a two-part discounting task. Appendix A shows the hypothetical items used in the discounting task.

Our hypotheses were as follows. First, because previous research has found that rates of discounting differ as a function of the magnitude (e.g., Estle et al., 2006) and/or type of outcome (e.g., Weatherly et al., 2010), we predicted that different rates of discounting would be observed across the different hypothetical outcomes (e.g., being owed money vs. receiving medical treatment).

Second, we predicted that different rates of discounting would be observed for outcomes within the participants' traditional cultures versus those within the majority culture. Rates of probability discounting increase (i.e., people tend to be willing to accept smaller amounts of the outcome) as the magnitude of the outcome increases (e.g., Estle et al., 2006), and that tribal outcomes would have a greater magnitude than federal outcomes. Therefore, we predicted steeper rates of probability discounting of the tribal education resolutions than the federal education legislation.

Third, we predicted that rates of discounting would be associated with participants' levels of identification with their traditional and the majority cultures (i.e., discounting of tribal vs. federal educational issues would differ as a function of participants' AI cultural identification). Also, consistent with the research that suggests that bicultural identification is associated with better mental

health (e.g., McDonald & Chaney, 2003) and that steep rates of delay discounting and shallow rates of probability discounting are associated with certain psychological disorders (e.g., Petry & Madden, 2010), we predicted that low levels of cultural identification would be associated with such rates.

METHOD

Participants

The study was open to students at the University of North Dakota who were members of federally recognized AI tribes and were enrolled in psychology classes between January 2011 and January 2012. The study was completed using SONA, an online experiment-management system (SONA Systems, Ltd, Version 2.72; Tallinn, Estonia) available only to students enrolled in psychology classes. The study was advertised only within SONA, materials were presented by the system, and all data were collected within this system. SONA tracked participation at the individual level, ensuring that each eligible student could participate only one time.

The original sample consisted of 47 individuals. Data from eight potential participants were discarded because, although they self-identified as AI, they either failed to specify any tribal affiliation or provided an affiliation with a non-federally recognized tribe. Thus, the final sample of participants consisted of 39 (10 male, 29 female) AIs. Participants received extra course credit in their psychology class as compensation.

Materials and Procedure

The first item presented to participants was a description of the study as approved by the Institutional Review Board at the University of North Dakota. Continuation in the study beyond this item constituted the granting of informed consent.

In all, participants completed three measures; the order of presentation varied randomly across participants.

The first measure was a demographic questionnaire which asked participants about AI status and tribal affiliation, age, grade point average, marital status, and participation in tribal activities (e.g., powwows).

The second measure was a 20-item questionnaire based on the Northern Plains Biculturalism Inventory-Revised (NPBI-Revised; Baker, 2005), designed to assess level of biculturalism. Researchers selected 20 items from the NPBI-Revised for use in this study, retaining the original wording. The questions pertained to how much the respondent identified, or felt comfortable, with AI and majority cultural practices. All items were endorsed on a 5-point Likert-like scale; 13

were associated with AI cultural identification (AICI) and 7 with majority, or European American, cultural identification (EACI). Scores for each subscale were calculated by summing the responses across the associated items. Although several measures of biculturalism have been developed and tested (e.g., Moran, Fleming, Somervell, & Manson, 1999), this particular inventory was used because it was developed specifically for AIs of the Northern Plains. Baker (2005) factor analyzed responses from the items in this inventory and reported a two-factor solution that corresponded to the intention behind the inventory. Internal consistency of the inventory in the present study was adequate, with Cronbach's alphas of 0.81 for the entire inventory and 0.91 and 0.76 for the AICI and EACI subscales, respectively.

The third measure was a two-part discounting task. The first part was a delay-discounting task that asked questions about four different hypothetical outcomes (being owed $1,000, being owed $100,000, obtaining medical treatment for oneself, and obtaining medical treatment for one's child). The exact wording of these questions can be found in Appendix A. The monetary outcomes were used because hypothetical monetary sums are the most commonly used outcomes in discounting research (see Madden & Bickel, 2010). Two different monetary sums were included as a manipulation check (i.e., the magnitude effect; Thaler, 1981). Specifically, because people tend to be willing to wait longer for larger outcomes, one would expect rates of delay discounting to be less steep for the $100,000 outcome than for the $1,000 outcome. The medical outcomes were chosen because past research suggests that decisions pertaining to medical treatment may differ from those pertaining to monetary sums (Terrell, Derenne, & Weatherly, in press; Weatherly et al., 2010; Weatherly & Terrell, 2011). The self versus child manipulation was chosen to determine if decision making would differ as a function of who would experience the hypothetical outcome. Furthermore, these outcomes were similar or identical to outcomes used in past research (e.g., Weatherly et al., 2010).

Participants were asked five questions about each delayed outcome, with the difference across questions being the delay to receiving the full outcome. The five delays were 1, 5, 10, 20, or 50 years. These particular delays were used to evaluate whether there might be a difference in time perspectives between AI and majority cultures. By using very long delays, we were attempting to maximize differences in discounting as a function of the participants' cultural identities.

The second part was a probability-discounting task that also asked about four different hypothetical outcomes (winning $1,000, winning $100,000, passing federal education reform legislation, and passing tribal education reform resolutions). The monetary outcomes were chosen for the same reasons described above. The education outcomes were also chosen because research suggests that discounting of these outcomes may differ from discounting of monetary ones (Terrell

et al., in press; Weatherly et al., 2010; Weatherly & Terrell, 2011). The federal versus tribal manipulation was designed to test whether discounting would vary as a function of whether the hypothetical outcome occurred on or off the reservation.

Again, participants were asked five questions about each outcome, with the difference across questions being the probability of receiving the full outcome. The five probabilities were 1, 10, 50, 90, or 99%. The exact wording of each outcome for the probability-discounting tasks can also be found in Appendix A.

In the discounting task, the outcomes were presented serially. That is, participants completed all five questions about one outcome before questions about another outcome were asked. The order of the eight outcomes varied randomly across participants, as did the order of the delays or probabilities for the individual outcomes.

Participants answered each discounting question by selecting from a series of researcher-provided response options, which is a variation of the multiple-choice method introduced by Beck and Triplett (2009). The exact response options for each outcome can also be found in Appendix A. Research on this particular method of collecting discounting data has shown that it produces temporally reliable results for both delay (Beck & Triplett, 2009) and probability (Weatherly & Derenne, in press) discounting. Likewise, research (Weatherly & Derenne, 2011) also suggests that this method typically, but not always, produces rates of discounting that are similar to other brief-response methods of collecting discounting data, such as the fill-in-the-blank method (Chapman, 1996).

Data Preparation and Analysis

The discounting data were analyzed by calculating the area under the discounting curve (AUC; Myerson, Green, & Warusawitharana, 2001) using Equation 1:

$$\sum_{i=1} (x_{i+1} - x_i) \times (y_i + y_{i+1})/2$$

With Equation 1, AUC is calculated by summing the areas of the successive trapezoids created by the indifference points (i.e., the participants' responses) across the five different delays or probabilities. For the delay-discounting outcomes, x was calculated in months. For the probability-discounting outcomes, x was calculated in terms of odds against the outcome. For both types of discounting, AUC values could vary between 0.0 and 1.0, with the value varying inversely with the rate of discounting. That is, a person who is willing to settle for a small amount of an outcome because the full outcome is delayed or uncertain is discounting steeply and therefore will display a discounting curve that has little area under it, which will be represented by a small AUC value. Conversely, a person who expects a large amount of the outcome despite the full outcome being

delayed or uncertain is discounting very little and therefore will display a discounting curve that has a large area under it, which will be represented by a large AUC value. For delay discounting, small AUC values indicate a tendency toward impulsive responding and large AUC values indicate a tendency toward a self-control response. For probability discounting, small AUC values indicate a tendency toward risk aversion and large AUC values indicate a tendency toward risk.

Although other analysis methods are available, we employed Equation 1 for several reasons. First, Equation 1 does not assume that the discounting data will take a certain form across the different delays or probabilities, unlike, for example, being fitted by a hyperbolic function (see Madden & Bickel, 2010, for a review). Second, with Equation 1 (and unlike with other methods), AUC values are calculated directly from the data rather than being estimated from the data. Third, AUC values are typically parametric, and therefore do not require data transformation prior to conducting statistical analyses (see Myerson et al., 2001, for a full discussion of the merits of AUC).

To test for differences in rates of discounting of the different outcomes, two one-way repeated measures analyses of variance (ANOVAs) were conducted, one on the AUC values from the four delayed outcomes and one on the AUC values from the four probabilistic outcomes. These analyses were conducted, rather than a two-way (small/large by money/education) ANOVA because one cannot necessarily equate tribal versus federal education as small versus large. The delayed and probabilistic outcomes were analyzed separately because there was no theoretical reason to believe that the five delays tested perfectly equated to the five probabilities tested. That is, one cannot assume that the delays of 1 or 50 years are the equivalent of having a 99 or 1% chance of receiving the outcome. Tukey HSD post hoc comparisons were made in the event that statistically significant results (i.e., $p \leq .05$) were observed.

To test for an association between cultural identification and rates of discounting, a simultaneous linear regression was conducted on each discounted outcome. In these analyses, the AUC value served as the dependent measure and the participants' scores for AICI and EACI served as predictor variables. Simultaneous regressions were employed because these analyses allowed for a determination of how much variance in the AUC values could be independently accounted for by the AICI and EACI scores.

RESULTS

Participants

All 39 participants self-identified as members of federally recognized AI tribes, with 20 identifying as Chippewa, 9 as Sioux, and the remaining 10 identifying with another Northern Plains tribal affiliation (affiliations were self-reported; i.e., they were not selected from options created

by the researchers). Participants reported a mean age of 24.4 years (*SD* = 8.4 years) and a grade point average of 3.0/4.0 (*SD* = 0.8). Five (12.8%) reported being married and 11 (28.2%) reported having a child. Twelve participants (30.8%) reported that they regularly attended powwows. Two participants (5.1%) reported that they had served on their tribe's tribal council, and nine (23.1%) indicated that someone in their family had served on their tribe's tribal council. The mean score on the AICI subscale of the biculturalism inventory was 37.7 (*SD* = 10.9). The mean score on the EACI subscale was 24.9 (*SD* = 5.2). AICI and EACI scores correlated at r (39) = -0.202, p = 0.217 (two-tailed). Thus, participants' responses averaged in the "neutral" category for both scales.

Delay Discounting

The mean AUC values for being owed $1,000, being owed $100,000, getting medical treatment for a serious disease, and getting medical treatment for one's child for a serious disease were 0.61 (*SD* = 0.32), 0.66 (*SD* = 0.26), 0.67 (*SD* = 0.23), and 0.67 (*SD* = 0.23), respectively. The one-way repeated measures ANOVA indicated that these values did not differ significantly from one another, $F(3, 114) = 0.81$, $p = 0.494$, $\eta^2 = 0.021$.

The first linear regression was conducted on discounting the outcome of being owed $1,000. Again, AUC value served as the dependent measure and the participants' scores for AICI and EACI served as predictor variables The model was not significant, $F(2, 36) = 0.00$, $p = 0.998$, $R^2 = 0.000$, and neither AICI ($\beta = 0.010$, $p = 0.956$) nor EACI scores ($\beta = 0.007$, $p = 0.962$) were significant predictors of discounting.

A similar result was observed for the outcome of being owed $100,000, with the model failing to reach statistical significance, $F(2, 36) = 0.01$, $p = 0.994$, $R^2 = 0.000$, and neither AICI ($\beta = -0.002$, $p = 0.989$) nor EACI scores ($\beta = -0.018$, $p = 0.916$) being significant predictors of discounting.

Likewise, for the outcome of getting medical treatment, the overall model, $F(2, 36) = 0.90$, $p = 0.414$, $R^2 = 0.048$, and both AICI ($\beta = 0.022$, $p = 0.897$) and EACI scores ($\beta = -0.213$, $p = 0.208$) failed to reach statistical significance. When the outcome was one's child receiving medical treatment, the overall model again failed to reach statistical significance, $F(2, 36) = 2.78$, $p = 0.075$, $R^2 = 0.134$. Again, neither AICI ($\beta = 0.187$, $p = 0.244$) nor EACI scores ($\beta = -0.279$, $p = 0.087$) were significant predictors of discounting.

Thus, for the delayed outcomes, different rates of discounting were not observed for the different outcomes. Furthermore, level of identification with either an AI or the majority culture was not predictive of how participants discounted any of the delayed outcomes tested.

Probability Discounting

The mean AUC values for winning $1,000, winning $100,000, federal education legislation, and tribal education resolutions were 0.36 (*SD* = 0.28), 0.34 (*SD* = 0.29), 0.71 (*SD* = 0.23), and 0.69 (*SD* = 0.25), respectively. The one-way repeated measures ANOVA indicated that these values differed significantly from one another, $F(3, 114) = 42.84$, $p < 0.001$, $\eta^2 = 0.530$. Tukey HSD post hoc tests indicated that rates of discounting of the monetary outcomes differed significantly from discounting of the education outcomes. However, the difference in AUC values between the two monetary outcomes and between the two education outcomes was not statistically significant.

The first linear regression was conducted on discounting the outcome of winning $1,000. The model approached statistical significance, $F(2, 36) = 3.02$, $p = 0.061$, $R^2 = 0.144$. Participants' AICI scores were not significant predictors of the AUC values ($\beta = -0.022$, $p = 0.889$). However, EACI scores were significant predictors of discounting ($\beta = -0.383$, $p = 0.020$), with higher EACI scores being predictive of lower AUC values (i.e., risk aversion). A similar result was observed for the outcome of winning $100,000. The model was statistically significant, $F(2, 36) = 4.78$, $p = 0.014$, $R^2 = 0.210$. AICI scores were not significant predictors of discounting winning $100,000 ($\beta = 0.055$, $p = 0.717$), but EACI scores were significant predictors ($\beta = -0.444$, $p = 0.006$). Again, greater identification with the majority culture was associated with steeper rates of probability discounting (i.e., lower AUC values).

The results for the education outcomes were different. When analyzing the AUC values for discounting federal education legislation, neither the overall model, $F(2, 36) = 0.71$, $p = 0.470$, $R^2 = 0.041$, nor the predictor variables, AICI: $\beta = 0.175$, $p = 0.301$ and EACI: $\beta = -0.073$, $p = 0.662$, were significant. Likewise, when analyzing the AUC values for discounting tribal education resolutions, neither the overall model, $F(2, 36) = 0.18$, $p = 0.837$, $R^2 = 0.010$, nor the predictor variables, AICI: $\beta = -0.039$, $p = 0.817$ and EACI: $\beta = -0.099$, $p = 0.562$, were significant.

Thus, for the probabilistic outcomes, different rates of discounting were observed between the monetary and education outcomes. Furthermore, level of identification with the majority culture, but not with an AI culture, was predictive of how participants discounted the monetary outcomes. However, cultural identification was not predictive of how participants discounted the education outcomes.

DISCUSSION

Our first hypothesis was that different rates of discounting would be observed across the different outcomes being discounted. This hypothesis was not supported when participants discounted delayed outcomes, but was supported when they discounted probabilistic outcomes.

Our second hypothesis was that AI participants would discount a majority culture outcome (i.e., federal education legislation) differently than a tribal outcome (i.e., tribal education resolution). This hypothesis was not supported. Finally, we predicted that participants' level of identification with an AI culture and the majority culture would predict how they discounted delayed and probabilistic outcomes. Cultural identity was a significant predictor of discounting for only two of the eight outcomes tested. Perhaps surprisingly, in those instances, it was participants' identification with the majority culture, and not their AI culture, that predicted discounting.

Weatherly and McDonald (2011) reported sometimes finding differences in rates of delay discounting between Northern Plains AI and Caucasian participants. The present study employed only AI participants and did not find differences in rates of delay discounting across four different outcomes. One could argue that the failure to observe differences was due to a small sample size. However, the fact that we found significant differences in discounting across the probabilistic outcomes would seem to counter this argument. This failure to find differences in rates of delay discounting was likely the outcome of a small effect size (Cohen, 1988). That is, the type of delayed outcome being discounted simply did not account for much of the variance in the observed AUC values. It should also be noted that this failure was probably not due to any aberrance in the data. Although the difference was not statistically significant, participants tended to display higher AUC scores for being owed $100,000 than for being owed $1,000, which would be consistent with the magnitude effect (Thaler, 1981).

Theoretically, there are several possible explanations for the failure to find differences in the rates of delay discounting. One is that Northern Plains AIs tend to discount all delayed outcomes similarly. Consistent with this explanation, some researchers have suggested that delay discounting potentially can be viewed as a personality trait (e.g., see Odum, 2011a, b), and, thus, knowing how an individual discounts one outcome would be predictive of how s/he would discount any other outcome. However, the present study only measured two types of delayed outcomes: money (two amounts) and medical treatment (for oneself and for one's child). Additional research on a wider array of delayed outcomes is warranted before one concludes that rates of delay discounting are uniform across outcomes, or are personality traits.

With that said, the results with the probabilistic outcomes suggest that similar rates of discounting will not always be observed. Participants discounted the probabilistic monetary outcomes significantly more than the educational outcomes. Some researchers have argued that the processes of delay and probability discounting are distinct (e.g., Green & Myerson, 2004). Thus, one should not generalize the conclusions from the probabilistic outcomes to delay discounting (or vice

versa). However, given that prior research has found that rates of discounting can vary as a function of the type of delayed outcome being discounted (e.g., Odum & Rainaud, 2003; Weatherly et al., 2010), it is possible that the same finding would ultimately be observed in AI participants as well.

In this study, we found that rates of discounting for the probabilistic monetary outcomes were steeper than those observed for the educational outcomes, which indicates that the participants were more risk averse with the monetary outcomes than with the educational outcomes. This finding does not necessarily mean, however, that participants placed more value on money than on education. Two arguments can be made against this possibility. First, because one might be willing to take a greater risk to get more of an outcome does not logically lead to the conclusion that that outcome is not valuable. In fact, one could argue that the more valuable an outcome, the more risk one would be expected to take to obtain it. Second, although research on probability discounting suggests that rates of discounting vary directly with the magnitude of the outcome (e.g., Estle et al., 2006), research also suggests that there are certain outcomes that participants will not discount very steeply regardless of whether the outcome is delayed or uncertain (see Weatherly & Derenne, 2013). Educational outcomes may fall in that category. What cannot be argued, however, is that the participants made different decisions about the probabilistic monetary and educational outcomes.

Perhaps surprisingly, level of identification with an AI culture did not predict how participants discounted any of the outcomes. The failure to find such a relationship may have been influenced by the fact that all of the participants were attending a non-tribal university and thus were at least partially, if not highly, integrated into the majority culture. One might also argue that all of the outcomes tested could be interpreted from a majority-culture perspective (i.e., the outcomes reflected concerns not specific to an AI culture). A third possibility is that the questionnaire used to assess identification with a Northern Plains AI culture lacked sufficient validity, although this argument can be countered by the fact that the construct validity of the measure has been established (Baker, 2005).

What may be equally surprising is that identification with the majority culture was predictive of how participants discounted probabilistic monetary outcomes. The more participants identified with the majority culture, the more risk averse they were when the outcome was money. Finding that identification with the majority culture was associated with discounting of these outcomes, but not with the discounting of probabilistic education outcomes or of any of the delayed outcomes, suggests that identification with the majority culture could influence specific aspects of decision making. That is, such an identification is associated with decisions about risking money, but not with decisions about waiting for money. This finding requires replication before strong conclusions are drawn from it. However, should the effect prove to be reliable, it would have major theoretical, and perhaps clinical, implications for the interaction between acculturation and decision making.

The present study is the first to report differences in probability discounting in an AI sample of participants, and to find that some discounting was related to identification with the majority culture. However, it also has a number of limitations. First, the present sample consisted only of AIs attending an off-reservation university in a single geographic area, the Northern Plains, and who were all relatively similar in age. Second, AIs in general tend to experience issues such as poverty at higher rates than the majority population, and factors such as socioeconomic status have been shown to be related to how individuals discount (e.g., Stanger et al., 2012). Thus, the rates of discounting observed in the present study may have been influenced by uncontrolled factors.

One could also argue that AIs may differ from other Americans in their views of the federal government and it policies based upon their tribe's history with the government; the present study did not specifically measure or control for this possibility. It is also the case that access to, and quality of, health care might differ across tribes (e.g., Novins, Beals, Sack, & Manson, 2000), which may have influenced how participants responded to the medical treatment discounting questions. Finally, several psychological disorders have been associated with rates of both delay and probability discounting. However, this study did not measure levels of mental health and did not ask if participants had specific disorders. Future researchers may be wise to do so.

These limitations notwithstanding, the present results suggest that AIs in the Northern Plains may make different decisions about probabilistic outcomes as a function of the type of outcome and the level of their affiliation with majority culture. Although strong conclusions should not be drawn from a single study that employed a moderate number of participants from one region of the country, we hope that the results will serve to encourage future research in this area. As noted above, determining when AI participants will make risk-averse versus risk-prone decisions, and how such decisions are associated with acculturation, may advance our understanding of AI populations in a number of positive ways. Future research that investigates these issues in larger, more diverse samples (e.g., age, level of education) that include participants living both on and off reservations would certainly seem warranted.

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Appendix A
Delay and Probability Discounting Questions

Delay Discounting Questions

X time = 1, 5, 10, 20, or 50 years

Owed $1,000

If you were owed $1,000 and were not going to get the money for X time, what is the smallest amount of money you would accept today rather than having to wait X time?

$1,000	$980	$960	$940	$920	$900	$880	$860	$840	$820	$800	$780	$760
$740	$720	$700	$680	$660	$640	$620	$600	$580	$560	$540	$520	$500
$480	$460	$440	$420	$400	$380	$360	$340	$320	$300	$280	$260	$240
$220	$200	$180	$160	$140	$120	$100	$80	$60	$40	$20	$0	

Owed $100,000

If you were owed $100,000 and were not going to get the money for X time, what is the smallest amount of money you would accept today rather than having to wait X time?

$100,000	$98,000	$96,000	$94,000	$92,000	$90,000	$88,000	$86,000	$84,000
$82,000	$80,000	$78,000	$76,000	$74,000	$72,000	$70,000	$68,000	$66,000
$64,000	$62,000	$60,000	$58,000	$56,000	$54,000	$52,000	$50,000	$48,000
$46,000	$44,000	$42,000	$40,000	$38,000	$36,000	$34,000	$32,000	$30,000
$28,000	$26,000	$24,000	$22,000	$20,000	$18,000	$16,000	$14,000	$12,000
$10,000	$8,000	$6,000	$4,000	$2,000	$0			

Medical Treatment - Self

Suppose you were suffering from a serious disease and your physician informed you that you would need to wait X time before getting a treatment that was 100% successful. However, you could immediately begin a different treatment that has a lesser chance of success. What is the minimum percentage of success that the different treatment could have for you to choose it?

100%	98%	96%	94%	92%	90%	88%	86%	84%	82%	80%	78%	76%	74%
72%	70%	68%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%
44%	42%	40%	38%	36%	34%	32%	30%	28%	26%	24%	22%	20%	18%
16%	14%	12%	10%	8%	6%	4%	2%	0%					

Medical Treatment - Child

Suppose your child was suffering from a serious disease and her physician informed her that she would need to wait X time before getting a treatment that was 100% successful. However, your child could immediately begin a different treatment that has a lesser chance of success. What is the minimum percentage of success that the different treatment could have for you to choose the different treatment for your child?

100%	98%	96%	94%	92%	90%	88%	86%	84%	82%	80%	78%	76%	74%
72%	70%	68%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%
44%	42%	40%	38%	36%	34%	32%	30%	28%	26%	24%	22%	20%	18%
16%	14%	12%	10%	8%	6%	4%	2%	0%					

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Appendix A, Continued
Delay and Probability Discounting Questions

Probability Discounting Questions

Y% chance = 1, 10, 50, 90, or 99%

Winning $1,000

You are a finalist in a national sweepstakes. You have a Y% chance of winning $1,000. If your number is not called, however, you do not receive anything. The organization running the sweepstakes is willing to guarantee to pay you a certain amount of money if you agree to remove your name from the sweepstakes. What is the smallest amount of money would you be willing to accept rather than having a Y% chance of winning $1,000?

$1,000	$980	$960	$940	$920	$900	$880	$860	$840	$820	$800	$780	$760
$740	$720	$700	$680	$660	$640	$620	$600	$580	$560	$540	$520	$500
$480	$460	$440	$420	$400	$380	$360	$340	$320	$300	$280	$260	$240
$220	$200	$180	$160	$140	$120	$100	$80	$60	$40	$20	$0	

Winning $100,000

You are a finalist in a national sweepstakes. You have a Y% chance of winning $100,000. If your number is not called, however, you do not receive anything. The organization running the sweepstakes is willing to guarantee to pay you a certain amount of money if you agree to remove your name from the sweepstakes. What is the smallest amount of money would you be willing to accept rather than having a Y% chance of winning $100,000?

$100,000	$98,000	$96,000	$94,000	$92,000	$90,000	$88,000	$86,000	$84,000
$82,000	$80,000	$78,000	$76,000	$74,000	$72,000	$70,000	$68,000	$66,000
$64,000	$62,000	$60,000	$58,000	$56,000	$54,000	$52,000	$50,000	$48,000
$46,000	$44,000	$42,000	$40,000	$38,000	$36,000	$34,000	$32,000	$30,000
$28,000	$26,000	$24,000	$22,000	$20,000	$18,000	$16,000	$14,000	$12,000
$10,000	$8,000	$6,000	$4,000	$2,000	$0			

Federal Education Legislation

One bill will be forwarded in this year's Federal legislative session. Your senators are considering two possible bills. The first bill is perfect in that it will address all of the issues that need reforming, but the chance of it passing is Y%. The second bill will not address all of the issues that need reforming, but it is guaranteed to pass. What percentage of perfect (i.e., 100%) would the second bill need to be before you would advise your senators to vote for it rather than having Y% chance that the perfect policy passes?

100%	98%	96%	94%	92%	90%	88%	86%	84%	82%	80%	78%	76%	74%
72%	70%	68%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%
44%	42%	40%	38%	36%	34%	32%	30%	28%	26%	24%	22%	20%	18%
16%	14%	12%	10%	8%	6%	4%	2%	0%					

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Appendix A, Continued
Delay and Probability Discounting Questions

Probability Discounting Questions													
Tribal Education Resolutions													
The tribal council of your tribe is considering two resolutions concerning the school system on your reservation. The council members indicate that the first resolution will address all of the issues that need addressing, but the chance of it passing before the next tribal election is Y%. The second resolution will not address all of the issues that need addressing, but it is guaranteed to be approved. What percentage of perfect (i.e., 100%) would the resolution need to be before you would advise the council members to vote for it rather than having Y% chance that the perfect resolution passes?													
100%	98%	96%	94%	92%	90%	88%	86%	84%	82%	80%	78%	76%	74%
72%	70%	68%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%
44%	42%	40%	38%	36%	34%	32%	30%	28%	26%	24%	22%	20%	18%
16%	14%	12%	10%	8%	6%	4%	2%	0%					

THE ROLE OF EXPLANATORY STYLE AND NEGATIVE LIFE EVENTS IN DEPRESSION: A CROSS-SECTIONAL STUDY WITH YOUTH FROM A NORTH AMERICAN PLAINS RESERVATION

Inga Mileviciute, MS, John Trujillo, BA, Matthew Gray, PhD, and Walter D. Scott, PhD

Abstract: In a cross-sectional study, we examined the role of explanatory styles and negative life events in the depressive experiences of AI youth. Ninety-three AI youth (49% female, ages 11-14 years) completed surveys assessing for explanatory style, negative life events, and depressive symptoms. Path analyses indicated that both the occurrence of negative life events within the past 6 months and a pessimistic explanatory style predicted more depressive symptoms. However, a moderation path model provided a superior fit to the data, indicating that the occurrence of negative life events was more strongly associated with depressive symptoms for those AI youth with a more pessimistic explanatory style. Findings are discussed in terms of potential interventions that can promote the well-being of this understudied and underserved population.

The experience of a depressive episode in youth appears to have devastating impacts, disrupting such basic developmental processes as self-concept formation (Cole, Martin, Peeke, Seroczynski, & Hoffman, 1998), social competence (Lewinsohn & Essau, 2002), and academic achievement (Lewinsohn et al., 1994). Youth depression also has serious long-term consequences, and is ultimately related to poor outcomes in adulthood, including increased negative life events, fewer economic resources, increased child care burdens, lower educational attainment, and chronic adult depression (e.g., Kessler & Magee, 1994; Lewinsohn, Rohde, Klein, & Seeley, 1999). In short, youth depression severely disrupts life paths.

Scholars and researchers interested in the well-being of American Indian (AI) youth have likewise emphasized the potential disruptive impact of depression (Manson, 2001). Compared to depression research with other minority populations, very little is known about etiological factors contributing to depression in AI youth (Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002). That is, despite the oft-made observation that depression is a serious mental health issue in AI communities (Whitbeck et al., 2002), we know very little about the phenomenon (Manson, 2001; O'Nell, 1996; Whitbeck et al., 2002). Even data on the basic epidemiology of depression

in AI communities are open to debate, with some suggesting higher (Kinzie et al., 1992; Manson, 2001), some lower (Beals et al., 2005), and others similar (Whitbeck, Mansoo, Johnson, Hoyt, & Walls, 2008) prevalence rates compared to those found in other populations. Further, there has been almost no empirical work on the factors contributing to depression among AIs (Manson, 2001; for exception, see Whitbeck et al., 2002), particularly when it comes to understanding developmental models of depression among AI youth, which are virtually nonexistent (Scott et al., 2008).

Explanatory Style and Youth Depression

The present study investigates one potential etiological factor for depression in AI youth: explanatory style. Explanatory style refers to the way in which youth explain the causes of negative and positive life events (Seligman, 1990). Specifically, youth who possess a pessimistic explanatory style, in which positive events are explained as due to external, unstable, and specific causes and negative events as due to internal, stable, and global causes, are thought to be more prone to depressive experiences (Lewis & Waschbusch, 2008; Seligman et al., 1984; Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998). For instance, a person possessing such a pessimistic explanatory style might interpret receiving a good grade as being due to luck but a bad grade as due to being stupid. Attributing the positive outcome (i.e., good grade) to luck represents an external (luck is a characteristic outside of me), unstable (I may not be lucky the next time), and specific (my luck was specific to this one event) explanation. In contrast, attributing the negative outcome (i.e., bad grade) to stupidity represents an internal (i.e., stupidity is a characteristic *in me*), stable (i.e., I will *always* be stupid) and global (i.e., stupidity will affect *many* outcomes) attribution.

Empirically, there have been a number of studies linking explanatory style to an increased risk of depression in children and adolescents (Jacobs, Reinecke, Gollan, & Kane, 2008). However, some evidence suggests that younger children (i.e., fourth graders) may not yet have developed an explanatory style, and attributing negative events to internal, global, and stable causes may serve to mediate the effects of those negative events on depression (Gibb & Alloy, 2006). Even by the fifth grade, however, children appear to have developed explanatory styles that function to moderate the relationship between negative life events and depressive symptoms (Gibb & Alloy, 2006).

Possible Influence of Explanatory Style on Depression in AI Youth

We focused on explanatory style in the present study due to themes expressed in interviews we conducted with tribal community members from the reservation in which this study was conducted. The confidentiality of the tribe is considered as important as the confidentiality of the individual in AI communities (Norton & Manson, 1996). Therefore, the tribe that worked with us on this study is described in general terms (i.e., Northern Plains).

AI youth growing up on reservations such as the one represented in this study, which is located in a very rural region of the Northern Plains, are often embedded within socioeconomic contexts of poverty and instability. Indeed, while the national poverty rate is approximately 10% for European American families with children, it is about three times this rate for AI families with children, and AI families living on reservations are at the greatest risk of being poor (U.S. Census Bureau, 2009). Similarly, although national unemployment has risen recently to over 9%, unemployment rates on AI reservations have consistently reached 50% or higher (U.S. Census Bureau, 2009); the unemployment rate on this reservation is 80%. Much recent empirical work has demonstrated that such economic deprivation is likely not without costs to the mental health of AI youth (Evans, 2004). For example, other concerns associated with such a lack of resources include low educational attainment, substance use, incarceration, child abuse, teen pregnancy, and school dropout (Evans, 2004). However, owing to their traditional cultural values and practices, AI communities also offer AI youth unique resources for optimal development (Whitbeck et al., 2002) which may promote more optimistic explanatory styles that help buffer the otherwise depressive impact of negative life events.

In the interviews we conducted with adult tribal community members, we asked them to identify the most significant challenges and problems confronted by youth living on the reservation. For the present purposes, two relevant themes emerged. First, not only did tribal community members view depression as a significant problem and challenge confronted by their youth, but they commonly viewed other problems experienced by their youth—academic underachievement, substance use, conduct/oppositional behavior—as due to depression. Second, in their open-ended descriptions of depression, tribal community members described what resembled a hopelessness subtype of depression (Abramson, Metalsky, & Alloy, 1989) in which explanatory style is thought to have an important contributory role. That is, they described the depression experienced by their youth as a fatalistic state which consisted of such symptoms of hopelessness as sad affect, apathy, suicidal thoughts, anhedonia, lowered self-esteem, and retarded initiation of voluntary responses. In discussions with elders and other tribal community members involved in recording the language of the tribe most represented in this study, they identified a Native word that appeared to closely resemble the meaning of the DSM-IV depression construct. Although we will not identity the actual word to protect the confidentiality of the tribe, its meaning translated into "always feeling sad."

One of the main variables thought to lead to this type of depression is a pessimistic explanatory style (Abramson et al., 1989). Based on these interviews, therefore, we suspected that a pessimistic explanatory style may be related to the depressive experiences of the AI youth on the reservation in which we conducted our research.

However, an emerging literature on culture and attributions suggests that the function and effects of explanatory style can differ across cultural contexts (Joseph & Gray, 2010; Rose, Endo, Windschitl, & Suls, 2008). Although a number of studies have found that, for North American individualistic cultures, a positive attributional style serves an important role of enhancing and maintaining self-esteem and promoting mental health (Abramson et al., 1989; Taylor & Brown, 1988), members of more collectivistic cultures are less apt to show this bias (Rose et al., 2008). Further, predictors of emotional well-being can vary in different cultural contexts (Kitayama & Markus, 2000). For instance, in European American cultural contexts, which emphasize autonomy and independence, adopting a more positive self-view is associated with affective well-being. However, in East Asian and Japanese cultural contexts, which emphasize social harmony and interdependence, the relationship between positive self-views and affective well-being may not be as strong (Kitayama & Markus, 2000). Given that AI communities have been found to be more collectivistic (Fryberg & Markus, 2003), it is possible that AIs do not exhibit as strong as a relationship between explanatory style and depression. However, we are aware of no empirical studies that have examined the potential relationship between explanatory style and depression in an AI population.

Present Study

As far as we know, this is the first empirical investigation of the relationship among negative life events, explanatory style, and depressive symptoms in a sample of AI youth. We administered self-report measures of negative life events, explanatory style, and depressive symptoms to a sample of fifth- through eighth-grade AI children from a Northern Plains reservation. For these youth, we expected that the relationship between negative life events and depressive symptoms would depend on the individual's explanatory style. For youth who possessed a highly pessimistic explanatory style (i.e., they attributed positive events to external, unstable, and specific causes and negative events to internal, stable, and global causes), we expected that the experience of negative life events would be associated with higher levels of depressive symptoms. In contrast, we expected that youth who possessed an optimistic explanatory style (i.e., they attributed positive events to internal, stable, and global causes and negative events to external, unstable, and specific causes) might evidence greater resiliency and report lower levels of depressive symptoms in the context of negative life events. However, based on social psychology literature showing cultural differences in attributional patterns, we acknowledged that this relationship might differ for AI youth.

METHOD

Participants

Participants were 93 AI youth (47 boys and 46 girls) from one school on an AI reservation in the Northern Plains of the United States. Twenty-seven of these participants were in fifth grade, 24 in sixth grade, 19 in seventh grade, and 23 in eighth grade. All students in grades five through eight were eligible to participate. However, approximately 2% of eligible students did not assent or did not receive parental/guardian consent and, therefore, did not participate.

Measures

Recent Negative Life Events Inventory (NLE)

We administered a negative life event measure developed specifically for AI adolescents that assessed specific negative life events occurring in the past 6 months (Novins, Beals, Roberts, & Manson, 1999). This measure contains 11 items ranging from relatively minor stressors (e.g., "breaking up with a girlfriend or boyfriend"), to chronic strains (e.g., "living with someone who has an alcohol problem"), to severe events (e.g., "suicide or death of a family member or close friend"). Participants checked either yes or no, indicating whether the event had occurred in the past 6 months.

Children's Depression Inventory (CDI)

The CDI was administered to assess depressive symptoms. The CDI is a 27-item questionnaire that measures the cognitive, affective, and behavioral symptoms of depression. Each of the items on the CDI is presented in a multiple-choice format, ranging from 0 to 2 in terms of intensity (i.e., 0 = *I am sad once in a while*, 1 = *I am sad many times*, 2 = *I am sad all the time*). Participants are asked to indicate which symptom has been most true for them during the past two weeks. Items are summed to yield a total score, with higher numbers indicating higher levels of depressive symptoms.

The CDI is a widely used self-report measure of childhood depression, and it possesses adequate psychometric properties (Saylor, Finch, Spirito, & Bennett, 1984). Further, the CDI has been shown to possess good psychometric properties with similar samples of AI youth from a Northern Plains tribe (Hamill, Scott, Dearing, & Pepper, 2009; Scott & Dearing, 2012). In the present study, the scale showed good internal consistency ($\alpha = .88$).

Children's Attributional Style Questionnaire-Revised (CASQ-R)

To assess the explanatory styles that youth use to explain positive and negative events, we used the CASQ-R (Thompson et al., 1998). The instrument contains 24 items with 12 positive (e.g., "You get an 'A' on a test") and 12 negative (e.g., "A team that you are on loses a game") events. For

each item, there are two response options (e.g., "I am smart" vs. "I am good in the subject that the test was in," or "The team members don't help each other when they play together" vs. "That day the team members didn't help each other") which map onto three dimensions of causality, namely, the internal-external, stable-unstable, and global-specific dimensions.

As recommended for scoring the CASQ-R (Thompson et al., 1998; N. Kaslow, personal communication, February 7, 2012), we first calculated negative and positive composite scores. The negative composite score is derived by summing the scores on the internality, stability, and globality scales for negative events. In contrast, the positive composite score is derived by summing the scores on the internality, stability, and globality scales for positive events. Then we calculated an overall composite score, in which the negative composite score is subtracted from the positive composite score. A lower overall composite score therefore represents a more depressive explanatory style. In the present study, the mean for the overall composite score was 1.33 (SD = 12.09). Cronbach's alphas for the positive and negative composite scales comprising the overall composite scale were.45 and .50, respectively. Although this was the first instance in which the CASQ has been used with an AI population and these alphas are low, they are not unexpected given the dichotomous response format of the CASQ-R, and are similar to reported alphas in other studies using the scale (Lewis & Waschbusch, 2008; Thompson et al., 1998).

Procedure

This study was done as part of a larger project to identify factors contributing to depression in Native youth in this community (see Hamill et al., 2009; Scott & Dearing, 2012; Scott et al., 2008). The overall purpose of the project, which was approved by and developed in consultation with tribal representatives and the school board (which was composed entirely of tribal community members), was to develop a group intervention designed to lower depression risk and increase well-being (Scott & Clarke, 2006).

The study was conducted in compliance with the Institutional Review Board of the University of Wyoming and with both the administration at the school where the study was done, which included a tribal representative who was consulted on all research conducted in the school, and with the school board noted above. In addition, we solicited feedback from a tribal representative regarding interpretation of the results and presentation of the findings, as well as for a draft of this publication.

We administered surveys containing the above measures in September of the school year. Prior to administration, we followed a passive informed consent procedure with parents and guardians. Specifically, four weeks prior to the study, we mailed a description of the study and its purposes to the parents and guardians of all students attending fifth through eighth grades. The parents/guardians had an opportunity to reject consent for their children's participation by phoning

a specific number either at the school or at the office of the third author of this paper. In addition, we followed an active informed assent procedure for students, in which they had an opportunity to decline participation after the study was described. Two percent of potential participants chose not to participate in this particular wave of data collection.

Graduate students enrolled in a doctoral clinical program administered the surveys in the students' classrooms. In addition, teachers and school staff responsible for each classroom were present to assist with supervision. Students completed the measures in classes ranging from 10 to 30 students.

Statistical Analyses

Path analysis with Mplus (Muthén & Muthén, 2007) was used to test the hypothesized model in which negative life events, explanatory styles, and the interaction between negative life events and explanatory styles predicted depressive symptoms. For explanatory styles, our main analysis used the overall composite scale score, as it takes into account the relative difference between optimistic and pessimistic explanatory styles. Given the cross-sectional nature of our data, several alternative path models were also tested to provide fit comparisons with the hypothesized model.

Missing and multivariate nonnormal data

Across all youth, 68% (n = 63) had complete data. Five percent (n = 5) of participants had missing data on the NLE. Sixteen percent (n = 15) of participants had data missing on the CDI. Twelve percent (n = 10) of participants had missing data on the CASQ-R overall composite scale. Maximum likelihood estimation is the recommended alternative to discarding participants who are missing data (Schafer & Graham, 2002). In addition, however, our data also violated multivariate assumptions of normality. Therefore, we used the robust maximum likelihood estimator (MLR; Muthén & Muthén, 2007), as it is the recommended estimator for dealing with both issues of missing data and multivariate nonnormality (Byrne, 2012).

RESULTS

Mean scores and standard deviations (SD) were calculated for NLE, CDI, and CASQ-R (see Table 1). We adopted a .05 level for determining statistical significance throughout our analyses. Independent sample t-tests indicated that there were no significant differences among these scores for boys and girls in our sample.

Table 1
Range Means and Standard Deviations for Recent Negative Life Events, Children's Attributional Style Questionnaire-Revised, and Children's Depression Inventory[a]

Measure	Range	Mean	*SD*[b]
Negative Life Events	.00-11.00	3.79	2.46
Children's Attributional Style Questionnaire-Revised			
Positive Composite	2.00-12.00	6.44	2.12
Negative Composite	.00-9.00	3.81	2.22
Overall Composite	-6.00-11.00	2.64	3.74
Children's Depression Inventory	.00-28.00	8.27	7.96

[a] *N*s ranged from 78-88 due to missing data. [b] *SD* = standard deviation.

Table 2 shows the percentages of participants who reported the occurrence of 11 different negative life events within the past 6 months. Examining this table, it is apparent that a high percentage of AI youth reported experiencing relatively severe negative events. For instance, approximately one-half of the participants reported that a family member or close friend had either died or been put in jail in the past 6 months.

Table 2
AI Youth who Reported Negative Life Event Occurrence in Past 6 Months[a]

Negative Life Event	Percent Reporting
Family member/close friend died	55%
Someone close had alcohol/drug problem	50%
Family member/close friend put in jail	47%
Had serious argument with friend/friends	28%
Close friend/family member attempted suicide but survived	23%
Other people gossiped/spread rumors about you	22%
Parent/guardian lost job or could not find wanted job	19%
Was in car wreck in which someone was seriously hurt	19%
Broke up with girlfriend/boyfriend	17%
Experienced verbal abuse by adult family members on regular basis	11%
Attacked/beaten up badly in fight	5%

[a] Table based on AI youth who had complete data on the Negative Life Event measure (n = 88)

Table 3 provides correlations between study variables for participants with complete data. The occurrence of negative life events in the past 6 months was positively correlated with depression. In addition, all CASQ-R composite scale scores were correlated in the expected directions. Specifically, the positive composite scale was negatively correlated with depressive symptoms, and the negative composite scale was positively correlated with depressive symptoms, although the latter correlation was not statistically significant ($p = .07$). Further, the overall composite scale, in which higher scores represent a more optimistic explanatory style, was significantly negatively correlated with depressive symptoms. Neither gender nor grade level was correlated with depressive symptoms. In short, AI youth who reported a more optimistic explanatory style tended to report fewer depressive symptoms.

Table 3
Correlations between Gender, Grade Level, Negative Life Events, Explanatory Style Composite Scales, and Depression[a]

	Variables						
	Gender (1 = Male, 2 = Female)	Grade Level	Negative Life Events	Positive Composite CASQ-R	Negative Composite CASQ-R	Overall Composite CASQ-R	CDI (Depressive Symptoms)
Gender (1 = Male, 2 = Female)							
Grade Level	-.05						
Negative Life Events	-.01	-.17					
Positive Composite CASQ-R	-.05	-.05	-.01				
Negative Composite CASQ-R	.16	.08	-.01	-.47**			
Overall Composite CASQ-R	-.13	-.08	.00	.85[a]	-.87[a]		
CDI (Depressive Symptoms)	.09	-.11	.43**	-.33**	.23	-.33*	

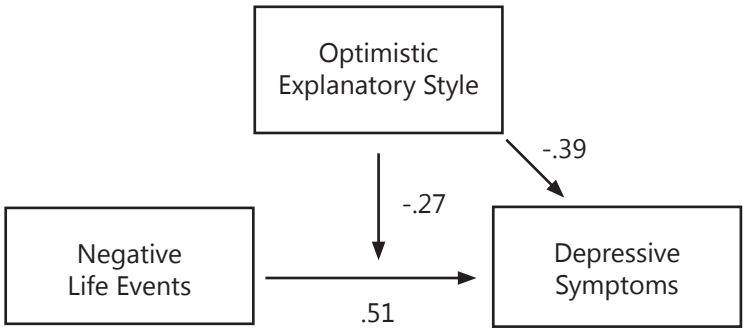
* $p < .05$ (2-tailed), ** $p < .001$ (2-tailed)
[a] Correlations are expected given overall composite scale = positive composite - negative composite

Hypothesized path model

Before examining our hypothesized moderation model, we first estimated a main effect path model in which negative life events and explanatory style predicted depressive symptoms. Overall, this main effect model provided a very good fit to the data ($\chi^2 = 5.81$, df = 7, $p = .56$; RMSEA = 0.0, 90% CI = .0 - .11; CFI = 1.0, TLI = 1.07; SRMR = .06). We then tested our hypothesized moderation model, which included both the main effect predictors in the initial model and the interaction between them. As predicted, the interaction between negative life events and explanatory style was significant ($\beta = -.27$; $p = .02$). Moreover, compared with the main effects model, the hypothesized moderation model improved the overall fit ($\chi 2 = 1.36$. df = 4, $p = .85$; RMSEA = 0.0, 90% CI = .0 - .09; CFI = 1.0; TLI = 1.26; SRMR = .04).

Figure 1 shows the results of the moderation path model. Both negative life events and the overall composite scale of the CASQ-R were significant predictors of depressive symptoms. As indicated by standardized coefficients, an increase in negative life events of one *SD* predicted a one-half *SD* ($\beta = .51$) increase in depressive symptoms. Further, an increase of one *SD* in optimistic explanatory style predicted an increase of over one-third *SD* ($\beta = -.39$) in depressive symptoms.

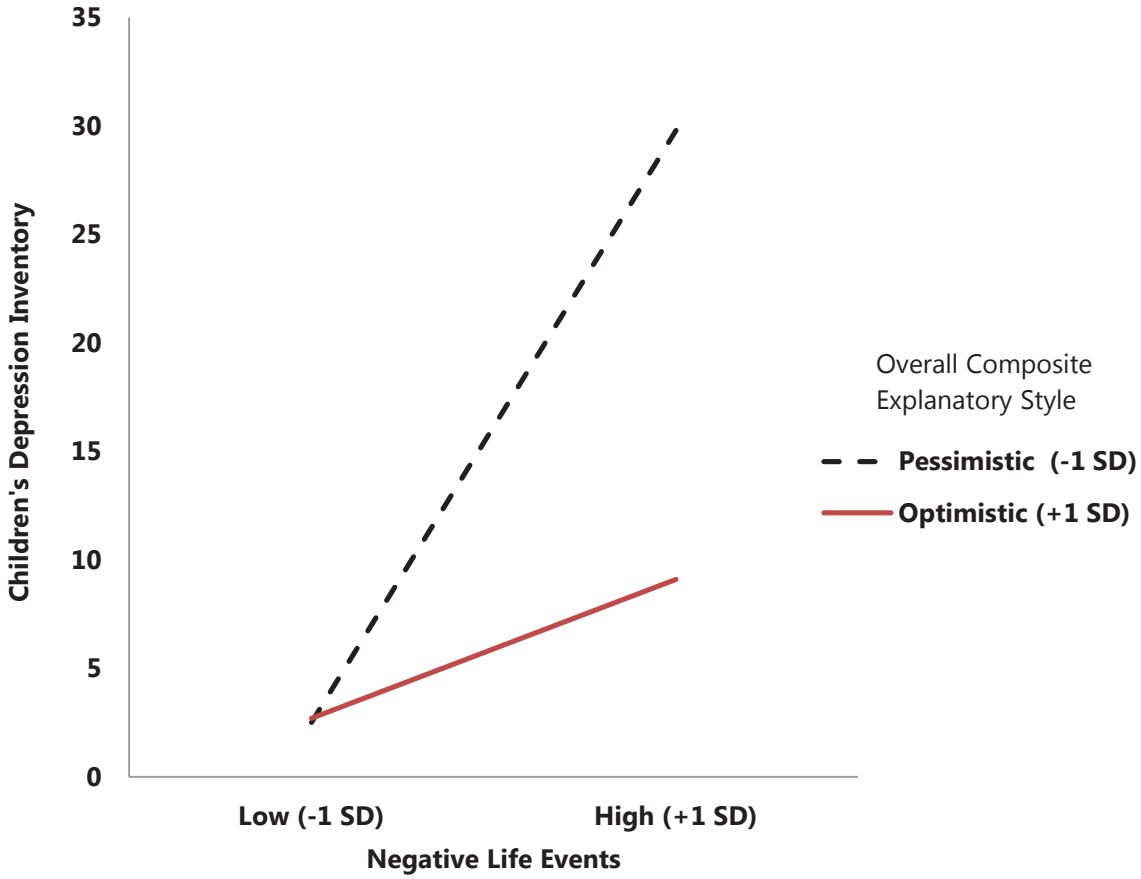
Figure 1
Hypothesized Moderation Path Model Showing the Relationship between Negative Life Events, Optimistic Explanatory Style, and Depressive Experiences



To examine the nature of the interaction between negative life events and an optimistic explanatory style in predicting depression, we mean-centered the independent variables and then plotted overall composite values that were 1 *SD* above and 1 *SD* below the mean set of values for both negative life events and overall composite attributional style variables (Aiken & West, 1991). As Figure 2 indicates, the occurrence of negative life events in the past 6 months was more strongly associated with depressive symptoms for those with a more pessimistic explanatory style. For individuals with an optimistic attributional style, there was a minimal relationship between the

occurrence of negative life events and depressive symptoms. In short, AI youth who were able to attribute internal, global, and stable causes to hypothetical positive events and external, specific and unstable causes to hypothetical negative events, were more resilient to depressive experiences.

Figure 2
Interaction Effects of Recent Negative Life Events and Overall Composite Explanatory Style on Depressive Symptoms (CDI)



Alternative path models

In order to compare and further evaluate our hypothesized path model, we also tested several alternative path models. First, we tested a meditational model in which explanatory style mediated the relationship between negative life events and depressive symptoms. This first alternative model provided a very poor fit to the data ($\chi 2$ = 149.60, df = 3, p = .00; RMSEA = .47, 90% CI = .40 - .54; CFI =.03; TLI = -.39; SRMR = .21). Further, the indirect effect from negative life events to depression via explanatory style was not significant (p = .62).

Second, we tested a reversed main effects model in which explanatory style was the dependent variable and negative life events and depression were the predictors. Although this model provided a good fit to the data, it did not perform as well as the hypothesized moderation model ($\chi 2 = 5.81$, df = 3, $p = .56$; RMSEA = .00, 90% CI = .00 - .11; CFI =1.0; TLI = 1.07; SRMR = .06).

We also separated the sample into younger (grades five and six) and older (grades seven and eight) children and retested the meditational models, which again performed very poorly, although sample size minimized our ability to adequately test them. In short, our best performing model was one in which AI youth who possessed a more optimistic explanatory style exhibited greater resiliency to depressive experiences in the context of stressful life events.

DISCUSSION

Based on interviews with tribal community members, we suspected that, for AI youth in the present study, a pessimistic explanatory style in the context of negative life events would be associated with depressive symptoms. Consistent with our hypotheses, the relationship between the occurrence of negative life events and depressive symptoms depended on explanatory style. Specifically, AI youth with a relatively greater tendency to use internal, global, and stable explanations for negative than for positive hypothetical events reported more depressive symptoms. Stated more positively, those AI youth with a more optimistic explanatory style were more resilient to the experience of depression in the context of negative life events. This finding did not vary for either gender or age.

The hopelessness theory of depression suggests that certain individuals have a cognitive vulnerability, which, when they encounter negative life events, may lead to a sense of hopelessness and a particular subtype of depression characterized by strong feelings of sadness, anhedonia, lowered self-esteem, retarded initiation of voluntary responses, and suicidal thoughts (Abramson et al., 1989). This phenomenon has been studied frequently among adult populations, and, although researchers have sometimes questioned the appropriateness of adult models of depression risk for youth, several studies show evidence for this theory among European American adolescents (Garber, Keiley, & Martin, 2002; Hankin, Abramson, & Siler, 2001; Prinstein & Aikins, 2004). This study contributes to the literature by examining the role of a pessimistic explanatory style among a rarely studied sample of AI youth, while highlighting the resiliency of AI youth who possess an optimistic explanatory style.

When we contrasted our hypothesized model with alternative models, our hypothesized moderation model performed best. In particular, we examined an alternative meditational model in which explanatory style mediated the relationship between negative life events and depressive symptoms. This latter model led to a very poor fit with our data, suggesting that, by fifth grade,

some AI youth have in fact developed explanatory styles with either protective (i.e., optimistic) or deleterious (i.e., pessimistic) effects for depression. Given that our youngest participants were in fifth grade, our findings are consistent with those of other researchers (e.g., Gibb & Alloy, 2006) who have found that explanatory style functions as a moderating variable by this grade level.

Our findings have implications for the development of AI youth depression prevention programs. In general, there are few prevention and intervention programs designed specifically for AI youth, and the available programs do not explicitly target explanatory styles (LaFromboise, 1996). Although not developed for AI youth, the Penn Resiliency Program (PRP; Gillham, Jaycox, Reivich, Seligman, & Silver, 1990) does in fact teach youth to challenge pessimistic explanatory styles by using cognitive restructuring skills. Specifically, PRP targets global, stable, and internal explanations for negative life events by teaching children to evaluate and challenge the accuracy of their beliefs and to generate alternative interpretations. Given the findings in the present study, a PRP program modified to fit the unique cultural contexts of AI youth offers a promising approach worthy of future investigation with AI youth.

Several limitations of the current investigation require note. First, one key limitation of the present study was the nature of the cross-sectional design. A goal for future research should be to conduct longitudinal studies to examine the timing of the emergence of explanatory styles, occurrence of negative life events, and development of depressive symptoms within AI youth. These designs would allow for more confident statements about the causal role of explanatory style. Another limitation of our study was the low internal reliability of the CASQ-R. However, our reliability scores for the CASQ-R were similar to those obtained with majority-culture youth populations (Thompson et al., 1998). Finally, it is important to note that we sampled youth from one reservation in a single school. Given that there are over 550 federally recognized tribes, one must be cautious in generalizing our findings to other AI youth populations.

This was the first empirical investigation of the relationship between explanatory style and depressive symptoms in the context of negative life events with an AI youth sample. Our results suggest that how AI youth think about the causes of positive and negative life events matters and relates strongly to their depressive experiences. Given the implications for promoting resiliency and preventing the development of serious mental health problems, we hope our findings encourage future studies that attempt to further explore the relationship between explanatory styles and mental health in AI youth.

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PREFERENCES FOR MENTAL HEALTH TREATMENT OPTIONS AMONG ALASKA NATIVE COLLEGE STUDENTS

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Abstract: In this study we investigated the mental health treatment preferences held by Alaska Native (AN) college students regarding treatment type, treatment provider, and therapy roles. Preferences were compared between AN and Caucasian participants and also between ANs with high and low identification with their Indigenous culture. While there were many similarities between groups, some important differences were found. The results of this study have significant implications for making mental health treatments more available and culturally appropriate for ANs.

Despite an increasing amount of research examining therapy processes and outcomes with ethnic minority individuals (Zane, Hall, Sue, Young, & Nunez, 2004), psychotherapy research with some groups is still sparse. Alaska Natives (ANs) are one ethnic minority group that has received little attention in this area. In the research that does exist, ANs are often grouped with American Indians (AIs). This research has found that, as a combined group, AI/ANs experience an increased susceptibility, compared to many other ethnic groups, to a number of mental health concerns such as substance abuse, suicide, and depression (Alaska Native Epidemiology Center, 2009; Allen, Levintova, & Mohatt, 2011; Brems, 1996; Manson, 2000). For example, Allen et al. (2011) found that the suicide rate for ANs is 3 to 6 times greater than for the general U.S. population. Despite significant mental health concerns, both AIs and ANs have been found to underutilize Western forms of mental health services (Gone, 2004; Gone & Trimble, 2012; Johnson & Cameron, 2001; Manson, 2000). Additionally, even when services are started, AIs and ANs exhibit the highest rates of dropout from mental health interventions (O'Sullivan, Peterson, Cox, & Kirkeby, 1989; Sue, 1977). Thus, it is important that we gain a better understanding of variables that may contribute to lower rates of service utilization and higher rates of mental health treatment dropout for ANs.

Research suggests that ANs' underutilization of mental health treatment, treatment dropout, and poor treatment outcomes may be due to the lack of options that meet their values and preferences (Coyhis & Simonelli, 2008; Gone, 2004; Gone & Trimble, 2012; Jonhson & Cameron, 2001; LaFromboise, 1988; Rodenhauser, 1994; Zane et al., 2004). In general, mental health treatment preferences are defined as the treatment, provider, and role options that are desired by clients (Swift, Callahan, & Vollmer, 2011). Whereas *treatment preference*s refers to the type and characteristics of the ideal intervention, *provider preferences* refers to the desired type of therapist and characteristics of the ideal therapist, and *role preferences* refers to the behaviors in which clients would like to engage, and would like their therapist to engage, during treatment. These factors have been found to have a significant influence on whether individuals will seek out and start treatment (King et al., 2005). In addition, preferences have been found to influence both individuals' likelihood of remaining in treatment for a full course, and their overall treatment outcomes (Swift et al., 2011). Although many have suggested that mental health treatment preferences are particularly important for those belonging to an ethnic minority (O'Sullivan et al., 1989; Smith, Rodriguez, & Bernal, 2011; Zane et al., 2004), little research has sought to examine treatment preferences within the AN population.

What little research has been conducted examining treatment preferences for ANs has primarily included them within the broader ethnic category of AIs. Existing studies have investigated AIs' preferences regarding desired treatment type (Beals et al., 2006; Coyhis & Simonelli, 2008; Gone & Trimble, 2012; Walls, Johnson, Whitbeck, & Hoyt, 2006), preferred provider type and characteristics of an ideal therapist (Beals et al., 2005; Bennett & BigFoot-Sipes, 1991; Bichsel & Mallinckrodt, 2001; Haviland, Horswill, O'Connell, & Dynneson, 1983; Littrell & Littrell, 1982), and desired therapy roles (Bichsel & Mallinckrodt, 2001; Littrell & Littrell, 1982; Shore & Manson, 2010; Thomason, 2011).

Although an understanding of AIs' preferences for mental health services is useful, the preferences held by AIs may not match those held by ANs. ANs have a unique history, experience of colonization, and environment, and face unique types of stressors (Langdon, 2002). It is important that we also seek to expand our understanding of the variables that impact service utilization, treatment dropout, and treatment outcomes for this ethnic minority group. An understanding of ANs' preferences for mental health services will better help providers offer services that fit their unique culture, values, and beliefs.

A study of mental health preferences for AN college students is especially needed. In general, a significant number of college students experience mental health problems (American College Health Association, 2012; Gallagher, 2012), including stress associated with moving away from family and attempting to balance coursework, relationships, and employment. These stressors can be particularly difficult for AN college students, many of whom relocate from rural villages

to more urban college locations. Although not specific to college students, the rates of suicide for college-age ANs give evidence of the stress that is faced by this population; where the base rate of suicide in the United States is approximately 10.9 deaths per 100,000 people, the rate for ANs in general is 41.3 deaths per 100,000, and for ANs between 18 and 20 years of age is 147 per 100,000 people (Centers for Disease Control and Prevention, 2003 as cited in DeCou, Skewes, Lopez, & Skanis, 2013).

At the same time, AN college students are in a unique position regarding preferences and mental health treatment options. Many ANs live in rural villages where few health care providers are available and where travel can be very difficult. Whereas ANs in these remote areas may have limited exposure to and knowledge of Western forms of mental health treatment, ANs in college settings may have more mental health treatment options available, including traditional healing practices as well as treatments that are more readily available on college campuses or in urban areas (e.g., college counseling centers, psychiatrists).

The overall purpose of this study was to gain a better understanding of AN college students' preferences for mental health treatment options, including an assessment of preferences for the desired type of treatment, desired provider type and characteristics of the ideal provider, and desired therapy roles. In addition, we sought to explore whether ANs' preferences differed depending on how highly they identified with their AN culture. Finally, we also sought to test whether their preferences differed from the preferences expressed by a sample of Caucasian participants. Currently, most of the mental health interventions available on college campuses (e.g., therapy and pharmacotherapy) are Western forms of treatment, based on preferences of the ethnic majority. Identifying similarities and differences in preferences between ANs and Caucasians can provide valuable information about whether treatment and provider options that fit the preferences of the majority group also match the preferences of ANs. This type of comparison can also provide information about possible ways to adapt the treatment and provider options that might be appropriate for Caucasians to better fit the preferences of ANs.

METHOD

Participants

Participants for this study (67 ANs, 105 Caucasians) were college students attending a large Northwestern university. Participant demographics can be found in Table 1. These participants were recruited through the psychology department's subject pool, which included all students from the university who were currently enrolled in a psychology department course, and received extra credit in their psychology department courses in exchange for study participation. Participants were

recruited over the course of a year; however, we capped our recruitment of Caucasian participants at approximately 100, believing that this would be an adequate sample size to serve as a comparison group. Although we did not attempt to match AN and Caucasian participants in our recruitment procedures, no significant differences in age, gender, marital status, previous or current use of therapy, or previous or current use of pharmacotherapy between the AN and Caucasian participants were found.

Table 1
Demographic Characteristics of Alaska Native and Caucasian Participants

	Alaska Natives (*n* = 67)	Caucasians (*n* = 105)
Age, *M*(SD)	24.22 (6.39)	24.17 (7.57)
Gender, % female	84.6%	85.7%
Marital Status, % single	79.1%	77.1%
Previous Therapy Use, % yes	37.9%	41.3%
Current Therapy Use, % yes	11.9%	10.5%
Previous Medication Use, % yes	23.9%	33.0%
Current Medication Use, % yes	11.9%	11.7%

Procedure

This study was an online survey. Participants provided informed consent and completed a set of demographic questions, and then were asked to image that they were experiencing a significant amount of psychological distress and were now considering various treatment options. Participants then completed a number of measures assessing preferences for type of treatment, type of provider, characteristics of an ideal provider, and therapy roles and behaviors, as well as a measure assessing cultural identification. The survey took approximately 30 to 40 minutes to complete. This study was approved by and conducted in compliance with the university's Institutional Review Board.

Measures

Rank Preferences for Treatment and Provider Type

For preferred type of treatment, we asked participants to rank order the following five options: acupuncture, natural remedies, psychotherapy/counseling, medication, and relaxation/meditation/yoga. For preferred type of provider, we asked participants to rank order the following seven options: church leader, community elder, confidant, physician, psychiatrist, self-help group, and therapist/counselor. The lists of preferred treatment and preferred provider options were based

on options provided in a survey conducted by Riedel-Heller, Matschinger, and Angermeyer (2005), with some adaptations to better fit our sample (e.g., "cure at spa" was removed as a possible option because it was thought that our participants would be less likely to consider it as a mental health treatment option compared to Riedel-Heller et al.'s German sample).

Preferred Counselor Characteristics Questionnaire

In addition to examining preferred provider type, we were also interested in identifying the characteristics that ANs and Caucasians would want their provider to possess. The Preferred Counselor Characteristics Questionnaire, originally developed by Atkinson, Furlong, and Poston (1986), was used to assess preferences for African Americans and included descriptions of therapists that were either similar or dissimilar to the participants on a set of eight characteristics (age, attitudes, education, ethnicity, gender, personality, religion, and socioeconomic status).

Using this measure, participants make a series of 120 forced-choice comparisons, with each level (similar and dissimilar) of each characteristic being compared to each level of every other characteristic (e.g., would you prefer a counselor who is similar to you in age or dissimilar to you in attitudes; who is similar to you in gender or similar to you in religion; who is similar to you in ethnicity or dissimilar to you in ethnicity). Various versions of the measure with different sets of characteristics have been used to study preferences for a number of other ethnic minority groups, including AIs (Bennett & BigFoot-Sipes, 1991). In this study we included all eight characteristics from the original measure; however, instead of presenting participants with a series of choice scenarios, we simply asked them to rank order the similar and dissimilar versions of the characteristics in terms of desirability (1st place representing the most desirable characteristic, 16th place representing the least desirable characteristic).

Psychotherapy Expectancy Inventory-Revised

The Psychotherapy Expectancy Inventory-Revised (PEI-R) was used in this study as a measure of preferred therapy roles. The PEI-R was developed in the early 1970s by Berzins and colleagues (Berzins, Herron, & Seidman, 1971; Rickers-Ovsiankina, Geller, Berzins, & Rogers, 1971) as a client measure of four different role expectations: approval-seeking, advice-seeking, audience-seeking, and relationship-seeking. Although the PEI-R was originally developed as a measure of role expectations, it has also been used to assess role preferences (Scholl, 2002; Tracey & Dundon, 1988). Similar to these previous studies, we asked our sample of participants to answer each item in terms of preferences. The PEI-R consists of 24 self-report items (6 items for each subscale) in which participants respond on a 7-point Likert-type scale, ranging from 1 (*not at all*) to 7 (*very strongly*). The four subscale scores are calculated by taking the average score for the six subscale items. Higher scores on a particular subscale indicate a greater expectation for those types

of behaviors in therapy. Adequate internal consistency (ranging from α = .75 to α = .87) and test-retest reliability (ranging from *r* = .54 to *r* = .68) for the four subscales have been reported (Berzins et al., 1971; Rickers-Ovsiankina et al., 1971). Additional support for the four-factor model has been found through confirmatory factor analysis (Bleyen, Vertommen, Vander Steene, & van Audenhove, 2001). With our sample, the internal consistency for each of the four subscales was adequate (α = .78 for Advice, α = .67 for Approval, α = .75 for Audience, and α = .76 for Relationship).

Orthogonal Cultural Identification Scale

The Orthogonal Cultural Identification Scale (OCIS) was developed by Oetting and Beauvais (1990-1991) as a measure of identity or affiliation with a particular ethnic group. It was developed as an alternative to other measures of acculturation, such as the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Rickard-Fugueroa, Lew, & Vigil, 1987), which force individuals to identify themselves along a continuum of either belonging to the ethnic majority or a minority cultural group. In contrast, the OCIS allows individuals to identify with both groups at various levels. For example, on the OCIS an individual could endorse an ethnic identity as both strongly AN and strongly Caucasian. Since its creation, the OCIS has been widely used as a measure of acculturation (Yoon, Langreher, & Ong, 2011).

The OCIS consists of six items for which participants endorse their level of identification with both the ethnic majority and their ethnic minority group. Items are rated on a 4-point scale ranging from 1 (*a lot*) to 4 (*none at all*); thus, total scores for each ethnic group range from 6 to 24, with lower scores representing a greater affiliation with that ethnic group. Adequate internal consistency, test-retest reliability, and validity have been reported for this measure (Johnson, Wall, Guanipa, Terry-Guyer, & Velasquez, 2002). For example, with an AI sample, Venner, Wall, Lau, and Ehlers (2006) found an internal consistency of α = .85 for the AI/AN subscale and α = .91 for the Anglo subscale. With their sample, Venner et al. (2006) also found significant correlations between scores on the AI/AN subscale and participation in AI cultural behaviors (e.g., attendance at traditional activities), illustrating adequate concurrent validity for the measure. With our sample, the internal consistency was α = .95 for the AN subscale and α = .95 for the Anglo subscale.

Using the OCIS, we categorized AN participants as having either high or low AN identity according to the median split method. For the AN participants, scores on the OCIS AI/AN ranged from 6 to 24, with a mean of 12.25 (*SD* = 4.92) and a median of 12. Using the median-split method, those participants who scored below 12 (*n* = 29) were classified as having high AN identification; those scoring above 12 (*n* = 25) were classified as having low AN identification. There were no differences between these two groups on any other demographic variables or the endorsement of current or previous use of therapy or pharmacotherapy. Those who obtained the median score (*n* = 9) were not included in the analyses comparing the preferences of those with different levels of

AN cultural identification. These participants were, however, included in the analyses comparing preferences between ANs and Caucasians. The Caucasian participants also completed the AI/AN subscale of the OCIS. However, only two of the 105 Caucasian participants scored below the median for ANs on this subscale. We thus decided to include all Caucasians in one group for the analyses.

RESULTS

Treatment Type Preferences

The percentages of participants who endorsed each treatment option as their first choice are reported in Table 2, and average rankings for each of the options are reported in Table 3. Three AN participants and one Caucasian participant did not complete the treatment rankings. Mann-Whitney *U* tests were conducted comparing mean rankings for the treatment type options between AN and Caucasian participants (a Mann-Whitney *U* test is similar to a *t*-test in that it can be used to examine whether differences exist in the average scores of two groups, but is more appropriate for non-parametric data such as rankings). As can be seen in Table 3, a significant difference was only found in preference for acupuncture, for which, on average, ANs expressed a significantly greater preference. Although the average rankings were largely similar between these two groups, when the percentages of participants who endorsed each option as their first choice are examined, there were some differences. Most notably, as can be seen in Table 2, more ANs endorsed natural remedies as their first choice compared to Caucasian participants (38.8% and 24.8%, respectively), and more Caucasians reported that therapy was their first choice compared to AN participants (21.0% and 9.4%, respectively).

Table 2
Percentages of Participants Endorsing Each Option as their First Choice for Preferred Type of Treatment

	Alaska Natives			Caucasians
	High AN[a] Identification	Low AN Identification	All ANs	
Treatment	*n* = 28	*n* = 24	*n* = 64	*n* = 105
Relaxation	39.3%	45.8%	40.6%	44.8%
Natural Remedies	42.9%	33.3%	38.8%	24.8%
Therapy	10.7%	8.3%	9.4%	21.0%
Acupuncture	3.6%	4.2%	4.7%	0%
Medication	3.6%	8.3%	4.7%	9.5%

Table 3
Mann-Whitney *U* Tests of Ranks for Preferred Type of Treatment

	High AN[a] Identification (*n* = 28)	Low AN Identification (*n* = 24)			All ANs (*n* = 64)	Caucasians (*n* = 105)		
Treatment	**Mean Rank[b] (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***	**Mean Rank (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***
Acupuncture	3.54 (0.96)	3.83 (1.13)	279.00	1.09	3.63 (1.06)	4.01 (0.96)	2703.00	2.23*
Medication	4.21 (1.13)	4.21 (1.29)	324.00	0.25	4.27 (1.13)	4.00 (1.29)	2943.50	1.48
Natural Remedies	2.18 (1.28)	2.13 (1.04)	330.50	0.11	2.11 (1.14)	2.40 (1.14)	2854.00	1.70
Relaxation	1.93 (1.05)	1.79 (0.88)	318.50	0.35	1.89 (0.99)	1.82 (0.95)	3226.50	0.47
Therapy	3.14 (1.30)	3.04 (1.04)	321.50	0.28	3.11 (1.17)	2.77 (1.21)	2837.00	1.75

[a] AN = Alaska Native
[b] A lower mean rank represents a greater average preference for the given treatment
* $p < .05$

Similarities and differences were also found when comparing the preferences of ANs who highly and less highly identified with AN culture. Although the Mann-Whitney *U* tests indicated no significant differences in mean rankings between the two AN groups (see Table 3), some differences can be seen when examining the percentages of participants who endorsed each option as their first choice (see Table 2). Specifically, those with higher AN identification more often preferred natural remedies (42.9%) over relaxation (39.3%), whereas those with lower AN identification more often preferred relaxation (45.8%) over natural remedies (33.3%). Additionally, those with lower AN identification were slightly more likely to choose medication compared to those who highly identified with AN culture.

Provider Type Preferences

The percentages of participants who endorsed each provider option as their first choice are reported in Table 4; average rankings for provider types can be found in Table 5. One AN participant and one Caucasian participant did not complete the provider type rankings. Mann-Whitney *U* tests were conducted comparing mean rankings for the provider type options between AN and Caucasian participants. As can be seen in Table 4, on average, ANs expressed a significantly stronger preference to receive help from a community elder and a significantly weaker preference to receive help from a psychiatrist when compared to Caucasian participants. Differences can also be seen in the

percentages of each group who endorsed these two types of providers as their first choice: 10.6% of ANs endorsed community elder as the top option, compared to only 1.0% of Caucasians, and 9.6% of Caucasians endorsed psychiatrist as the top choice, compared to only 4.5% of ANs.

Table 4
Percentages of Participants Endorsing Each Option as their First Choice for Preferred Type of Provider

	Alaska Natives			Caucasians
	High AN[a] Identification	Low AN Identification	All ANs	
Provider	*n* = 29	*n* = 25	*n* = 66	*n* = 104
Confidant	41.4%	56.0%	54.5%	56.7%
Therapist	24.1%	12.0%	15.2%	17.3%
Community Elder	10.3%	16.0%	10.6%	1.0%
Church Leader	13.8%	0%	9.1%	3.8%
Psychiatrist	3.4%	8.0%	4.5%	9.6%
Physician	3.4%	4.0%	3.0%	6.7%
Self-help Group	3.4%	4.0%	3.0%	4.8%

[a] AN = Alaska Native

Table 5
Mann-Whitney *U* Tests of Ranks for Preferred Type of Provider

	High AN[a] Identification (*n* = 29)	Low AN Identification (*n* = 25)			All ANs (*n* = 66)	Caucasians (*n* = 104)		
Provider	**Mean Rank[b] (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***	**Mean Rank (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***
Church Leader	4.62 (2.35)	5.28 (1.99)	290.00	1.32	4.77 (2.25)	5.29 (1.99)	3050.50	1.27
Community Elder	4.69 (2.11)	4.12 (1.90)	287.00	1.33	4.35 (1.99)	5.08 (1.63)	2713.50	2.34*
Confidant	2.69 (1.85)	2.04 (1.77)	286.00	1.42	2.26 (1.83)	2.29 (1.82)	3423.50	0.03
Physician	3.69 (4.16)	4.16 (1.63)	299.50	1.11	4.05 (1.59)	3.84 (1.65)	3171.50	0.85
Psychiatrist	4.62 (1.64)	4.40 (1.89)	339.50	0.41	4.58 (1.80)	3.91 (1.74)	2718.00	2.31*
Self-help Group	4.79 (1.61)	4.76 (1.67)	361.00	0.03	4.70 (1.62)	4.68 (1.68)	3398.00	0.11
Therapist	2.90 (1.54)	3.24 (1.54)	317.00	0.80	3.30 (1.60)	2.91 (1.51)	2937.50	1.61

[a] AN = Alaska Native
[b] A lower mean rank represents a greater average preference for the given treatment
* $p < .05$

Although the Mann-Whitney *U* tests indicated no significant differences in mean rankings between those who highly and less highly identified with AN culture (see Table 5), some clear differences between these two AN groups are evident in their first choices (see Table 4). Specifically, those with low AN identification were much more likely to choose a confidant first (56.0% vs. 41.4%) and were much less likely to a church leader first (0% vs. 13.8%) compared to those with high AN identification. Additionally, those who highly identified with AN culture were much more likely to choose a therapist (24.1% vs. 12.0%) and were less likely to prefer a community elder (10.3% vs. 16.0%) as their first source for help compared to those with lower AN identification.

Preferred Provider Characteristics

Mean preference rankings for each of the provider characteristics measured by the Preferred Counselor Characteristic Questionnaire can be found in Table 6. Mann-Whitney *U* tests were first conducted comparing the average level of preference for each characteristic between AN and Caucasian participants. Among these 16 characteristics, three significant differences were found. Specifically, ANs expressed a greater average preference for a provider with similar ethnicity compared to Caucasian participants, and Caucasian participants expressed a greater aversion to a provider with dissimilar personality and dissimilar attitudes compared to AN participants. For both ANs and Caucasians, the most important characteristics were more education, older age, similar attitudes, and similar personality.

Mann-Whitney *U* tests were next conducted comparing the average level of preference for each provider characteristic between AN participants who highly and less highly identified with AN culture (see Table 6). Among the 16 characteristics, only two significant differences were found. Specifically, those who more highly identified with AN culture expressed a greater average level of preference for a provider with a similar religious background and similar socioeconomic status compared to participants who less highly identified with AN culture.

Table 6
Mann-Whitney *U* Tests of Ranks for Preferred Mental Health Provider Characteristics

	High AN[a] Identification (*n* = 29)	Low AN Identification (*n* = 24)			All ANs (*n* = 63)	Caucasians (*n* = 101)		
Characteristic	**Mean Rank[b] (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***	**Mean Rank (*SD*)**	**Mean Rank (*SD*)**	***U***	***z***
More Educated	4.31 (4.00)	5.00 (4.37)	319.50	0.52	4.81 (4.16)	3.72 (2.90)	2916.00	0.91
Older	4.69 (3.70)	5.17 (3.45)	306.00	0.76	5.14 (3.91)	4.66 (5.14)	3026.50	0.60
Similar Attitudes	5.76 (4.64)	3.79 (3.39)	260.50	1.58	4.75 (3.93)	3.63 (2.94)	2647.00	1.83
Similar Personality	6.45 (3.79)	5.29 (3.56)	281.00	1.20	6.08 (3.91)	5.13 (3.39)	2785.50	1.35
Similar Religion	6.59 (4.16)	9.46 (5.11)	231.50	2.09*	8.00 (4.85)	7.39 (4.51)	2964.50	0.74
Same sex	7.21 (4.99)	6.58 (4.31)	346.50	0.03	6.49 (4.56)	6.74 (4.50)	3052.50	0.44
Similar Ethnicity	8.03 (3.92)	8.75 (3.73)	303.00	0.81	8.44 (3.77)	9.91 (3.88)	2522.00	2.24*
Similar SES[c]	8.17 (3.68)	10.58 (3.01)	214.50	2.40*	9.30 (3.73)	8.74 (3.26)	2842.50	1.15
Opposite Sex	9.41 (4.25)	7.79 (3.81)	268.50	1.43	8.83 (4.31)	9.50 (4.27)	2865.50	1.07
Similar Age	9.97 (3.72)	9.96 (4.95)	340.00	0.14	9.79 (4.24)	9.16 (3.62)	2861.00	1.09
Dissimilar Personality	10.17 (4.03)	9.50 (4.27)	316.00	0.57	9.87 (4.05)	11.31 (3.17)	2587.50	2.02*
Similarly Educated	10.38 (4.17)	9.88 (3.63)	322.00	0.47	10.02 (4.05)	9.35 (3.86)	2894.00	0.98
Dissimilar SES	10.45 (3.52)	9.71 (3.46)	317.50	0.55	10.11 (3.41)	10.86 (3.50)	2749.50	1.47
Dissimilar Attitudes	11.03 (4.48)	10.38 (4.26)	312.00	0.65	10.79 (4.10)	12.42 (3.76)	2339.50	2.87**
Dissimilar Ethnicity	11.69 (3.04)	11.50 (4.12)	335.00	0.23	11.40 (3.44)	11.26 (2.98)	3011.00	0.58
Dissimilar Religion	11.69 (3.97)	12.67 (2.90)	315.50	0.59	12.17 (3.64)	12.23 (3.58)	3154.50	0.09

[a] AN = Alaska Native
[b] A lower mean rank represents a greater average preference for the given treatment
[c] SES = socioeconomic status
* $p < .05$
** $p < .01$

Preferred Therapy Roles

Preferences for therapy roles as measured by the PEI-R were next compared between groups. Means and standard deviations can be found in Table 6. Independent samples *t*-tests were first conducted comparing the average level of preference for each of the four therapy roles between AN and Caucasian participants. The effect size values (Cohen's *d*) listed in Table 7 represent the size of the difference between the group means compared to the amount of variance in the data. No significant differences between ANs and Caucasians were found for any of the four therapy roles. Independent samples *t*-tests were next conducted comparing the average level of preference for each of the four therapy roles between ANs who more and less strongly identified with AN culture. Again, no significant differences were found between these two groups on any of the four PEI-R subscales. Participants of all types expressed the strongest preference for treatment to focus on the therapy relationship, followed by advice.

Table 7
Average Preferences for Therapy Roles as Measured by the PEI-R

	High AN[a] Identification (*n* = 29)	Low AN Identification (*n* = 25)			All ANs (*n* = 65)	Caucasians (*n* = 104)		
Therapy Role	**Mean (*SD*)**	**Mean (*SD*)**	***t* Value[b]**	***d* Value**	**Mean (*SD*)**	**Mean (*SD*)**	***t* Value**	***d* Value**
Advice	4.79 (0.85)	4.62 (1.43)	0.51	0.14	4.77 (1.11)	4.61 (1.02)	0.96	0.15
Approval	3.98 (1.02)	3.69 (0.92)	1.09	0.30	3.87 (1.01)	3.73 (1.01)	0.90	0.14
Audience	3.96 (1.03)	4.35 (0.94)	1.46	0.40	4.08 (0.97)	3.93 (0.93)	1.01	0.16
Relationship	5.23 (0.79)	5.19 (0.95)	0.18	0.05	5.13 (0.88)	5.07 (1.06)	0.46	0.06

[a] AN = Alaska Native
[b] No *t* values were significant at the $p < .05$ level

DISCUSSION

In this study, we sought to gain a better understanding of the mental health treatment preferences held by AN college students. More specifically, this study focused on identifying the preferences of ANs in three main areas, including type of treatment, provider type and characteristics of the ideal provider, and therapy roles. In addition, we sought to explore whether ANs differ from Caucasians in their mental health treatment preferences and whether ANs who highly and less highly identify with AN culture differ from each other in their preferences. Both similarities and differences were found between groups.

Treatment Type Preferences

When examining treatment types for those faced with the possibility of seeking help for a mental health problem, it appears that, in general, natural remedies were more frequently preferred by ANs with both high and low cultural identification compared to Caucasian participants. Relaxation was the most preferred option for AN college students who less strongly identified with AN culture (as well as for Caucasian college students), and natural remedies were more often preferred by ANs who highly identified with AN culture. Additionally, AN participants from both groups were less likely than Caucasian participants to choose therapy as their first treatment option, and both had a significantly higher mean ranking for acupuncture compared to Caucasians.

These findings are congruent with existing literature that suggests AI/ANs are more likely to prefer treatment options that incorporate traditional healing methods, such as holistic and natural remedies (Coyhis & Simonelli, 2008; Gone, 2004; Thomason, 2011). For example, Beals et al. (2006) found that, among those who sought help for substance abuse problems in two AI reservation populations, 42% had done so through traditional sources. Some have suggested that Western treatment options, such as therapy, may not be congruent with AI/AN values and ways of knowing. For example, many aspects of Western mental health treatment, such as authoritarian figures, time restraints, and structured interviews may be seen as impolite and culturally insensitive to AIs/ANs (Johnson & Cameron, 2001; Shore & Manson, 2010).

Provider Type Preferences

Participants from all groups were most likely to indicate that they would seek help from a confidant first if they were experiencing a mental health problem. However, some differences between groups were also observed. For example, ANs more frequently endorsed wanting to seek help from a community elder compared to Caucasian participants. This result is also similar to what has been found previously with AIs (Beals et al., 2005; Bee-Gates, Howard-Pitney, LaFromboise, & Rowe, 1996), and it appears to align with core AI/AN cultural values that place emphasis on community and respect for elders (Langdon, 2002). In addition, our study found that those with high AN identification were much more likely to seek help from a church leader first, which may reflect AI/AN cultural values that emphasize spirituality as an essential component of the healing process (Coyhis & Simonelli, 2008; Lewis, Duran, & Woodis, 1999; Thomason, 2011). Also, on average, AN participants ranked seeking help from a psychiatrist significantly lower than did our Caucasian participants. This finding may further illustrate the incongruence between Western mental health treatment options and ANs' preferences.

Understanding ANs' preferences for treatment and provider type can have a number of important implications for clinical practice. For instance, these findings demonstrate the need for treatment options that integrate natural remedies and spirituality. Additionally, mental health providers who work with ANs may want to collaborate with community elders and church leaders to make recommendations for mental health services. These recommendations fit within a health care framework that emphasizes a more traditional healing approach important to AN culture. Although traditional healing techniques differ among AN groups, commonalities include therapeutic massage; storytelling and talking circles; herbal remedies; drums and dance; prayer; and consultation with tribal doctors, traditional healers, or community elders. Traditional methods such as these focus on integration of the mind, body, and spirit for mental and physical health care interventions.

Preferred Provider Characteristics and Preferred Therapy Roles

While knowledge of ANs' preferences regarding treatments and providers can help those in the field identify better ways to decrease the disparity in mental health help-seeking behaviors between ANs and Caucasians, recognizing ANs' preferred characteristics of an ideal provider and preferred therapy roles is more likely to have an impact on treatment retention when ANs do seek out counseling or psychotherapy. The results of this study indicate that preferences in these two areas are largely similar between ANs and Caucasians. Participants from both groups expressed a preference for a provider who is older, is more educated, and has a similar attitude and personality to themselves. Using the same measure (the Preferred Counselor Characteristics Questionnaire), Bennett and BigFoot-Sipes (1991) found very similar results with their AI sample. In terms of therapy roles, both groups also expressed the strongest preference for therapy to focus on the therapeutic relationship, followed by desiring advice from the therapist. Based on our results and the results of others (Atkinson et al., 1986; Bennett & BigFoot-Sipes, 1991; Swift, Stewart, Whipple, & Kominiak, 2013), it appears that, regardless of culture, some of these therapist characteristics and roles seem to be almost universally desired by clients.

Although there were many similarities in preferred provider characteristics and preferred therapy roles, some important differences were also found. For example, ANs, on average, more strongly preferred a provider who had a similar ethnic background. Research across cultures has indicated that clients of all types prefer a therapist whose ethnicity matches their own (Cabral & Smith, 2011). We also found that AN participants, on average, were not as opposed to a therapist with dissimilar attitudes or dissimilar personality compared to Caucasian participants. Perhaps, given the scarcity of AI/AN providers, ANs are somewhat resigned to the idea of a provider who is different from themselves.

Limitations

Limitations of this study should be taken into consideration when interpreting results. First, our sample consisted of college students, and their preferences may differ from those of the general population when age, level of education, and level of acculturation are considered. Our results may not generalize to ANs outside of a college setting, as well. In addition to differences in age, level of education, and level of acculturation, ANs in college and urban settings likely have had much more exposure to Western forms of mental health treatments compared to ANs in rural settings. In some ways this makes AN college students an ideal group for studying preferences, since they have knowledge of both traditional and Western treatment options. However, ANs in rural settings may express much stronger preferences for traditional healing methods, and further research is needed to explore this possibility. Our AN and Caucasian participants were found to be similar in terms of demographics (e.g., age, gender, level of education), but this finding may be due to the fact that both groups were composed of college students. Given the diversity that does exist between these two cultural groups outside of a college setting (e.g., household income, level of education; Office of Minority Health, 2012), preferences between ANs and Caucasians may vary more if studied in other settings. In addition, the majority of the participants were not actively receiving mental health services at the time of the study. Participants were only asked to imagine that they were in a state of distress, which could reflect different preferences than if they had actually been experiencing psychological distress and looking for an appropriate treatment. Also, all of our participants were currently enrolled in a psychology course which may have impacted the preferences that they expressed. Future research should seek to identify preferences for ANs outside of a college setting.

Furthermore, results from this study were generalized for ANs as a group; however, a wide variety of contextual factors (e.g., experience of colonization, environmental conditions, types of stressors) create cultural differences within this population. Further research is needed to explore whether subgroups within AN culture differ in their preferences toward mental health treatment options. Additionally, although our study did seek to identify treatment preferences in multiple areas, there were some limitations to the range and domains that were assessed. It is possible that participants held preferences for provider types and treatment types that were not included as options in our study, such as traditional healers, talking circles, or therapeutic massage. Qualitative research may be useful for identifying preferences that were not included in this study, and may also be beneficial in understanding some of the counterintuitive results found in this study, such as AN participants being less likely to prefer therapy as a treatment option, but more likely to prefer a therapist as treatment provider.

Conclusions and Future Directions

Aside from exploring preference differences within the AN population and integrating qualitative research methods, several additional future directions exist for this area of research. For example, it would be of value to investigate perceived stigma and attitudes toward seeking out mental health treatment among ANs. Furthermore, future efforts should be made to identify how ANs view mental health, mental health problems, wellness, and the healing process, as well as to examine whether accommodating treatment preferences for ANs actually leads to improved treatment outcomes. Studies have shown that preference accommodation is, in general, beneficial and increases utilization (Haviland et al., 1983; Swift et al., 2011), yet nothing is known about preference matching for ANs. Finally, future research should seek to supplement existing literature (Gone, 2004; Thomason, 2011) by identifying ways to integrate ANs' preferences, values, and culture into Western forms of mental health treatment, as well as by identifying ways to culturally integrate Western forms of mental health interventions into AN ways of healing.

In conclusion, this study sought to gain a better understanding of the treatment preferences held by AN individuals. Given that we found some differences in preferences between AN and Caucasian college students, and between ANs based on levels of cultural identification, it is important for mental health treatment providers to identify preferences held by AN clients before offering or beginning treatment, and to identify a treatment approach that will align with the client's culture. Furthermore, providers should seek to assess cultural identification and recognize how it may influence client preferences. Ultimately, when working with culturally diverse populations, it is important to acknowledge differences that may exist due to culture, and to provide treatment options that align best with individual clients' values, beliefs, and preferences.

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