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Association between Community Attachment and Prescription Drug Misuse among American Indian Adolescents in Arizona

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Abstract: Prescription drug misuse (PDM) has become a major health issue in the U.S. over the past decade. PDM affects all ethnic and racial groups; however, there is a higher prevalence among American Indian (AI) youths, and there is scarce information on the risk and protective factors driving this behavior. Using the Arizona Youth Survey 2018, we analyzed data from 2494 students who self-identified as AI (aged 13–18 years, 47.31% male). Logistic regression models were used to examine the association between community attachment with lifetime and the past-30-days PDM. Community attachment was negatively associated with AI youths' lifetime PDM (OR = 0.78, 95% CI [0.65, 0.92]); however, it was not significant for the past-30-days users (OR = 0.91, 95% CI [0.72, 1.15]). For both lifetime and past-30-days users, a common protective factor was close friends' negative perceptions of PDM, while a common risk factor included siblings' prescription drug use and ease of access to substances. Lifetime users' drug-free closest friends were also protective. The findings support similar community-oriented approaches showing a cumulative rather than immediate effect, and past-30-days PMD youths were strongly influenced by peers and family. PDM risk and protective factors can advance knowledge about AI youths' social and cultural determinants of health and influence future prevention interventions.

Keywords: prescription drug misuse; American Indian adolescents; community attachment

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1. Introduction

In the past decade, prescription drug misuse (PDM) has received increased attention and emerged as a significant health challenge in the United States (U.S.) [1–3]. Misuse of prescription drugs, including pain relievers such as opioids, sedatives or tranquilizers, and stimulants, is defined as taking a medication in a non-prescribed manner, taking someone else's prescription even if for a legitimate medical complaint, or taking a medication to feel its effects [4]. In a 2018 national report by Substance Abuse and Mental Health Services Administration (SAMHSA), PDM ranked second only to marijuana as the most commonly drug-related negative behavior in the U.S. In addition, there were 9.9 million prescription pain reliever misusers, accounting for 3.6% of the U.S. population in that year [3]. According to the 2019 U.S. Youth Risk Behavior Survey, 14.3% of students in grades 9–12 report lifetime misuse of prescription opioids [5]. Youths misusing prescription opioids are more likely to engage in risky sexual behaviors, violent behaviors, have a higher rate of suicide risk, and other negative behaviors [6].

Even though PDM occurs in all racial and ethnic groups in the U.S., American Indians (AI) and Alaska Natives (AN) have a higher prevalence. For instance, Schuler et al. reported that Native Americans aged 12 and older had the highest prevalence of prescription opioid misuse among all racial groups based on a one-million-sample dataset collected between 1999–2018 [7]. AI, AN, and Native Hawaiian college students have the highest rates of opioid misuse compared to students of other races or ethnicities [8]. According to

a SAMHSA report, the rate of prescription pain reliever misuse among AI or AN was 1.5 times higher than the national average and it was also higher than for White people [9]. In a national sample, the prevalence of opioid misuse was significantly higher among reservation-based AI students than the national prevalence [10]. In addition, Centers for Disease Control and Prevention (CDC) reported that the prevalence of opioid-related overdose deaths among AI and AN has been above the national average in the past years [11]. This evidence highlights the importance of examining prescription drug misuse among AI youths.

There is limited understanding about the risk and protective factors of PDM among young AIs. American Indians experience an early onset of marijuana use and alcohol intoxication which might contribute to later use of PDM [12]. Peer-, school-, and family-level factors may contribute to the risk of misusing prescription drugs (e.g., peer substance use, lower family disapproval of substance use, and lower school performance, difficult social relationships, and other family problems) [8,13]. Perceived racial discrimination is also a risk factor for PDM among AI youths [14]. Few studies have focused on protective factors. Family and community support are primarily viewed as a source of resilience, delaying or preventing the onset, misuse, and treatment of opioid use among AI adolescents [15,16]. Across all races/ethnicities, youths with various types of social attachments (e.g., family, school, and community) were associated with lower odds of PDM [17]. Parental and school attachment, as well as the availability of fun and safe activities in the community, are factors that reduce PDM among American youths [18].

Although the research targeting PDM protective factors at the community-level for AI youths is limited, studies have shown that community connection and social support are protective factors for substance use in AI youths [19–22]. These findings demonstrate the likelihood that a community approach could be largely consistent with American Indigenous values and traditions. Consequently, the purpose of this paper is to investigate the potential relationship between PDM and community attachment among AI adolescents while examining protective and risk factors of PDM in AI youths.

Attachment theory guides our examination of AI behavioral patterns, or in other words, how attachment to community of origin might influence youth health behavior. Attachment theory has previously been successfully applied to investigate risk and protective factors among AI and other ethnic minority students in the U.S. [23–26]. In this study, we conceptualize community attachment from a classical attachment theory perspective [27]. Attachment theory aims to decipher how distinct relational qualities and personality types forecast various behaviors.

American Indian youths are part of a five-century long history of political efforts, economic tensions, and hostility to disconnect them from their community [28]. Despite those efforts, many youths and their families maintain a sense of attachment and connection to their communities of origin [25]. Self-determination and self-resilience helped AI communities to preserve and, in some cases, regain a sense of attachment to their communities; however, there is a lack of understanding of the health benefits of community attachment. In this study, we focus on community attachment as expressed through bonds to the physical space of residence, which have been identified as a source of resilience for AI youths [29].

Given the importance of community-based values in the AI culture, the current study assesses whether community attachment is associated with PDM as a protective factor for AI youths. Conducting a secondary analysis of a state-wide database, the Arizona Youth Survey 2018, our null hypotheses are that there is no association between community attachment and PDM in both lifetime use and past-30-days use. Our alternative hypotheses are listed below:

H1: *There will be an association between community attachment and lifetime PDM among AI adolescents.*

H2: *There will be an association between community attachment and the past-30-days PDM among AI adolescents.*

2. Materials and Methods

2.1. Data and Sample

This study utilized secondary data from the Arizona Youth Survey (AYS) 2018, conducted by the Arizona Criminal Justice Commission (ACJC) to better comprehend risk and protective factors among Arizona's youths at the state level [30]. AYS examined the prevalence of risky behaviors such as substance use, gang involvement, and delinquent behaviors using validated measures from instruments such as the Risk and Protective Factor Model and Communities That Care (CTC) survey [30]. The CTC assessments of risk and protective factors have been found to be reliable and valid with samples of AI youths [31]. AYS 2018 includes 49,009 youths, attending the eighth, tenth, and twelfth grades and aged 12 to 19, residing in 15 different counties of Arizona, where all public, private, and charter schools were eligible to participate [30]. AYS collected the race and ethnicity of the participants by providing a choice to identify with one of more the following categories: White, Hispanic/Latinx, Black/African American, Asian, AI/AN, and Hawaiian/Other Pacific Islander; students were allowed to select multiple categories if they felt they applied. Due to the focus on AI youths, the students in this study self-identified as AI/AN or multiracial, including the AI/AN racial group. Listwise deletion was used to address missing or incomplete data; the final sample size for analysis comprised 2494 AI respondents.

2.2. Measures

Lifetime and the past-30-days prescription drug misuse: The dependent variables were self-reported by the students on how many occasions they have used prescription drugs without a doctor's prescription in their lifetime and during the past 30 days. Specifically, research participants were asked six questions about their PDM experience, including three questions for each prescription drug (prescription pain relievers, stimulants, and sedatives) they used in their lifetime and three questions for each prescription drug they used in the past 30 days. All six questions shared the same response categories (0, 1–2 times, 3–5 times, 6–9 times, 10–19 times, and 20+). Due to the skewed distribution toward non-use, all measures of PDM were dichotomized into non-use (0) and any use (1). In this study, we excluded the past-30-days users from the lifetime users. Therefore, lifetime users refer to people who had at least once misused prescription drugs in their lifetime but had not used them within the last 30 days. This may include those who tried only once or used them infrequently in the past.

Community Attachment. Research participants were asked to answer three questions measuring the level of community attachment: (a) "If I had to move, I would miss the neighborhood I now live in"; (b) "I like my neighborhood"; and (c) "I'd like to get out of my neighborhood." Scores for three questions were created by averaging the 4-point Likert scales (1 = strongly disagree, 4 = strongly agree) with reversed coding for (c). The Cronbach α for this item was 0.74. A higher score indicated a higher level of community attachment.

Covariates. To estimate the relationship between community attachment and PDM, the covariates at different levels and demographic characteristics that can potentially be associated with substance use were included in the models. At the individual level, age (numerically from 13 to 18, where 13 represented 13 years old or younger and 18 represented 18 years old or older), gender (male = 1; female = 0), and the youths' negative perceptions of prescription drug use were also included by asking how wrong the adolescents thought using prescription drugs without a doctor telling the youths to use them was (1 = not wrong at all; 4 = very wrong). Peer level included the youths' number of closest friends who committed to being drug-free (numerically from 0 to 4, where 4 represented four or more), gang involvement (yes/no), and close friends' negative perceptions of prescription drug use. Items on the family level included whether the youths received free or reduced-cost lunch (yes/no), whether the youths' siblings had ever used prescription drugs without a doctor's prescription (yes/no use or no siblings), parental negative perception of prescription drug use, and family attachment (average of six 4-point Likert scales measuring the youths' closeness to mother and father; Cronbach = 0.83). At the school level, the youth's academic

performance (1 = mostly F's; 5 = mostly A's), commitment to school (average of three 5-point Likert scale questions, e.g., how interesting are most of your courses to you? Cronbach α = 0.72). The community and societal level included the items asking whether youths had any exposure to substance use prevention advertisements (yes/no), the ease of access to substances (1 = very hard; 4 = very easy), and the community's negative perception of substance use (cigarettes, alcohol, and marijuana).

2.3. Analytical Strategies

We first ran descriptive statistics to illustrate the sample characteristics. Then, logistic regressions were undertaken to examine the relationship between community attachment and PDM among AI youths. Using a hierarchical regression approach for each of the outcome variable, we ran a basic model of regression on all the covariates at the individual, peer, family, school, community, and societal levels. Then, a full model was shown as the variable of community attachment added to the basic model. We compared the Nagelkerke pseudo R^2 changes between the basic and full model. The statistical analyses were conducted in Stata version 15.1.

3. Results

Table 1 shows that about one-tenth (9.5%) of the AI youths reported misusing at least one of the three types of prescription drugs in their lifetime but not within the past 30 days, while approximately 8% of the samples reported misusing prescription drugs within the past 30 days. The mean score for community attachment was 2.58 (SD = 0.82) on a 4-point scale. Table 1 presents the descriptive statistics for all variables. The average age of the sample was 15.41 years (SD = 1.69), and slightly fewer male adolescents (47.31%) participated compared to females. Across the individual, peer, and family levels, the overall perception was strongly against prescription drug misuse (between 3.40 and 3.78). On average, the youths reported having two closest friends who were drug-free (SD = 0.63). The level of gang involvement was low, with only 5.01% of the sample reporting current membership. At the family level, approximately 60.0% of the students received free or reduced-cost lunches; the scores for family attachment were 2.79 (SD = 0.75) on a 4-point scale, and 17.5% of students reported that their siblings had used prescription drugs. The overall level of commitment to school was moderate (3.17 on a 5-point scale), and the average academic performance was 3.61 (SD = 1.06), indicating that the average grades were between B and C. At the community and societal level, the youths reported moderate ease of access to substances (2.08 on a 4-point scale), and exposure to drug prevention advertisements was common (71.45%).

Table 2 shows the findings from the logistic regressions of the AI youth lifetime PDM. In the basic model (model 1) with covariates, the Nagelkerke pseudo R^2 statistic was 0.081, explaining 8.1% of the variance in the dependent variable. The community attachment in the full model (model 2) slightly improved the Nagelkerke pseudo R^2 statistic (R^2 = 0.086) by 0.005. In model 2, community attachment was statistically significant, indicating that every unit increase in community attachment decreased the risk of youth misusing prescription drugs in their lifetime by 22% (OR = 0.78, 95% CI [0.65, 0.92]).

Other covariates in both models showed a similar pattern, revealing risk and protective factors for those who had misused prescription drugs in their lifetime. Gender was one of the protective factors, with males having a 38–39% lower chance than females (OR = 0.61, 95% CI [0.45, 0.81] and OR = 0.62, 95% CI [0.47, 0.84]) of using prescription drugs. Having one more drug-free closest friend (OR = 0.86, 95% CI [0.78, 0.95] and OR = 0.87, 95% CI [0.79, 0.95]) and close friends' negative perceptions of misusing prescription drugs (OR = 0.76, 95% CI [0.65, 0.89]) also lowered the chances of misusing prescription drugs.

Table 1. Sample descriptive statistics (N = 2494).

	%	Mean (Range)	SD
Dependent Variables:			
Lifetime prescription drug use	9.50		
Past 30 days prescription drug use	7.90		
Independent variables:			
Community attachment		2.58 (1–4)	0.82
Control variables:			
Individual level			
Age in years		15.41 (13–18)	1.69
Male	47.31		
Youth's negative perceptions of prescription drugs use		3.53 (1–4)	0.81
Peer level			
Number of drug-free closest friends		2.15 (0–4)	1.63
Close friends' negative perceptions of prescription use		3.40 (1–4)	0.94
Gang involvement	5.01		
Family level			
Free or reduced cost lunch	59.50		
Family attachment		2.79 (1–4)	0.75
Parental negative perception on prescription drugs use		3.78 (1–4)	0.64
Siblings prescription drugs used	17.52		
School level			
School grades		3.61 (1–5)	1.06
Commitment to school		3.17 (1–5)	0.91
Community and societal level			
Ease of access to substances		2.08 (1–4)	1.17
Exposure to substance use prevention advertisement	71.45		

Table 2. Logistic regression results for American Indian youth lifetime prescription drug misuse (N = 2494).

	Model 1 Ever Used in Lifetime			Model 2 Used in Lifetime		
	OR	**[95% CI]**	***p*-Value**	**OR**	**[95% CI]**	***p*-Value**
Age in years	0.99	[0.91, 1.08]	0.861	0.98	[0.90, 1.07]	0.699
Male	0.61	[0.45, 0.81]	0.001	0.62	[0.47, 0.84]	0.002
Youth's negative perceptions of prescription drugs misuse	0.94	[0.79, 1.14]	0.545	0.95	[0.79, 1.14]	0.572
Number of drug-free closest friends	0.86	[0.78, 0.95]	0.002	0.87	[0.79, 0.95]	0.003
Close friends' negative perceptions of prescription drugs misuse	0.76	[0.65, 0.89]	0.001	0.76	[0.65, 0.89]	0.001
Gang involvement	0.51	[0.27, 0.96]	0.036	0.55	[0.29, 1.03]	0.064
Free or reduced cost lunch	0.88	[0.66, 1.18]	0.396	0.87	[0.65, 1.15]	0.329
Family attachment	0.90	[0.74, 1.09]	0.280	0.95	[0.78, 1.15]	0.594
Parental negative perceptions of prescription drugs misuse	0.91	[0.75, 1.12]	0.380	0.91	[0.74, 1.12]	0.361
Siblings used prescription drugs	1.75	[1.26, 2.43]	0.001	1.72	[1.24, 2.38]	0.001
School grades	0.99	[0.86, 1.13]	0.928	1.00	[0.88, 1.14]	0.989
Commitment to school	0.93	[0.78, 1.10]	0.377	0.94	[0.80, 1.12]	0.492
Ease of access to prescription drugs	1.19	[1.05, 1.36]	0.008	1.19	[1.04, 1.35]	0.009
Exposure to substance use prevention advertisement	1.22	[0.89, 1.67]	0.223	1.24	[0.90, 1.70]	0.187
Community attachment				0.78	[0.65, 0.92]	0.006
Nagelkerke pseudo R^2			0.081			0.086
Δ Nagelkerke pseudo R^2						0.005

Note. OR odds ratio; CI confidence interval

Two factors increased the risk of using prescription drugs in their lifetime: the youths' siblings using prescription medicines (OR = 1.75, 95% CI [1.25, 2.43], and OR = 1.72, 95% CI [1.24, 2.38]) and the ease of access to prescription drugs (OR = 1.19, 95% CI [1.05, 1.36],

and OR = 1.19, 95% CI [1.04, 1.35]). Notably, gang involvement was statistically significant only in the basic model, where youths who joined a gang are 50% less likely than youths without gang affiliation to misuse prescription drugs in their lifetime (OR = 0.51, 95% CI [0.27, 0.96]); however, it was not statistically significant at the 95% level in the full model (OR = 0.55, 95% CI [0.29, 1.03]).

Table 3 presents the results of the logistic regressions for AI youths who had misused prescription drugs within the past 30 days. The Nagelkerke pseudo R^2 statistic in the basic model (model 3) explained 35.95% of the variance in the dependent variables (R^2 = 0.3595), which was much higher than in model 1 and model 2. However, community attachment did not reach statistical significance (OR = 0.91, 95% CI [0.72, 1.15]) in the full model (model 4), where R^2 increased slightly. Models 3 and 4 identified risk and protective factors for AI youths who had misused prescription drugs within the past 30 days. In addition to close friends' negative perceptions of misusing prescription drugs (OR = 0.69, 95% CI [0.57, 0.82]), youth and parental attitudes were also identified as protective factors for youths' PDM by 31–46% (OR = 0.54, 95% CI [0.45, 0.66], and OR = 0.66, 95% CI [0.54, 0.81]). Students with stronger commitment to school had a 20% decrease in odds of past-30-days PDM (OR = 0.80, 95% CI [0.64, 0.99]). In terms of risk factors, students involved in gangs were 320–332% more likely than those not involved in gangs to have misused prescription drugs in the past 30 days (OR = 4.20, 95% CI [2.46, 7.16], and OR = 4.32, 95% CI [2.25, 7.39]). Youths who had siblings using prescription medicine increased their risk of misusing prescription drugs in past 30 days by 152% (OR = 2.52, 95% CI [1.73, 3.69], and OR = 2.52, 95% CI [1.72, 3.68]). An increased in the ease of access to prescription drugs by one unit resulted in 19–20% chance increase in the risk of misusing prescription drugs in the past 30 days (OR = 1.19, 95% CI [1.01, 1.42], and OR = 1.20, 95% CI [1.01, 1.42]).

Table 3. Logistic regression results for American Indian youth past-30-days prescription drug misuse (N = 2494).

	Model 3 Ever Used in Past 30 Days			**Model 4 Used in Past 30 Days**		
	OR	**[95% CI]**	***p*-Value**	**OR**	**[95% CI]**	***p*-Value**
Age in years	0.98	[0.88, 1.10]	0.777	0.98	[0.88, 1.10]	0.735
Male	0.71	[0.49, 1.03]	0.073	0.72	[0.49, 1.04]	0.080
Youth's negative perceptions of prescription drugs misuse	0.54	[0.45, 0.66]	0.000	0.54	[0.45, 0.66]	0.000
Number of drug-free closest friends	0.97	[0.85, 1.10]	0.621	0.97	[0.85, 1.10]	0.649
Close friends' negative perceptions of prescription drugs misuse	0.69	[0.57, 0.82]	0.000	0.69	[0.57, 0.82]	0.000
Gang involvement	4.20	[2.46, 7.16]	0.000	4.32	[2.52, 7.39]	0.000
Free or reduced cost lunch	1.01	[0.70, 1.47]	0.949	1.01	[0.70, 1.47]	0.951
Family attachment	0.79	[0.62, 1.01]	0.059	0.81	[0.63, 1.04]	0.096
Parental negative perceptions of prescription drugs misuse	0.66	[0.54, 0.81]	0.000	0.66	[0.54, 0.81]	0.000
Siblings used prescription drugs	2.52	[1.73, 3.69]	0.000	2.52	[1.72, 3.68]	0.000
School grades	0.88	[0.75, 1.03]	0.121	0.88	[0.75, 1.03]	0.122
Commitment to school	0.80	[0.64, 0.99]	0.037	0.80	[0.64, 0.99]	0.038
Ease of access to prescription drugs	1.19	[1.01, 1.42]	0.040	1.20	[1.01, 1.42]	0.039
Exposure to substance use prevention AD	0.94	[0.64, 1.40]	0.778	0.95	[0.64, 1.41]	0.794
Community attachment				0.91	[0.72, 1.15]	0.428
Nagelkerke pseudo R^2			0.3595			0.3600
Δ Nagelkerke pseudo R^2						0.0005

Note. OR odds ratio; CI confidence interval

4. Discussion

This study hypothesized that community attachment would be associated with PDM in the youths' lifetime and past 30 days. Using state-level cross-sectional data from AYS 2018, we found that community attachment can help protect against lifetime PDM among AI youths. Although we did not observe the same effect for AI youths who had PDM

in the past 30 days, our analysis highlights the significance of community attachment in addressing prescription drug misuse among AI youths. Additionally, this article contributes to the existing knowledge about risk and protective factors for PDM at the community level.

The findings about community attachment can be interpreted as a progressive and cumulative process. That is, positive community attachment may not have immediate protective results, but it can help reduce the risk of misusing prescription drugs in the long term. The results may suggest that the community plays a contradictory role in this case. On the one hand, the community provides protection against lifetime PDM, as confirmed in this study. On the other hand, the community can be the source of prescription drugs. According to SAMHSA [3], 37.6% of people aged 12 or older who misused prescription pain relievers in 2018 obtained pain relievers from the community through prescription(s) or stole them. Therefore, the connection between youths and the community requires further research. What are the characteristics of the community that strengthen its protective effects and which ones do the opposite? There is a need to better identify community characteristics that are a source of resilience in order to integrate and strengthen them through community-based prevention interventions.

Notably, in models of lifetime PDM use, the positive effect of gang involvement was attenuated when considering the community attachment, indicating that the community connection may buffer against the odds of PDM. In models of past-30-days use, however, gang involvement was strongly associated with PDM and became a risk factor regardless of considering community attachment. We interpret these seemingly contradictory results as reflecting a possible shift to other drugs among youths who had tried prescription drugs in their lifetime but not in the past 30 days, which may diminish the impact of gang involvement on prescription drugs use. Further research is needed to verify this statement.

Furthermore, when we investigated the schools, we discovered that most of them were located off- or near reservations. In addition, only five schools had AI students as more than 50% of the total number of students, while the remaining schools had predominantly White or Hispanic students. This could indicate that most AI students in the AYS 2018 did not live in communities that shared their culture. Consequently, students and their parents may have encountered interracial group issues, unfriendly interactions, or even racial discrimination from their communities. Alternatively, many students might have resided in majority AI communities but were enrolled in non-AI schools. This daily cultural switch necessitates further examination from a risk and resilience perspective.

Our findings also identified the risk and protective factors of PDM in AI youth. In particular, this study suggests that enhancing community attachment can be a strategy to reduce the odds of PMD, supporting the literature that indicates that community connection is a protective factor [19–22]. Consistent with previous studies, peer and family issues increased the chance of using drugs. The risk factors were siblings' possible history of prescription drug use and ease of access to substances [8,13,17,32]. Having close friends with negative perceptions of PDM supports previous research that identified it as a protective factor against lifetime and past-30-days users [17].

Additional protective factors, such as community attachment, male gender, and the number of drug-free closest friends, were added to the knowledge base about reducing the likelihood of prescription drugs misuse among AI youths who have used PDM in their lifetime. For the AI youths who had used PDM within the past 30 days, protective factors included the youth's and parents' negative perceptions of PDM and commitment to school; however, gang involvement was significantly more strongly associated with PDM as a risk factor. This indicates that youths' personal and significant others' external attitudes toward PDM matter and strongly influenced their decision to use drugs, particularly in the past 30 days [17].

Likewise, gang involvement and commitment to school are also demonstrated as predictors, implying that having a low sense of achievement in school and spending time with gang members would increase students' use of prescription drugs. This is consistent

with prior studies that suggest adolescents' decision on substance use is concerns the opinions of others and peer interaction [32–34].

This study has several limitations. First, the AYS relied on self-reported data from students for all items, which may be subject to recall bias and underreporting because PDM is an undesirable behavior and a sensitive topic with moral and legal implications. In addition, school-based studies cannot capture dropout students, who might be more likely to engage in substance use and other risky behaviors. Second, due to the nature of secondary data analysis, we were unable to include all variables related to substance use; however, we did include the potential covariates that had been investigated in previous studies utilizing the AYS dataset. Other measurement limitations included the community attachment measure which was limited only to the physical neighborhood. Urban American Indian youths in Arizona often travel with their relatives to reservations for ceremonies or family events. The concept and measurement of community attachment needs to be expanded for the AI community in order to capture the youths' sense of belonging to more than one place. Furthermore, although the AYS 2018 included many AI students, most school districts were located outside reservations. We did not have information about the actual address of the students, which made it impossible to compare students who lived in reservations with those who lived in the cities or rural areas adjacent to reservations. Lastly, because AYS collected cross-sectional data, we could only identify associations between the dependent and independent variables; however, we cannot infer causality.

5. Conclusions and Implications

The current study has demonstrated the association between community attachment and lifetime PDM among Arizona AI adolescents. The article has also identified the risk and protective factors for lifetime and past-30-days PDM, emphasizing the importance of youths' relationships with peers, family, and community. These findings contribute to the knowledge base about the social and cultural determinants of health related to PDM among AI youth. The study findings can inform the design and testing of innovative prevention strategies with and for this population from a harm reduction perspective.

The findings document the need for future research focused on the protective and risk factors for PDM among AI youths. Future studies should consider collecting primary data from AI youths, investigating schools and communities inside and outside reservations, and employing longitudinal designs to obtain data at different time points. To better understand the lived experiences of AI youths, qualitative and mixed-method designs can also make an important contribution. Findings from such studies can inform the design and evaluation of culturally grounded universal, selective, and indicated prevention interventions.

Practice implications include creating a more inclusive community for AI youths, which recognizes their culture as a source of pride and identity. Protective factors should be employed in culturally tailored prevention interventions to reduce PDM and promote the health and well-being of AI youths.

From an attachment theory perspective [27], this study highlights the complexity of identifying and measuring community attachment for AI youths. There is no question that community attachment can have a protective effect against PDM. The findings can serve as the basis for refining the concept of community for both urban and reservation-based AI youths, and for recognizing the diverse experiences of those not using and already experiencing PDM. All their diverse voices are needed to help youths in their communities stay healthy and thrive.

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Data Availability Statement: Researchers can apply the AYS data via: https://www.azcjc.gov/Programs/Statistical-Analysis-Center/Arizona-Youth-Survey.

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References

1. Dupont, R.L. Prescription Drug Abuse: An Epidemic Dilemma. *J. Psychoact. Drugs* **2010**, *42*, 127–132. [CrossRef] [PubMed]
2. Kelly, B.C.; Trimarco, J.; LeClair, A.; Pawson, M.; Parsons, J.T.; Golub, S.A. Symbolic boundaries, subcultural capital and prescription drug misuse across youth cultures. *Sociol. Health Illn.* **2014**, *37*, 325–339. [CrossRef] [PubMed]
3. Substance Abuse and Mental Health Services Administration [SAMHSA]. *Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health*; HHS Publication No. PEP19-5068, NSDUH Series H-54; Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration: Rockville, MD, USA, 2019.
4. National Institute on Drug Abuse [NIDA]. Misuse of Prescription Drugs Research Report. 2020. Available online: https://nida.nih.gov/publications/research-reports/misuse-prescription-drugs/overview (accessed on 11 November 2022).
5. Jones, C.M.; Clayton, H.B.; Deputy, N.P.; Roehler, D.R.; Ko, J.Y.; Esser, M.B.; Brookmeyer, K.A.; Hertz, M.F. Prescription opioid misuse and use of alcohol and other substances among high school students—Youth Risk Behavior Survey, United States, 2019. *MMWR Suppl.* **2020**, *69*, 38–46. [CrossRef] [PubMed]
6. Bhatia, D.; Mikulich-Gilbertson, S.K.; Sakai, J.T. Prescription Opioid Misuse and Risky Adolescent Behavior. *Pediatrics* **2020**, *145*, e20192470. [CrossRef]
7. Schuler, M.S.; Schell, T.L.; Wong, E.C. Racial/ethnic differences in prescription opioid misuse and heroin use among a national sample, 1999–2018. *Drug Alcohol Depend.* **2021**, *221*, 108588. [CrossRef] [PubMed]
8. Qeadan, F.; Madden, E.F.; Bern, R.; Parsinejad, N.; Porucznik, C.A.; Venner, K.L.; English, K. Associations between opioid misuse and social relationship factors among American Indian, Alaska Native, and Native Hawaiian college students in the U.S. *Drug Alcohol Depend.* **2021**, *222*, 108667. [CrossRef]
9. Substance Abuse and Mental Health Services Administration [SAMHSA]. Nonmedical Use of Prescription Pain Relievers Varies by Race and Ethnicity. 2013. Available online: https://www.samhsa.gov/data/sites/default/files/report_1972/Spotlight-1972.html (accessed on 11 November 2022).
10. Stanley, L.R.; Crabtree, M.A.; Swaim, R.C. Opioid Misuse Among American Indian Adolescents. *Am. J. Public Health* **2021**, *111*, 471–474. [CrossRef]
11. Centers for Disease Control and Prevention [CDC]. Drug Overdose Prevention in Tribal Communities. CDC Injury Prevention and Control. 2022. Available online: https://www.cdc.gov/injury/budget/opioidoverdosepolicy/TribalCommunities.html (accessed on 11 November 2022).
12. Stanley, L.R.; Swaim, R.C.; Smith, J.K.; Conner, B.T. Early onset of cannabis use and alcohol intoxication predicts prescription drug misuse in American Indian and non-American Indian adolescents living on or near reservations. *Am. J. Drug Alcohol Abus.* **2020**, *46*, 447–453. [CrossRef]
13. Nalven, T.; Spillane, N.S.; Schick, M.R. Risk and protective factors for opioid misuse in American Indian adolescents. *Drug Alcohol Depend.* **2019**, *206*, 107736. [CrossRef]
14. Garrett, B.A.; Livingston, B.J.; Livingston, M.D.; Komro, K.A. The effects of perceived racial/ethnic discrimination on substance use among youths living in the Cherokee nation. *J. Child Adolesc. Subst. Abus.* **2017**, *26*, 242–249. [CrossRef]
15. Hirchak, K.; Amiri, S.; Espinoza, J.; Herron, J.; Hernandez-Vallant, A.; Cloud, V.; Venner, K. Trends in non-medical prescription opioid use among urban and rural American Indian and Alaska native youth residing in New Mexico: 2013–2017. *Am. Indian Alsk. Nativ. Ment. Health Res.* **2021**, *28*, 1–16. [CrossRef] [PubMed]
16. Waugh, E.; Ivanich, J.; O'Keefe, V.; Usher, J.; Haroz, E.; Goklish, N.; Kastler, G.; Nestadt, P.; Cwik, M. Understanding opioid use within a Southwestern American Indian reservation community: A qualitative study. *J. Rural. Health* **2022**, *39*, 179–185. [CrossRef] [PubMed]
17. Wu, S.; Farmer, A.Y. Risk and protective factors of youth prescription drug misuse: Variations across racial/ethnic groups. *Child Adolesc. Soc. Work. J.* **2021**, *39*, 499–514. [CrossRef]
18. Park, N.K.; Melander, L.; Sanchez, S. Nonmedical prescription drug use among midwestern rural adolescents. *J. Child Adolesc. Subst. Abus.* **2016**, *25*, 360–369. [CrossRef]
19. Hawkins, E.H.; Cummins, L.H.; Marlatt, G.A. Preventing substance abuse in American Indian and Alaska native youth: Promising strategies for healthier communities. *Psychol. Bull.* **2004**, *130*, 304–323. [CrossRef]
20. Henson, M.; Sabo, S.; Trujillo, A.; Teufel-Shone, N. Identifying protective factors to promote health in American Indian and Alaska native adolescents: A literature review. *J. Prim. Prev.* **2016**, *38*, 5–26. [CrossRef]

21. Kelley, A.; Witzel, M.; Fatupaito, B. Preventing substance use in American Indian youth: The case for social support and community connections. *Subst. Use Misuse* **2018**, *54*, 787–795. [CrossRef]
22. Wendt, D.C.; Hartmann, W.E.; Allen, J.; Burack, J.A.; Charles, B.; D'Amico, E.J.; Dell, C.A.; Dickerson, D.L.; Donovan, D.M.; Gone, J.; et al. Substance use research with indigenous communities: Exploring and extending foundational principles of community psychology. *Am. J. Community Psychol.* **2019**, *64*, 146–158. [CrossRef]
23. Carlo, G.; McGinley, M.; Hayes, R.C.; Martinez, M.M. Empathy as a mediator of the relations between parent and peer attachment and prosocial and physically aggressive behaviors in Mexican American college students. *J. Soc. Pers. Relatsh.* **2012**, *29*, 337–357.
24. Hysenbegasi, A.; Hass, S.L.; Rowland, C.R. The impact of depression on the academic productivity of university students. *SSRN Electron. J.* **2005**, *8*, 145–151.
25. Lomawaima, K.T. Educating Native Americans. In *Handbook of Research on Multicultural Education*, 2nd ed.; Banks, J., Banks, C., Eds.; Jossey-Bass: San Francisco, CA, USA, 2004; pp. 441–461.
26. Love, K.M. Parental Attachments and Psychological Distress Among African American College Students. *J. Coll. Stud. Dev.* **2008**, *49*, 31–40. [CrossRef]
27. Bowlby, J. *A Secure Base: Clinical Applications of Attachment Theory*; Routledge: London, UK, 1988.
28. Simi, D.; Matusitz, J. Native American Students in U.S. Higher Education: A Look from Attachment Theory. *Interchange* **2015**, *47*, 91–108. [CrossRef]
29. Jackson, A.P.; Smith, S.A.; Hill, C.L. Academic Persistence Among Native American College Students. *J. Coll. Stud. Dev.* **2003**, *44*, 548–565.
30. Arizona Criminal Justice Commission [ACJC]. *Arizona Youth Survey 2018: State of Arizona*; Arizona Criminal Justice Commission: Phoenix, AZ, USA, 2018.
31. Guttmannova, K.; Wheeler, M.J.; Hill, K.G.; Evans-Campbell, T.A.; Hartigan, L.A.; Jones, T.M.; Hawkins, J.D.; Catalano, R.F. Assessment of risk and protection in native American youth: Steps toward conducting culturally relevant, sustainable prevention in Indian country. *J. Community Psychol.* **2017**, *45*, 346–362. [CrossRef]
32. Wu, S.; Yan, S.; Marsiglia, F.F.; Perron, B. Patterns and social determinants of substance use among Arizona Youth: A latent class analysis approach. *Child. Youth Serv. Rev.* **2020**, *110*, 104769. [CrossRef]
33. Duncan, T.E.; Tildesley, E.; Duncan, S.C.; Hops, H. The consistency of family and peer influences on the development of substance use in adolescence. *Addiction* **1995**, *90*, 1647–1660. [CrossRef]
34. Henneberger, A.K.; Mushonga, D.R.; Preston, A.M. Peer Influence and Adolescent Substance Use: A Systematic Review of Dynamic Social Network Research. *Adolesc. Res. Rev.* **2020**, *6*, 57–73. [CrossRef]

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