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**Attitudes Regarding Harm-Reduction and Abstinence Intervention Strategies for Alcohol
Problems Among American Indian/Alaska Native College Students**

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Abstract

Objective: Culture may influence attitudes toward alcohol intervention strategies among American Indian/Alaskan Native (AI/AN) individuals. This study examined AI/AN college students' attitudes regarding harm-reduction (HR) and abstinence-only (AO) intervention strategies to overcome problems with alcohol, including perceived social support for using these strategies. **Method:** Participants were AI/AN college students who consumed alcohol ($N = 159$) and completed a single in-person data collection session. Separate analyses of covariance were conducted to examine perceived effectiveness and self-efficacy for the intervention strategies, and perceived support of friends and family. **Results:** No difference in perceived effectiveness was found, while self-efficacy was higher for HR than AO for both hazardously and non-hazardously drinking groups. Likewise, participants perceived greater social support for HR than AO strategies, even from friends or family who are abstinent, and no differences were found between hazardous and non-hazardous drinking groups in perceived support for these interventions. **Conclusions:** AI/AN students who drink perceived no difference in effectiveness between HR and AO strategies and were more confident in their abilities to utilize HR strategies over AO. Regardless of drinking status, participants perceived they would have greater social support for HR compared with AO strategies from friends and family. The findings indicate that HR intervention strategies may be a socially valid intervention option for AI/AN college students.

Keywords: American Indian/Alaska Native, alcohol misuse, abstinence, harm-reduction, treatment strategies

Public Significance Statement

Harm reduction approaches to alcohol problems seek to reduce alcohol-related consequences without requiring abstinence and are effective with college students as well as more appealing than abstinence-promoting intervention strategies. However, given high rates of abstinence among American Indian and Alaska Native (AI/AN) people and evidence suggesting generally negative attitudes toward drinking, harm reduction approaches may not be similarly favored by AI/AN college students. In this study with AI/AN college students who drank, we found that harm reduction strategies were viewed more favorably than abstinence strategies, suggesting that these strategies are a socially valid approach with AI/AN college students.

Attitudes Regarding Harm-Reduction and Abstinence Intervention Strategies for Alcohol Problems Among American Indian/Alaska Native College Students

Alcohol misuse is a significant concern on college campuses across the United States, with 40% to 45% of college students engaging in heavy drinking (Devos-Comby & Lange, 2008; Patrick et al., 2022; Wechsler et al., 2002) and 27% of students reporting binge drinking in the past month (Epstein et al., 2020). Both the heavy drinking environment associated with colleges and the typical college student age are associated with an increased risk of having an alcohol use disorder (AUD; Alley et al., 2020; Knight et al., 2002). An AUD is characterized by symptoms indicating that an individual is continuing to use alcohol despite significant problems caused by their drinking (American Psychiatric Association, 2022). As many as 9% of females and 11% of males who are college-aged (18-25 years old) have been diagnosed with AUD in the past year (White, 2020).

Alcohol misuse is a concern in many American Indian or Alaska Native (AI/AN) communities (Berman et al., 2000; Hawkins et al., 2004). In Alaska, alcohol consumption and related consequences are among the highest in the country, with the age-adjusted frequency of deaths due to alcohol use nearly double the national average (Hull-Jilly & Rich, 2019). Within the AI/AN population in Alaska, the alcohol-induced rate of death is more than four times the rate of mortality of Whites (Hull-Jilly & Rich, 2019). A study conducted in Alaska that compared AI/AN college students with non-AI/AN students found that while alcohol use did not differ, AI/AN students reported significantly more alcohol consequences (Skewes & Blume, 2015). This suggests that like many college students, AI/AN students would benefit from interventions that help them avoid alcohol-related consequences.

Both abstinence and harm-reduction (HR) treatment approaches have been successful in

improving physical and mental health outcomes in individuals engaging in harmful drinking behaviors (Adamson et al., 2010; Epstein et al., 2020; Marlatt & Witkiewitz, 2002). Abstinence-only (AO) treatment approaches promote a complete avoidance of alcohol and drinking contexts to eliminate issues related to alcohol misuse through abstinence (Lee & O'Malley, 2018). Mutual self-help programs such as Alcoholics Anonymous (AA) promote abstinence-only as do treatment approaches that have a singular treatment goal of abstinence. Although research is limited, individuals who have a higher severity of alcohol-related consequences and engage in more frequent binge drinking have been found to prefer AO approaches (Heather et al., 2010). AO approaches are more effective than HR treatment approaches in limiting alcohol misuse consequences when individuals choose abstinence over moderation (Adamson et al., 2010).

HR approaches do not require abstinence, instead, the goal is to direct those who drink problematically to alter hazardous drinking behaviors and minimize alcohol-related consequences (Marlatt & Witkiewitz, 2002). Interventions focus on teaching strategies for drinking in moderation, limiting drinking behavior that would lead to a higher level of intoxication, and emphasizing strategies to limit alcohol-related consequences like using a designated driver or drinking with individuals you trust (Marlatt & Witkiewitz, 2002; Martens et al., 2005; Pearson et al., 2013). An example of an HR program to reduce alcohol use and consequences among college students is Brief Alcohol Screening and Intervention for College Students (BASICS; Larimer et al., 2022).

Studies on the efficacy of HR approaches show that moderation is an achievable goal when treating alcohol misuse and is effective at reducing alcohol use and consequences among college students (Lemoine et al., 2020; Marlatt & Witkiewitz, 2002; Montes et al., 2018; Pearson et al., 2013). However, AI/AN students are underrepresented in studies that have examined the

efficacy of HR. Typically, individuals showing a preference towards HR are younger (Heather et al., 2010; Hodgins et al., 1997; Winer et al., 2022), want a less rigid treatment approach (Lee & O'Malley, 2018), and have less motivation to change (Adamson et al., 2010; Heather et al., 2010). These characteristics describe many college students, indicating that HR may be favored in this population and an appropriate treatment approach (Skewes & Gonzalez, 2013; Wechsler et al., 2002; Winer et al., 2022).

While the general characteristics of college students (e.g., less motivation for change, less severe physical dependence) would suggest that HR intervention approaches would be preferred over AO interventions, limited research exists on general attitudes regarding interventions for alcohol problems in college students, and none focused solely on AI/AN students. Skewes and Gonzalez (2013) found that typical college-aged students (aged 18-25; i.e., emerging adults) in Alaska who drank hazardously appeared to favor HR over AO strategies for dealing with alcohol problems, including believing HR to be more effective and reporting much greater self-efficacy for using HR strategies over AO. Unlike emerging adults, students over 25 years old did not believe there was a difference in effectiveness between HR and AO strategies, but like their younger counterparts, they had greater self-efficacy for HR than AO, as did emerging adults who drank non-hazardously. In only one case was AO rated higher than HR; among students over the age of 25 who drank non-hazardously AO was perceived as more effective. Overall, for students who drink hazardously, HR was perceived as more effective and self-efficacy was higher for HR in most groups.

There is reason to question whether AI/AN students would likewise prefer HR over AO approaches. AI/AN people have the highest rates of abstinence compared to all other racial and ethnic groups in the U.S. (Beals et al., 2003; Cunningham et al., 2016; Skewes & Lewis, 2016)

and many Tribes have chosen to implement strict alcohol control policies (Berman et al., 2000; Kavas et al., 2008). Research also suggests there are negative attitudes toward alcohol use in AI/AN populations (May & Smith, 1988; Mohatt et al., 2004; Yuan et al., 2010). These negative attitudes may stem from a variety of sources, such as the stigma and discrimination regarding Native peoples and alcohol that followed its introduction by European colonizers (Covone 2022; Daisy et al., 1998; Gonzalez & Skewes, 2023); the harms associated with alcohol and alcohol-related health disparities for AI/AN peoples (Grant et al., 2015; Karaye et al., 2023; Vaeth et al., 2017); or belief in the myth of an AI/AN biological vulnerability to alcohol problems (Gonzalez & Skewes, 2023). Given cultural differences in attitudes toward alcohol and abstinence, HR interventions may not be preferred by AI/AN college students as a means of overcoming or avoiding alcohol consequences.

However, AO-based intervention strategies may have aspects that make them less favorable for AI/AN students. AI/AN people tend to be part of a large extended kin and community social network, and treatment approaches often fail to consider this (Daisy et al., 1998). This may be particularly important in relation to AO and perceived social support by friends and family who drink, as AO frequently advises avoidance of those who drink, but this can be: (a) at odds with collectivist AI/AN values and traditions; (b) difficult in small, socially connected communities; and (c) result in social isolation or hardship if drinking is common in an interdependent social network of friends and family (Chong & Lopez, 2008; Daisy et al., 1998). Cultural factors may also affect perceptions of how supportive friends and family may be of different strategies to change alcohol use. Perceptions of support can be important as social networks can undermine or encourage changes in alcohol use (McCrary, 2004) and perceived support has been found to influence alcohol treatment outcomes (Chong & Lopez, 2008; Kelly et

al., 2011; Mavandadi et al., 2015). Among Hispanic college students, perceived social support also has been found to be associated with greater self-regulation and in turn greater use of HR strategies and fewer alcohol-related consequences (Sanchez-Garciaguirre et al., 2024). While cultural factors may positively influence AI/AN students' perceptions of AO, these strategies may be perceived to be difficult to implement for social reasons or may be perceived as garnering less social support, particularly from friends and family who drink.

The Present Study

This study examined AI/AN college students' attitudes regarding HR and AO intervention strategies for overcoming problems with alcohol. This study also examined students' perceived social support for using HR and AO by their drinking and non-drinking friends and family. In contrast to findings for general college students (Skewes & Gonzalez, 2013), we hypothesized that AO strategies would be perceived as more effective than HR strategies among AI/AN students regardless of hazardous drinking status because of cultural influences that promote abstinence. However, consistent with previous findings among college students (Skewes & Gonzalez, 2013), we predicted that students who drink hazardously would have greater self-efficacy for HR than AO, while those who drink non-hazardously would have no difference in self-efficacy between HR and AO.

The present study also examined perceived social support for AO versus HR, which, to our knowledge, has not previously been examined with any population. We hypothesized that regardless of the participants' drinking status, they would perceive that their friends and family who drink would support HR strategies over AO. This is due to the AO emphasis on the avoidance of any situations where one might be exposed to alcohol, including friends and family who drink. We predicted that participants would not perceive friends and family who drink as

supporting AO relative to HR. Conversely, we predicted that participants would perceive friends and family who do not drink as supporting AO strategies over HR.

Method

Participants

Participants in the study included 159 women (69.8%, $n = 111$) and men (30.2%, $n = 48$) who identified as Alaska Native and/or American Indian. Approximately 81% of participants reported being Alaska Native, 16% reported being American Indian, and 3% reported being both Alaska Native and American Indian. Participants attended one of two large, open-enrollment universities in different regions of Alaska (campus A, $n = 121$; campus B, $n = 38$), and most of the participants (73.2%) were full-time students. The mean age of participants was 27.11 years ($SD = 9.16$), with a range from 18 to 61 years of age; and 72.6% of the sample was under 30 years old (see Table 1 for additional demographic information).

Procedures

Participants were recruited via email solicitations, flyers posted on campus, in-class announcements, and advertisements in the school newspapers. Advertisements stated that the study sought AI/AN college students for a study of attitudes toward alcohol interventions and factors that affect those attitudes. Advertisements directed potential participants to a webpage that screened for eligibility. Inclusion criteria included self-identifying as (a) AI/AN, (b) a college student, (c) age 18 or older, and (d) having consumed one or more standard alcoholic drinks in the 30 days before screening. The study protocol was approved by the Institutional Review Boards of both universities where the study was conducted, and this manuscript was reviewed by an AI/AN community advisory board.

Eligible individuals were scheduled for a single in-person data collection session on their

respective campus, where study materials were presented in random order on laptop computers.

Participants were compensated with a \$25 Visa gift card for their time.

Measures

Demographics

Participants completed a brief demographic questionnaire that included variables such as age, gender, year in college, parental educational attainment, and race/ethnicity.

Treatment Attitudes

The Treatment Attitude Scale (TAS; Skewes & Gonzalez, 2013) is a 46-item self-report measure of attitudes towards HR (21 items) and AO (25 items) strategies for changing problems with alcohol including: perceived effectiveness, self-efficacy to perform the strategy, and perceptions of social support from friends and family. First, participants rate their perception of the effectiveness of each intervention strategy on a 5-point Likert scale ranging from 1 (*not at all likely to be effective*) to 5 (*very likely to be effective*). Participants were provided with the following directions: “There are many ways to manage problematic alcohol use. Imagine that you have an alcohol problem. Below are different types of things that you could do to try to change your problem. Rate how effective you think each strategy would be if you had an alcohol problem.” In this sample, internal consistency was excellent with a Cronbach’s alpha of .93 for HR and .92 for AO. Participants then rate the 46 items regarding their confidence (self-efficacy) to utilize HR and AO strategy on a 5-point Likert scale ranging from 1 (*not at all confident*) to 5 (*extremely confident*). In this sample, internal consistency was excellent with a Cronbach’s alpha of .93 for HR and .92 for AO.

Lastly, the perception of whether friends and family would support their use of each strategy was rated on a 5-point Likert scale from 1 (*definitely oppose*) to 5 (*definitely support*).

Participants were provided the following directions: “We are interested in how much you think that people in your life would support or oppose you trying to change your drinking using different strategies or methods, *if you had an alcohol problem*.” Participants were asked to separately rate their perceptions of support from (a) friends who drink, (b) friends who do not drink, (c) family who drink, and (d) family who do not drink. This measure has not previously been validated with AI/AN populations. In this sample, internal consistencies for friends who drink was excellent (HR $\alpha = .91$; AO $\alpha = .93$) and was good to excellent for friends who do not drink (HR $\alpha = .86$; AO $\alpha = .95$). Internal consistency was also excellent for family who drink (HR $\alpha = .93$; AO $\alpha = .93$) and was good to excellent for family who do not drink (HR $\alpha = .86$; AO $\alpha = .94$).

Hazardous Drinking

The Alcohol Use Disorder Identification Test-Consumption (AUDIT-C; Bush et al., 1998) is a 3-item self-report measure that evaluates hazardous drinking behaviors. The AUDIT-C measures (a) the frequency of drinking, (b) the number of drinks consumed on a typical drinking occasion, and (c) the frequency of consuming 6+ standard drinks on one occasion. Each item is rated on a 5-point scale from 0 to 4. A total score is calculated by adding points from each item, with higher scores indicating more hazardous drinking behaviors. The AUDIT-C has been shown to have good predictive validity for indicating hazardous drinking behaviors in both general samples and with AIAN adults (Bush et al., 1998; Dawson et al., 2005) and has shown good test-retest reliability (Simon et al., 2024). Scores from the AUDIT-C (≥ 4 for women, ≥ 5 for men; Dawson et al., 2005) were used to classify participants as drinking hazardously with participants below these cut points defined as drinking non-hazardously.

Analyses

Separate 2×2 mixed between-within-subjects analyses of covariance (ANCOVAs) were conducted on (a) perceived effectiveness and (b) self-efficacy for the intervention strategies. The within-subjects independent variable was intervention strategy (HR, AO) and the between-subjects independent variable was hazardous drinking (non-hazardous drinking [$n = 92$], hazardous drinking [$n = 67$]). Main effects of intervention and hazardous drinking as well as the interaction of these variables were examined. Age was included as a covariate in all analyses given previous findings that attitudes toward HR and AO interventions differ among college students by age (Skewes & Gonzalez, 2013).

Separate $2 \times 2 \times 2$ mixed between-within-subjects ANCOVAs were conducted on (a) perceived support of friends and (b) perceived support of family. Two within-subjects independent variables were intervention strategy (HR, AO) and support person drinking (drinks, does not drink). The between-subjects independent variable was hazardous drinking (non-hazardous drinking [$n = 89$], hazardous drinking [$n = 65$]). Main effects for intervention, support person's drinking status, and hazardous drinking were examined. In addition, two-way interactions were examined: Hazardous drinking $\times$ Intervention strategy, Hazardous drinking $\times$ Support person drinking, Intervention strategy $\times$ Support person drinking.

Results

See Table 2 for means and standard deviations for perceived effectiveness and self-efficacy for HR and OA intervention strategies by drinking status. A significant main effect was not found for perceived effectiveness by intervention strategy, $F(1, 156) = 3.47, p = .065, \eta^2 = .02$. Further, no significant difference was found for drinking status ($F(1, 156) = 2.73, p = .101, \eta^2 = .02$), or the interaction of drinking status by strategy, $F(1, 156) = 2.99, p = .086, \eta^2 = .02$.

For self-efficacy, a significant main effect was found for intervention strategy with a moderate effect size, $F(1, 156) = 9.23, p = .003, \eta^2 = .06$. A significant main effect also was found for drinking status with a small effect size, $F(1, 156) = 7.79, p = .006, \eta^2 = .05$. The interaction of drinking status by intervention strategy was not found to be significant, $F(1, 156) = 3.10, p = .080, \eta^2 = .02$. Participants rated greater self-efficacy for HR than AO strategies, with no difference by drinking status. Further, participants who drank non-hazardously reported greater self-efficacy than those who drank hazardously, with no difference by strategy.

See Table 3 for means and standard deviations for perceived support by friends and family for the intervention strategies and see Table 4 for the results of the separate ANCOVA analyses for friends and family. The analysis for perceived social support by friends revealed no significant main effect for participants' own drinking status. There was a significant main effect with a moderate effect size for the support person's drinking status, a significant main effect with a large effect size for intervention strategy, and a significant interaction for social support person drinking status by intervention strategy. A probe of this interaction, with Bonferroni's corrections for multiple comparisons, revealed that there was significantly greater perceived support for HR than AO for both friends who drink ($p < .001, \eta^2 = .69$) and did not drink ($p < .001, \eta^2 = .36$), although the greater support for HR vs. AO was more pronounced for friends who drink. Further, friends who did not drink were perceived to be more supportive than friends who drink for both AO ($p < .001, \eta^2 = .66$) and HR strategies, $p < .001, \eta^2 = .49$. All effect sizes for these differences were large.

The analysis for perceived support by family revealed a significant main effect with a small effect size for participants' own drinking status and a non-significant interaction effect for participants' drinking status by strategy. These findings suggest that students who drink

hazardously perceived that their family would support them less overall compared with those who drank non-hazardously, regardless of strategy. A significant main effect with a medium effect size for intervention strategy and a significant interaction was found for social support person drinking status by intervention strategy. A probe of this interaction revealed findings that mirrored those of perceptions of friends' support. Participants perceived significantly greater support for HR than AO for both family who drink ($p < .001$, $\eta^2 = .61$) and did not drink ($p < .001$, $\eta^2 = .24$), although the greater support for HR relative to AO was more pronounced for family who drink (see Figure 1). Family who do not drink were perceived to be more supportive than family who drink, with a larger difference between these for AO strategies ($p < .001$, $\eta^2 = .57$) than for HR strategies, $p < .001$, $\eta^2 = .41$. All effect sizes for these differences were large.

Discussion

Few studies have examined attitudes or preference for AO versus HR intervention strategies to overcome problems with alcohol, and none have examined these with AI/AN participants. Because of high rates of abstinence and negative attitudes toward alcohol use among AI/AN people (Cunningham et al., 2016; May & Smith, 1988; Mohatt et al., 2004; Yuan et al., 2010), we hypothesized that AO strategies would be perceived as more effective than HR strategies among AI/AN students, regardless of hazardous drinking status. However, we found that for AI/AN college students, both HR and AO strategies were perceived to be equally effective intervention strategies for overcoming problems with alcohol and that drinking status did not significantly affect these perceptions. While contrary to our hypothesis, this finding was consistent with findings from Skewes and Gonzalez (2013) for college students over 25 years old.

Partially consistent with our hypothesis, students were higher in self-efficacy for HR than

AO. Based on previous research with college students (Skewes & Gonzalez, 2013), we had hypothesized that only students who drank hazardously would have greater self-efficacy for HR while those who drink non-hazardously would have no difference in self-efficacy between HR and AO. Our findings indicate that AI/AN college students who drink feel more confident in their abilities to execute HR strategies compared with AO, regardless of whether they drank hazardously. This may be due to cultural influences on AI/AN students and being part of an extended social network (Daisy et al., 1998) and AO strategies involving avoidance of friends and family who drink (Chong & Lopez, 2008; Daisy et al., 1998). Also, considering the social environment, avoiding friends who drink may be difficult due to the high rate of alcohol consumption among college students (Devos-Comby & Lange, 2008; Wechsler et al., 2002) which may have influenced these findings.

Regarding perceived support, we had hypothesized that participants would perceive that friends and family who drink would support HR strategies over AO, as these strategies prescribe ceasing or avoiding contact with them. We also hypothesized that friends and family who do not drink would be perceived by participants to have greater support for AO than HR due to the value of abstinence widely held within AI/AN communities (Chong & Lopez, 2008; Daisy et al., 1998). Partially consistent with our hypothesis, we found that overall, participants perceived that their friends and family would support HR strategies over AO; however, contrary to our hypothesis, this was not specific to friends and family who drink. Although, the greater perceived support for HR compared with AO was larger for friends and family who drink, who also were rated as lowest in perceived support for AO. These findings suggest that some of the cultural influences we were expecting in favor of perceived support for AO strategies among non-drinking friends and family were not found. However, alternative cultural influences such as

collectivism may have impacted responses. For example, participants may have thought that friends and family would be opposed to strategies that involve avoiding friends and relatives. Thus, there could be an influence of culture that we did not anticipate, and future research should explore why students perceived greater support for HR relative to AO intervention strategies.

For both intervention strategies, friends and family who do not drink were perceived to be more supportive of strategies to change drinking than friends and family who drink. We also found that students who drank hazardously perceived that their family would support them less overall in their change effort regardless of intervention strategy compared with those who drank non-hazardously. This later finding may be related to research that has shown that individuals without a substance use disorder tend to have more perceived social support (de Souza et al., 2016). Our findings suggest that increasing social support for change as part of an intervention may be important for AI/AN students who drink hazardously.

Some limitations should be considered when interpreting the findings. This study was limited to AI/AN college students located in Alaska, so it is unknown how these results would generalize to a non-college sample and AI/AN college students located elsewhere. Additionally, the sample size is also relatively small. Female college students were overrepresented in this sample and the mean age of college student participants in this sample was higher than the national average, although was representative of college students in Alaska. It is important to note that while AI/AN college students were favorable to HR this may not generalize to individuals not in college or AI/AN Elders.

Conclusion

Although we hypothesized that AI/AN students would favor AO relative to HR in some instances due to cultural considerations, this was not found. We found that AI/AN college

students who drank perceived no difference in effectiveness between HR and AO strategies and were more confident in their abilities to utilize HR strategies over AO, regardless of how hazardously they drank. We also found that students perceived that they would have greater social support for HR compared with AO strategies from friends and family, regardless of either the participants' or friends' and family's drinking status. The findings indicate that HR intervention strategies may be a socially valid intervention option for AI/AN college students and suggest that commonly used and efficacious HR interventions used with college students would be acceptable intervention options for AI/AN students.

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Table 1*Participant Demographics*

Characteristic	<i>n</i>	%
Gender		
Women	111	69.8
Men	48	30.2
Class standing		
Freshman	38	24.2
Sophomore	35	22.3
Junior	39	24.8
Senior	37	23.6
Graduate student	7	4.5
Non-degree seeking/other	1	0.6
Marital status		
Single (never married)	113	73.9
Married	19	12.4
Separated/divorced/widowed	21	13.8
Employment		
Not employed	69	43.9
Part-time (< 40 hours/week)	70	44.6
40 or more hours/week	18	11.5
Father's education level		
< 7 th to 9 th grade	12	7.6
10 th to 11 th grade	6	3.8
High school graduate	62	39.5
Some college	39	24.8
Undergraduate college degree	25	15.9
Graduate degree	13	8.3
Mother's education level		
< 7 th to 9 th grade	13	8.3
10 th to 11 th grade	8	5.1
High school graduate	49	31.2
Some college	31	19.7
Undergraduate college degree	38	24.2
Graduate degree	18	11.5

Note. The denominator used to calculate percentages included only item respondents.

Table 2

Means and Standard Deviations for Effectiveness and Self-Efficacy Ratings by Intervention Strategies and Participant Drinking Status

	Non-hazardous (<i>n</i> = 67)	Hazardous (<i>n</i> = 92)
Variable and intervention	Mean (<i>SD</i>)	Mean (<i>SD</i>)
Effectiveness		
AO strategies	3.74 (0.77)	3.45 (0.77)
HR strategies	3.65 (0.72)	3.65 (0.72)
Self-efficacy		
AO strategies	3.38 (0.83)	2.97 (0.83)
HR strategies	3.74 (0.73)	3.60 (0.73)

Note. Means and standard deviations shown above are adjusted for the covariate, age. AO = abstinence-only; HR = harm reduction.

Table 3

Means and Standard Deviations for Perceived Social Support Ratings for Friends and Family by Intervention Strategy, Support Person Drinking, and Participant Drinking Status

Participant drinking status and intervention	Friends		Family	
	Do not drink	Drink	Do not drink	Drink
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Non-hazardous				
AO strategies	3.95 (0.78)	2.75 (0.77)	4.13 (0.78)	3.17 (0.76)
HR strategies	4.41(0.45)	3.69 (0.70)	4.50 (0.47)	3.94 (0.65)
Hazardous				
AO strategies	3.65 (0.78)	2.55 (0.76)	3.85 (0.78)	2.98 (0.75)
HR strategies	4.32 (0.45)	3.70 (0.70)	4.37 (0.47)	3.90 (0.65)

Note. The means and standard deviations shown are adjusted for the covariate in the model, age . AO = abstinence-only; HR = harm reduction.

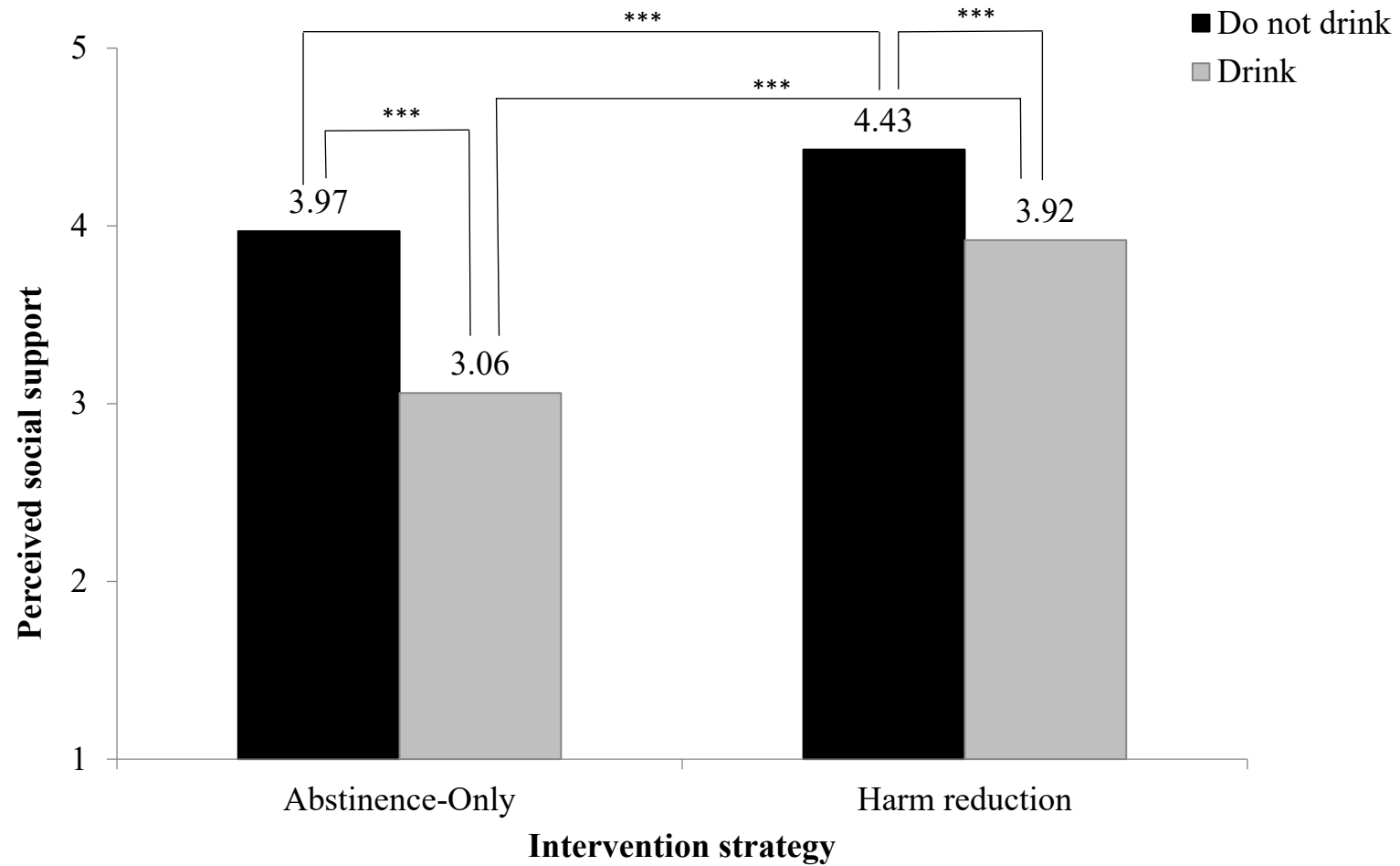
Table 4*ANCOVA Results for Perceived Social Support from Friends and Family*

Variable	Friends			Family		
	<i>F</i> (1, 151)	<i>p</i>	η^2	<i>F</i> (1, 151)	<i>p</i>	η^2
Main effects						
SP drinking status (drinks, does not drink)	17.18	< .001	.10	3.03	.084	.02
Strategy (AO, HR)	44.72	< .001	.23	11.70	<.001	.14
Participant's drinking status (hazardous, non-hazardous)	3.78	.054	.02	4.47	.036	.03
Interactions						
SP drinking status $\times$ Participant's drinking status	.90	.345	.01	0.69	.480	.00
Strategy $\times$ Participant's drinking status	3.56	.061	.02	2.06	.153	.01
SP drinking status $\times$ Strategy	4.02	.047	.03	7.09	.009	.04

Note. Results are for two separate ANCOVA for perceived social support by friends and family. SP = support person; AO = abstinence-only; HR = harm reduction.

Figure 1

Participants' Perceived Social Support for Intervention Strategies by Family Who Do and Do Not Drink Alcohol



*** $p < .001$.