

to the ED for suicide-related concerns in short time frame than they had during their previous visit. Thus, definitive conclusions regarding the effectiveness of SPI-SFU for increasing outpatient treatment engagement await a controlled trial comparing SPI-SFU with usual care. Despite these limitations, findings from this evaluation suggest that SPI-SFU holds promise with respect to engaging patients at high risk for suicide presenting to EDs in outpatient follow-up treatment. This approach could be adapted for EDs across various settings in the general population, including urgent care facilities. ■

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Contributors

B. Stanley, G. K. Brown, G. W. Currier, and K. L. Knox planned and designed the project and oversaw data acquisition. All authors were involved in analysis and interpretation of the data and drafting and revising the article. All authors approved the final article.

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Effect of Depression on Risky Drinking and Response to a Screening, Brief Intervention, and Referral to Treatment Intervention

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We assessed alcohol consumption and depression in 234 American Indian/Alaska Native women (aged 18–45 years) in Southern California. Women were randomized to intervention or assessment alone and followed for 6 months (2011–2013). Depression was associated with risk factors for alcohol-exposed pregnancy (AEP). Both treatment groups reduced drinking in response to SBIRT above the reduction in response to assessment alone. Screening for depression may assist in allocating women to specific AEP prevention interventions. (*Am J Public Health*. 2015; 105:1572–1576. doi:10.2105/AJPH.2015.302688)

Women who consume alcohol and do not practice effective contraception are at risk for an alcohol-exposed pregnancy (AEP). AEPs can lead to fetal alcohol spectrum disorders, the leading known cause of developmental disabilities.^{1–3} Prepregnancy drinking, particularly heavy episodic or binge drinking, is

TABLE 1—Characterization of Population Sample by Depression Status: Southern California, 2011–2013

Variable	Not Depressed		Depressed		P ^a
	Mean ±SE or %	No.	Mean ±SE or %	No.	
Age, y	28.3 ±0.6	147	29.3 ±0.8	83	.358
Has had a child	59.6	146	73.5	83	.034
No. of pregnancies	1.92 ±0.19	142	2.11 ±0.21	82	.522
No. of children	1.42 ±0.13	146	1.66 ±0.16	83	.241
Wants more children	61.4	140	58.2	79	.642
Employed	44.4	144	36.3	80	.233
Religious		140		79	.85
Not at all	12.9		13.9		
Somewhat	74.3		70.9		
Very	12.9		15.2		
Cohabiting	46.2	145	35.4	82	.112
Birth control use					
Use birth control ^b	63.9	147	51.8	84	.072
Abstinent	10.0		7.6		
No birth control	25.6		42.5		
Using birth control correctly	78.3		55.0		<.001
Birth control effectiveness		93		42	.069
High	19.4		23.8		
Medium high	45.1		45.2		
Medium low	35.5		28.6		
Low	0		2.4		
Smoker	29.3	147	34.9	83	.372
Drug use					
Taking illegal drugs	9.0	145	20.3	79	.016
Taking prescription drugs	32.9	146	57.5	80	<.001
Taking depression medication	5.5	146	16.5	79	.007
Taking anxiety medication	5.5	145	8.9	79	.332
Functionality impaired	1.8	112	16.7	83	<.001
Knowledge questions correct		67		37	
Pregnancy related	95.0 ±1.3		92.5 ±1.8		.246
Women's health related	35.1 ±3.5		33.3 ±5.6		.784
Total	84.1 ±1.2		81.6 ±1.8		.232
Heard of FASD/FAS	77.1	140	71.6	81	.359
Knows someone affected by FASD/FAS	34.1	132	36.8	76	.689
Alcohol consumption variables					
Total sample					
Drinks/wk	2.93 ±0.39	136	6.72 ±1.41	78	.002
Drinks/occasion	2.38 ±0.33	138	2.57 ±0.47	79	.738
Binge episodes/2 wk	0.94 ±0.14	136	2.20 ±0.58	79	.008
Age at first drink	15.5 ±0.3	138	14.5 ±0.45	79	.136
Family dependency risk	10.1 ±1.1	64	19.4 ±4.7	33	.014
T-ACE	1.92 ±0.17	64	2.35 ±0.27	33	.157

Continued

a robust predictor of AEP.⁴ Depression has been linked to problem alcohol consumption in women^{5–7} and appears to predate^{8,9} and perhaps predict¹⁰ alcohol problems. Among American Indian/Alaska Native (AI/AN) women, studies have linked depression to problem drinking.^{11–13} However, risk factors for an AEP and interventions to reduce risk for AEP have not been well studied in AI/AN women.¹⁴ This is further complicated by variability among AI/AN populations in the prevalence of alcohol consumption^{11,15–20} and depression.^{13,21–23}

One approach to prevention of AEPs is screening, brief intervention, and referral to treatment (SBIRT).^{24,25} We previously tested the effectiveness of an SBIRT intervention in AI/AN women and found that whether women received an assessment followed by the SBIRT intervention or assessment alone, they reported a significant reduction in alcohol use. We examined depression as a predictor of vulnerability to having an AEP and explored whether depressed AI/AN women respond differently than nondepressed women to an SBIRT intervention.

METHODS

Between 2011 and 2012, we recruited nonpregnant AI/AN women aged 18 to 45 years from Southern California health clinics into an intervention trial. Methods, measures, and the intervention itself are described in detail elsewhere.²⁶ All participants were assessed for quantity and frequency of alcohol consumption and other health behaviors. We used the 9-item Patient Health Questionnaire²⁷ to measure depression and functionality. Women were then randomized into the intervention or the control group. Intervention group women completed a Web-based survey providing personalized feedback. All participants were followed up by telephone at 1, 3, and 6 months. Including follow-up, the study spanned 2011 to 2013.

To compare groups, we used repeated-measures analysis of variance and mixed-model methods including interaction terms. Separate analyses were stratified on depression. Analyses were performed using multiple imputation methods in PASW Statistics version 18 (SPSS Inc., Chicago, IL). We used a 2-sided $P < .05$ to judge significance.

TABLE 1—Continued

T-ACE severity	10.3 ±1.3	65	14.1 ±3.2	34	.195
Perception of other women's drinks/wk	6.61 ±0.71	138	9.20 ±1.36	72	.063
Perception of other women's drinks/occasion	3.41 ±0.30	137	3.33 ±0.30	76	.862
Current drinkers					
Drinks/wk	5.18 ±0.56	77	13.45 ±2.39	39	<.001
Drinks/occasion	4.16 ±0.48	79	5.07 ±0.75	40	.292
Binge episodes/2 wk	1.58 ±0.20	81	4.35 ±1.03	40	.001
Age at first drink	15.4 ±0.3	81	13.8 ±0.5	41	.007
Family dependency risk	9.46 ±1.24	39	22.6 ±6.8	16	.008
T-ACE	1.92 ±0.20	39	3.14 ±0.36	14	.003
T-ACE severity	8.82 ±0.74	39	19.7 ±6.3	14	.008
Perception of other women's drinks/wk	6.22 ±0.61	78	13.6 ±2.3	35	<.001
Perception of other women's drinks/occasion	3.49 ±0.28	76	4.39 ±0.48	37	.088

Note. FAS = fetal alcohol syndrome; FASD = fetal alcohol spectrum disorders; T-ACE = an alcohol screening questionnaire with questions on tolerance, annoyed, cut down, and eye-opener.

^aComparison between depressed and not depressed women using χ^2 test or analysis of variance.

^bIncludes abstinence.

RESULTS

We recruited 234 nonpregnant AI/AN women from Southern California health clinics, both reservation based and urban; 15 (6.4%)

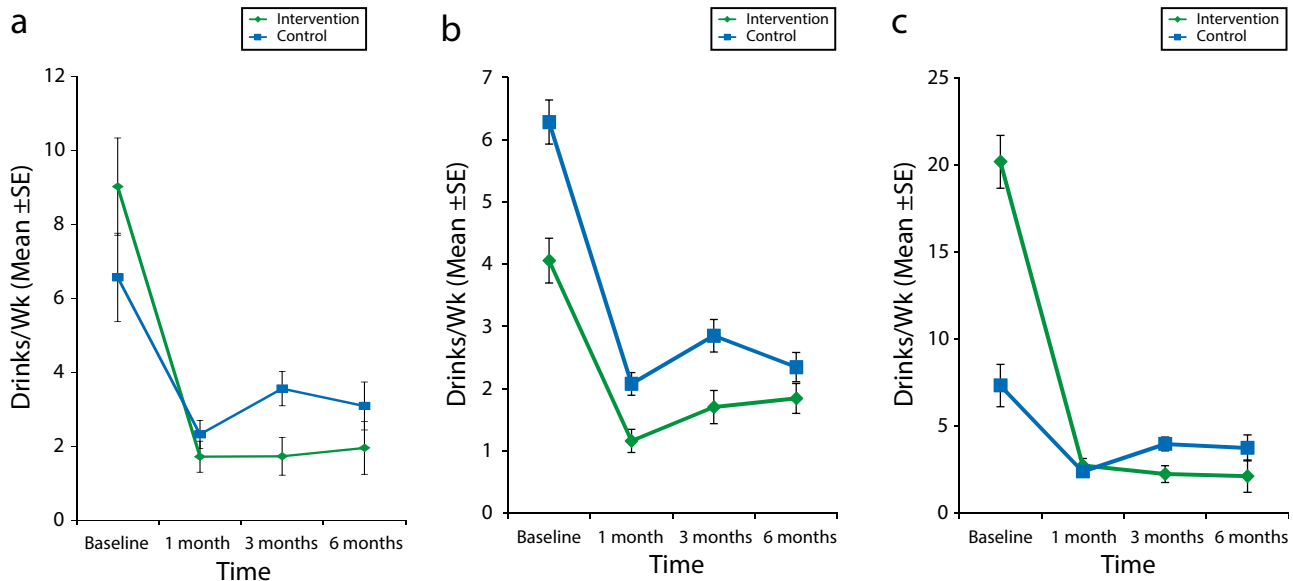
were lost to follow-up. Using the 9-item Patient Health Questionnaire, we identified 84 women (36%) as depressed. Riskier alcohol consumption and contraceptive practices were associated with depression (Table 1).

We found a statistically significant time effect ($P < .001$) but no intervention effect (treatment \times time; $P = .127$) for change in number of drinks per week (Figure 1). However, we found significant interactions between depression and time ($P < .001$), depression and intervention ($P = .021$), and among depression, intervention, and time ($P < .001$).

When the results were stratified by depression, we found a significant treatment \times time effect only among depressed women ($P < .001$). Among participants in the intervention group, depressed women decreased risky behavior to a greater extent than nondepressed women ($P < .001$; data not shown).

DISCUSSION

In this sample of AI/AN women, 36% reported depression. This percentage far exceeds the 14% rate reported in a national study in 2006 using the same screening tool²⁸ and may underestimate the true prevalence because of the limited (61%–88%) sensitivity of the 9-item Patient Health Questionnaire.^{29,30} Depressed women in our sample reported more drinks per week and more binge episodes



Note. Groups were compared with repeated-measures analysis of variance with imputed data (n = 123; control group, n = 67; intervention group, n = 56). For the total sample and the not depressed group, time effect $P < .001$; intervention effect, not significant ($P = .127$ and $.365$). For the depressed group, time effect $P < .001$; intervention effect $P < .001$. Whiskers indicate standard errors.

FIGURE 1—Estimated marginal mean number of drinks consumed per week over time and by treatment group for (a) all women, (b) nondepressed women, and (c) depressed women: Southern California, 2011–2013.

than their nondepressed counterparts. Furthermore, depression was linked with poor contraception practices. Inconsistent use of contraception among drinking women³¹ increases vulnerability to an AEP. Depression was associated with risk factors for vulnerability to an AEP and modified the response to an SBIRT intervention.

The higher level of drinking reported at baseline by depressed participants provided greater opportunity for reduction but did not account for our results. When the analysis was stratified by magnitude of consumption, we found no effect of the intervention above that of assessment alone. In some studies, greater readiness to change has been associated with greater severity of alcohol misuse.³²

Evidence has shown that depression may encourage self-awareness³³ and a more realistic understanding of personal risk,³⁴ which may contribute to readiness for change. Depression may also motivate problem solving.^{35,36} Among depressed women, our SBIRT intervention with personalized feedback may have supported the change inspired by assessment. Screening for depression may be particularly important in AEP prevention because onset and prevalence of depression in women^{37,38} peak during childbearing years. Among some AI/AN populations, women may be at increased risk for depression as a result of living conditions,^{39–47} historical trauma, loss of culture, discrimination, and conflicts between traditional and modern culture.^{48–51}

Limitations of this study include that data were self-reported and responses may have been influenced by social acceptability. However, we took extensive measures to ensure confidentiality and respect cultural etiquette. The study was carried out by trusted community members trained as research assistants.

These findings suggest that depressed AI/AN women are at increased risk of an AEP and may benefit from more personalized interventions. ■

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Human Participant Protection

This protocol was approved by the Southern California Tribal Health Clinic; University of California, San Diego; and San Diego State University institutional review boards. A Certificate of Confidentiality was obtained from the National Institutes of Health to further protect the confidentiality of participants. All research staff completed human research participant protection training. All participants provided informed consent.

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Support for Policies to Improve the Nutritional Impact of the Supplemental Nutrition Assistance Program in California

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The Supplemental Nutrition Assistance Program (SNAP) provides a vital buffer against hunger and poverty for 47.6 million Americans. Using 2013 California Dietary Practices Survey data, we assessed support for policies to strengthen the nutritional influence of SNAP. Among SNAP participants, support ranged from 74% to 93% for providing monetary incentives for fruits and vegetables, restricting purchases of sugary beverages, and providing more total benefits. Nonparticipants expressed similar levels of support. These approaches may alleviate the burden of diet-related disease in low-income populations. (*Am J Public Health*. 2015;105:1576–1580. doi: 10.2105/AJPH.2015.302672)

The Supplemental Nutrition Assistance Program (SNAP) aims to alleviate food insecurity