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Implementing a state-wide SBIRT service in rural health settings: New Mexico SBIRT

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Abstract

This is a report on the New Mexico Screening, Brief Intervention and Referral to Treatment (SBIRT) project conducted over five years as part of a national initiative launched by the Substance Abuse and Mental Health Services Administration with the aim of increasing integration of substance use services and medical care. Throughout the state, 53,238 adults were screened for alcohol and/or drug use problems in ambulatory settings, with 12.2% screening positive. Baseline substance use behaviors among 6,360 participants eligible for brief intervention, brief treatment or referral for treatment are examined and the process of implementation and challenges for sustainability are discussed.

Keywords

SBIRT; Screening; Brief Intervention; Referral; Rural Primary Care

Introduction

Historically, alcohol and drug use interventions have targeted individuals who meet Diagnostic and Statistical Manual criteria for Abuse or Dependence (1). Despite efforts to engage such individuals in treatment, relatively few seek it and the vast majority of individuals needing treatment for a drug (78%) or alcohol (92%) problem do not receive it (2). Furthermore, most substance users do not meet DSM Criteria for Abuse or Dependence (2) although many of them may use alcohol or drugs in a risky manner causing a significant aggregate public health and social burden (3, 4).

The focus of substance abuse treatment on the relatively small number of individuals who seek formal treatment misses the opportunity to prevent the progression from risky use to more severe problems, including the onset of substance use disorders. Similarly, sequestration of substance abuse treatment services from the mainstream healthcare system misses the opportunity to engage and refer the vast majority of individuals with substance use disorders who do not access treatment.

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There is a large body of evidence supporting the use of brief interventions for risky substance use delivered in medical settings. Physician advice to reduce risky alcohol use has been recommended by the nation's leading preventive services task force (5, 6). Brief interventions delivered in medical settings can be effective in reducing alcohol use (7, 8, 9, 10) and even mortality, (11) and recent evidence supports their efficacy with users of illicit drugs as well (12, 13, 14). A number of studies also show that interventions for risky alcohol use are cost-effective, helping to avert high-cost adverse outcomes such as motor vehicle accidents and hospitalizations (15, 16, 17, 18, 19, 20, 21, 22).

In 2003, the Substance Abuse and Mental Health Services Administration (SAMHSA) launched a major initiative termed Screening, Brief Intervention, and Referral to Treatment (SBIRT) in seven states with the aim of increasing integration of substance use services into the mainstream medical sector. This Initiative, described by Madras and colleagues, (23) was implemented in a variety of medical settings, including emergency departments, community clinics, and primary care practices, and demonstrated the feasibility of scaling-up SBIRT across the country. It screened 459,599 patients over five years and found that 22.7% screened positive for risky substance use or abuse/dependence. Furthermore, a randomly selected sample of those individuals who received a brief intervention was found to have significantly reduced their drug and alcohol use at 6-month follow-up (23). A recent report from the Washington State SBIRT program found that brief intervention and brief treatment services delivered in an Emergency Department setting were successful in facilitating entry to specialty substance abuse treatment (24).

Brief interventions are among the most cost-effective, yet underutilized preventive health services (19, 20). While there has been increased adoption of screening and brief intervention services in recent years, there are persistent systemic barriers that can stifle their adoption (25, 26, 27). As such, understanding and disseminating successful SBIRT service delivery models is of some significance if their public health potential is to be realized. The purpose of this paper is to describe how one of the seven originally-funded SAMHSA Initiative sites, the New Mexico SBIRT program, was able to integrate SBIRT services with rural primary care and public health settings scattered across a large state. The paper will describe the process of implementing SBIRT, the characteristics of the population served, lessons learned, and recommendations for other states or systems wishing to implement or expand SBIRT services.

Method

Historically, New Mexico's behavioral health system has been underfunded and compartmentalized. In 2003, the State redesigned its mental health services system by drawing nearly all state behavioral health funding from its various Departments into a behavioral health collaborative charged with overseeing and monitoring the State's contracting for behavioral health services. The SAMHSA-funded New Mexico SBIRT program, funded from October 2003 through September 2008, was launched concurrently with the redesign of the behavioral health system. The NM SBIRT Program was conducted through a locally-based, non-profit organization, Sangre de Cristo Community Health Partnership (SDCCHP) that was established in May 2000 in order to coordinate and work with the community health centers in the Northern New Mexico via the federal Community Access Program to eliminate health disparities in underserved areas. At the initiation of the SBIRT project, SDCCHP had been collaborating with eight community health centers.

NM SBIRT operated in 17 of the 33 counties in New Mexico. Most of the clinic partner sites were situated in rural communities of fewer than 2,000 people, although they served a larger catchment area. All initial SBIRT sites were Federally Qualified Health Centers

(FQHCs) selected by SDCCHP because of their willingness to participate and sufficient patient flow to meet the project's enrollment goals. Each clinic site entered into a contractual agreement with SDCCHP that defined payment arrangements of \$12.00 per brief pen-and-pencil substance misuse screen completed by clinic staff, and stipulated that the site commit private interviewing space for the project. SDCCHP's staff oriented the FQHC's medical staff to the project and participated in designing the integration of SBIRT at their site. The importance of their buy-in and ownership for the integration of services to be successful at their clinic site was continuously emphasized.

Staffing

New Mexico is the 5th largest state in the U.S., with large swaths of land that are sparsely populated. The two most distant sites were over 400 miles apart. The project's two clinical supervisors (a masters level social worker and a doctoral level psychologist), located in the SDCCHP headquarters in Santa Fe, were responsible for hiring and training the Behavioral Health Counselors (BHCs) that would be stationed at each clinic site to deliver SBIRT services. This consisted of 2–3 weeks of initial training focusing on patient screening, motivational interviewing for brief interventions (28) and community reinforcement for brief treatments (29). The training also emphasized the importance of serving as an integrated and respected member of the healthcare team and on collecting data for program outcome evaluation, as required by SAMHSA. Regional supervisors in other parts of the state were responsible for overseeing day-to-day activities of the BHCs. Meetings among the clinical supervisors, BHCs, and clinic medical staff were conducted initially in person and subsequently through videoconferencing, and at least once every two months in person. Videoconferencing was utilized because the expense of face-to-face meetings throughout the course of the project would have been cost-prohibitive due to long travelling long distances.

Clinical Services

The project placed BHCs who were masters-level, licensed mental health counselors, in rural FQHC clinics in 17 of 33 counties in New Mexico. Each clinician served one clinic, except in the few cases in which smaller clinics were located relatively close to another site participating in the program. During the period of SAMHSA funding, SBIRT services were provided to adults at 8 FQHC organizations with a total of 20 sites, three Indian Health Services and three Public Health Clinics. During the second year of SBIRT implementation, SDCCHP received approval from SAMHSA to pilot the SBIRT model within eight school-based health centers, which maintained a strong affiliation with or were part of the services system of the FQHCs participating in the SBIRT program. The description of adolescent services is beyond the scope of the present paper and will be subject of a future publication.

The primary care or BHC staff administered a brief alcohol and drug use screening instrument chosen by SDCCHP for its brevity, validity and reliability. The 10-item Alcohol Use Disorders Identifications Test (AUDIT) was used to screen for alcohol misuse (30). Drug use was screened using a question inquiring about past year use of any of a list of illicit substances. An additional question asked "In the last year, have you ever used prescription drugs in a non-medical way?" Patients scoring above an 8 on the AUDIT or who answered affirmatively to any of the three drug use questions were given a very brief intervention consisting of reviewing the patient's screen score and introduction of the BHC as a member of the clinical team whom the patient should meet. This "warm hand-off" from clinician to BHC allowed a seamless integration of medical and behavioral health services. When the BHC was not present in the clinic (e.g., part-time BHC or vacation leave) and a warm-hand off was not possible, patients were scheduled to see the BHC the next available visit. Upon receiving a patient via "warm hand-off", the BHC delivered a motivational

interviewing session to help the patient assess their state of readiness to change their behavior.

Patients were classified by the BHCs according to the SAMHSA SBIRT guidelines as needing a brief intervention (BI) if they scored between 8 and 15 on the AUDIT or if they answered affirmatively to one of the drug use questions. The BI was based on motivational interviewing (28, 31, 32). Individuals were classified as needing brief treatment (BT), which was based on the Community Reinforcement Approach, (29) if they scored between 16 and 29 on the AUDIT and/or answered one of the two drug questions affirmatively. Those who scored above a 29 on the AUDIT and/or who answered all three drug use questions affirmatively were classified as needing referral to available substance abuse specialty services in the community which were contracted to participate in the SBIRT program through separate memoranda of agreement with SDCCHP.

The treatment classification guidelines were used by the BHCs following the first BI session to inform the patient of the BHCs' clinical recommendation for any further intervention. The possible further intervention options discussed with participants included to: 1) continue with another BI session, 2) receive up to 12 sessions of BT, or 3) be offered a referral to a substance abuse treatment program. It was understood that patients could move from screening to BI to BT to referral to treatment if warranted. All patients were offered to return as needed to see the BHC or the primary care staff. Counselors were given special training in both BI and BT with refresher training over the course of the project, and fidelity checks conducted by their supervisors. Funding was available through the SAMHSA grant to pay for substance abuse treatment in the community.

Data collection

Patients with a positive initial screen who consented to a brief intervention were enrolled in the SBIRT program. Data were collected by SDCCHP using the SAMHSA Government Performance and Results Act (GPRA) questionnaire. The GPRA is a structured interview divided into seven domains including demographics, substance use, living conditions, employment, criminal justice, mental and physical health, and social connectedness. Basic demographic information was collected for patients who received screening only. Patients who received a BI were administered only the demographic and substance use sections, whereas those who received either BT or RT were given the entire GPRA.

Participants

From the launch of the New Mexico SBIRT project until the end of SAMHSA funding on September 30, 2008, NM SBIRT performed 66,839 unique screenings for substance use. In the current report, we focus on those screenings conducted in the adult healthcare delivery system, excluding minors under age 18 and screenings conducted in school-based settings (due to the unique issues involved in implementing SBIRT in school settings). NM SBIRT performed 53,238 screenings for substance use with adults in healthcare settings. In this article, we report on the characteristics of those service recipients for whom basic demographic information on gender, ethnicity, race and age is available ($n=52,199$). We further report on baseline substance use behaviors among 6,360 participants eligible for BI, BT, or referral for whom this information is available.

Analysis

Information about demographic characteristics of NM SBIRT service recipients is presented using basic descriptive statistics. Demographic differences in receipt of SBIRT services are examined with bivariate measures of association. Demographic differences in baseline substance use characteristics were examined using nonparametric measures of association

due to departures from key assumptions (e.g., normality, equal variances). Finally, demographic predictors of baseline substance use behaviors were examined in multivariate models, with the dependent variables of number of days that the participant reported using (a) illicit drugs; (b) alcohol; and (c) alcohol to intoxication. Zero-inflated negative binomial regression models were used due to the distributional properties of the dependent variables and supportive model diagnostics. Zero-inflated approaches have the advantage of modeling zeros and integer counts separately, thereby allowing for greater nuance in understanding predictors of past 30 day frequency of substance use vis-à-vis past 30 day abstinence. Because the responses of patients accessing care at the same place may not be independent, standard errors were adjusted to account for clustering within healthcare site.

Results

SBIRT was successfully implemented throughout New Mexico, although the number and type of health care sites in which SBIRT was provided varied over time as a result of several factors. A total of 5 sites were discontinued during the SAMHSA funding period from 2003–2008 due to low patient volume and the inability of some of those 5 sites to commit to the project adequately (e.g., no office space provided, health providers not offering feedback on screening results to patients).

In some cases, clinic leadership was unhappy with the decision to discontinue SBIRT services. In one case, SDCCHP had to leave a geographic area that had a great need for SBIRT services, because the clinic was experiencing administrative issues which interfered with efficient screening. While continuing this site with a part-time counselor was considered, it was not feasible because of the wide distance between other SBIRT sites, which would have made commuting to see patients impractical. Furthermore, it would have been difficult to keep the clinical site staff engaged in the care model when counselors were available on a limited basis. Despite these challenges, by July 2008, two months before the end of the five years of funding for the project, adult SBIRT services were provided in 25 sites, including 20 FQHCs, 2 Public Health Offices, 1 rural hospital, and 2 Indian Health Services (IHS).

Characteristics of Population Receiving SBIRT services

As shown in Table I, of the 52,199 adult screenings administered through NM SBIRT for substance use, 58.0% of those screened were women, and 59.9% reported Hispanic ethnicity. In terms of race, the majority were White (83.6%), 15.0% were American Indian/Alaska Native, and 1.4% reported another race or identified multiple races. The mean age was 44.3 (SD=17.1).

A demographic breakdown of patients accessing each component of the SBIRT service continuum is shown in Table II. Overall, the majority of those screened reported substance use levels that did not warrant intervention (87.8%), that is, they screened negative. Of the remaining participants who screened positive, 63.6% were recommended to receive a brief intervention, while 29.3% were recommended for brief treatment and 7.1% were recommended for referral to specialty substance abuse treatment.

Chi-square tests indicate significant demographic differences in SBIRT service classifications ($p<.001$ for gender, ethnicity, race, and age group). Males were more likely to be classified as needing brief intervention, brief treatment, or referral to treatment than females. The proportion of men requiring the more intensive service levels of brief treatment (5.58) or referral (1.45%) was over twice that of females. While statistically significant, differences in SBIRT service classifications by ethnicity and race were less substantial in magnitude than gender differences. Service recipients identifying multiple racial categories

or a race other than White or American Indian/Alaska Native were allocated to BI, BT, and RT at higher proportions than Whites or AI/AN. Service recipients in the 21–25 and 26–29 age brackets were most likely to be classified as needing brief treatment or referral, while those in the 18–20 age range were most likely to be classified as needing a brief intervention (15.32%). While statistically distinguishable, demographic differences were of small magnitude, as shown by the low values of Cramer's V.

Table III shows demographic differences in frequency of self-reported illicit drug use, alcohol use, and alcohol to intoxication in the past 30 days among the subset of 6,360 patients who received a brief intervention, brief treatment, or referral. Significant differences were evident across all demographic categories except between gender and days of illicit drug use, ethnicity and days of illicit drug use, and race and days of alcohol use. The most common illicit drug was marijuana, with marijuana use reported by 43.47% of those eligible for BI, BT, or referral services. Just under 20% reported use of illicit drugs other than marijuana in the past 30 days (including misuse of prescription drugs).

Table IV shows the results of zero-inflated negative binomial regression examining the relationship between participant characteristics and past 30 day substance use behaviors. In these multivariate models, female gender was associated with a lower predicted count of days of drug use ($p < .05$), days of alcohol use ($p < .001$), and days of alcohol use to intoxication ($p < .001$). Women were also more likely to report not using alcohol ($p < .001$) and not using alcohol to intoxication within the past 30 days ($p < .001$). Days of alcohol use and alcohol to intoxication had similar patterns for Hispanic ethnicity, whereby Hispanic ethnicity was associated with fewer days of drinking ($p < .001$) and drinking to intoxication ($p < .05$), but not related to past 30 day abstinence from alcohol use or alcohol to intoxication. With respect to race, American Indians reported lower levels of drug use ($p < .001$) and were more likely to report not using illicit drugs at all in the last 30 days ($p < .05$). American Indians were less likely to report zero days of drinking to intoxication ($p < .05$) but reported fewer days of alcohol use ($p < .05$) and alcohol use to intoxication ($p < .05$) relative to Whites. Finally, participant age was positively related to past 30 day abstinence from illicit drugs ($p < .001$), alcohol ($p < .01$), and alcohol to intoxication ($p < .001$), and higher age was associated with higher predicted count of days of alcohol use ($p < .001$) and drinking to intoxication ($p < .001$), but was unrelated to frequency of illicit drug use among those who had used illicit drugs in the last 30 days.

Discussion

In the 5 years of funding from October 2003 through September 2008, the NM SBIRT project screened well over 50,000 adult patients presenting at primary health care clinics, Indian Health Services facilities, and public health offices in rural and frontier New Mexico. The clinics were spread out over half of the counties in New Mexico and spanned distances of hundreds of miles. In order to accomplish this, during the project, SDCCHP contracted with 8 FQHCs (with 20 sites), 3 Public Health Clinics, 2 Indian Health Services and 10 schools, employing up to 24 Behavioral Health Counselors and 4 clinical supervisors. Clinical supervision took place through both in-person and videoconferencing meetings. The following lessons learned and the experiences of NM SBIRT hold important implications for other systems considering adoption of SBIRT services.

Health systems and providers wishing to adopt SBIRT should be aware that the majority of individuals screened for substance use problems will not display patterns of use that are of clinical concern. Indeed, over 85% of NM SBIRT service recipients received screening only. Analysis of NM SBIRT service patterns by recipient demographics revealed discernible differences in baseline substance use patterns and eligibility for SBIRT services across

demographic characteristics. While some population groups had disproportionately higher levels of substance use at baseline and were placed in higher SBIRT service levels accordingly, it is important to note that those served through NM SBIRT represented a diverse patient population from communities scattered throughout the state. Problematic substance use is relatively common in all segments of society. Screening in medical environments inherently casts a wide net, and SBIRT therefore targets a broader population than traditional services for substance abuse.

Involving clinic personnel in the screening process was critical in fostering a sense of partnership between SDCCHP and the participating clinics during this project. Had the BHC been the sole entity responsible for screening patients, project buy-in from clinic personnel (e.g., nurses, physicians, receptionists, administrators) would have likely been much more difficult to secure.

The integration of substance abuse screening with the medical visit likely led to greater patient comfort and willingness to report sensitive behaviors. The integration of screening into medical practice was successful, as healthcare sites screened a large number of patients throughout the course of the project. In training BHC's, sensitivity to culture and local environment were heavily emphasized, particularly with respect to the importance of ensuring privacy and confidentiality. Assurance of confidentiality is critical for successful screening, particularly in smaller communities where patients may be hesitant to reveal substance use behaviors for fear of disclosure to family members and friends.

The success of the project was predicated on the ability of the BHCs to become integrated with the clinical team. Behavioral Health Counselors had to navigate a nuanced role in that they were SDCCHP employees responsible for the SBIRT program and SDCCHP permitted them to assist in clinical aspects of care that went beyond the strict confines of SBIRT for alcohol and drug use. For example, many BHCs provided therapy for mental health problems as well. This broadening of their responsibilities was responsive to the needs of the patients and helped to enhance the behavioral health services capacity at many of the sites. In addition, a number of BHCs obtained clinical supervision from their clinical supervisor during the project as part of their licensure requirements. This has had the added benefit of seeding the community with a cadre of behavioral health therapists who could be credentialed with the health plans for payments of services and who were competent in screening and brief intervention for risky alcohol and drug use.

Having a non-profit organization with a state-wide presence responsible for the SBIRT program provided the needed flexibility to implement SBIRT in diverse clinical sites, recruit and hire staff quickly, and adjust to changing conditions as the project unfolded. We believe that the administrative structure of the NM SBIRT model was integral to its success. A state health department or other government agency may not have been as nimble in terms of communication and decision making. SDCCHP was able to work directly with a network of service providers across the state with minimal bureaucratic obstacles, acting as an organizational champion for the integration of behavioral health and SBIRT services. States and healthcare systems wishing to adopt SBIRT should consider using a non-governmental intermediary organization to spearhead its initial implementation.

NM SBIRT also leveraged the power of videoconferencing technology to enhance site-to-site communication and facilitate project planning and personnel supervision. Each clinical organization implementing SBIRT was outfitted with teleconferencing capability, creating a technology infrastructure that proved to be indispensable given the substantial geographic dispersal of healthcare sites in communities across rural New Mexico.

Sustainability of federally-funded start up projects is often a challenge and should be addressed early on. SDCCHP has explored a number of options to sustain the project. Although the number of clinical site partners has downsized to 3 FQHCs with 9 sites as federal funding has wound down, the NM SBIRT project still has a viable presence across the state. The federal Center for Medicare Services approved billing codes for the Medicare Program for screening and brief intervention and State Medicaid Programs have the option of approving these codes for reimbursement. Unfortunately, the NM Human Services Department, although supportive of the SBIRT project, did not opt to reimburse for these services through Medicaid because of the state's budget climate. Clinic sites have begun to bill private insurers, a number of whom now reimburse for SBIRT. In the next stage of sustaining SBIRT, SDCCHP is in discussion with a number of clinics to include services provided by the BHCs within their organizational billing system. Finally, SDCCHP has partnered with Friends Research Institute to obtain National Institute on Drug Abuse funding to conduct a clinical trial at two sites to compare a computerized brief intervention with the usual brief intervention being conducted through the SBIRT project. This partnership will permit SDCCHP to publish outcomes from its SAMHSA efforts, including future publications comparing the outcomes of patients who received BI with those who received BT and describing the services and outcomes of adolescents who received school-based SBIRT services.

The NM SBIRT program demonstrated that the integration of Behavioral Health and primary care was possible in rural clinic settings and permitted over 50,000 patients to be screened for possible substance use problems. Key ingredients in the NM SBIRT program that should be considered by others wishing to replicate the services include: integrating alcohol and drug use screening with the medical visit, permitting behavioral health counselors to work as part of the health care team to provide services other than SBIRT (such as mental health counseling) and the use of teleconferencing to facilitate training and supervision. Given the large number of primary care patients in the US and the ubiquitous nature of alcohol and drug use, SBIRT programs can be implemented and scaled up across a wide geographic area including rural settings.

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Table I

Demographic characteristics of adult patients screened in the New Mexico SBIRT Program ($n=52,199$).

	Number	Percent
Gender		
<i>Male</i>	21,924	42.0
<i>Female</i>	30,275	58.0
Ethnicity		
<i>Hispanic</i>	31,284	59.9
<i>Non-Hispanic</i>	20,915	40.1
Race		
<i>White</i>	43,614	83.6
<i>AI/AN</i>	7,840	15.0
<i>Multiracial/Other</i>	745	1.4
	Mean	SD
Age	44.29	17.1

Table II

Percentage of NM SBIRT recipients assigned to each SBIRT component by demographic characteristics ($N = 52,199$)

	Screening Only $n=45,815$ (87.8%)	Brief Intervention $n=4,062$ (7.8%)	Brief Treatment $n=1,868$ (3.6%)	Referral to Treatment $n=454$ (0.9%)	χ^2 (Cramer's V)	Sig.
Gender					1108.19 (.15)	$p<.001$
Male	82.28	10.69	5.58	1.45		
Female	91.74	5.68	2.13	0.45		
Ethnicity					54.69 (.03)	$p<.001$
Hispanic	88.27	7.10	3.72	0.91		
Non-Hispanic	87.02	8.80	3.37	0.81		
Race					57.79 (.02)	$p<.001$
White	87.89	7.78	3.47	0.86		
AI/AN	87.87	7.45	3.78	0.91		
Multiracial/Other	79.87	11.28	7.79	1.07		
Age					1325.57 (.09)	$p<.001$
18–20	80.28	15.32	3.59	0.81		
21–25	83.69	10.09	5.11	1.11		
26–29	84.07	8.96	5.58	1.40		
30–34	85.89	8.19	4.93	0.98		
35–39	85.44	8.59	4.25	1.72		
40–44	85.62	8.13	4.94	1.31		
45–49	86.08	8.13	4.57	1.22		
50–54	88.62	7.46	3.30	0.62		
55–59	91.31	6.19	2.20	0.31		
60–64	93.83	4.62	1.23	0.32		
65 and older	96.73	2.63	0.59	0.06		

Table III

Substance use profile of NM SBIRT adult service recipients by demographic characteristics ($n=6,360$).

	Number of Days in the Last 30 Days that participants used:		
	Illicit Drugs <i>mean (SD)</i>	Alcohol <i>mean (SD)</i>	Alcohol to Intoxication <i>mean (SD)</i>
Entire sample	6.43 (10.60)	7.37 (9.41)	5.84 (8.66)
Gender	NS	***	***
<i>Male</i>	6.56 (10.75)	8.52 (9.89)	6.73 (9.12)
<i>Female</i>	6.24 (10.35)	5.58 (8.30)	4.47 (7.69)
Ethnicity	NS	***	***
<i>Hispanic</i>	6.72 (11.01)	7.01 (9.33)	5.38 (8.40)
<i>Non-Hispanic</i>	6.04 (10.00)	7.86 (9.49)	6.47 (8.96)
Race	***	NS	***
<i>White</i>	6.79 (10.89)	7.43 (9.54)	5.76 (8.71)
<i>AI/AN</i>	4.35 (8.41)	7.14 (8.72)	6.40 (8.39)
<i>Multiracial/Other</i>	7.13 (11.06)	6.73 (9.05)	5.26 (8.21)
Age	***	***	***
Spearman's Rho	-.21	.13	.07

p<.001;

NS= Non-significant. The following nonparametric tests were used to identify demographic differences in substance use: Wilcoxon Rank Sum test (gender and ethnicity). Kruskal-Wallis equality-of-populations test (race); Spearman's Rho (age).