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Disparities in Health Services for HIV/AIDS, Hepatitis C Virus, and Sexually Transmitted Infections: Role of Substance Abuse Treatment Programs

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Abstract

Objectives—This report focused upon the availability of infection-related health services in substance abuse treatment programs with and without addiction services tailored for special populations (women and non-white populations).

Methods—In a cross-sectional, descriptive design, treatment program administrators across the United States within the National Drug Abuse Treatment Clinical Trials Network provided information on program characteristics, the availability of infection-related services (four medical services and three non-medical services for HIV, HCV, and STI), and barriers to providing infection-related services.

Results—Of 319 programs, 269 submitted surveys (84% response rate). Of these, 80% provided addiction services for special populations. Programs providing addiction services designed for at least one special population, were more likely to provide infection-related health services, especially HIV-related education (94% versus 85%, $p = 0.05$) and patient counseling (76% versus 60%, $p = 0.03$) and were more likely to include outpatient addiction services (86% versus 57%, $p < 0.001$) and outreach and support services (92% versus 70%, $p = 0.01$). Barriers to providing infection-related services included funding (cited by 48.3% to 74.7% of programs), health insurance (cited by 28.9% to 60.8% of programs), and patient acceptance (cited by 23.2% to 54.3% of programs).

Conclusions—Despite many barriers, infection-related healthcare is available in programs with addiction treatment services tailored for special populations, especially for African Americans and Latino Americans. Tailoring substance abuse treatment along with reducing barriers to infection-related care represent public health interventions with potential to reduce the burdens and disparities associated with these infections.

Keywords

HIV/AIDS; Hepatitis C Virus; Sexually Transmitted Infections; Substance Abuse Treatment; Disparities

Despite substantial advances in prevention and even greater enhancements in the range of therapeutic options, today many Americans continue to suffer a disproportionately greater burden of the most prevalent preventable illnesses, especially many infectious diseases. The 2004 case rate for the acquired immunodeficiency syndrome (AIDS) per 100,000-population is 6.0 for whites, 56.4 for blacks, 18.6 for Hispanics, 3.7 for Asians and Pacific Islanders, and 7.9 for American Indians and Alaskan Natives ¹. Human immunodeficiency virus (HIV) infection borne by women has tripled since 1985 from 8% to more than 26% in 2005 ². The highest hepatitis C virus (HCV) incidence rates and prevalence rates occur among Hispanic Americans and African Americans, respectively ³. Disparities also exist among many sexually transmitted infections (STI), as women sustain three times higher rates than men for chlamydial infections and African Americans and Latinos suffer higher rates of gonorrhea⁴.

Among the many factors associated with gender and ethnic/racial disparities in these infections, substance use and access to care are prominent in prevention and treatment ^{5–12}. Interestingly, substance abuse treatment has been associated with infection-related benefits, largely mediated through reducing behaviors placing individuals at risk of acquiring these infections or reducing the challenges to adherence to the treatments for these infections ^{13–15}. There is also evidence that locating infection-related health services in substance abuse treatment programs may also contribute to the infection-related benefits of substance abuse treatment ^{16–18}. Clinicians, who provide infection-related health services in substance abuse treatment programs, are likely to be more experienced and sensitive to the concerns of this patient population. In light of the foregoing, we examined the availability of infection-related services in substance abuse treatment programs that do and do not tailor addiction services for women and non-white ethnic/racial populations.

METHODS

Study Population

The Infections and Substance Abuse Study was one of the studies conducted in the National Drug Abuse Treatment Clinical Trials Network (CTN) funded by the National Institute on Drug Abuse¹⁹. A detailed description of this study and its main findings have been published previously ^{18, 20}. A survey was provided to each administrator of the 319 treatment programs; we received a survey from 84% (269 of 319) of these programs. No portion of the country or the CTN was over-represented among the 50 non-responding treatment program administrators.

Approval was obtained from Institutional Review Boards with jurisdiction over the participating substance abuse treatment programs. Participants were provided information about the objectives of the study prior to the one-time administration of the survey instrument.

Study Design

The Infections and Substance Abuse study was designed to generate hypotheses that may assist in the design of future studies that can inform public policy. Derived from a cross-sectional, descriptive study, this report focuses upon the availability of addiction services targeted for special populations (women, African Americans, Latinos, American Indians/Alaskan Natives, Asian Americans, and Hawaiians/Pacific Islanders) and the availability of 21 infection-related health services (seven services for each of the three infections). These infection-related health services are divided into two categories: medical (medical history and physical examination, biological testing, medical treatment, and medical monitoring) and non-medical (patient education, patient risk assessment, and patient counseling,) services. Definitions for each health service accompanied the surveys. Instructions within the survey guided the administrators to respond yes or no to their program's provision of each infection-related health service on-site or via referral agreements with other agencies and to their program's provision of addiction services tailored for women or a specific non-white ethnic/racial population.

This report also focuses upon the treatment program structure, service setting, patient characteristics, staff characteristics, sources of reimbursement, and barriers to the provision of infection-related services. For program structure, service setting, types of addiction services (such as counseling and pharmacotherapy), or sources of reimbursement, administrators were asked to respond yes or no to each option. For patient characteristics, administrators were asked to provide their best estimate of the rates of the three infections, injection equipment sharing, and sexual intercourse with multiple partners. For each of 8 barriers (government regulations, substance abuse treatment program policies, staff training, funding, patient health insurance, patient acceptance, staff acceptance, or other) to each infection-related service, administrators were asked to respond yes or no.

Statistical Analysis

Each section of the survey contained mostly multiple-choice questions. Consequently, the number and proportion of respondents providing a given answer were used to summarize responses. For some questions, responses were collapsed into a broader set of categories (e.g., federal, state, and local funding collapsed to government funding).

Three groups of cross tabulations were performed: 1) between treatment program (including patient) characteristics and the availability of addiction services designed for women or a specific ethnic/racial population; 2) between the 7 health services for the 3 infections (dependent variables) and the availability of addiction services designed for women or a specific ethnic/racial population (independent variables); and 3) between programs with and without addiction services designed for women or a specific ethnic/racial population (dependent variables) and the 8 barriers to the provision of the infection-related services for the 3 infections (independent variables). The significance of bivariate relationships was assessed by Chi square test and calculating odds ratios (OR) with 95% confidence intervals (95% CI). In cases where the Chi square test was inappropriate (cases with expected cell counts less than five), the Fisher's exact test was used. To summarize the differences in the number of infection-related services provided, Wilcoxon-Mann Whitney rank sum tests were estimated for each infection to determine whether programs that offered addiction services tailored for a special population also offered a significantly different number of infection-related services than programs without addiction services tailored for a special population. In such a calculation, p-values less than 0.05 indicate that the total number of infection-related services differed significantly between programs with and programs without tailored addiction services and substantiated the need for more detailed testing of individualized addiction services.

RESULTS

Substance Abuse Treatment Program Characteristics

Overall, 78.5% of the 269 treatment programs were sponsored by private not-for-profit agencies, 5.6% by private for profit agencies, 13.4% by government agencies, and the remainder by other types of agencies. The treatment settings varied; 14% were hospital, university, or medical based, 13% mental health, family health, or child service center-based, 61% were free-standing, and 13% were co-located in other health institutions.

All the programs offer an array of addiction services (including individual and group counseling). Some programs tailor these services to meet the needs of their patients, such as language and culturally-relevant counseling services. Fifty-five percent of the programs provided inpatient detoxification or residential services, 37% outpatient pharmacotherapy services, 80% outpatient services such as detoxification and counseling, and 88% outreach and support services.

Nearly three quarters of the programs contained addiction services tailored for women (see Table 1) and more programs reported addiction services designed for Latino patients than for African American patients (43.3% versus 37.5%). Addiction services designed for American Indians/Alaskan Natives, Asians, and Hawaiian/Pacific Islanders existed in 15.7% to 19.4% of the treatment programs. Twenty percent of the programs did not offer any specialized addiction treatment services for any of the special populations examined by this study.

Treatment programs providing addiction services designed for at least one special population were more likely to include outpatient addiction services (86% versus 57%, $p < 0.001$) and outreach and support services (92% versus 70%, $p = 0.01$). Treatment programs with addiction services designed for women were similar to programs containing addiction services tailored for each of the other ethnic/racial populations in the distribution of treatment settings, types of addiction services, largest source of revenue, and medical and non-medical staffing.

Approximately 80% of the programs with addiction services for women or a non-white ethnic/racial population have medical staff (physicians, physician assistants, nurse practitioners, registered or licensed practical nurses, pharmacists, or medical technicians). Programs that provided population-targeted addiction services and those that did not were similar in patient census, estimates of infection rates, and estimates of rates of injection equipment sharing and multiple sex partners.

Provision of Infection-Related Health Services

Regardless of whether addiction treatment services for a special population was provided by treatment programs, HIV-related health services were offered more frequently than services for HCV or STI. The three non-medical health services (patient education, risk assessment, and counseling) were delivered more frequently than the four medical services (patient history and physical examination, biological testing, treatment, and clinical monitoring).

We assessed the prevalence of infection-related services under two conditions: programs with addiction services tailored for women or a non-white ethnic/racial population and programs without addiction services tailored for each population. As shown in Table 2, treatment programs with addiction services tailored for African Americans and Latino Americans differed significantly in the number of the HIV, HCV, and STI-related services, as compared to treatment programs without addiction services designed for these two subpopulations. The number of STI-related services differed significantly between treatment programs with and without addiction services tailored for Asian Americans, while the number of HCV-related services differed significantly between treatment programs with and without addiction services tailored for American Indians/Alaskan Natives. Based upon this information, we performed

more detailed testing of each infection-related service (see Table 3) under the two conditions outlined earlier.

Treatment programs with addiction services for women were similar to programs without such specially tailored services with two exceptions (Table 3). Treatment programs with addiction services designed for women were 1.93 times more likely (95% CI: 1.07–3.49) to offer HIV-related patient monitoring (53% versus 37%, $p = 0.03$) and 2.23 times more likely (95% CI: 1.18–4.20) to offer HCV-related patient risk assessment (81% versus 66%, $p = 0.01$) as compared to programs without women-tailored addiction services.

In treatment programs with addiction services designed for African Americans, 16 (76%) of the 21 different infection-related health services were available significantly more often than in programs without such specifically designed addiction services. For these 16 services, the range and average of these odds ratios were 1.10 to 7.65 and 3.0, respectively. For example, programs with targeted addiction services for African Americans were substantially more likely to offer HIV-related counseling (86% versus 64%, $p < 0.001$) and HCV-related biological testing (49% versus 30%, $p < 0.001$) than programs that do not target addiction services for African Americans (Table 3). In comparison, treatment programs with Latino-tailored addiction services provided 9 (43%) of the 21 different infection-related health services significantly more often than programs without addiction services tailored for Latinos. For these 9 services, the range and average of these odds ratios were 1.07 to 4.84 and 2.37, respectively.

Treatment programs with addiction services tailored for American Indians/Alaskan Natives were substantially more likely to provide 5 (24%) of the 21 different infection-related health services than programs without such tailored-addiction services. For these 5 infection-related services, the range of the odds ratios was 1.04 to 4.82, while the average of these odds ratios was 2.30.

Treatment programs with addiction services designed for Asian Americans were significantly more likely to provide HCV-related patient treatment (47% versus 28%, $p = 0.02$), STI-related counseling (79% versus 61%, $p = 0.02$), STI-related patient treatment (55% versus 32%, $p = 0.01$), and STI-related patient monitoring (58% versus 39%, $p = 0.03$) than programs without Asian-specific addiction services. For these 4 infection-related services, the range of the odds ratios was 2.13 to 5.36, while the average of these odds ratios was 2.35. There were no substantial differences in the provision of infection-related health services between programs with and without addiction services designed for Hawaiians/Pacific Islanders.

Finally, treatment programs with addiction services tailored for at least one special population were substantially more likely to provide HIV-related education (94% versus 85%, $p = 0.05$) and patient counseling (76% versus 60%, $p = 0.03$) as compared to programs that do not provide addiction services tailored for any special population.

Barriers to the Provision of Infection-Related Services

We then evaluated the frequency of the program administrator's report (yes or no) of one of the eight barriers (government regulations, substance abuse treatment program policies, staff training, funding, patient health insurance, patient acceptance, staff acceptance, or other) to each of the 21 infection-related services in programs with addiction services tailored for a special population.

Regardless of infection type, the lack of government funding was the most frequently reported barrier to the delivery of each infection-related service, ranging from 48.5% of the programs

citing this as a barrier to providing HIV-related biological testing to as many as 74.7% reporting this as a barrier to providing HIV-related risk assessment .

The lack of health insurance (cited by 28.9% to 60.8% of administrators) was the second most frequent barrier for 19 of the 21 infection-related health services in programs with addiction services tailored for women, for all of the infection-related health services in programs with addiction services for African Americans, and for 16 of the 21 infection-related health services in programs with addiction services for Latinos. Health insurance was also cited second most frequently as a barrier for 10 of the 21 infection-related health services in programs with addiction services for American Indians/Alaskan Natives, for 5 of the 21 infection-related health services in programs with addiction services for Asians, and for 6 of the 21 infection-related health services in programs with addiction services for Hawaiians and Pacific Islanders.

For many treatment programs, patient acceptance was the third most frequently reported barrier to the infection-related services, cited by 23.2% to 54.3% of programs. However, for some treatment programs, patient acceptance was the second most frequently cited barrier. This was the case in the provision of 11 of the 21 infection services provided in programs with American Indian/Alaskan Native-tailored addiction services, the provision of 16 of the 21 infection services in programs with Asian American-tailored addiction services, and the provision of 15 of the 21 infection services in programs with addiction services tailored for Hawaiians or Pacific Islanders.

DISCUSSION

The prominence of healthcare disparities in public health discussions has spurred interest in the identification of disparities, studying the causes, and pursuing possible remedies.^{21, 22} It is well established that women and minority populations experience disparities in health and healthcare – i.e., differences in incidence, prevalence, mortality, morbidity, other consequences of disease, related to many factors including access to services⁶ – and that these disparities extend to issues around addiction and addiction-related infections^{1–4}. The four key findings in this report suggest that there appear to be some alignment between services offered and these health and healthcare disparities. First, nearly 80% of the programs surveyed provide addiction services tailored to at least one of the special populations (women and ethnic/racial minorities) that are the topic of this report and that are known to be associated with healthcare disparities around addiction-associated infections. Second, treatment programs offering tailored addiction services for these special populations frequently offer an array of infection-related health services. Third, infection-related health services were to a large extent offered more frequently by programs with addiction services tailored to special populations, differences most robustly seen in programs with addiction services for African Americans or Latinos. Fourth, government funding, private health insurance, and patient acceptance were the three most frequently cited barriers limiting availability of infection-related services.

Thus, program administrators appear to have identified specific population needs and in spite of substantial barriers they have developed programming and services to address them. There is, however, little reason to believe that these enhanced services are substantial enough to match the magnitude of the disparities^{1–4} which is likely to vastly outpace service availability. Still, the types of infection-related services offered varied widely and may be related to a number of factors, including programming in response to changes in clinical guidelines, program philosophy, and/or other local factors (catchment area, urban/rural/suburban, and other unknown factors) as well as state mandates in the form of regulations or policies²³. However, our analysis did not reveal that treatment program size, legal structure (public versus private or profit versus not for profit), or the availability of medical staffing could explain the findings reported in this paper.

We previously reported that infection-related services for HIV/AIDS, HCV and STI were available more often in treatment programs providing outpatient pharmacotherapy addiction treatment services than in treatment programs that did not provide this type of addiction service²⁰. However, this does not adequately explain our findings in this report as treatment programs providing addiction services designed for at least one special population were more likely to include outpatient addiction services and outreach and support services and not outpatient pharmacotherapy as a part of their addiction treatment services.

Given the overwhelming evidence for infection-related benefits of substance abuse treatment, especially in reducing drug use behaviors^{13–15, 24}, and the disproportionately greater rates of drug use and associated infections among many non-white ethnic/racial populations as compared to whites²⁵ it is important for the Substance Abuse and Mental Health Services Administration (SAMHSA) to expand its national survey of treatment programs¹⁷ to include a focus on, and questions about the provision of addiction services for non-white ethnic/racial populations.

In addition to barriers associated with the lack of government funding and health insurance, both consistent with continuing discussion about the costs of healthcare in the United States, a substantial portion of treatment programs identified patient acceptance as a barrier to providing infection-related health services. This barrier was cited most frequently after funding by programs with specialized addiction services for American Indians/Alaskan Natives, Asian Americans, and Hawaiians/Pacific Islanders. In fact, patient acceptance was endorsed more than 2 times as often by programs with addiction services tailored for Asian Americans, and Hawaiians/Pacific Islanders as compared to programs without addiction services for these two population groups. Challenges with patient acceptance may in part be a consequence of the stigma often associated with these infections and the background of discrimination often experienced by members of these special populations. Nonetheless, we do not have evidence that inadequate patient acceptance was associated with the absence of any infection-related health service.

Admittedly, the findings in this report must be viewed in the context of this study's limitations. The hypothesis-generating design of this study did not allow an ability to report causation and there was no information collected in this study to verify treatment program administrator responses or to assess utilization, costs, effectiveness, patient satisfaction, or staff satisfaction with the provision of the infection-related health services. Also, we did not collect information about the scope of the addiction services tailored for a special population among the treatment programs. Also, no information is available about the ethnic and gender composition of the treatment programs in this study, although it is not unreasonable to assume that composition of special populations was significant enough for treatment programs to provide addiction services tailored for these special populations. Clearly, there are many areas that deserve more in-depth examination, but they were beyond the scope of this study's hypotheses-generating design.

We believe there are several responses to these limitations. For one and to the extent possible, the study design attempted to mitigate some of the limitations. For example, to enhance the provision of valid information, the length of the survey was tailored to encourage participation. We used representatives of the study population to design the content and format of the survey, and respondents were informed that their personal, treatment program, and state identities would be kept confidential. Second and as previously reported²⁰, the main findings of this study are consistent in areas where the current study and two previous multi-site treatment program studies sought similar information^{16, 17}. Finally and because of the limitations of resources, the investigators chose an exploratory design to generate hypotheses to stimulate

other investigators to pursue these important questions and just as importantly to test our findings.

Another potential limitation is the likelihood of finding some significant results by random chance, given the number of statistical tests performed. Although this would tend to temper the meaningfulness of any single test result, the overall pattern of test results presents a useful reference. Clearly, the association between treatment programs with addiction services tailored for African Americans and Latino Americans and the provision of infection-related services is quite strong, consistent, and does not appear likely to be due to chance.

While the treatment programs in this study share similarities and differences with treatment programs outside of this clinical trials network,²⁶ this report is consistent with prior studies,^{15–16} in revealing the role of substance abuse treatment programs as a source of infection-related health care for many substance users. More importantly, the overall finding is that despite barriers, programs with addiction services designed for women and non-white ethnic/racial populations provide infection-related health services more often than programs without these specially designed addiction services. Infection-related health care services are not only important because these infections occur disproportionately among substance users and ethnic/racial populations; they place a considerable burden on the nation as a whole. For these reasons, every opportunity to prevent or control these infections represents a public health imperative. The findings of the present study strongly encourage the nation to consider tailoring substance abuse treatment as an important public health strategy in addressing both the control of these infections and perhaps in reducing some of the disparities associated with them.

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TABLE 1

Treatment Programs Providing Addiction Services Designed For Special Populations

SPECIAL POPULATION	PERCENT OF PROGRAMS (N=269) WITH TAILORED SERVICES
Women	73.9
African Americans	37.5
Latinos	43.3
American Indian/Alaskan Native	19.4
Asian	18.6
Hawaiian/Pacific Islander	15.7
None	20.1
At Least One Special Population Group	79.9
One Special Population Group	34.5
2–3 Special Population Groups	25.3
4 or More Special Population Groups	20.1

TABLE 2

P-value of Differences in the Number of the 21 Infection-Related Services Between Treatment Programs with and without Addiction Services Tailored for Special Populations **

Special Population	Infection-Related Services		
	HIV	HCV	STI
Women	0.0908	0.2211	0.3476
African Americans	<.0001	<.0001	<.0001
Asian Americans	0.2297	0.0787	0.0213
Latino Americans	0.0035	0.0205	0.0061
American Indians/Native Americans	0.1318	0.0113	0.0615
Hawaiian/Pacific Islander	0.3795	0.3083	0.2531

** Wilcoxon-Mann Whitney rank sum tests were estimated for each infection to determine whether programs that offered addiction services tailored for a special population also offered a significantly different number of infection-related services than programs without addiction services tailored for a special population. In such a calculation, p-values less than 0.05 indicate that the total number of infection-related services differed significantly between programs with and programs without tailored addiction services for a special population

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Types of Services	Percent of Programs Providing Infection-Related Health Services With and Without Addiction Services Designed For:									
	Women		African Americans		Latino Americans		American Indians/Alaskan Natives		Asians	
	With n=190	Without n=79	With n=91	Without n=178	With n=106	Without n=163	With n=46	Without n=223	With n=44	Without n=225
Risk assessment	79	71	86	73*	83	74	84	77	86	77
Counseling	66	60	81	54 [#]	73	57*	76	61	79	61*
Medical History & Physical Exam	54	48	65	44 [#]	59	47	56	52	55	52
Biological Testing	44	39	56	35 [#]	48	39	50	42	55	40
Treatment	38	29	57	24 [#]	49	28 [#]	53	33*	55	32*
Monitoring	44	36	63	31 [#]	55	33 [#]	58	39*	58	39*

* p<0.05 comparing programs with and programs without especially designed addiction services

[#] p<0.001 comparing programs with and programs without especially designed addiction services