

Workforce Diversity and Disparities in Opioid Treatment Wait Time and Retention

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Abstract

Background: Workforce diversity is a key strategy to improve treatment engagement among members of racial and ethnic minority groups. In this study, we seek to determine whether programs with higher workforce diversity show differences in wait time to treatment entry and retention in treatment for opioid use disorders among individuals self-identified as Black/African American or Latino/Hispanic. We account for the role of Medicaid expansion and program ownership type (i.e., public, non-profit, for-profit) among opioid treatment programs (OTP) located across the United States.

Methods: We examined four waves of the National Drug Abuse Treatment System Survey (NDATSS), a nationally representative longitudinal dataset (2000- 2017), to assess the associations between OTPs' program ownership type and workforce diversity on wait time and retention. We conducted comparative and predictive analysis in an analytic sample of programs pre- and post-Medicaid expansion (162 in 2000, 173 in 2005, 282 in 2014, and 300 in 2017). We considered the moderated effect of workforce diversity and program ownership type on wait time and retention.

Results: We found significant differences in wait time to treatment entry and retention in treatment across waves. Average days waiting decreased in the last two waves of the NDATSS (2014 and 2017) (post Medicaid expansion per the Affordable Care Act), while retention rates varied across years. Key findings show that programs with both a higher percent of African American staff and a higher percent of African American clients were associated with longer wait times to enter treatment. Programs with both a higher percent of Latino staff and a higher percent of Latino clients were associated with lower retention in treatment. Program ownership type (public, non-profit and for-profit) played an important role in whether diversity was related to wait time and/or retention.

Conclusions: Findings show decreases in wait time over the years with significant variation in retention during the same period. Workforce diversity was associated with higher wait time and lower retention when programs also had high percentages of African American and Latino clients. Findings have implications for OTPs in minority communities to enhance wait time to treatment entry and retention in treatment.

Background

The opioid epidemic disproportionately affects the nation's 100 million low-income Americans and those who lack health insurance – groups that are disproportionately comprised of minority communities. Delivering culturally responsive care is critical to engage minorities in opioid use disorder (OUD) treatment and abate the effect of the epidemic. To identify key culturally competent practices that impact access and engagement (i.e., wait time to treatment entry and retention in treatment), it is necessary to examine the role of workforce diversity, one of the most concrete organizational culturally competent practices (i.e., matching staff-client culture, language, worldview based on racial/ethnic background) [1–5]. The following study addresses a significant gap in disparities research using nationally representative data to

examine the impact of workforce diversity, an essential culturally responsive practice, on OTP quality measures of wait time and retention for individuals self-identified as Black/African American (hereafter African American) or Hispanic/Latino (hereafter Latino).

It is well established that individuals self-identified as members of racial and ethnic minority groups are more likely than White individuals to experience difficulty entering and staying in outpatient substance use disorder (SUD) treatment [6–10]. Reflecting their importance to treatment, wait time and retention have been included as performance measures developed by the Washington Circle [11], the Network for the Improvement of Addiction Treatment [12], and county and state administrative data systems [13]. Treatment access (measured through wait time to initiate treatment) and retention in treatment are critical process measures to abate disparities in substance use disorder treatment [14]. Yet, there is limited understanding of the role of workforce diversity in access and retention among OTPs.

Disparities in wait time and retention

Among those seeking help for substance abuse issues, wait time to treatment entry is a commonly cited barrier. Most studies show that African American and Hispanics clients wait more days to enter SUD treatment than non-Hispanic White clients [15–17]. Treatment retention, or time spent in treatment, is likewise an important process measure and robust predictor of reduced post-treatment substance use [11,18]. As healthcare reform has supplied new incentives for increasing access to OUD treatment via Medicaid reimbursements, evaluating treatment access and retention within the context of Medicaid expansion is critical to responding to OUD treatments' main challenge, specifically, “treatment dropout” [19–23].

Workforce diversity and wait time and retention

Cultural competence is defined as a set of behaviors, attitudes and policies that enable a system, organization, or individual to function effectively with culturally diverse clients and communities [24]. Cultural competence also encompasses the culturally and linguistically appropriate services (CLAS) denomination used by federal health agencies [25–27]. Workforce diversity is one of the six core components of CLAS: Leadership, Quality Improvement and Data Use, Workforce, Patient Safety and Provision of Care, Language Services, and Community Engagement.

Federal, state, and professional organizations have promoted cultural competence as a means to improve SUD treatment retention among racial/ethnic minorities. Medicaid payments and related regulation have strengthened the focus on delivering services that respond to the cultural and linguistic services needs of clients [27]. The National Institute of Medicine, National Institute of Nursing and the National Association of Social Workers have all promoted workforce diversity strategies and developed training standards for cultural competency [28–34]. Regulation at the federal, state and professional certification levels have incorporated cultural competence in health care services [35–38]. Of particular relevance to the proposed research, the Substance Abuse and Mental Health Services Administration has

called on providers to rely on CLAS because the majority of SUD counselors are non-Hispanic Whites [39,40], even as 36% of clients at publicly-funded SUD treatment centers are non-White [41].

Workforce diversity has become one of the chief cultural competency strategies to address healthcare disparities [42–52]. Following Brach and Fraser (2000), we define workforce diversity as the demographic and cultural representation of health workers and managers that reflect inclusion of backgrounds that are representative of the client population [48]. A workforce that represents client diversity is thought to be one of the main mechanisms to improve cultural and linguistic responsiveness.

However, the relationship between diversifying the workforce and disparities in access and retention in the SUD treatment system is not clear. Because culturally competent practices include a wide array of program arrangements, practices, and services, it is critical to determine which components of CLAS are most needed to engage minorities in OUD treatment. Some work shows that discordance between the racial and the ethnic diversity of clients and treatment staff widens healthcare disparities [3,5,53–55], while other work suggests that congruence is associated with disparities [56]. Congruence between the cultural and the linguistic backgrounds of staff and clients is thought to elevate the competencies of health care providers and improve client treatment adherence via the understanding of racial/ethnic history and cultural norms, as well as the communication through the client's native language [1–5]. This is thought to create a conducive climate for implementing CLAS (e.g., family support groups in Spanish) [57–59] and addressing the disparities in treatment outcomes among minorities [60–63].

The field of SUD treatment has seen increased client diversity, yet limited longitudinal research has explored the provider/client similarity in racial/ethnic background [3,7,39]. In this exploratory work, we expect to see the role of workforce diversity to be associated with lower wait time and higher retention in well-resourced programs, while high diversity in staff and clients may be associated with higher wait time and lower retention in lower-resourced programs.

Methods

We relied on data from the National Drug Abuse Treatment System Survey (NDATSS). This dataset contains eight waves of surveys to outpatient substance use treatment programs conducted in 1988, 1990, 1995, 2000, 2005, 2011, 2014, and 2017 [64–66]. Each survey wave since 1988 included programs from prior waves except for those dropped due to closure. Replacement programs were added to ensure adequate sample size. Representative samples of newer programs were added to keep the NDATSS representative of the changing population of US treatment programs. In this paper, we looked at four waves of NDATSS data pre- and post-Medicaid Affordable Care Act expansion (2000, 2005, 2014, and 2017) and focused on opioid treatment programs only. The analytic sample included: 162 programs in 2000, 173 programs in 2005, 282 programs in 2014, and 300 programs in 2017.

Dependent variables. We considered two dependent variables in this study: 1) wait time, defined as average number of waiting days to begin treatment, 2) retention, defined as percent of clients remaining in treatment for more than three months.

Independent variables. We included two workforce diversity variables: percent of African American staff and percent of Latino staff. Whether the treatment program resided in a state that expanded Medicaid was added as a control. Additional client and program characteristics relevant to our outcomes were also included: percent of African American clients, percent of Latino clients, percent of unemployed clients, accreditation by The Joint Commission (TJC), whether the treatment program was owned by a hospital, type of program (private for-profit, private not-for-profit, public), staff-to-client ratio, and proportion of staff with graduate degrees and total number of clients served in the previous fiscal year.

Statistical Analysis. We conducted a comparative analysis of all variables across years. Chi-square tests or Analysis of Variance (ANOVA) were used to detect statistical differences across years. Since all dependent variables are continuous, we conducted linear regression analysis with normalized weight within each year to study the association of workforce diversity and other variables with the two dependent variables. Weights were introduced to make the data nationally-representative. Interactions of workforce diversity with program type and clients' race/ethnicity were evaluated to examine the potentially moderated effect on wait time and on retention.

Results

Disparities in wait time and retention

The comparative analysis across four waves is presented in Table 1. We find that average waiting days are significantly different by year. More specifically, the average waiting days have decreased in the last two waves (post Medicaid expansion). The percent of clients remaining in treatment more than 3 months is significantly different across year as well. Compared to the year 2000, the percent of clients treated more than 3 months is higher in 2005 (beta = 6.389, $p < 0.05$) and lower in 2014 (beta = -18.664, $p < 0.001$).

There were differences across years for program characteristics. Programs owned by another organization were significantly different across years, with a decrease in such programs in the years 2014 and 2017. Type of programs was also significantly different by year. There were more private not-for-profit programs in 2014 and in 2017, relative to public programs, which were more prevalent in 2017. Percent of unemployed clients is significantly different by year and higher in 2014 and in 2017.

Workforce Diversity and Wait time and Retention

Table 2 shows that programs with both a higher percentage of African American staff and a higher percentage of African American clients reported significantly higher average wait times (beta = 0.015, $p < 0.05$). However, public programs with a higher percentage of African American staff reported significantly lower average wait times compared to counterparts (i.e., private programs with lower percentage of African American staff; beta = -1.349, $p < 0.05$). Similarly, public programs with higher percentage of Latino staff reported lower average wait time rates compared to counterparts (beta =

-4.936, $p < 0.05$). Among programs in Medicaid-expanded states, programs with a higher percentage of African American clients report statistically significant lower wait time rates (beta = -0.847, $p < 0.05$).

The programs with both a higher percentage of Latino staff and a higher percentage of Latino clients reported lower rates of treatment retention of more than three months (beta = -0.005, $p < 0.05$). However, private not-for-profit programs with a higher percentage of Latino staff reported higher rates of treatment retention of more than three months (beta = 0.304, $p < 0.05$).

Program Structure Factors and Wait time and Retention

For types of programs, both private not-for-profit (beta = 50.851, $p < 0.05$) and public (beta = 154.471, $p < 0.001$) programs reported significantly higher wait times compared to their counterparts. Programs accredited by The Joint Commission (TJC) have lower percent of clients treated more than 3 months (beta = -8.097, $p < 0.001$). Staff-to-client ratio is negatively associated with percent of clients treated more than 3 months (beta = -51.241, $p < 0.001$), whereas it is positively associated with proportion of graduate staff (beta = 9.802, $p < 0.05$).

Discussion

We explored the association between workforce diversity and disparities in wait time to treatment entry and retention in OUD treatment using a nationally representative sample. We found significant differences in wait time and retention in the NDATSS data between 2014 and 2017. Specifically, average days waiting decreased in the last two waves (post Medicaid expansion), while retention rates varied across all years, pre- and post-Medicaid Affordable Care Act expansion.

Key findings show that programs with both a higher percentage of African American staff and a higher percentage of African American clients were more likely to have more days waiting to enter opioid treatment programs, compared to programs with lower percentages of African American staff and clients. Similarly, programs with both a higher percentage of Latino staff and a higher percentage of Latino clients stayed in treatment fewer days waiting than programs with both a lower percent of Latinos staff and clients. Consistent with other studies, these findings on the negative association between workforce diversity and measures of treatment engagement suggest that there may be other factors that explain these differences in access and retention [67]. Previous analyses of the NDATSS determined that treatment units that focus on minority populations tend to have lower retention rates as well as fewer engagement approaches to improve retention [68–73]. Albeit conjectural, programs with high percentage of African American and/or Latino staff and clients smaller and less resourced than programs with higher percentage of White staff and clients [74,75].

These “high minority” programs also tend to be located in lower income and under-resourced minority communities [75–77]. Worse outcomes in highly diverse programs may therefore be explained by unobserved factors, such as low-capacity programs that also have high levels of minority staff and clients [78]. This notion is supported by studies which have considered diversity and high program

resources together and found that access and retention are generally high in the presence of both factors [67]. Our findings suggest that workforce diversity as a mechanism of cultural competence via racial/ethnic and language matching may be only effective when programs have the organizational policies, practices, training and other resources to improve standards of care.

Other findings highlight the importance of organizational structure and policies in enhancing access in opioid treatment. Because we found lower wait time in public programs with high African American staff and lower retention in nonprofit programs with lower Latino client presence, it is critical to consider the organizational context of treatment.

We would like to recognize limitations of this study. First, bias related to program managers over-reporting positive features, such as lower wait times and greater retention may exist. We used auxiliary variables to reduce this bias and determine the most accurate program condition regarding OTP practices and services. Moreover, using existing data from real-world treatment settings may not be optimal for assessing our OTP process outcomes, but it is the most comprehensive and reliable source [79,80]. Second, we compared NDATSS data on key outcomes obtained from client records in a national random sample of methadone treatment units in the National Evaluation of Substance Abuse Treatment Study [65,81]. These results support the reliability and validity of NDATSS data. NDATSS findings on the effect of program features on OTP process outcomes have been consistent with results from regional studies using program and client data [14,82]. To mitigate concerns about the validity and reliability of the data, we used robust single indicators (workforce diversity, program practices, and OTP process outcomes) and compared indicators with data from the National Survey of Substance Abuse Treatment Services (N-SSATS).

Last, we also accounted for repeated observations from the same unit over time using random effects models. These models are helpful to mitigate bias due to nonrandom attrition of programs from the sample over time and account for unobserved program characteristics. Despite these limitations, findings from our study are likely to inform policy and practice interventions tailored to the most common opioid treatment settings nationwide.

Conclusions

Findings expand our understanding of the complex role of workforce diversity in enhancing access and retention in opioid treatment. It is critical to further examine workforce diversity within the potential resource and capacity needs of vulnerable OTPs serving minority communities. As federal and state authorities promise a significant influx of financial resources drawn from pharmaceutical settlements and new taxation revenues to enhance access to opioid treatment, it is critical to support OTPs in minority communities to improve treatment outcomes.

Abbreviations

OTP: opioid treatment program

NDATSS: National Drug Abuse Treatment System Survey

OUD: opioid use disorder

SUD: substance use disorder

CLAS: culturally and linguistically appropriate services

TJC: The Joint Commission

N-SSATS: National Survey of Substance Abuse Treatment Services

Declarations

Ethics approval and consent to participate

This study was reviewed and approved by the Institutional Review Board of the Texas A&M University (IRB2019-0268D). One of the principal investigators, also the corresponding author, has obtained consent to publish from the participants in this study (program staff members).

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

EG reviewed the research literature, framed the scope of the paper, contributed to the statistical analysis, and was the primary text author. TK, TD and DH provided additional literature review, critical review of

statistical analysis, and support in writing the manuscript, including revisions. YK and SW conducted statistical analysis and provided critical review. All authors provided support for all revisions. All authors reviewed and approved the final draft.

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Tables

Table 1. Comparative analysis across four waves of NDATSS data

	2000 (N=162)	2005 (N=173)	2014 (N=282)	2017 (N=300)	p value
Percent of African American staff	29.3 (26.4)	33.8 (74.6)	25.1 (26.2)	28.1 (26.9)	0.185
Percent of Latino staff	11.9 (18.5)	9.5 (15.6)	9.3 (16.2)	10.1 (15.8)	0.405
Average waiting days*	51.3 (71.5)	59.1 (94.5)	37.9 (73.2)	29.1 (44.6)	0.018
Percent of clients treated more than 3 months***	84.5 (16.0)	87.5 (14.0)	75.9 (30.6)	76.5 (30.6)	0.000
Medical expansion***	0 (0%)	0 (0%)	182 (64.5%)	228 (76%)	0.000
Client characteristics					
Percent of African American clients***	30.3 (27.3)	27.6 (27.3)	18.0 (22.6)	20.6 (23.9)	0.000
Percent of Latino clients*	18.0 (21.3)	17.1 (22.7)	12.9 (18.9)	14.3 (19.5)	0.012
<i>Medicaid expanded states</i>					
Percent of African American clients	–	–	19.7 (22.7)	21.6 (23.3)	0.420
Percent of Latino clients	–	–	16.0 (19.5)	15.4 (19.2)	0.754
<i>Medicaid non-expanded states</i>					
Percent of African American clients	–	–	15.0 (22.2)	17.5 (25.6)	0.516
Percent of Latino clients	–	–	7.3 (16.4)	11.1 (20.1)	0.194
Program characteristics					
The Joint Commission accreditation	40 (25%)	64 (37%)	88 (34.8%)	90 (34.2%)	0.094
Owned by another organization***	117 (72.7%)	124 (71.7%)	75 (26.6%)	85 (28.5%)	0.000
Type of programs*					0.011
Private for-profit	51 (31.9%)	58 (33.7%)	84 (29.8%)	93 (31.3%)	
Private not-for-profit	70 (43.8%)	83 (48.3%)	164 (58.2%)	163 (54.9%)	

Public	39 (24.4%)	31 (18%)	34 (12.1%)	41 (13.8%)	
Staff-to-client ratio*	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.1 (0.1)	0.011
Number of treatment clients	624.7 (749.6)	715.1 (11112.3)	969.1 (3742.3)	841.7 (1696.6)	0.197
Proportion of graduate staff	0.3 (0.2)	0.4 (0.2)	0.4 (0.2)	0.4 (0.2)	0.552
Percent of unemployed clients***	45.4 (22.6)	44.1 (25.2)	54.2 (25.7)	53.0 (26.6)	0.000

* p<0.05, ** p<0.01, *** p<0.001

Table 2. Linear regression models (with normalized weights & interactions)

	Average wait time			TX more than 3 months		
	Beta	95% CI	p value	Beta	95% CI	p value
Medicaid Expansion	-13.551	-43.706, 16.604	0.380	-0.485	-7.096, 6.126	0.886
Year^a						
2005	20.837	-8.216, 49.89	0.162	6.837	1.234, 12.439	0.017
2014	3.304	-37.149, 43.756	0.873	-19.196	-27.293, -11.1	0.000
2017	-4.376	-41.982, 33.231	0.820	-8.572	-16.903, -0.241	0.044
Percent of African American staff	-0.083	-0.96, 0.794	0.853	0.075	-0.089, 0.24	0.371
Percent of Latino staff	0.454	-3.037, 3.944	0.799	0.080	-0.195, 0.355	0.570
Percent of African American clients	-0.847	-1.515, -0.18	0.014	-0.114	-0.25, 0.021	0.099
Percent of Latino clients	0.207	-0.815, 1.23	0.692	0.000	-0.153, 0.152	0.996
The Joint Commission accreditation	-14.075	-34.229, 6.078	0.173	-8.097	-12.499, -3.694	0.000
Owned by another organization	17.623	-5.897, 41.143	0.144	0.820	-4.231, 5.87	0.751
Type of programs^b						
Private not-for-profit	50.851	10.502, 91.201	0.014	-4.876	-12.474, 2.722	0.209
Public	154.471	100.625, 208.317	0.000	4.285	-6.734, 15.304	0.446
Staff-to-client ratio	-68.889	-307.468, 169.691	0.572	-51.241	-74.454, -28.028	0.000
Number of treatment clients	-0.002	-0.007, 0.003	0.436	0.000	-0.002, 0.001	0.757
Proportion of graduate staff	12.232	-33.426, 57.89	0.600	9.802	0.824, 18.779	0.033
Percent of unemployed clients	0.081	-0.4, 0.562	0.742	0.074	-0.016, 0.164	0.107

Interactions

Percent of African American staff*Percent of African American clients	0.015	0.004, 0.027	0.011	0.001	-0.001, 0.004	0.349
Percent of African American staff*Private not-for-profit	-0.254	-1.255, 0.747	0.620	-0.056	-0.252, 0.141	0.580
Percent of African American staff*Public	-1.349	-2.524, -0.173	0.026	-0.177	-0.42, 0.065	0.152
Percent of Latino staff*Percent of Latino clients	-0.010	-0.031, 0.012	0.375	-0.005	-0.009, -0.001	0.018
Percent of Latino staff*Private not-for-profit	0.148	-3.664, 3.96	0.939	0.304	0.024, 0.585	0.034
Percent of Latino staff*Public	-4.936	-9.151, -0.722	0.023	0.341	-0.075, 0.756	0.108
# observations	198			661		

^a2000 as reference; ^bprivate for-profit as reference