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Assessing the generalizability of the CSAT-sponsored GAIN dataset: Are the CSAT sites representative of adolescent treatment programs in the U.S.?

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Abstract

The CSAT-sponsored GAIN dataset represents one of the largest longitudinal datasets of adolescent substance use treatment currently available. Understanding the characteristics of the included treatment programs is needed to help inform whether the data are generalizable to adolescent treatment more broadly. Data from a national sample of adolescent treatment programs was compared to the CSAT-funded programs to assess generalizability and understand trends over time in quality service provision. The results indicated that CSAT-funded programs had higher rates of comprehensive mental health assessments, discharge planning, HIV, STD and TB testing, and HIV/AIDS education and support. Conversely, CSAT and non-CSAT-funded programs had similar rates of comprehensive substance use screening and assessment, family and aftercare counseling, drug and alcohol urine screening, case management support, and licensing. The results also showed that service provision has not changed much over the past decade and is in critical need of improvement to reflect expert-informed quality standards.

Keywords

adolescent treatment; evidence supported treatments; quality assurance

1. Introduction

Policymakers are demanding that evidence-based treatments (EBTs) become more widely implemented in substance use treatment settings (National Institute on Drug Abuse (NIDA), 2004; Substance Abuse and Mental Health Services Administration (SAMHSA), 2009a). EBT implementation is especially relevant for settings that treat adolescent substance use, where the quality of treatment services has been known to be highly variable (Godley, Godley, & Hagen, 2005; Stevens & Morral, 2003) and where developmentally appropriate treatment is not always available (Gans, Falco, Schackman, & Winters, 2010; Schackman, Rojas, Gans, Falco, & Millman, 2007). As such, implementing effective interventions to treat substance use could significantly improve outcomes for youth, their families and communities. Moreover, quality of care is critical in adolescent treatment where recovery

rates typically observed at 12 months are less than 50% (Dennis, Godley, Diamond, Tims, Babor, Donaldson, et al., 2004).

Over the past decade, the government has sought to encourage the uptake of EBTs by running experimental trials of new therapies (e.g., Dennis et al., 2004), conducting observational studies of treatment programs that may qualify as 'exemplary' (e.g., Stevens & Morral, 2003), and by offering community based treatment providers discretionary grant funding intended to support the effective delivery of EBTs (Hunter, Ramchand, Griffin, Suttrop, McCaffrey, & Morral, 2012). Since 2000 the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA), Center of Substance Abuse Treatment (CSAT) has funded over 100 community based treatment programs across the United States to support the delivery of EBTs to address adolescent substance use. One required component of the grant funding is standardized client data collection using the Global Appraisal of Individual Needs (GAIN; Dennis, 1999). The GAIN is a biopsychosocial clinical assessment tool utilized at treatment intake to characterize baseline or pretreatment client characteristics and at follow-up time points (e.g., 3, 6 and 12 months) to assess changes following treatment (Dennis, Chan, & Funk, 2006). As a result of the considerable investment in standardized data collection, knowledge about adolescent substance use and treatment has largely expanded over the past decade. As of June 2013, 147 publications and numerous presentations regarding adolescent substance use and treatment have been documented using the GAIN dataset (GAIN Coordinating Center, 2013). These studies shed light on a variety of issues, including pretreatment levels of alcohol and other substance abuse among adolescents, adolescent treatment experiences and longitudinal trends in adolescent substance use, related risk factors and treatment effectiveness.

Although the GAIN dataset has been of great value for increasing understanding about adolescent substance use and treatment, it is not known how well the community-based programs funded by CSAT are representative of adolescent treatment providers nationally. Applying for and receiving federal discretionary grant funding requires significant resources that might not be typical among adolescent substance use treatment providers. For example, to receive federal funds to deliver an EBT under a discretionary grant program, an organization must submit an application that describes the community and need for the EBT, specifies the substance use treatment program's purpose, goals and objectives, including documentation of the fit between the EBT and the program's outcomes, and demonstrates sufficient resources to implement and evaluate the EBT if funded. Some providers may lack the capacity to complete this work. Those providers that have this capacity to procure federal grant funding may differ from other facilities in other ways or treat youth with different substance problems, outcomes, and treatment experiences. As a result, generalizing from the data collected by the CSAT grantees to adolescent treatment nationally may be limited; as the programs may represent higher quality, resourced facilities than those not federally supported.

We are unaware of any research to date that has examined program characteristics that are associated with the receipt of CSAT discretionary grant funds to deliver EBTs and as a result, the generalizability of the CSAT-funded programs to adolescent treatment programs nationally. Thus, it remains unclear whether these grant-funded programs are representative of the adolescent treatment providers nationally and as a result whether analyses involving the GAIN data can be generalized to treatment programs across the U.S. Given the government's emphasis on these initiatives to disseminate EBTs, it is important to consider their generalizability as well as to understand how well the data collected from these projects may be used to make conclusions about adolescent substance abuse treatment programs more broadly.

The primary goal of this study is to determine whether the CSAT-funded treatment programs were more likely to provide elements associated with effective treatment, sometimes referred to as 'quality indicators' than programs not funded by CSAT. The purpose of this was to assess the generalizability of the CSAT programs to a national sample of adolescent treatment programs. We identified several quality indicators from reviews of the literature (Brannigan, Schackman, Falco & Millman, 2004; Drag Strategies, 2003; Mark et al., 2006; National Institutes on Drug Abuse, 2009; Winters, Botzet, & Fahnhorst, 2011) to inform our hypotheses. Specifically, we hypothesized that CSAT-funded programs would be more likely than non-CSAT funded adolescent treatment programs: to provide comprehensive assessments and treatments for substance use and mental health; to report family counseling along with related support services such as aftercare, transitional, social services, case management, employment counseling and training; to be more likely to offer testing for HIV, STDs and TB and in turn, offer HIV or AIDs education and support. We also examined whether CSAT-funded programs were more likely to be licensed or accredited by a state agency or governing body to deliver substance use treatment. Understanding the generalizability of the CSAT-funded programs is critical for putting the data and findings from the GAIN database into perspective with the care typically received by adolescents in the U.S.

The secondary goal of this paper was to examine overall where adolescent treatment programs stand in terms of service provision quality from the years 2000-2008. The data gathered across both groups of programs (i.e., the CSAT and non-CSAT funded programs) help inform the field as to whether treatment programs serving adolescents are reporting service provision in line with quality treatment guidelines. An examination of these data help to provide information about the trends in treatment delivery and provide an update to the field since the 2003 data were reported by Mark et al. (2006).

2. Methods

2.1 Dataset

The current paper uses data from the National Survey of Substance Abuse Treatment Services (N-SSATS) to examine the characteristics of the CSAT-funded treatment programs as compared with a national sample of adolescent treatment providers. The N-SSATS is executed by the SAMHSA's Office of Applied Studies to provide information from all treatment programs in the United States, both public and private, that provide substance abuse treatment. The Office of Applied Studies reports that the N-SSATS dataset represents approximately 95% of substance use treatment facilities in the U.S. (SAMHSA, 2009b). The unit of analysis in N-SSATS is at the facility level, which is defined as "a physical location where treatment services are provided" (SAMHSA, 2009b); the survey is mailed to the "Facility Director" who is requested (or his/her designee) to complete the N-SSATS. Data from 2000-2007 were used in the analyses; the N-SSATS was not conducted in 2001.

2.2 Program Selection

The CSAT and non-CSAT-funded programs were identified in the N-SSATS records. First, we searched for the 138 adolescent treatment programs that CSAT funded between 2000-2007 using the program name and location (mailing address) in the year in which the grant was initially funded to identify the records to include in the CSAT-funded group. Using this information, 112 program records were found (81%). There are several possible reasons that data from 26 of the CSAT funded programs were not included in the N-SSATS dataset (e.g., facility representative did not complete the survey or the program did not receive the N-SSATS survey request (e.g., due to program being delivered in nontraditional setting). For the non-CSAT funded group, we selected programs using similar criteria as

Mark et al. (2006), that is programs serving 10 or more adolescents in the reporting year. Between 2,341 (in year 2000) - 2,492 (in year 2003) programs met criteria and were classified into the non-CSAT funded group.

2.3 Measures

We used responses from 14 N-SSATS items to assess the level of service provision, type of therapy and counseling, testing and other services, and licensing, certification or accreditation across the two groups of adolescent programs (see Table 1 for details). For most items, respondents/facility representatives were asked, "Which of the following services are provided by this facility at this location (mark all that apply)". Response options to each item were "yes" or "no" that were then coded "1" for yes and "0" for no for the analyses. For the licensing, certification and accreditation item, respondents/facility representatives were asked "Does this facility or program have licensing, certification or accreditation from any of the following organizations? (include only related to substance abuse services)" and responses were coded as "1" if any of the five options were endorsed and "0" if none of the five items were endorsed.

2.3 Analyses

The differences between the CSAT and the non-CSAT sites were first visually examined by plotting the average response, across all years, for the CSAT facilities and comparing it with the annual averages for the non-CSAT sites for each of the 14 quality measures (see Figure 1). Then, we fit logistic regression models to each of the 14 quality measures which controlled for an indicator of funding (i.e., CSAT versus non-CSAT) and included year fixed-effects (e.g., dummy indicators for each year) to estimate the adjusted odd ratios that describe the observed magnitude of the difference in likelihood that CSAT versus non-CSAT sites endorsed a particular item.

3. Results

Figure 1 displays the percentage of CSAT and non-CSAT programs that report provision of each of the 14 quality indicators. For each quality measure, the CSAT value combines data from all years, since the number of CSAT programs was very small each year, (i.e., no more than 18 programs in any given year), and is presented as a straight, dotted line. The annual percentages of non-CSAT programs reporting positively on each quality indicator are presented as circles in each panel.

The non-CSAT program values tended to be stable and high over time for assessment of comprehensive substance abuse (~96% annually), therapy involving aftercare counseling (~83% annually), and any licensing, certification or accreditation (~93% annually). Conversely, non-CSAT values for assessment of mental health problems (~50% annually), social services assistance (~52% annually), employment counseling or training (~32% annually) and other HIV/AIDS education (~55% annually) were stable but much lower.

It is also worth noting the indicators that did not appear stable over time. Rates of family counseling for the non-CSAT group were high with a slight decrease between 2000 and 2007 (92% to 88%, respectively) while rates for testing for HIV, other STD, and TB screening were all notably low (<34% annually) and appeared to decrease slightly over time between 2000 and 2007. Finally, rates for testing for drug/alcohol urine screening, transitional discharge planning, and case management were consistently high and appeared to slightly increase over time.

The adjusted odds ratios and p-values from our logistic regression models that compared the proportion of CSAT and non-CSAT programs reporting provision of each of the 14 quality

indicators, controlling for fixed effects of time are also presented in Figure 1. As shown in the figure, CSAT sites differ from other sites on several of the quality measures. First, a notably higher percentage of CSAT sites assess patients for mental health problems than the non-CSAT group's annual averages (60% versus ~50% annually, respectively; adjusted odds ratio (OR) = 1.49 and $p = 0.048$). Additionally, CSAT sites had a higher rate of other HIV/AIDS education than non-CSAT sites (67% versus ~55% annually, respectively; adjusted OR = 1.63 and $p = 0.017$) and testing rates for HIV and other STDs, and TB were notably higher among the CSAT-funded sites than the annual averages for the non-CSAT-funded sites in the latter half of the decade (adjusted OR's = 1.75, 1.88 and 1.79, respectively; p -values < 0.01). Discharge planning services for the CSAT-funded sites was significantly higher for the majority of years, yielding an adjusted OR of 2.28 ($p = 0.036$). In addition, the CSAT-funded programs appear to have higher rates of social service assistance (61% versus ~52% annually, respectively; adjusted OR = 1.45 and $p = 0.059$) and employment service provision (40% versus ~32% annually, respectively; adjusted OR = 1.44 and $p = 0.065$) as compared to the non-CSAT programs, however these differences are not statistically significant. In sum, the CSAT programs demonstrated statistically significant higher rates of service provision on six out of the 14 indicators of quality.

4. Discussion

4.1 Summary of findings

Regarding the primary purpose of the paper, the study findings show evidence that programs funded to provide evidence-based treatments to address adolescent substance use were more likely than those who did not receive such funding to offer services that many believe are indicators of higher quality care. However, it appears that similar proportions in both groups report offering comprehensive substance use screening and assessment, family and aftercare counseling, drug and alcohol screening, and case management support. Contrary to our hypotheses, CSAT and non-CSAT programs also reported similar levels of licensing, certification or accreditation. The differences between facilities are driven largely by services of related non-substance use-specific needs: CSAT-funded programs reported higher rates of provision of comprehensive mental health assessments, testing for related problems (HIV, STD and TB), and HIV or AIDS education and support. The magnitude of these differences ranged from CSAT sites being 1.5 to 2.3 times more likely than non-CSAT sites to have specific types of services.

4.2 Clinical and policy implications and future research

These findings are important given that a great proportion of the research on adolescent substance use and treatment is the result of data collected solely from CSAT-funded adolescent funded programs in the U.S. as evidenced by the 145+ publications to date using this dataset. This study suggests that the findings from those studies may not generalize well to the treatment services offered to all adolescents in the U.S. It should be known that CSAT-funded programs and therefore adolescents treated in those programs may be more likely to receive screening or testing for mental health, HIV, STD and TB and perhaps receive additional HIV education and discharge planning. In so far as these particular facilities characteristics are associated with substance use treatment clients baseline and follow-up outcomes, findings from the 145+ papers using the CSAT grantee data might be biased. Future work should carefully examine whether these characteristics are associated with short- and long-term substance use treatment outcomes. There is at least some evidence that the provision of mental health services is linked with improved substance use outcomes (Ramchand, Griffin, Hunter, Booth, & McCaffrey, under review). However, this evidence derives from the very same GAIN dataset under investigation in the current study.

Related to our secondary goal to better understand the trend in service provision across these treatment quality indicators, our findings indicate significant room for improvement in adolescent substance use treatment provision. These findings have been noted in earlier studies of adolescent treatment quality (e.g., Brannigan et al., 2004; Mark et al., 2006; Gans et al., 2010). For example, fewer than half of the programs report offering HIV testing and TB screening and less than half offer STD testing. Both CSAT and non-CSAT-funded adolescent treatment programs showed high rates of comprehensive substance use assessment services but provision of mental health assessment was less likely to be provided, only about half of the non-CSAT facilities reported provision and this didn't change much over the eight year (i.e., 2000-2007) reporting period. Moreover, Gans et al., (2010) reported that the quality of assessment varies greatly among adolescent programs, with many programs using tools that lack reliability and validity. Although there appears an increase in transitional discharge planning, consistent with NIDA guidelines, other related non-substance use specific service provision such as employment and training still appear lacking in most treatment programs. In sum, these results are not consistent with national treatment guidelines that advocate for comprehensive services to address adolescent's substance problem as well as any medical, mental health, familial or education problems and the trends over time indicate few changes since 2000. The data are consistent with previous reports of treatment quality. For example, Brannigan et al. (2004) reported that less than half of the key treatment elements were reported in 2001-2002 by 107 adolescent treatment providers. Likewise, Mark et al.'s (2006) study that utilized the N-SSATS data from 2003 reflect similar results noted herein.

4.3 Limitations

We relied on responses from the N-SSATS in our study. These responses are based on self-report and were asked at the facility level, not necessarily specifically about the adolescent treatment program. A more intensive approach to assess quality, like onsite observation by a third party, might yield more accurate assessments, as utilized by Gans et al., (2010). In other words, this work represents broad comparisons of facilities on less in depth measures (similar to Mark et al., 2006); comparisons on more comprehensive measures would be useful to augment our findings. We were also limited to the examination of indicators that were assessed in the N-SSATS survey, elements of successful adolescent substance use care also include assessments of qualified staffing and developmentally and culturally appropriate services, as first established in 2002 (see Brannigan et al., 2004; Winters et al., 2011), but not included in the N-SSATS survey. Additionally, while we matched 81% of the CSAT sites to their N-SSATS records, it may be possible that some form of nonresponse bias could alter our findings if the 19% of sites that were excluded different in a meaningful way on the N-SSATS survey items. Finally, we were limited by the small sample of CSAT programs in N-SSATS dataset to examine whether there were changes over time in service provision as a result of CSAT-funding.

4.4. Conclusions

The CSAT sponsored GAIN analytic dataset represents one of the largest longitudinal datasets of adolescents in substance abuse treatment currently available. Before generalizations about adolescent treatment effectiveness can be made from this data, it is important to understand how representative the sample is to adolescent treatment nationally. This study suggests that the CSAT-funded programs are likely to represent programs that are more likely to offer mental health and HIV and other STD programs than adolescent treatment programs nationally. Although these are agreed upon indicators of quality, few studies have actually linked provision of these services to treatment outcomes. However, to the extent that policymakers and practitioners agree that such services should be offered to those young people attending adolescent treatment programs, it is striking to note that the

proportion of facilities offering these services has not changed much over the past decade. These findings suggest a critical need of improvement to reflect the quality standards put forth by experts in the field.

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Figure 1.

Proportion of CSAT-funded programs (presented as dotted line) and non-CSAT programs (presented as circles for each year 2000, 2001-2007) providing the quality indicator. Odds ratios across the 14 quality indicators denote differences between the CSAT and non-CSAT funded programs. A greater odds ratio indicates that a higher proportion of the CSAT-funded programs reported provision of indicator over the non-CSAT programs.

Table 1**N-SSATS Quality Indicator Items**

<u>Assessment and Pre-Treatment Services</u>
1. Comprehensive substance abuse assessment or diagnosis
2. Comprehensive mental health assessment or diagnosis
<u>Substance Abuse Therapy and Counseling</u>
3. Family counseling
4. Aftercare counseling
<u>Testing</u>
5. Drug or alcohol urine screening
6. HIV testing
7. STD testing
8. TB screening
<u>Transitional and Other Services</u>
9. Assistance with obtaining social services
10. Discharge planning
11. Employment counseling or training
12. Case management
13. HIV or AIDs education, counseling or support
<u>Licensing, Certification or Accreditation</u>
14. "Does this facility or program have licensing, certification or accreditation from any of the following organizations? (include only related to substance abuse services)"
a. State substance abuse agency
b. JCAHO (Joint Commission on Accreditation of Healthcare Organizations)
c. CARF (Commission on Accreditation of Rehabilitation Facilities)
d. NCQA (National Committee for Quality Assurance)
e. Another state or local agency or organization