

NEDS ANALYTIC SUMMARY

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Highlights

Treatment components not exclusively geared toward addressing substance abuse showed promise in reducing substance use among adolescents.

Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults



NEDS Analytic Summary Series

The Center for Substance Abuse Treatment (CSAT) works to improve the lives of those affected by alcohol and other substance abuse, and, through treatment, to reduce the ill effects of substance abuse on individuals, families, communities, and society at large. Thus, one important CSAT mission is to expand the knowledge about effective substance abuse treatment and recovery services. In support of these efforts, CSAT established the National Evaluation Data Services (NEDS) contract to provide a wide array of secondary data analysis products to the substance abuse treatment field.

Specifically, the NEDS project is focused upon providing CSAT with an analytic capability to use existing data to address policy- and practice-relevant topics as well as future research and evaluation activities. NEDS has developed several product lines designed to provide analytic findings to substance abuse treatment policy makers, service providers, services researchers and evaluators in a format that is most useful to the end user.

The Analytic Summary is one of the NEDS product lines. The purpose of the Analytic Summary is to provide a brief summary of each technical report produced by NEDS written in non-technical language. Readers who find the Analytic Summary results of interest can contact the original NEDS technical report authors for more detailed information. Through this process, the NEDS Analytic Summaries provide information to the substance abuse treatment field and promote linkages among different areas in the field.

This Analytic Summary

This NEDS Analytic Summary is based on the NEDS Technical Report titled *Treatment Effectiveness for Adolescents and Young Adults: A Re-analysis of the Job Corps Drug Treatment Enrichment Project (DTEP) Data* (Orwin, R. and Ellis, B., March 2001). For a more thorough discussion of the analysis and findings, please obtain a copy of the complete Technical Report. Information for doing so is provided on the last page of this summary.

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Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults

Analytic Importance

One important function of CSAT is to expand the knowledge about, and the availability of, effective treatment and recovery services for those affected by alcohol and other substance abuse. In sponsoring these analyses of the data they have collected, CSAT is attempting to gain useful insight into the fundamental question: *What constitutes effective (and cost-effective) treatment, and for what populations?*

Substance use and abuse among adolescents has been a persistent problem during the past three decades. Gaining a better understanding of adolescent substance abuse patterns and adolescent experiences with substance abuse interventions is of great interest to CSAT and the substance abuse treatment field.

The unique characteristics of the Department of Labor's Job Corps Program provided a controlled environment in which adolescent drug intervention services could be examined. In the Job Corps high-risk young people attend a residential employment and training program for an average of seven months. This program provided an opportunity for CSAT to sponsor the Drug Treatment Enrichment Project (DTEP), which included enhanced intervention services in addition to the standard services of drug testing and counseling in the Job Corps Alcohol and Other Drugs of Abuse (AODA) programs.

To enhance the knowledge and understanding of adolescent substance abuse together with adolescent treatment outcomes, it is important to determine the effectiveness of specific treatment components in reducing substance abuse

among adolescents and young adults.

Analytic Purpose

This analytic summary presents the results of a re-analysis of data collected for the CSAT evaluation of the Job Corps Drug Treatment Enrichment Project. The CSAT evaluation compared the experiences of adolescents who received enhanced intervention services as a part of DTEP with the experiences of adolescents who received Job Corps' standard services of drug testing and counseling.

The initial evaluation showed that the majority of the Job Corps students had experimented with some form of substance use. Almost three-fourths had used alcohol, more than one-half had used at least one drug, and the predominant drug used was marijuana. Many of the Job Corps students included in the analysis were from ethnic/racial minorities, with low socio-economic backgrounds, low academic achievement, and experience with juvenile crime. The findings revealed a significantly greater reduction in marijuana use and crack cocaine use among DTEP participants compared to Job Corps participants in the standard AODA program.

The present analysis focused on Job Corps participants who received enhanced services under DTEP only and examined the relationship among specific types of counseling and other services and substance abuse outcomes. This analysis addressed the following key questions:

- What kinds of services were most closely associated with drug abstinence and reduced substance use at follow-up?

This analysis addressed the following questions:

- **What kinds of services were most closely associated with reduced substance use?**
- **Did individual counseling sessions lead to more positive outcomes than group sessions?**
- **How did the quantity and timing of specific services affect substance use at follow-up?**



The Job Corps enhanced drug treatment program included 9 types of sessions:

- **Group counseling on substance abuse**
- **Individual counseling on substance abuse**
- **Group counseling on issues other than substance abuse**
- **Individual counseling on issues other than substance abuse**
- **Community resources (AA/NA)**
- **Educational sessions**
- **Life skill sessions**
- **Recreation and other activities**
- **Case management.**



Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

- Did individual counseling sessions lead to more positive outcomes than group sessions?
- How did the quantity and timing of specific services affect abstinence and reduced substance use at follow-up?
- Group counseling on issues other than substance abuse
- Individual counseling on issues other than substance abuse
- Community resources (AA/NA)

While the original evaluation compared Job Corps participants who received standard and enhanced services, this analysis focused on those enhanced services to determine which ones were more likely to result in reduced substance use.

Analytic Approach

This analysis examined the types of services and quantity and timing of the services that were associated with drug abstinence and reduced substance use for DTEP participants approximately one year after leaving Job Corps.

Of the 466 students who participated in DTEP at one of four selected Job Corps centers, services data were available for a total of 313 students. All had reported substance use (primarily marijuana) within the 12 months preceding enrollment in Job Corps. They also completed a follow-up interview at least six months after leaving Job Corps. For each DTEP service, data were obtained on:

- Session date and duration
- Type of session and topic
- Specialty of the staff member conducting the session.

Thirty-six different session topics were collapsed into nine discrete categories.

- Group counseling on substance abuse
- Individual counseling on substance abuse

- Educational sessions
- Life skill sessions
- Recreation and other activities
- Case management.

As part of a planned regimen of "enhanced" substance abuse treatment, sessions devoted to other topics were considered complementary treatment sessions and may have included substance abuse discussions.

The analysis included two substance abuse outcome measures at the time of the follow-up interview:

- Abstinence from substance use
- Reduced substance use.

Abstinence was defined as no illicit substance use reported at follow-up. Reduced substance use was defined as abstinence or reduction in marijuana use and no other substance use (including underage drinking), or fewer drugs (and less underage drinking) and no increase in marijuana use at follow-up.

Participation in the program was divided into two time periods: (1) sessions that occurred in the first three months and (2) sessions that occurred after three months. Services in the first three months were scheduled on a weekly basis to be more regular and intensive than later in the program. By dividing the student's experience into two time periods, the analysis could examine the

Students who stayed in the DTEP at least 6 months had better substance use outcomes than students who left earlier in the program.

The DTEP program had a balance of substance abuse and complementary treatment services, averaging:

- **7.7 days in sessions on substance abuse**
- **6.6 days in sessions addressing issues other than substance abuse.**



Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

effects of different types of sessions at different points in time.

For the overall sample and a subset of students who stayed in Job Corps for at least six months, statistical models were used to examine the effects of different types of services, intensity of services, and timing of services.

- Type of service: substance abuse versus complementary sessions
- Intensity of service: number of different days each of 9 session types were attended
- Timing of service: provided in months 1-3 versus months 4-12.

Logistic regression (LR) was the principal analytic procedure used to predict the substance use and frequency of use at follow-up. All LR estimates controlled for the date in which students enrolled in Job Corps, gender, ethnicity, work experience, prior arrest history, highest grade completed, whether they lived with their biological parents, and the number of drugs they reported using in the previous 12 months.

Findings

Substance Use Outcomes Improved

A total of 117 students (37%) were abstinent from all drugs at the time of the follow-up interview, up to one year after leaving Job Corps. An additional 49 (16%) reduced their substance use. In all, 53 percent of the students had improved drug use outcomes. These results compare favorably with results from therapeutic community evaluations.

Students who stayed in DTEP at least 6 months had slightly better sub-

stance use outcomes at follow-up: 44 percent were abstinent, another 14 percent had reduced substance use, totaling 58 percent with reduced substance use outcomes.

Distribution of Session Types and Their Timing Varied

There were a total of 5,045 sessions attended by the 313 students, about 16 sessions per student on average. The timing of session types varied:

- Group sessions devoted to substance abuse topics tended to occur in the first 3 months.
- Individual sessions tended to be spread throughout the students' participation.
- Educational or enhancing "life skills" sessions tended to be in the latter months.

As shown in Exhibit 1, the majority of participants in Job Corps attended individual counseling devoted exclusively to substance abuse issues (84%). Almost three-fourths (74%) of the participants received group counseling that was devoted exclusively to substance abuse issues. Less than a third of the students participated in the individual (28%) and group (29%) counseling sessions that addressed issues other than substance abuse, such as confidentiality/trust, anger/stress management, and self esteem.

The average time spent in substance abuse and complementary treatment sessions was evenly balanced. The distribution of days spent in each type of session is presented in Exhibit 2. The number of different days on which services were provided averaged:

Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

Each additional day of a session dedicated to complementary treatment services increased odds of being abstinent at follow-up by up to 3 percent.



Exhibit 1 Percent of Sessions and Students by Session Category			
Session Category	Session Topic and Staff Specialist	Sessions (N=5,045)*	Students (N=313)
<i>Group counseling: substance abuse issues</i>	Group counseling sessions conducted by a Substance Abuse Specialist or sessions with substance abuse topics	17%	74%
<i>Individual counseling: substance abuse issues</i>	Individual counseling sessions conducted by a Substance Abuse Specialist or sessions with substance abuse topics	32%	84%
<i>Other group counseling sessions</i>	Group counseling (confidentiality/trust; self-help; anger/stress management, self-esteem, loss and grief, HIV awareness, etc.) by staff other than Substance Abuse Specialist	4%	29%
<i>Other individual counseling sessions</i>	Individual counseling (confidentiality/trust; self-help; anger/stress management, self-esteem, loss and grief, HIV awareness, etc.) by staff other than Substance Abuse Specialist	7%	28%
<i>Community resources – NA/AA</i>	Community resource sessions	1%	7%
<i>Life skills sessions</i>	Life skills	6%	26%
<i>Education sessions</i>	Education sessions or group or individual sessions conducted by an Education Specialist	17%	47%
<i>Recreation and other activities</i>	Recreational activities or group or individual sessions conducted by an Activities Specialist	5%	22%
<i>Case management sessions</i>	Case management	6%	28%

*Missing classification for 223 sessions (4%)

- 7.7 days for substance abuse topics or other sessions conducted by a substance abuse specialist
- 6.6 days for sessions addressing issues other than substance abuse.

A quarter of the 313 students dropped out of Job Corps within 3 months. A total of 127 students (41%) stayed at least 6 months. Except for counseling in substance abuse issues, long term students received more days of counseling sessions in the latter part of their stay in Job Corps.

Services were concentrated in first 3 months. Nearly half (46%) of all services occurred in the first 3 months of students' stay in the Job Corps program. A higher number of session days were spent in the first 3 months for group counseling for sub-

stance abuse and other sessions led by a substance abuse specialist.

Factors Associated with Reduced Substance Use Outcomes at Follow-up

Three statistical models were used to assess the effects of type of session, intensity of services, and timing of services.

Complementary treatment services were associated with positive substance use outcomes. The number of days in sessions devoted exclusively to substance abuse was compared to the days in sessions for other issues in order to determine which type of session was more closely associated with reduced substance use outcomes (Exhibit 3).

Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

Individual counseling sessions devoted to complementary treatment that occurred later in the program increased the likelihood of reduced substance use at follow-up.

Exhibit 2 Days in Counseling Sessions by Type and Timing of Session: All Students (N=313)						
Session Type	Total		First 3 Months		Months 4-12	
	Mean	Range	Mean	Range	Mean	Range
Group counseling exclusively dedicated to substance abuse issues	2.7	0-13	1.9	0-8	0.8	0-11
Individual counseling exclusively dedicated to substance abuse issues	4.9	0-40	2.6	0-15	2.3	0-30
Group counseling: complementary treatment	0.6	0-19	0.3	0-6	0.3	0-15
Individual counseling: complementary treatment	1.0	0-27	0.4	0-13	0.6	0-25
Community resources (AA/NA)	0.1	0-6	0.04	0-6	0.1	0-5
Educational sessions	2.5	0-79	0.9	0-19	1.6	0-76
Life skills sessions	0.9	0-32	0.2	0-8	0.7	0-32
Recreation and other activities	0.8	0-55	0.3	0-8	0.5	0-49
Case management	0.8	0-14	0.2	0-11	0.6	0-14

- Students who remained in the program at least 6 months and participated in complementary sessions had 2-3 percent higher odds of remaining abstinent at follow-up for each extra session day.
- Substance use outcomes did not differ significantly with each extra session day exclusively devoted to substance abuse topics.

None of the 9 session types, by themselves, had a significant impact on abstinence or reduced use. In examining the effect of the number of session days spent in each of the 9 session types, the analysis showed that no specific type had a significant impact on outcomes, whether for the full sample or for the subset of students who stayed at least 6 months in the program.

Timing of certain services had an impact on substance use outcomes. Timing of services (first 3 months or months 4-12) for each of the 9 session types had some impact on reported

substance use at follow-up (see Exhibit 3). For the total group of 313 students, none of the findings were statistically significant in affecting abstinence. However, complementary individual counseling in months 4-12 increased the odds of *reduced* substance use by 29 percent.

For students who stayed at least 6 months, the odds of being abstinent at follow-up were higher when they received:

- Individual complementary counseling in months 4-12 (46% higher odds of being abstinent)
- Recreational activities in the first 3 months.

In contrast, the odds of being abstinent at follow-up were lower for long term students who received group complementary counseling later in the program.



Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

Implications for research include:

- Investigate clinically standardized group counseling on issues other than substance abuse
- Extend analyses to address alcohol abuse among adolescents
- Gather data on severity of addiction among adolescents.



Exhibit 3			
Adjusted Odds Ratios of Being Abstinent of All Drugs at Follow-up			
Session Type		All Students (N=313) OR	Students: 6 + Months (N=127) OR
Days in Substance Abuse Treatment vs. Complementary Treatment Sessions			
Exclusively devoted to substance abuse issues		1.019	0.996
Complementary treatment and topics		1.020+	1.028*
Timing of Services			
Group counseling—substance abuse issues	First 3 Months	0.990	0.833
	Month 4-12	0.998	1.036
Individual counseling—substance abuse issues	First 3 Months	1.059	1.161
	Month 4-12	1.009	0.978
Group counseling: complementary treatment	First 3 Months	0.958	0.839
	Month 4-12	0.770	0.408*
Individual counseling: complementary treatment	First 3 Months	0.943	1.150
	Month 4-12	1.120	1.458*
Community resources (AA/NA)	First 3 Months	1.734	0.529
	Month 4-12	0.878	-
Educational sessions	First 3 Months	0.970	0.822
	Month 4-12	1.020	1.030
Life skills sessions	First 3 Months	1.341	1.403
	Month 4-12	1.077	1.028
Recreation & other activities	First 3 Months	0.862	4.459+
	Month 4-12	1.140+	1.129
Case management	First 3 Months	0.832	-
	Month 4-12	1.055	1.073

Odds Ratios are adjusted for year/quarter of enrollment, gender, ethnicity, education, work and arrest history, whether lived with biological parents and number of drugs used at enrollment

+ Significant at $p < .10$

* Significant at $p < .05$

"-" indicates coefficient could not be estimated

Implications

This analysis provides evidence for the benefits of a well planned, comprehensive treatment program for adolescents and young adults. Students in DTEP who received individual counseling on issues complementary to substance use and other services that did not address substance abuse issues had the best substance use outcomes in the year following delivery of these services. The findings have implications for adolescent substance abuse treatment research, policy, and practice.

Implications for Research

There is little empirical information available on the outcomes of substance abuse treatment for adolescents or on the treatment components that are most effective for this population. The present analysis has several implications for future research/analysis:

- Build on current findings to identify which treatment components are most effective for adolescents and young adults. Larger sample sizes may be needed for increased statistical power to determine the

Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

effects of specific components on substance use outcomes.

- **Investigate adolescent treatment services that include clinically standardized group counseling sessions.** For group counseling on issues other than substance abuse, such analyses are needed to determine if this service delivery method has stronger or weaker outcomes compared to individual counseling and/or therapy.
- **Examine group versus individual counseling to determine what approach is best for whom at what cost.** Group sessions are clearly less expensive and for certain types of clients and counseling issues typically yield better outcomes. Individual counseling on issues other than substance abuse of adolescent and young adult clients appeared to contribute to abstinence in this analysis. Additional research can help to identify the most cost-effective and beneficial balance of services to clients of all ages.
- **Extend analyses to address alcohol abuse among adolescents.** This analysis did not focus on the use of alcohol-only because the age range of the sample included individuals over 21. Further analyses of the Job Corps data could build on the knowledge gathered here.
- **Gather data on the severity of addiction among adolescents at intake.** More data are needed to make inferences about the relative benefits of particular services based on drug addiction severity of the individual.

The Job Corps data set provides a rich

resource of data for further analyses of substance abuse treatment of economically disadvantaged adolescents and young adults. NEDS may seek other data sets that have sufficient information about adolescent demographic and substance using characteristics combined with information about treatment services and outcomes.

Implications for Policy

This analysis focused on the effectiveness of a broad range of treatment services in reducing substance abuse among adolescents. The policy implications of the findings include:

- **Support the comprehensive treatment model for adolescents and young adults.** The findings confirm studies which suggest that enhanced programs which provide life skills training, recreational sessions, vocational and educational skills training, and individualized counseling to treat specific problems associated with substance abuse problems have a positive effect on subsequent substance use of adolescents.
- **Develop clinical standards for group counseling on issues other than substance abuse.** The group sessions offered by the Job Corps DTEP program were not clinically licensed or standardized, factors which may contribute to underestimating the potential value of this type of complementary treatment service.
- **Promote individual counseling of adolescents.** Although group counseling has been adopted in many settings in recent years because some view it as roughly comparable in effectiveness to individual counsel-

Implications for policy include:

- **Support the comprehensive treatment model for adolescents**
- **Develop clinical standards for group counseling on issues other than substance abuse**
- **Promote one-on-one counseling in the treatment of at-risk youth.**



Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

ing, individual sessions in the present analysis appeared more conducive to abstinence and reduced use at follow-up than group sessions.

As part of an integrated substance abuse intervention program, complementary services address related needs and issues of adolescence and help to improve the students' overall functioning.

Implications for Practice

The enhanced services considered in this analysis included life skills, recreational sessions, vocational and educational skills training, and individualized counseling to treat specific problems associated with substance abuse. The findings have the following implications for substance abuse treatment practitioners.

- **Offer a comprehensive array of services that address a multitude of factors that contribute to substance abuse.** This is especially important in treating adolescents, whose rapid physical and emotional changes, family problems, school pressures, peer pressure, and undiagnosed mental health problems (including learning disabilities) can be overwhelming.
- **Provide adolescents with more individual counseling sessions.** Individual counseling sessions appeared more conducive to abstinence and improvement in substance use behavior at follow-up than group sessions.
- **Examine the use of group sessions.** The fact that the DTEP group sessions were not designed as clinical interventions and were not led by

clinically certified group therapists suggests that practitioners may need to take a close look at their use of group sessions in terms of the purpose, objectives, staffing, and scheduling.

- **Provide life skills training and recreational sessions.** These complementary services may be useful as part of a comprehensive package that treats "the whole child."

Options such as life skills training and recreational outlets present alternatives to drug abuse that relieve pressure as well as provide healthy opportunities for personal growth among high-risk adolescents and young adults.

Future Steps

The results of the present analysis of the Job Corps DTEP program indicated that the treatment components not exclusively geared towards addressing substance abuse issues were effective in addressing substance abuse issues. Much of the current substance abuse literature empirically recognizes the therapeutic importance of these other services in conjunction with traditional substance abuse counseling within adult treatment programs. It also is consistent with CSAT's comprehensive treatment model.

Enhanced programs in which practitioners provide life skills, recreational sessions, vocational and educational training, and individualized counseling can have a positive effect on subsequent substance use of adolescents. Like many studies of adolescent drug abuse, this analysis suggests a need to provide a comprehensive array of services.

Implications for practice include:

- **Offer a comprehensive array of services that address a multitude of factors that contribute to substance abuse**
- **Provide adolescents with more one-on-one counseling**
- **Provide life skills training and recreational sessions.**



Effectiveness of Treatment Components in Reducing Substance Use by Adolescents and Young Adults (cont.)

Future research/analysis efforts should replicate and expand on the present findings. Studies of the treatment components which are effective in achieving abstinence and reductions in alcohol use for such youth should be undertaken. In particular, comparisons of individual and group counseling approaches to substance abuse treatment for adolescents should be compared for Job Corps and other at-risk youth.

Reference

Orwin, R., and Ellis, B. (2001). *The effectiveness of treatment components in reducing drug use in adolescents and young adults: A Re-analysis of the Job Corps Drug Treatment Enrichment Project*. Prepared by Battelle Centers for Public Health Research and Evaluation under the NEDS contract No. 270-97-7016. Fairfax, VA: Caliber Associates.

For more information, please contact the National Evaluation Data Services analysis team at (703) 385-3200, or visit the NEDS Web site.

**Find more on the web
<http://neds.calib.com>**

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Job Corps Drug Treatment Enrichment Project (DTEP)

Job Corps is a program of the U.S. Department of Labor intended to assist young individuals who need and can benefit from an unusually intensive program operated in a residential group setting to become more responsible, employable and productive citizens. Job Corps is designed to serve economically disadvantaged youth aged 16 to 24 years through a comprehensive, competency-based service model which includes assessment, basic education, and vocational skills training and work experience. The Drug Treatment Enrichment Project (DTEP) was a CSAT-DOL Office of Job Corps jointly sponsored demonstration introduc-

ing enhanced substance abuse intervention services within a sample of four Job Corps Centers. The evaluation of DTEP included Job Corps student and program data to compare DTEP with the standard Job Corps program through a collaborative study by Caliber Associates, Battelle Human Affairs Research Center and Research Triangle Institutes. Data were collected for 6,510 students enrolling between February 1993 and July 1994. Follow-up interviews were conducted approximately one year after Job Corps termination for 1,156 students. The DTEP sample included 466 students.

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