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The Added Risk of Opioid Problem Use among Treatment-Seeking Youth with Marijuana and/or Alcohol Problem Use

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Abstract

Objectives—To determine the added risk of opioid problem use (OPU) in youth with marijuana/alcohol problem use (MAPU).

Method—475 youth (ages 14–21 years) with OPU+MAPU were compared to a weighted sample of 475 youth with MAPU only (i.e., no OPU) before and after propensity score matching on gender, age, race, level of care, and weekly use of marijuana/alcohol. Youth were recruited from 88 drug treatment sites participating in eight Center for Substance Abuse Treatment funded grants. At treatment intake, participants were administered the Global Appraisal of Individual Need to elicit information on demographic, social, substance, mental health, HIV, physical and legal characteristics. Odds ratios with confidence intervals were calculated.

Results—The added risk of OPU among MAPU youth was associated with greater comorbidity: higher rates of psychiatric symptoms and trauma/victimization; greater needle-use and sex-related HIV-risk behaviors and greater physical distress. The OPU+MAPU group was less likely to be African American or other race and more likely to be age 15–17 years, Caucasian; report weekly drug use at home and among peers; engage in illegal behaviors and be confined longer; have greater substance abuse severity and poly drug use; and use mental health and substance abuse treatment services.

Conclusions—These findings expand on the existing literature and highlight the substantial incremental risk of OPU on multiple comorbid areas, among treatment-seeking youth. Further evaluation is needed to assess their outcomes following standard drug treatment and to evaluate specialized interventions for this subgroup of severely impaired youth.

Introduction

Over the past decade, past year prevalence of using most substances including marijuana and alcohol has either decreased or reached a plateau among U.S. teenagers in schools [1] and in the community [2]. In contrast, use of non-heroin opioids, the second most commonly used illicit drug among youth has almost doubled during this period (5 to 9%) [1]. It has been shown that teen opioid users develop abuse and/or dependence within months of

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weekly or greater (i.e. regular) use [3] and at a faster rate when compared to adult-onset opioid use [4]. Correspondingly, there has been a ten-fold increase in teenage admissions to publicly funded substance abuse treatment programs for non-heroin opioid use problems (0.2 to 2.2%) [2]. Therefore, problem use of opioids among youth has important implications for public health, with a heightened risk for overdose, mortality, HIV/Hepatitis-C infections from injection-use, and associations with a criminal lifestyle [5–7].

In contrast to a more extensive body of literature characterizing the typical youth with cannabis and/or alcohol use problems, often drawn from large samples, studies characterizing treatment-seeking youth with opioid use problems have examined smaller samples and are only just emerging [3,8–12]. These studies have consistently described users/abusers as being predominantly Caucasian, male and older teens who present with poor academic involvement, legal problems and polysubstance use; and who are at high risk for HIV/Hepatitis – C infection secondary to injection drug use (IDU) and unprotected sexual behaviors. However, all (except for Woody et al. [8]), were single site studies and most recruited from residential settings [3,9–11]. Two of these studies compared opioid using/dependent youth to non-opioid using youth entering treatment. Clemmey et al. [10] compared 44 heroin-users [with or without other substance use disorders (SUD)] to non-heroin substance abusing youth (n=109) using the Global Appraisal of Individual Needs (GAIN). They found that the heroin users consistently reported more baseline problems across multiple domains, including symptoms of psychiatric disorders, and that they had worse outcomes post-residential treatment. In a separate study, Subramaniam et al. [3], compared 94 adolescents with an opioid use disorder (OUD, 53–57 % of whom also had a current cannabis and/or alcohol use disorder) to 72 teens with non-opioid cannabis/alcohol use disorders. They showed that while adolescents with an OUD were more likely to have academic, multiple substance use, depressive and needle-use HIV-risk problems, they were no different from the cannabis/alcohol use disorder group with regard to high rates of psychiatric, legal and sexual risk behaviors. A limit of this study was that co-occurring psychiatric problems were often placement criteria for the residential treatment program and may explain why this study did not observe any difference on them. While these prior studies have made valuable contributions to our knowledge of youth with OUD, and shed some light on how they differ from non-opioid abusing youth, generalizability was limited by the use of single site data and/or entire or predominantly residential samples and in most cases, small samples. What is needed is a description of a larger and more diverse treatment sample of youth in order to evaluate the added risks of problem use of opioids in youth.

This paper examines the incremental risk of opioid problem use (OPU) in a treatment-seeking sample of youth (e.g., adolescents and young adults) with OPU *plus*, marijuana and/or alcohol problem use (MAPU) when compared to those with those with MAPU only (the modal profile in treatment [2,13]). We anticipate that having OPU in addition to MAPU (i.e. having OPU+MAPU) will be associated with being Caucasian, having poor school performance, engaging in polysubstance use, reporting higher rates of illegal behaviors and HIV/Hepatitis-C infection-risk behaviors; thereby confirming features that have been consistently reported in single site studies. In addition, we expect to report new findings: 1) higher rates of co-occurring psychiatric problems likely due to affective distress states associated with opioid withdrawal [14,15] and demoralization from a lifestyle of high rates of crime and opioid dependence [3]; 2) determine if rates of victimization/trauma and physical distress are higher among opioid problem users compared to those without, since opioids are analgesics and this choice may represent self-medication of emotional and/or physically painful conditions; and 3) describe treatment utilization rates in this population, which may provide information on mechanisms for early identification and improving abstinence outcomes. Results of this study will extend the literature, by including a large sample of participants entering either outpatient or residential substance use disorder (SUD)

treatment across the US. These results will better inform targeted treatment planning and the appropriate allocation of program resources for OPU youth.

Methods

Data Source

Intake assessments from participants ages 11–21 years entering treatment for SUDs were pooled together from 88 sites participating in 8 Center for Substance Abuse Treatment (CSAT) funded demonstration projects [Strengthening Communities-Youth (SCY), Adolescent Residential Treatment (ART), Effective Adolescent Treatment (EAT), Targeted Capacity Expansion (TCE, include TCE/HIV), Assertive Adolescent Family Treatment, (AAFT), Young Offender Reentry Program (YORP), Drug Court (DC), Adolescent Treatment Models (ATM)] that recruited youth participants from January 1999-August 2007 [13,16,17]. The data were pooled and de-identified for secondary analyses here under the terms of data sharing agreements and the supervision of Chestnut Health System's Institutional Review Board. A common feature in all studies is that all participants were administered the Global Appraisal of Individual Needs – Intake assessment (GAIN-I) [18].

Inclusion and Exclusion Criteria

To be included in this study, participants had to (a) be between ages 11–21 years; (b) meet past year Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) symptom criteria for cannabis or alcohol use disorders (dependence or abuse) or self report weekly or more frequent use of cannabis or alcohol in either the 90 days prior to treatment enrollment or (if coming from a controlled environment like detention or residential treatment) in the last 90 days they were in the community prior to the confinement; and (c) have entered adolescent or young adult treatment settings. The use of both categorical criteria for DSM abuse/dependence and a dimensional severity criteria of weekly use or greater, as used in previous studies [19] ensures that the groups represent the typical youth entering community-based treatments for problems associated with substance use [2]. Of the 12,951 youth in the original data set, 11,201 (71%) met these inclusion criteria. To focus the contrast on those with and without problem opioid use (dependence, abuse or weekly use), we excluded another 3,771 (13% of 12,951) who had used opioids infrequently at one or more times in the past year, but did not meet the preceding threshold of problem use since they denied problems associated with opioid use. This left a final data set of 7,430 participants who could be classified into one of the two study groups, described below.

Definition of Study Groups

Opioid Problem Use (OPU+MAPU) group—Participants in this group either met DSM-IV criteria for opioid dependence (24%) or abuse (38%) and/or self-reported weekly or more frequent use of opioids in the past 90 days controlled for confinement (80%) *plus* marijuana and/or alcohol problem use (i.e. dependence, abuse or weekly use, MAPU). Per the inclusion and exclusion criteria described above, by definition, this group had a marijuana and/or alcohol problem as well. A total of 513 (7%) participants were identified with OPU+MAPU.

Marijuana and/or Alcohol Problem Use (MAPU) Only Group—The remaining 6,917 (93%) participants had a marijuana and/or alcohol problem [met DSM-IV criteria for dependence (29%) or abuse (47%) and/or weekly use of marijuana and/or alcohol (91%)], but did not meet the above criteria for opioid problem use. Per above, this group was also limited to those with “no” past year opioid use.

Matching via Propensity Score Weighting

To help control for spurious findings and create a more rigorous comparison, two samples were analyzed both without and with matching based on propensity score weighting [20,21]. The propensity score was calculated using logistic regression to predict being in the OPU +MAPU group or not as a function of core demographics (gender, race, age); substance use severity (dichotomous measures or weekly cannabis and alcohol use vs. <weekly use); level of care (outpatient vs. residential); and whether the site had a high concentration of opioid users (15 or more in the site vs. <15 in the site). The weight for the MAPU group was then calculated as the propensity score times the sample size of the OPU group with valid responses on all propensity variables (93%) over the sum of the MAPU weights. Adding the latter (a constant) does not affect the match but creates equal sample sizes per group and creates a slightly more conservative test. OPU+MAPU youth were assigned a weight of 1 and thus do not change regardless of whether the analysis is unmatched or matched. The final weighted equal-sized groups contained 475 participants each.

Assessment—Data was obtained from the Global Appraisal of Individual Needs – Intake (GAIN-I) [18], which was administered by trained interviewers at treatment intake. The GAIN is a standardized, comprehensive structured interview widely used in adolescent and young adult substance abuse treatment research and it takes 1–2 hours to administer. It consists of eight main sections: demographics/background, substance use, physical health, risk behaviors, mental health, environment risk, legal involvement and academic/vocational issues. For this study, responses to individual questions and a few composite GAIN scales were selected to provide lifetime, past-year and/or past 90-day information on several clinical characteristics reported in the literature (see introduction). Additional details of the GAIN including its psychometric properties are available at www.chestnut.org/li/gain. The following is a description of clinical characteristics examined in this study that were derived from select GAIN scales:

SUD Diagnosis: Responses to questions on the GAIN's Substance Problem Scale (which includes 7 dependence symptoms, 4 abuse symptoms, 2 symptoms of substance induced disorders and 3 screener items including weekly use) which can be used as a dimensional measure of severity or to categorize participants based on whether they met past year DSM-IV criteria for dependence or abuse or weekly use. This could be done overall or for each substance in DSM-IV. Those who either met criteria for dependence or abuse or weekly use were combined to create the OPU and MAPU groupings.

Internalizing Psychiatric Disorders: Responses to the Internal Mental Distress Scale in the mental health section of the GAIN were dichotomized to yield information on whether or not participants met past-year DSM-IV symptom criteria for any of the internalizing disorders. For this study they consist of major depressive disorder (MDD), generalized anxiety disorder (GAD) and traumatic stress disorder [23].

Externalizing Psychiatric Disorders: Responses to the Behavioral Complexity Scale in the mental health section of the GAIN were dichotomized to yield information on whether or not participants met past-year DSM-IV symptom criteria for any of the externalizing disorders, attention deficit/hyperactivity disorder (ADHD) and conduct disorder (CD) [23].

Victimization: Responses reporting physical, emotional or sexual abuse were counted for occurring ever (lifetime) or in the past year. Responses from the 15-item General Victimization Scale (GVS) in the environment section of the GAIN were categorized as having moderate to high levels of victimization for participant scores of 4 or more. Moderate/high levels on GVS correlates with high mental distress and reported traumatic

distress [24]. Current worry about victimization includes any concern that physical, emotional or sexual abuse might occur.

HIV-risk Behaviors: Needle Risk: Those scoring 1 or more on the 9-item Needle Problem Scale are considered to have moderate/high needle risk in the past year [18,25]. Since needle use is so infrequent, any problems related to use were considered moderate or high risk. Sexual Risk: Those scoring 2 or more on the 12-item Sexual Risk Scale were considered to have moderate/high sexual risk in the past year [25].

Physical Distress: Participants scoring 0.14 or higher on the proportional 14-item Health Problem Scale (HPS) were considered to have moderate/high levels of health problems (e.g., weekly or more frequent days with health problem, health problems keeping you from meeting responsibilities at home, school or work etc) in the past year [18]. The HPS was designed to be comparable to the Addiction Severity Index (ASI) medical scale. Those who also reported poor health were included under any physical distress or health problem.

Treatment Utilization: Rates of past SUD and mental health treatment utilization were calculated for reports of receiving any of the four following treatments: any emergency room visits, nights at a hospital, night at residential treatment, or outpatient office visits.

Statistical Analyses—Propensity score weighting was used for all analyses (see above) to control for demographics, level of care, frequency of marijuana and alcohol use and concentration of opioid users in the site. For each dependent variable, the odds ratio (OR) with 95% confidence intervals (CI) were calculated to represent the likelihood that the ‘variable of interest’ was associated with having OPU. Given the large sample sizes, even small ORs can be statistically significant, so we have focused the narrative on those that may also be clinically significant (i.e. only $OR \geq 1.20$ or $O.R. \leq 0.8$) [26]. All analyses were conducted in SPSS version 14.0.2 [27].

Results

Demographic, Environmental, Academic/Vocational and Illegal Activity Characteristics

Table-1 compares the OPU+MAPU group with the unweighted and weighted MAPU group. The unweighted group is presented primarily as a reference to the literature (which has largely focused on whether there were any differences), while the weighted comparison looks at the difference after matching on substance use severity, level of care and program and is the focus of this paper. Even after matching, the OPU+MAPU group was significantly less likely than the weighted MAPU group to be African American or other race and significantly more likely to be Caucasian, age 15 to 17, have weekly alcohol/drug use in their home or among their social peers, to be employed, to have been in a controlled environment, and to be higher on each of the measures of crime and violence.

Substance Use Characteristics

Table-2 shows that the two groups were significantly different on the majority of substance use characteristics. The OPU+MAPU group compared to the weighted MAPU group initiated substance use at an earlier age (i.e. prior to age 10) and were less likely to initiate use between ages 15–17 years (average age: 11.7 vs. 12.6 years, $p = 0.00$, data not shown in table). They were also more likely to have used substances for 5 or more years while the MAPU group was more likely to report 1–2 years of substance use. The OPU+MAPU group was more likely the MAPU group to report weekly use of tobacco, crack/cocaine and other substances. (Note that weekly cannabis and alcohol use were not significantly different between the groups because they were intentionally matched on these). The OPU+MAPU

group was also more likely to meet past-year any substance dependence diagnosis (excluding nicotine). They were also more likely to meet past-year SUD diagnosis for any substance, cocaine, amphetamines, and other drugs (hallucinogens, inhalants, PCP, sedatives, and other substances such as OTC medications, nitrous oxide, steroids, etc.); and more likely to meet criteria for 3 or more SUD diagnoses. They also reported higher rates with lifetime and any past-week withdrawal symptoms. Within the OPU group 6% reported heroin only, 67% used prescription opioids only, 16% used both types of opioids and 10% reported no opioid use in the past 90 days prior to intake/confinement (but met criteria for past-year opioid abuse or dependence). Sixteen percent of the OPU group reported using heroin at least weekly, while 64%, reported using prescription opioids at this frequency (by definition 0% used opioids in the MAPU group). Twenty four percent of the OPU group met criteria for past year opioid dependence diagnosis and 17% for past year opioid abuse diagnosis (data not shown in Table-2).

Substance Treatment Characteristics—Even after propensity score matching, the OPU+MAPU group was more likely than the weighted MAPU group to be treated in a post-residential continuing care setting. The OPU+MAPU group was also more likely to perceive both having an alcohol/substance problem and the need for any treatment; to have utilized any SUD treatment in the past; and to report multiple (i.e. 2 or more) prior treatment episodes.

Other Comorbid Conditions: Mental Health, HIV-Risk and Physical Health Problems—Table-3 shows that the OPU+MAPU group was more likely to endorse multiple problems on mental health, HIV-risk and physical health domains. The OPU+MAPU group was more likely than the weighted MAPU group to meet symptom criteria for any past-year any psychiatric disorder, internalizing disorder, or externalizing disorder, or both disorders; each of the individual internalizing and externalizing disorders; and high levels of victimization. Correspondingly, the OPU+MAPU group was also more likely to endorse higher rates of past mental health treatment utilization. Needle-use and sexual HIV-risk behaviors were more prevalent in the OPU+MAPU group, as were moderate to severe physical health problems. While the OPU+MAPU group was more likely than the unweighted MAPU group to have been pregnant, the weighted comparison lost significance.

Figure 1 illustrates by group the count of 11 past year problems endorsed in tables 1 to 3 including: cannabis use disorder, alcohol use disorder, cocaine use disorder, amphetamine use disorder, other substance use disorder, any internalizing disorder, any externalizing disorder, physical sexual or emotional victimization, needle use risk, moderate/high sexual risk and moderate/high health problem. The OPU+MAPU group endorsed significantly more comorbid conditions [5.1 compared to 3.4, $F=9.3(948)$, $p=.002$]. As seen in Figure 1, 54% of the MAPU group reported 3 or fewer problems, 26% reported 5 or more problems and none reported 9 or more problems. By comparison, 24% of the OPU+MAPU group reported 3 or fewer problems, and more than 55% reported 5 or more problems. Thus, while comorbidity is ubiquitous and distributions overlap, the OPU group has more problems.

Discussion

This is the first study we know of that has evaluated the added risk of opioid problem use with marijuana/alcohol problem use among youth entering SUD treatment across multiple outpatient and residential sites in the U.S. The majority of the results confirmed findings from existing single-site studies of teen users of heroin [9,10] or those with opioid dependence/abuse [3,8,11,12]. Overall, this study found that having OPU was associated with higher rates of problems on virtually all of the psychosocial and clinical domains examined, with very few risk associations losing significance when comparisons were made

to the weight adjusted MAPU group. The OPU+MAPU group was more likely than the weighted MAPU group to have multiple (on average five) clinically comorbid conditions. The OPU+MAPU group was less likely to be African American or other race and more likely than the weighted MAPU group to be older teens, i.e. 15–17 years old, Caucasian, report longer duration of substance use, have higher rates of SUD diagnoses (except for cannabis use disorder by design), have greater psychiatric symptom severity, report higher levels of victimization and HIV-risk behaviors (sexual risk and needle-use), and engage in higher rates of illegal behaviors.

This study showed that the added risk of OPU was associated with higher rates of each of the internalizing and/or externalizing psychiatric disorders examined, which is in contrast to findings of no such group differences in psychiatric disorders in a recent study [3] comparing OUD with non-OUD youth with cannabis/alcohol use disorders. This finding is most likely due to this study's low proportion of residential patients (32%) where psychiatric comorbidity is an admission criterion. The novel findings of higher rates of lifetime and recent victimization may be conceived of either as a consequence of dependence on opioids exposing these youth to situations associated with greater risk for trauma/victimization (e.g. intoxication, selling drugs, trading drugs for sex or money); or as an attempt to self-medicate via psychological disassociation from psychological pain or seeking relief from physical pain (with opioids with established analgesic properties) or both. This assumption is supported by study results showing that having OPU was more likely to be associated with physical distress.

Additional new findings from the study include that 64% of the OPU+MAPU youth were using prescription opioids (in comparison to 16% reporting heroin use) and that the added risk of OPU was associated with higher levels of homelessness and regular substance use by family members and peers. These findings suggest exposure to and/or modeling of deviant behaviors similar to findings reported previously by Nurco et al. [28]. The OPU+MAPU group was also more likely to be confined and spend long periods in confinement prior to the current episode of treatment, indicating higher severity of substance and legal problems. Homelessness may be conceived either as an antecedent or a consequence of their protracted substance use careers. However, a causal analysis of early-onset drug use associated problems and opioid use problems could not be examined in this cross-sectional study and warrants future research. The higher rates of confinement may be a consequence of higher rates of criminal activity (e.g. driving under the influence, trading sex for drugs/money, drug-dealing); or alternatively, suggest a more effective referral process for residential treatment initiated while they were in the juvenile justice system.

Another new area of exploration showed that the OPU youth were more likely to have used both mental health and SUD treatment services and to verbalize perceived need for current SUD treatment. It is likely that their prior treatments and current placement at higher intensity treatment settings may have influenced/primed their motivation to change. The implications of high treatment utilization on cost to society need to be explored in future studies.

Limitations

While corroborating information from collateral informants and the use of urine drug testing may have improved the validity of data, GAIN self-reports have been found to correlate highly with biometric measures of substance use [29]. The GAIN only provides diagnostic impressions and not “true” DSM-IV psychiatric diagnoses which may have resulted in either an over-inclusion of participants in each of the psychiatric disorders or under inclusion due to denial/misreporting. Although we used propensity score to minimize the impact of significant demographic/social/treatment factors on the results, this method is still quasi-

experimental and does not guarantee “true” group differences or account for the influence of high rates of polysubstance use. By not including 13% of the sample who reported infrequent/non-“problem use” of opioids in our comparisons, we were unable to comment on their characteristics, which may have important treatment implications. In this cross-sectional study, we were unable to examine causal relationships or outcomes for OP vs. MAP users. Although the data was pooled from several treatment sites from across the country, further study using a representative sample of the US population, may improve generalizeability.

Clinical Implications

The substantial added risk and comorbidities associated OPU may be a risk for or a consequence of opioid dependence and associated withdrawal symptoms; high crime; trauma and emotional distress; physical health problems; and needle-use and sexual risk behaviors. These findings highlight the importance of developing specialized and comprehensive treatments plans that integrate interventions that target the associated comorbidities. They also support the need for a) prevention studies to address environmental and mental health risk factors among these youth, b) further exploration of the complex relationships of the various risk factors with structural equation modeling and c) outcome studies to determine the influence of baseline comorbid risk factors such as environmental factors, polysubstance use, multiple psychiatric disorders, HIV/HCV infection-risk and criminal behaviors on opioid dependence treatment outcomes. Also worthy of investigation is whether more widespread use of effective medications for opioid dependent youth [8,12] may improve other outcomes in addition to opioid use in this complex and multiply disabled subgroup of youth with problem use of opioids.

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References

1. Johnston, LD.; O'Malley, PM.; Bachman, JG.; Schulenberg, JE. Monitoring the Future national survey results on adolescent drug use: 1975–2006: Volume I, Secondary school students. Bethesda, MD: National Institute on Drug Abuse; 2007. (NIH Publication No. 07-6205)
2. Substance Abuse and Mental Health Services Administration Office of Applied Studies. Treatment Episode Dataset (TEDS), 1992–2005 [Computerfile]. 2007. [cited 2007 April 28, 2008]; Available from: <http://www.icpsr.umich.edu/cocoon/SAMHDA/SERIES/00056.xml?token=1>

3. Subramaniam GA, Stitzer MA, Woody GE, Fishman MJ, Kolodner K. Clinical Characteristics of Treatment Seeking Adolescents with Opioid Versus Cannabis/Alcohol Use Disorders. *Drug Alcohol Depend.* 2009; 99(1):141–9.
4. Mills KL, Teesson M, Darke S, Ross J, Lynskey M. Young people with heroin dependence: findings from the Australian Treatment Outcome Study (ATOS). *J Subst Ab Treatment.* 2004; 27(1):67–73.
5. Substance Abuse and Mental Health Services Administration Office of Applied Studies. *Drug Abuse Warning Network, 2005: National estimates of drug-related emergency department visits.* Rockville, MD: Author; 2007.
6. Center for Disease Control and Prevention. Viral Hepatitis and injection drug users. Fact Sheet Series. 2002. [cited September 15, 2007]; Available from: http://www.cdc.gov/IDU/hepatitis/viral_hep_drug_use.htm
7. Nurco DN, Hanlon TE, Kinlock TW. Recent Research on the Relationship between Illicit Drug Use and Crime. *Behav Science and Law.* 1991; 9:221–42.
8. Woody G, Poole S, Subramaniam GA, Dugosh K, Bogenschutz M, Abbott P, et al. Extended Medication-Assisted Therapy Produces Better Outcomes Than Detoxification Among Opioid-Addicted Youth. *JAMA.* 2008; 300(17):2003–11. [PubMed: 18984887]
9. Hopfer CJ, Mikulich SK, Crowley TJ. Heroin use among adolescents in treatment for substance use disorders. *J Am Acad Child Adolesc Psychiatry.* 2000 Oct; 39(10):1316–23. [PubMed: 11026188]
10. Clemmey P, Payne L, Fishman M. Clinical characteristics and treatment outcomes of adolescent heroin users. *J PsychoactDrugs.* 2004; 36(1):85–94.
11. Gordon SM, Mulvaney F, Rowan A. Characteristics of adolescents in residential treatment for heroin dependence. *Am J Drug Alcohol Abuse.* 2004 Aug; 30(3):593–603. [PubMed: 15540495]
12. Marsch LA, Bickel WK, Badger GJ, Stothart ME, Quesnel KJ, Stanger C, et al. Comparison of pharmacological treatments for opioid-dependent adolescents: a randomized controlled trial. *Arch Gen Psychiatry.* 2005 Oct; 62(10):1157–64. [PubMed: 16203961]
13. Dennis, ML.; White, M.; Ives, ML. Individual Characteristics and Needs Associated with Substance Misuse of Adolescents and Young Adults in Addiction Treatment. In: Leukefeld, C.; Gullotta, T.; Tindall, MS., editors. *Handbook on Adolescent Substance Abuse Prevention and Treatment: Evidence-Based Practice.* In press
14. Janiri L, Martinotti G, Dario T, Reina D, Paparello F, Pozzi G, et al. Anhedonia and substance-related symptoms in detoxified substance-dependent subjects: a correlation study. *Neuropsychobiology.* 2005; 52(1):37–44. [PubMed: 15942262]
15. Handelsman L, Aronson MJ, Ness R, Cochrane KJ, Kanof PD. The dysphoria of heroin addiction. *Am J Drug Alcohol Abuse.* 1992; 18(3):275–87. [PubMed: 1329491]
16. Stewart-Sabin, C.; Chaffin, M. Culturally competent substance abuse treatment for American Indian and Alaska Native youths. In: Stevens, SJ.; Morral, AR., editors. *Adolescent Substance Abuse Treatment in the United States: Exemplary Models from a National Evaluation Study.* Binghamton, NY: Haworth Press; 2003. p. 155-82.
17. Dennis ML, Ives ML, White MK, Muck RD. The strengthening communities for youth (SCY) initiative: A cluster analysis of the services received, their correlates and how they are associated with outcomes. *J PsychoactDrugs.* 2008; 40:3–16.
18. Dennis, ML.; Titus, JC.; White, M.; Unsicker, J.; Hodgkins, D. Bloomington, IL: Chestnut Health Systems; 2003. *Global Appraisal of Individual Needs (GAIN): Administration guide for the GAIN and related measures.* (Version 5) Retrieved from <http://www.chestnut.org/LI/gain/index.html> on May 7, 2008
19. Colder CR, Chassin L. The psychosocial characteristics of alcohol users versus problem users: data from a study of adolescents at risk. *Dev Psychopathol.* 1999 Spring; 11(2):321–48. [PubMed: 16506537]
20. Dehejia RH, Wahba S. Propensity Score-Matching Methods for Nonexperimental Causal Studies. *Review Econ Stats.* 2002; 84(1):151–61.
21. Rosenbaum PR, Rubin DB. The central role of the propensity score in observational studies for causal effects. *Biometrika.* 1983; 70(1):41–55.

22. Dennis ML, Chan YF, Funk R. Development and validation of the GAIN Short Screener (GSS) for internalizing, externalizing, and substance use disorders and crime/violence problems among adolescents and adults. *Am J Addictions*. 2008; 15:80–91.
23. Chan Y-F, Dennis ML, Funk R. Prevalence and Comorbidity of Major Internalizing and Externalizing Problems among Adolescents and Adults Presenting to Substance Abuse Treatment. *J Subst Ab Treatment*. 2008; 34:14–24.
24. Titus JC, Dennis ML, White WL, Scott CK, Funk RR. Gender differences in victimization severity and outcomes among adolescents treated for substance abuse. *Child Maltreat*. 2003 Feb; 8(1):19–35. [PubMed: 12568502]
25. Dennis, ML.; White, M.; Ives, MI. Individual characteristics and needs associated with substance misuse of adolescents and young adults in addiction treatment. In: Leukefeld, Carl; Gullotta, Tom; StatonTindall, Michele, editors. *Handbook on Adolescent Substance Abuse Prevention and Treatment: Evidence-Based Practice*. Vol. Chapter 3. New London, CT: Child Family Agency Press; 2009. p. 45-72.
26. Kraemer HC, Morgan GA, Leech NL, Gliner JA, Vaske JJ, Harmon RJ. Measures of Clinical Significance. *J Am Acad Child Adolesc Psychiatry*. 2003; 42(12):1524–9. [PubMed: 14627890]
27. SPSS. Statistical Program for the Social Sciences. Chicago: SPSS; 2006. Version 14.0.2
28. Nurco DN, Kinlock TW, O'Grady KE, Hanlon TE. Differential contributions of family and peer factors to the etiology of narcotic addiction. *Drug Alcohol Depend*. 1998 Aug 1; 51(3):229–37. [PubMed: 9787996]
29. Lennox RD, Dennis ML, Scott CK, Funk RR. Combining psychometric and biometric measures of substance use. *Drug Alcohol Depend*. 2006; 83:95–103. [PubMed: 16368199]

Figure 1.

Number of Major Clinical Problems* in the Past Year by Group

* Count of 11 past year problems endorsed in tables 1 to 3: cannabis use disorder, alcohol use disorder, cocaine use disorder, amphetamine use disorder, other substance use disorder, any internalizing disorder, any externalizing disorder, physical sexual or emotional victimization, needle use risk, moderate/high sexual risk, moderate/high health problem.

Demographics and Social Characteristics of Opioid Problem Users (OPU, n=475) and Marijuana/Alcohol Problem Users (MAPU, =475)

Table 1

	MAPU						OPU+MAPU vs. MAPU Unweighted				OPU+MAPU vs. MAPU Weighted		
	Unweighted (n=6471)			Weighted (n=475)			OPU+MAPU (n=475)				Odds ratio ^f	95% Confidence Interval	
	N (Mean)	% (SD)	N (Mean)	% (SD)	N (Mean)	% (SD)	N (Mean)	% (SD)					
I. Demographics													
% Female	1588	25%	163	34%	173	36%				1.76	(1.6 – 2)	1.09	(0.8 – 1.4)
Race													
% African American	1295	20%	101	21%	20	4%				0.18	(0 – 0.6)	0.16	(0 – 0.7)
% Caucasian	2557	40%	176	37%	308	65%				2.82	(2.6 – 3)	3.13	(2.9 – 3.4)
% Mixed	913	14%	74	16%	60	13%				0.88	(0.6 – 1.2)	0.78	(0.4 – 1.2)
% Other	1706 (15.8)	26% – 144%	124 (16.2)	26% (1.5)	87 (16.3)	18% (1.4)				0.63	(0.4 – 0.9)	0.63	(0.3 – 0.9)
Age													
% < 15 years	1210	19%	(16.2)	10%	31	7%				0.30	(0 – 0.7)	0.65	(0.2 – 1.1)
% 15–17 years	4789	74%	(16.2)	76%	381	80%				1.42	(1.2 – 1.7)	1.29	(1 – 1.6)
% 18–21 years	472	7%	(16.2)	15%	63	13%				1.94	(1.7 – 2.2)	0.90	(0.5 – 1.3)
Site Experience with Opioid users													
Clients from sites with <15 OP users	5746	89%	314	0.66	287	0.60				0.19	(0 – 0.4)	0.78	(0.4 – 1.2)
Clients from sites with 15+ OP users	725	11%	161	0.34	188	0.40				5.19	(5 – 5.4)	1.28	(0.9 – 1.6)
II. Environment:													
Family/Home:													
% Single Parent family	3203	50%	232	49%	217	46%				0.86	(0.7 – 1.1)	0.88	(0.6 – 1.2)
% Weekly Alcohol Use among those at home	1704	26%	135	28%	174	37%				1.62	(1.4 – 1.8)	1.46	(1.2 – 1.7)
% Weekly Drug Use among those at home	843	13%	84	18%	121	25%				2.27	(2.1 – 2.5)	1.59	(1.3 – 1.9)
% Ever Homeless/Runaway	2011	31%	189	40%	262	55%				2.72	(2.5 – 2.9)	1.85	(1.6 – 2.1)
Social Peers													
% Regular Alcohol Use by Social Peers	3649	56%	308	65%	338	71%				1.91	(1.7 – 2.1)	1.34	(1.1 – 1.6)
% Regular Drug Use by Social Peers	4919	76%	375	79%	404	85%				1.79	(1.5 – 2.1)	1.52	(1.2 – 1.9)
III. Academic/Vocational													
% Either in school, High School Grad or GED ^a	5846	90%	415	87%	400	84%				0.57	(0.3 – 0.8)	0.77	(0.4 – 1.1)

	MAPU						OPU+MAPU vs. MAPU Unweighted			OPU+MAPU vs. MAPU Weighted		
	Unweighted (n=6471)			Weighted (n=475)			OPU+MAPU (n=475)					
	N (Mean)	% (SD)	N (Mean)	% (SD)	N (Mean)	% (SD)	N (Mean)	% (SD)	Odds ratio ^f	95%Confidence Interval	Odds ratio ^f	95%Confidence Interval
% Employed ^a	1906	29%	138	29%	175	37%			1.40	(1.2 – 1.6)	1.43	(1.2 – 1.7)
IV. Illegal Activity												
Juvenile Justice/Police Involvement												
% Lifetime involved	5489	85%	410	86%	404	85%			1.01	(0.7 – 1.3)	0.90	(0.5 – 1.3)
% Currently involved ^a	4600	71%	335	71%	316	67%			0.81	(0.6 – 1)	0.83	(0.6 – 1.1)
% In detention/jail ^a	1674	26%	140	30%	141	30%			1.21	(1 – 1.4)	1.01	(0.7 – 1.3)
% On probation/parole ^a	3131	48%	235	50%	229	48%			1.21	(0.8 – 1.2)	0.94	(0.7 – 1.2)
% Arrested ^a	1436	22%	112	24%	106	22%			1.21	(0.8 – 1.2)	0.93	(0.6 – 1.2)
% In a Controlled Environment ^a	2452	38%	232	49%	285	60%			1.21	(2.3 – 2.6)	1.57	(1.3 – 1.8)
% 13+ Days in Controlled Environment ^a	1586	25%	171	36%	224	47%			1.21	(2.6 – 2.9)	1.59	(1.3 – 1.9)
Criminal Behaviors												
Past-year Any Violence or Illegal Activity	5246	81%	398	84%	431	91%			2.29	(2 – 2.6)	1.90	(1.5 – 2.3)
Any Act of Physical Violence ^b	4432	68%	343	72%	392	83%			2.19	(1.9 – 2.4)	1.83	(1.5 – 2.1)
Any Property crimes ^c	3072	47%	247	52%	341	72%			2.82	(2.6 – 3)	2.35	(2.1 – 2.6)
Any Interpersonal crimes ^d	2828	44%	224	47%	302	64%			2.25	(2.1 – 2.4)	1.96	(1.7 – 2.2)
Any Drug related crimes ^e	2943	45%	241	51%	323	68%			2.55	(2.3 – 2.7)	2.06	(1.8 – 2.3)
Any Past-year Driving under the influence	1206	19%	134	28%	225	47%			3.93	(3.7 – 4.1)	2.28	(2 – 2.5)
Any Past-year Drug Dealing	1457	23%	142	30%	270	57%			4.51	(4.3 – 4.7)	3.07	(2.8 – 3.3)
Any Past-year Trading Sex for Drugs/money	64	1%	9	2%	27	6%			6.18	(5.7 – 6.6)	3.09	(2.3 – 3.9)
Any Past-year Gambling	1040	16%	83	17%	114	24%			1.65	(1.4 – 1.9)	1.50	(1.2 – 1.8)

Notes: **OPU** defined as meeting criteria for past year opioid dependence/abuse or weekly or greater opioid use in the past 90-days and have mar/alc problem use; **MAPU** defined as meeting criteria for past year marijuana/alcohol dependence/abuse or weekly or greater marijuana/alcohol use in the past 90-days and no opioid problem use; **Bold** odds ratio are significantly different than 1 at p<.05.

^aDuring the past 90 days

^bPhysical assault of another person within the past year.

^cSelf report of or arrests related to vandalism, forgery, bad checks, shoplifting, theft, robbery, auto theft.

^dSelf report of or arrests related to assault, aggravated assault with a weapon, rape, murder, and arson.

Table 2

Substance Use and Treatment Characteristics of Opioid Problem Users (OPU, n=475) and Marijuana/Alcohol Problem Users (MAPU, n=475)

V. Substance Use Characteristics	MAPU						OPU+MAPU vs. MAPU Unweighted				OPU+MAPU vs. MAPU Weighted			
	Unweighted (n=6471)			Weighted (n=475)			OPU+MAPU (n=475)		Odds ratio ^f	95% Confidence Interval	Odds ratio ^f	95% Confidence Interval		
	N	%	N	%	N	%								
Age of First use of any substance														
% < 10 years	511	8%	44	9%	84	18%		2.50	(2.2 – 2.7)	2.08	(1.7 – 2.5)			
% 10–14 years	4792	74%	357	75%	351	74%		0.99	(0.8 – 1.2)	0.93	(0.6 – 1.2)			
% 15–17 years	1155	18%	71	15%	39	8%		0.42	(0.1 – 0.7)	0.51	(0.1 – 0.9)			
% 18 or > years	14	0%	2	0.4%	1	0.2%		0.97	(0 – 3)	0.50	(0 – 2.9)			
Years of Substance Use ^d														
% < 1 year	406	6%	15	3%	5	1%		0.16	(0 – 1)	0.33	(0 – 1.3)			
% 1–2 years	2675	41%	149	31%	96	20%		0.36	(0.1 – 0.6)	0.55	(0.3 – 0.9)			
% 3–4 years	2073	32%	173	36%	166	35%		1.14	(0.9 – 1.3)	0.94	(0.7 – 1.2)			
% 5 or > years	1317	20%	138	29%	208	44%		3.04	(2.9 – 3.2)	1.90	(1.6 – 2.2)			
% Weekly Drug Use in the Past 90 days ^b														
Any substance Use ³	6393	99%	472	99%	473	100%		2.88	(1.5 – 4.3)	1.47	(0 – 3.3)			
Tobacco Use	3360	52%	274	58%	335	70%		2.21	(2 – 2.4)	1.75	(1.5 – 2)			
Marijuana Use	4282	66%	389	82%	396	83%		2.56	(2.3 – 2.8)	1.10	(0.8 – 1.4)			
Alcohol Use	1451	22%	240	51%	259	55%		4.15	(4 – 4.3)	1.17	(0.9 – 1.4)			
Heroin Use	0		0		78	16%		NA	NA	NA	NA			
Prescription Opioid Use	0		0		302	64%		NA	NA	NA	NA			
Crack/Cocaine Use	185	3%	29	6%	149	31%		15.58	(15.3 – 15.8)	7.00	(6.6 – 7.4)			
Other Drug Use	346	5%	48	10%	260	55%		21.33	(21.1 – 21.5)	10.74	(10.4 – 11.1)			
% Past Year Substance Diagnosis														
Any Substance Dependence Diagnosis	3237	50%	294	62%	419	88%		7.47	(7.2 – 7.8)	4.62	(4.3 – 5)			
Any Substance Abuse Diagnosis	2679	41%	132	28%	39	8%		0.13	(0 – 0.5)	0.23	(0 – 0.6)			
Any Substance Use Disorder Diagnosis ^c	5916	91%	426	90%	458	96%		2.48	(2 – 3)	3.06	(2.5 – 3.6)			

	MAPU						OPU+MAPU vs. MAPU Unweighted		OPU+MAPU vs. MAPU Weighted	
	Unweighted (n=6471)		Weighted (n=475)		OPU+MAPU (n=475)		Odds ratio ^f	95% Confidence Interval	Odds ratio ^f	95% Confidence Interval
	N	%	N	%	N	%				
Opioid use disorder	0	0%	0	0%	192	40%	NA	NA	NA	NA
* Cannabis use disorder	3117	48%	202	43%	203	43%	0.81	(0.6 – 1)	1.01	(0.8 – 1.3)
* Alcohol use disorder	1746	27%	139	29%	163	34%	1.41	(1.2 – 1.6)	1.26	(1 – 1.5)
* Cocaine use disorder	128	2%	16	3%	86	18%	11.01	(10.7 – 11.3)	6.52	(6 – 7.1)
* Amphetamine use disorder	192	3%	21	4%	57	12%	4.45	(4.1 – 4.8)	2.95	(2.4 – 3.5)
* Other substance use disorder ^d	318	5%	33	7%	203	43%	14.48	(14.3 – 14.7)	9.98	(9.6 – 10.4)
3 or more SUDs	267	4%	31	7%	140	29%	9.71	(9.5 – 9.9)	5.93	(5.5 – 6.4)
Withdrawal Severity										
% reporting any lifetime withdrawal	2673	41%	234	49%	385	81%	6.07	(5.8 – 6.3)	4.38	(4.1 – 4.7)
% Any withdrawal symptoms past week	1864	29%	144	30%	185	39%	1.58	(1.4 – 1.8)	1.47	(1.2 – 1.7)
SUD Treatment Characteristics										
Current Level Of Treatment										
% in Any Outpatient	5177	80%	281	59%	267	56%	0.32	(0.1 – 0.5)	0.89	(0.6 – 1.1)
% in Any Residential setting	1134	18%	151	32%	150	32%	2.17	(2 – 2.4)	0.99	(0.7 – 1.3)
% in Any Post-Residential Continuing Care	193	3%	43	9%	58	12%	4.52	(4.2 – 4.8)	1.40	(1 – 1.8)
% reporting any days on Medications for Substance problems at intake	0		0		4	1%	NA	NA	NA	NA
Need Perception and Readiness to Change										
Perceives alcohol/substance as a problem ^e	1639	25%	176	37%	315	66%	5.82	(5.6 – 6)	3.35	(3.1 – 3.6)
Perceives need for ANY treatment	4777	74%	382	80%	426	90%	3.05	(2.7 – 3.4)	2.08	(1.7 – 2.5)
% Prior SA Treatment Episodes										
Any	1906	29%	201	42%	279	59%	3.42	(3.2 – 3.6)	1.95	(1.7 – 2.2)
One	1168	18.1%	103	22%	108	23%	1.33	(1.1 – 1.6)	1.07	(0.8 – 1.4)
Two or more	737	11.4%	98	21%	171	36%	4.39	(4.2 – 4.6)	2.18	(1.9 – 2.5)

Notes: **OPU** defined as meeting criteria for past year opioid dependence/abuse or weekly or greater opioid use in the past 90-days and have mar/alc problem use; **MAPU** defined as meeting criteria for past year marijuana/alcohol dependence/abuse or weekly or greater marijuana/alcohol use in the past 90-days and no opioid problem use; **Bold** odds ratio are significantly different than 1 at p<.05.

* Included in Clinical Comorbidities count

^a Current age minus age of first use.

^b Controlled for Confinement During the past 90 days.

^c Excluding tobacco.

^d includes hallucinogens, inhalants, PCP, sedatives and other miscellaneous substances such as OTC medications, nitrous oxide, steroids, etc.

^e Do you currently feel that you have any problems related to alcohol or drug use?

Mental Health, HIV-Risk and Physical Health Characteristics of Opioid Problem Users (OP users, n=475) and Marijuana/Alcohol Problem Users (MAP users, n=475)

Table 3

	MAPU						OPU+MAPU vs.MAPU Unweighted		OPU+MAPU vs.MAPU Weighted	
	Unweighted (n=6471)		Weighted (n=475)		OPU+MAPU (n=475)		Odds ratio ^f	95% Confidence Interval	Odds ratio ^f	95% Confidence Interval
	N	%	N	%	N	%				
VI. Mental Health Characteristics:										
A. % Past Year Symptoms of Internalizing Disorders										
* Any Internalizing Disorder ^d	2535	39%	238	50%	363	76%	5.01	(4.8 – 5.2)	3.21	(4.7 – 5.3)
Major Depression Disorder	2081	32%	200	42%	326	69%	4.63	(4.4 – 4.8)	3.03	(2.8 – 3.3)
Generalized Anxiety Disorder	711	11%	78	16%	171	36%	4.55	(4.3 – 4.8)	2.86	(2.6 – 3.2)
Traumatic Stress Disorder ^b	1351	21%	141	30%	245	52%	4.04	(3.8 – 4.2)	2.51	(2.2 – 2.8)
Suicidal Thoughts or Actions	1318	20%	124	26%	211	44%	3.12	(2.9 – 3.3)	2.25	(2 – 2.5)
Any self injurious behaviors	481	7%	45	10%	96	20%	3.13	(2.8 – 3.4)	2.39	(1.9 – 2.9)
B. % Past Year Symptoms of Externalizing Disorders/Problems										
* Any Externalizing Disorder	3805	59%	311	66%	409	86%	4.34	(4.1 – 4.6)	3.25	(2.9 – 3.6)
Conduct Disorder	3178	49%	271	57%	378	79%	4.02	(3.8 – 4.2)	2.92	(2.6 – 3.2)
Attention Deficit-Hyperactivity Disorder	2636	41%	226	48%	345	73%	3.87	(3.7 – 4.1)	2.94	(2.7 – 3.2)
C. % Past Year Internalizing/Externalizing Problems										
Either	4271	66%	351	74%	440	93%	6.45	(6.1 – 6.8)	4.41	(4 – 4.8)
Internal only	451	7%	38	8%	29	6%	0.87	(0.5 – 1.3)	0.75	(0.2 – 1.2)
External only	1734	27%	113	24%	77	16%	0.53	(0.3 – 0.8)	0.63	(0.3 – 0.9)
Both	2084	32%	200	42%	333	70%	4.96	(4.8 – 5.2)	3.23	(3 – 3.5)
D. % Physical, Sexual, or Emotional Victimization										
Any Lifetime History of Victimization	3991	62%	331	70%	390	82%	2.85	(2.6 – 3.1)	2.00	(1.7 – 2.3)
Lifetime High Levels of Victimization ^c	2796	43%	246	52%	327	69%	2.92	(2.7 – 3.1)	2.07	(1.8 – 2.3)
* Past-Year Victimization	2325	36%	191	40%	266	56%	2.28	(2.1 – 2.5)	1.91	(1.6 – 2.2)
Current worry about victimization	1091	17%	93	20%	139	29%	2.05	(1.8 – 2.3)	1.71	(1.4 – 2)
E. % Any Prior Mental Health Treatment	2426	37%	203	43%	312	66%	3.18	(3 – 3.4)	2.56	(2.3 – 2.8)
VII. % HIV-Risk Characteristics										
Any Past Year Needle Use	73	1%	7	1%	103	22%	24.28	(24 – 24.6)	18.71	(17.9 – 19.5)

	MAPU						OPU+MAPU vs.MAPU Unweighted			OPU+MAPU vs.MAPU Weighted		
	Unweighted (n=6471)			Weighted (n=475)			OPU+MAPU (n=475)			95% Confidence Interval		
	N	%	N	%	N	%	N	%	Odds ratio ^f	95% Confidence Interval	Odds ratio ^f	95% Confidence Interval
* Past Year Moderate/High Needle Risk	31	0%	3	1%	101	21%	55.99	(55.6 – 56.4)	38.80	(37.6 – 40)		
Any Past-Year Sexual activity	4966	77%	394	83%	424	89%	2.52	(2.2 – 2.8)	1.71	(1.3 – 2.1)		
* Past Year Moderate/High Sexual Risk	4018	62%	346	73%	402	85%	3.37	(3.1 – 3.6)	2.07	(1.7 – 2.4)		
VIII. % Physical Health Problems												
Any Physical Distress/health Problem ^d	1824	28%	144	30%	203	43%	1.90	(1.7 – 2.1)	1.72	(1.4 – 2)		
* Past Year Mod/High health problem	1711	26%	133	28%	177	37%	1.66	(1.5 – 1.9)	1.53	(1.3 – 1.8)		
Past Year Been Pregnant/Responsible for Pregnancy	448	7%	41	9%	53	11%	1.70	(1.4 – 2)	1.36	(0.9 – 1.8)		

Notes: **OPU** defined as meeting criteria for past year opioid dependence/abuse or weekly or greater opioid use in the past 90-days and have mar/alc problem use; **MAPU** defined as meeting criteria for past year marijuana/alcohol dependence/abuse or weekly or greater marijuana/alcohol use in the past 90-days and no opioid problem use; **Bold** odds ratio are significantly different than 1 at p<.05.

* Included in Clinical Comorbidities count

^a General anxiety disorder, major depression disorder, suicide thoughts or actions, traumatic stress disorder.

^b Post traumatic distress, acute traumatic distress or disorders of extreme stress not otherwise specified.

^c Reporting 4 or more of the following: types of victimization, traumatic factors (e.g., multiple people, someone they trusted, fearing for life, sexual penetration, people didn't believe them) or continuing fear it will reoccur.

^d Count of various types of physical problems endorsed by respondent.