Does Mandated Treatment Benefit Youth? A Prospective Investigation of Adolescent Justice System Involvement, Treatment Motivation, and Substance Use Outcomes

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Abstract

Background—The majority of adolescents treated for substance use disorder (SUD) in the United States are now referred by the criminal justice system. Little is known, however, regarding how justice-system involvement relates to adolescent community treatment outcomes. Controversy exists, also, over the extent to which justice system involvement reflects a lack of intrinsic motivation for treatment. This study examined the relation between justice system referral and reported reason for treatment entry and tested the extent to which each predicted treatment response and outcome.

Method—Adolescent outpatients ($N = 127$; M age = 16.7, 24% female) with varying levels of justice-system involvement (i.e., no justice system involvement [No-JSI; $n = 63$], justice-system involved [JSI; $n = 40$], justice system involved-mandated [JSI-M; $n = 24$]) and motivation levels (i.e., self-motivated [$n = 40$], externally-motivated [$n = 87$]) were compared at treatment intake. Multilevel mixed models tested these groups' effects on percent days abstinent (PDA) and odds of heavy drinking (HD) over 12 months.

Results—JSI-M were less likely to be self-motivated compared to No-JSI or JSI ($p = 0.009$). JSI-M had higher PDA overall, but with significant declines over time, relative to no-JSI. Self-motivated patients did not differ from externally-motivated patients on PDA or HD.

Conclusions—Mandated adolescent outpatients were substantially less likely to report self-motivated treatment entry. Despite the notion that self-motivated treatment entry would be likely to produce better outcomes, a judicial mandate appears to predict an initially stronger treatment response, although this diminishes over time. Ongoing monitoring and/or treatment may be necessary to help maintain treatment gains for justice system-involved adolescents.

Keywords

justice system; mandated treatment; adolescent; treatment; motivation; substance use disorder

1.1. Introduction

Fewer than one in ten adolescents diagnosed with substance use disorder (SUD) receive specialized care in any given year (Substance Abuse and Mental Health Services Administration [SAMHSA], 2012). Many adolescents who meet diagnostic criteria for SUD do not perceive a need for intervention (Tims et al., 2002; SAMHSA, 2012), possibly as a

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result of their typically less severe clinical profile relative to adult clients (Brown, 1993; Handelsman et al., 2005; Stewart & Brown, 1995). Consequently, most adolescents who enter treatment do so not because they want help, but rather because of some external pressure, typically from parents, schools, and, increasingly, from the criminal justice system (Rounds-Bryant et al., 1999; SAMHSA, 2009; 2012; Shillington & Clapp, 2003).

1.2. Justice system involvement among adolescents in SUD treatment

Referrals to treatment by the criminal justice system are common, accounting for roughly half of adolescent treatment admissions nationwide (SAMHSA, 2009; 2012). Other adolescent studies have found rates of justice system referrals ranging from 46–65% (Rounds-Bryant et al., 1999; Shillington & Clapp, 2003; Tims et al., 2002). Despite this substantial level of justice system referral, little is known about how justice system-involved (JSI) adolescents respond to the treatment programs to which they are referred.

Some JSI adolescents who enter SUD treatment are mandated (JSI-M) to attend, while others are *involved* in the justice system, but not *mandated* to attend treatment (JSI). Some adult research has found differences among these three groups of patients (i.e., No JSI, JSI, JSI-M) at treatment entry and in their response to treatment (Marshall & Hser, 2002; Kelly et al., 2005). In Kelly and colleagues' (2005) study, for example, JSI-M patients differed in clinically relevant ways from the other two groups (e.g., lower motivation for change, fewer substance-related consequences, less psychological distress), whereas JSI patients appeared clinically similar to the No JSI group. Among adolescents, however, little is known about these distinct subcategories of patients.

1.3. Justice system involvement vs. perceived reason for entering treatment

Various theoretical perspectives, such as self-determination theory, self-regulation theory, and reactance theory (Brehm, 1999; Deci & Ryan, 1985; Stajkovic & Luthans, 1998) suggest that being pressured into treatment by an external force could impact individuals' sense of agency, self-efficacy, and negative reactivity, which could interfere with treatment engagement. Consequently, mandated individuals might be expected to have a *worse* response to SUD treatment (e.g., drop out sooner, be less motivated, have poorer outcomes) given that they are there "against their will" or are merely "going through the motions." The majority of research on JSI adults does not support this prediction, suggesting instead that mandated individuals have as good or better outcomes as non-mandated individuals (Brecht et al., 1993; Burke & Gregoire, 2007; Hampton et al., 2011; Kelly et al., 2005; Knight et al., 2000; Perron & Bright, 2008; Prendergast et al., 2008; Stevens et al., 2006).

The adult literature on the effectiveness of legally-motivated treatment also has noted the conflation of the *objective* presence of a legal mandate for treatment with the *subjective* sense of a lack of autonomy in treatment entry. Put simply, someone who is "court-mandated" to treatment could still want or perceive a need for treatment, but this distinction has frequently been neglected. Several authors have written about the problems with referring to non-mandated patients as "voluntary" or assuming that a legal mandate always results in a subjective sense of coercion (e.g., Klag et al., 2005; Urbanoski, 2010; Wild, 2006). They argue that there has been an over-reliance on objective distinctions between patients based on legal status, rather than on their subjective report of their reasons for entering treatment. Other studies have found that these objective and subjective sources of data do not always match up, highlighting the need to consider both when examining these variables as predictors of treatment outcomes (Maxwell, 2000; Stevens et al., 2006).

1.4. The present study

The present study examines the characteristics and influence of different patient sub groupings: (a) adolescents not involved in the criminal justice system compared to those involved in the justice system, either with or without a mandate to enter treatment; and, (b) adolescents reporting a self-motivated vs. externally-motivated reason for entering SUD treatment. First, within each way of categorizing patients, we examine baseline differences on demographic, clinical, motivational, and legal variables in order to see whether there are systematic differences between groups. Second, we examine these categorizations as predictors of substance use outcomes over a 12-month period, after the end of formal treatment. Finally, we examine the relation between the two ways of categorizing patients to see whether those who are justice-system involved are less likely to report being self-motivated for treatment.

Method

2.1. Participants

Participants were adolescents who presented to a private outpatient SUD treatment facility in the Northeastern U.S. between 2006 and 2009. Individuals were eligible if they were 14–19 years old, English-speaking, within their first month of treatment at this facility, and had a parent/guardian consent to participation (if under 18). Of the 160 adolescents who were eligible to participate, 95% ($n = 152$) agreed to be contacted by study staff and 127 (79%) were enrolled.

The final sample was 76% male, 87% White, and 16.7 years old ($SD = 1.2$) at study entry. At baseline, most participants were living with parent(s) (94%), enrolled in school (76%), and not employed (57%). Marijuana was the most commonly reported drug of choice (71%), followed by alcohol (12%), and heroin/narcotics (11%). Marijuana dependence was the most common SUD diagnosis (58%), followed by alcohol dependence (32%), alcohol abuse (28%), and marijuana abuse (27%). The median length of stay in this treatment program was 19 weeks (18 sessions; $M = 21.85$ sessions, $SD = 19.59$, range = 0 – 145).

2.2. Measures

2.2.1. Background information—At baseline, the Background Information Form (BIF; Brown et al., 1989) was used to assess demographic information, school/employment status, living situation, and prior participation in SUD treatment. Participants also reported the number of 12-step meetings they had attended in their lifetime and their drug of choice.

2.2.2. Justice system involvement—Participants were asked, "Are you currently involved in the justice system?" If participants endorsed current involvement, they were asked "Did the justice system mandate that you attend this alcohol/drug treatment?" These two questions were used to create three categories of baseline JSI: (1) no current involvement (No JSI; $n = 63$; 49.6%), (2) justice system involved, but not mandated to treatment (JSI; $n = 40$; 31.5%), and (3) justice system involved and mandated to treatment (JSI-M; $n = 24$; 18.9%). Participants were separately asked to report their number of arrests in the past year.

2.2.3. Self-reported reason for entering treatment—Participants were asked, "How did you enter this treatment program?" and were read a list of choices (i.e., wanted to go, went reluctantly, parent(s)/self made mutual decision, parent(s) wanted me to go, court/probation officer recommended that I go, court/probation officer required that I go). Participants were allowed to report multiple reasons for entering, but in these cases were

asked to identify a single primary reason. Participants were also allowed to provide reasons that were not listed; these were recorded verbatim and later coded into categories (e.g., treatment facility or provider recommended). Primary reasons for entering treatment were coded as "self-motivated" (i.e., wanted to go, went reluctantly, and parent(s)/self made mutual decision; $n = 40$; 31.5%) or "externally-motivated" (all other categories; $n = 87$; 68.5%).

2.2.4. Motivational variables—At baseline, participants separately rated the importance of not drinking and using drugs in the next 90 days on a scale from 1 (*not important*) to 10 (*very important*). They identified their treatment goal from a list of options (e.g., "I want to become completely abstinent from alcohol and all drugs," "I want to learn how to use alcohol and/or drugs socially"), which were then coded as either *complete abstinence from drugs and alcohol* or *continued use of drugs and/or alcohol*. Finally, participants were asked whether they thought they might have a problem with drugs or alcohol. These responses were collapsed into a single variable and coded dichotomously to indicate any problem recognition (yes vs. no).

2.2.5. Substance use outcomes—The Timeline Follow Back (TLFB; Sobell & Sobell, 1992) and Form-90 (Miller & Del Boca, 1994) were used at each timepoint to examine past 90 day substance use (180 days at 12-months). Participants used calendars to assist recall. These measures were used to calculate the two main outcomes: percent days abstinent (PDA; i.e., percentage of days on which participant did not use any drugs/alcohol) and percent heavy drinking days (PHDD; i.e., percentage of days on which participant consumed 6+ drinks).

2.2.6. SUD and comorbid psychiatric disorders—Lifetime SUD diagnoses were assessed at baseline using a modified version of the Customary Drinking and Drug Use Record (CDDR; Brown et al., 1998), a structured interview. Lifetime DSM-IV-TR abuse and dependence symptoms were assessed for alcohol and up to three drugs and were then categorized according to DSM cutoffs. The Computerized Diagnostic Interview Schedule for Children, version IV (C-DISC-IV; Shaffer et al., 2000) was used at baseline to assess past-year Axis-I psychiatric diagnoses, based on DSM-IV criteria.

2.2.7. Substance Use Severity—The Personal Involvement Scale (PIS), a subscale of the Personal Experience Inventory (PEI; Henly & Winters, 1988), is a 29-item self-report measure of substance use severity. It assesses use across multiple settings, use for self-medicating purposes, and rearranging activities to facilitate use on a 0 (*never*) to 3 (*often*) scale. Total scores are the average of all items and can range from 0 to 3, with higher scores representing greater substance use severity. Internal consistency in the present sample was high (= .93).

2.2.8. Recent psychological symptoms—The Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) is a 53-item self-report measure derived from the longer Symptom Checklist 90-Revised (SCL-90-R). The BSI measures the degree of distress caused by psychological symptoms in the past week across nine symptom dimensions (e.g., anxiety, depression, hostility). Degree of distress is rated on a 0 (*not at all*) to 4 (*extremely*) scale. The total score is the average of all endorsed items and can range from 0 to 4. Internal consistency in the present sample was high (= .96).

2.2.9. Alcohol- and drug-related consequences—The Inventory of Drug Use Consequences-Recent (InDUC-2R; Tonigan & Miller, 2002) is a 50-item self-report measure of recent (e.g., past 90 days) consequences of alcohol and/or drug use. The

frequency of each consequence is rated on a scale from 0 (*N/A or never*) to 3 (*daily or almost daily*) and raw scores are summed to provide the total score (range = 0–135). Internal consistency was high (= .96).

2.2.10. SUD treatment exposure—SUD-specific treatment exposure in the past 90 (at baseline, 3-, and 6-month assessments) or 180 (at 12-month assessment) days was assessed with the TLFB. Participants marked on the calendar the number of outpatient SUD treatment sessions they had attended during the time period, both at the present treatment facility and at other outpatient programs. All outpatient sessions were combined into a single variable at each timepoint indicating the number of outpatient SUD treatment sessions attended. Participants also marked the number of days they spent in inpatient SUD treatment. As this variable was significantly positively skewed at all timepoints (indicating that the majority of participants did not participate in inpatient treatment), this variable was dichotomized to represent the presence or absence of inpatient SUD treatment during the time window.

2.2.11. Biological verification of self-reported substance use—Biological verification for seven substances (amphetamines, methamphetamines/MDMA, benzodiazepines, cannabinoids, cocaine, opiates, and phencyclidine) was conducted using Intercept Oral Fluid Drug Test kits (Kroll Laboratory Specialists, Inc). If youth reported abstinence from drugs (excluding alcohol and nicotine) in the past three months, they were asked to provide a saliva sample. There were no inconsistencies detected between self-reported abstinence and saliva test results.

2.3. Procedure

Eligible adolescents and their parents (if under 18) were informed about the study by a program director at treatment intake. If interested, study staff contacted them to screen for eligibility, review procedures, and schedule the baseline interview. Participants completed the baseline assessment as close as possible to the date of their first treatment session, followed by assessments 3, 6, and 12 months later. Participants were paid after each assessment: $50 for baseline and 12-month and $40 for 3- and 6-month assessments.

2.3.1 Follow-up rates and attrition analyses—Follow-up rates were 91.3% at 3 months, 84.3% at 6 months, and 87.4% at 12 months. At each timepoint, participants who did not complete the follow-up assessment were compared to successfully followed cases on baseline demographic (age, gender, race) and clinical variables (PDA, PIS, InDUC-2R, presence of a comorbid Axis-I condition) using independent samples t-tests (for continuous variables) and Chi-square analyses (for categorical variables). There were no significant differences detected at the 3- or 6-month follow-ups between completers and non-completers ($ps > .06$). However, non-Whites were less likely to complete the 12-month follow-up than Whites ($\chi^2 (1, N = 127) = 5.04, p = .04$). There were no further differences at the 12-month follow-up between completers and non-completers ($ps > .06$).

2.4. Data analysis plan

We first examined the baseline differences in demographic, clinical, motivational, and legal variables, as well as differences in SUD treatment exposure (outpatient and inpatient) across the 1-year follow-up, by justice system status (no JSI vs. JSI vs. JSI-M) and self-reported reason for entering treatment (self-motivated vs. externally-motivated) using one-way ANOVAs for continuous variables and Chi-square tests for categorical variables. We then constructed separate multilevel mixed models to investigate JSI group and motivational group as predictors of substance use outcomes (i.e., PDA and PHDD) over time, controlling for the predictor of attrition (i.e., race). PDA was normally distributed, but PHDD was non-normal (skewness = 2.07; kurtosis = 4.82). Given the largely bimodal distribution of PHDD,

we created a binary variable indicating the presence or absence of any heavy drinking (HD) during each follow-up period. Hierarchical linear models (HLM) were used for the analyses containing PDA as the outcome. Given the transformation of heavy drinking, we used generalized estimating equations (GEE) to analyze models containing HD. Finally, to examine the extent to which JSI patients report a self-motivated reason for treatment entry, we computed a cross-tabulation between the two ways of categorizing patients' mode of treatment entry and compared them using a Chi-square test for trend followed by post hoc logistic regression analyses to identify which between-group differences were significant (Table 7). The analyses for this paper were generated using SAS software, Version 9.2. Copyright, SAS Institute Inc. SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc., Cary, NC, USA.

Results

3.1 Justice System Involvement

3.1.1 Differences between JSI groups at intake

A baseline comparison of demographic, clinical, motivational, and legal variables across the three JSI classifications can be seen in Table 1. The groups were largely similar with a few exceptions. There was a significant difference between groups with respect to school status, such that the proportion of individuals currently enrolled in school was greater for No JSI (88.9%) and JSI-M (95.8%) individuals compared to JSI individuals (65.0%; $\chi^2(2, N = 127) = 13.33$, $p = .001$). The No JSI participants had lower levels of recognition of the importance of drug abstinence during the next 90 days ($M = 4.7$, $SD = 3.4$), relative to individuals in the JSI ($M = 7.4$, $SD = 3.3$) and JSI-M ($M = 7.8$, $SD = 3.5$) groups ($F = 11.67$, $p < .001$). No JSI individuals had also attended fewer 12-step meetings ($M = 5.1$, $SD = 14.8$) than JSI ($M = 21.1$, $SD = 46.7$) and JSI-M ($M = 19.9$, $SD = 49.0$) participants ($F = 3.08$, $p < .05$). Not surprisingly, a significantly higher proportion of JSI (50.0%) and JSI-M (54.2%) participants reported being arrested in the past year than did No-JSI (9.5%) patients ($\chi^2(2, N = 127) = 26.49$, $p < .001$).

3.1.2 Comparison of treatment exposure between JSI groups

Table 2 compares the amount of treatment participants received by justice group. Inpatient substance use treatment indicates whether the patient had participated in inpatient treatment in the past 3 or 6 months. Outpatient substance use treatment describes the number of sessions the participant attended during the follow-up period on which they are reporting. There were no significant differences between justice groups with respect to inpatient substance use treatment or outpatient substance use treatment at any of the assessments, indicating that groups were exposed to similar levels of treatment across the 1-year follow-up period.

3.1.3 Longitudinal analysis of treatment outcomes by JSI group

We ran multilevel mixed models to test the prospective relation between JSI group and outcomes (Table 3). Results revealed a main effect of justice system grouping, such that JSI-M individuals had greater PDA relative to the No-JSI individuals ($\beta = 17.83$, $p = 0.022$; Figure 1). However, there was also an interaction between JSI group and time, such that JSI-M individuals showed a significant decline in PDA over time relative to No-JSI individuals ($\beta = -2.23$, $p = 0.013$). In terms of HD over time, there was a significant interaction also, such that compared to the No JSI group, JSI individuals had increased odds of HD (OR = 1.12, $p = 0.037$; Figure 2). In this model, there were main effects also of race and time, such that odds of HD were lower for non-White individuals (OR = 0.43, $p = 0.026$) and the odds of HD decreased with time (OR = 0.93, $p = 0.011$).

3.2 Self-Reported Reason for Treatment Entry

3.2.1 Differences between self- vs. externally-motivated groups at intake—The two motivational groups were similar across demographic, clinical, motivational, and legal variables at intake with two exceptions (Table 4). Self-motivated participants reported significantly higher levels of past-week psychological symptoms ($M = 1.3$, $SD = 0.8$) than externally-motivated participants ($M = 1.0$, $SD = 0.7$; $F = 5.05$, $p = .03$). Self-motivated participants were also more likely than externally-motivated participants to recognize that they had a drug/alcohol problem (77.5% vs. 52.9%; $\chi^2(1, N = 127) = 6.96$, $p = .008$).

3.2.2 Comparison of treatment exposure between treatment motivation groups—Table 5 compares the amount of treatment participants received by self-reported reason for treatment entry. There were no significant differences between the self-motivated and externally motivated groups with respect to inpatient substance use treatment or outpatient substance use treatment at any of the assessments, indicating that these groups were exposed to similar levels of treatment across the 1-year follow-up period.

3.2.3 Longitudinal analysis of treatment outcomes by reason for treatment entry—We constructed multilevel mixed models to test the prospective relationship between reason for treatment entry and substance use outcomes. Results revealed no significant differences between groups with respect to PDA ($= 3.170$, $p = 0.611$) and HD ($OR = 0.705$, $p = 0.388$; figure 2) across the 1-year follow-up period (Table 6). Additionally, there were no significant interactions between reason for treatment entry and time with respect to PDA or odds of HD. There was, however, a significant main effect of race, showing decreased odds of HD for individuals of any race other than White ($OR = 0.42$, $p = 0.028$).

3.3. Justice system involvement versus self-reported reason for treatment entry

The proportion of individuals who reported a self-motivated reason for entering treatment was significantly different between JSI groups ($\chi^2(2, N = 127) = 9.35$, $p = 0.009$), such that individuals in the JSI-M group (8%) were significantly less likely to report a self-motivated reason for treatment entry compared to the JSI (45%; $= -1.10$, $p = 0.006$) and No-JSI (32%; $= -0.816$, $p = 0.038$) groups. There was no significant difference in self-reported reason for treatment entry between the JSI and No-JSI groups.

4. Discussion

4.1. Similarities and differences between groups at baseline

Within each method of categorizing patients, there were few baseline differences between groups. The three JSI groups were comparable in age, gender, and ethnicity, as well as substance use (PDA and PHDD), drug of choice, presence of an SUD or comorbid Axis-I diagnosis, substance-related consequences, substance use severity, degree of psychological distress, and prior exposure to SUD treatment. This finding is in contrast to the two adult studies that have found that mandated clients were distinct from the other two groups in their substance use profile (Marshall & Hser, 2002; Kelly et al., 2005).

Despite largely similar baseline profiles, JSI-M and JSI individuals thought it was more important to stop using drugs in the next 90 days than No JSI individuals. However, these groups did not differ from the No JSI group on any of the other motivational variables. JSI and JSI-M individuals were no more likely than No JSI individuals to report having an abstinence goal or a drug/alcohol problem and did not believe it was particularly important to stop drinking in the next 90 days. This suggests that while justice system involved

patients may recognize the consequences they could face if caught using drugs, their desire for total abstinence or for abstaining from less-detectable alcohol is not any greater.

Similarly, adolescents who were self-motivated for treatment did not differ from those who were externally-motivated in demographics; self-reported substance use, severity, or consequences; or prior treatment or 12-step meeting attendance. Self-motivated adolescents did report a higher degree of past-week psychological distress than externally-motivated adolescents and were more likely to believe that they had a problem with drugs/alcohol (78% vs. 53%). Conceptually, it makes sense that individuals who say they wanted to come to treatment would also report being in more distress and believe that they have a drug/ alcohol problem (Finney & Moos, 1995). However, it is worth noting that this desire for treatment did not translate into a greater likelihood of wanting to abstain from use or believing it was more important to stop drinking/using, at least at treatment entry, suggesting that their personal goals or reasons for desiring treatment were independent of an abstinence-based goal.

4.2. Predicting substance use outcomes by JSI status and reason for entering treatment

In contrast to theoretical assumptions that individuals who want treatment would have better outcomes than those who report being there as a result of some external force, we found no differences in outcomes over the follow-up period between self-motivated and externally-motivated individuals. The reasons for this are unclear. One potential explanation is that because the self-motivated group appeared to suffer a greater illness burden at treatment entry (i.e., had more psychological symptoms and greater substance problem recognition), it may have dampened or offset the potentially better prognosis typically associated with an intrinsic desire for help.

On the other hand, there were significant differences detected across JSI groups. Compared to the No JSI group, mandated participants had a stronger initial response to treatment in terms of PDA, followed by a more rapid decline in PDA in the second half of the follow-up period. A similar pattern emerged with heavy drinking, with JSI individuals showing initially decreased heavy drinking that rebounded following treatment relative to the No JSI group. Although not directly examined in the current study, our findings suggest that insofar as these gains are related to legal supervision of substance use (e.g., urine testing), ongoing monitoring and contingency management could help sustain initial treatment gains over time and minimize increases in substance use (e.g., South Dakota 24/7 Sobriety Project [http:// apps.sd.gov/atg/dui247/hb1072.htm]; Hawaii Opportunity Probation with Enforcement [HOPE; Hawken & Kleiman, 2009]).

4.3. Comparison of the two ways of classifying modes of treatment entry

Adolescents who were legally mandated to treatment were the least likely to report a self-motivated reason for entering treatment, relative to individuals who were not involved in the justice system and JSI individuals without a mandate for treatment, suggesting that they were unlikely to perceive that it was their choice to enter. However, less than one-third of those with no JSI reported a self-motivated reason for entering treatment, which is consistent with prior findings on modes of adolescent treatment entry (e.g., Tims et al., 2002) and with prior arguments against using the word "voluntary" to describe patients without a legal mandate for treatment (e.g., Klag et al., 2005; Urbanoski, 2010; Wild, 2006). JSI individuals without a mandate for treatment were just as likely to report a self-motivated reason for treatment as no JSI individuals, highlighting an important distinction between JSI individuals with and without mandates for treatment.

4.4. Limitations

This study was based on a relatively small and predominantly White sample of adolescents from a single, private, suburban outpatient clinic. As a result, our subgroups were small and our findings may not be representative of the broader adolescent SUD patient population. Perhaps the most salient limitation is that the categorizations of individuals used to predict outcomes were based on brief, categorical responses to a limited number of questions. Others have pointed out that individuals often have multiple and interrelated reasons for entering treatment, to which they assign differing degrees of importance and which have dynamic, idiosyncratic relations to constructs like motivation, perceived coercion, and perceived need for treatment (e.g., Wild, 2006). Our limited categorizations could not capture these nuances.

4.5. Future Directions

This study was unique in its simultaneous examination of adolescents' self-reported reasons for entering treatment and the objective presence or absence of justice system involvement. Future work may build upon our simpler one-item measures with more sophisticated assessments of these modes of treatment entry. Additional research could use qualitative interviewing (e.g., Andrews et al., 2012) and/or a multi-item quantitative measure (e.g., the Treatment Entry Questionnaire [Urbanoski & Wild, 2012]) to assess how adolescents perceive treatment entry. Future research could also more directly assess constructs of perceived coercion, perceived need for treatment, and readiness to change by using validated measures of these constructs and comparing these across JSI and self- vs. externally-motivated groups. Some have begun to address this issue with adult samples (e.g., Prendergast et al., 2008; Stevens et al., 2006; Wild et al., 2006) in response to criticisms about the over-reliance on objective, legally-based distinctions between patient groups (Klag et al., 2005; Urbanoski, 2010; Wild, 2006).

4.6. Conclusion

Our findings suggest that the assumption that a court mandate is tantamount to a lack of intrinsic motivation for treatment may, in adolescent cases, be correct. In contrast, given that more than two-thirds of *non-justice-system involved* patients also reported an *external* reason for treatment entry, our findings do not support a "voluntary" treatment entry designation for these individuals. Also, in keeping with adult studies, the subgroup of mandated patients evinced a comparatively superior initial treatment response. The declining nature of this initially better outcome, however, suggests justice-system involved adolescents may need some combination of ongoing treatment, support, and monitoring to maintain these gains and enhance the chances of remission and long-term recovery.

Acknowledgments

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PDA profiles by Justice Group

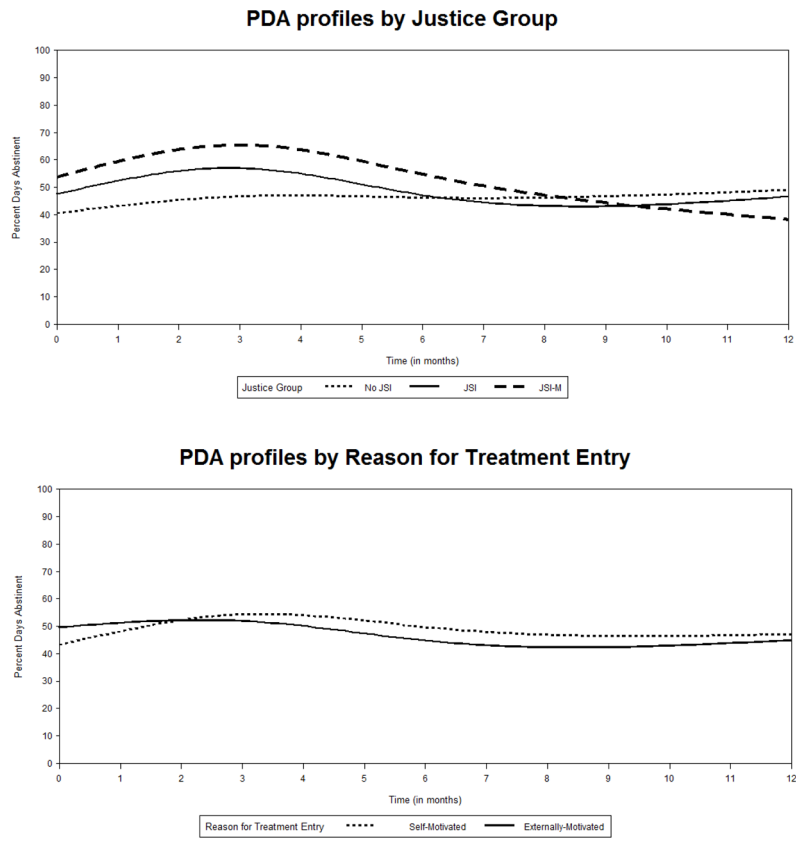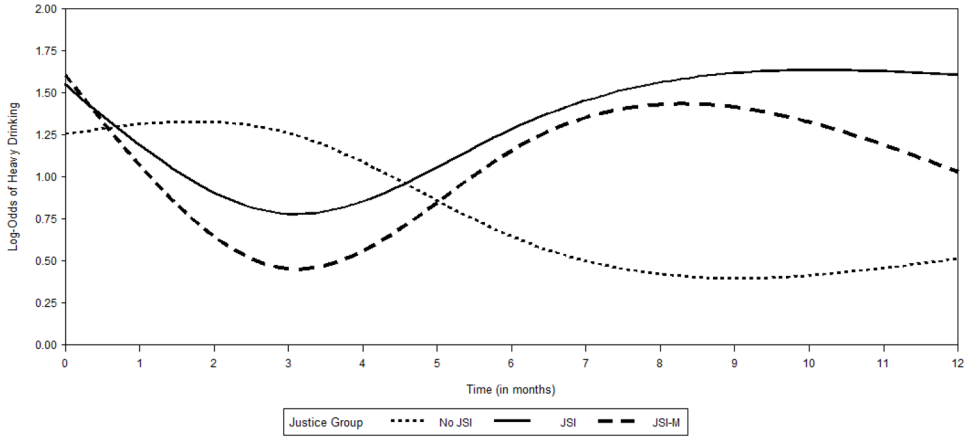**PDA profiles by Reason for Treatment Entry**

Figure 1.
PDA profiles by a) Justice System Involvement (above); and, b) Reason for Treatment Entry (below).

Log-Odds of Heavy Drinking by Justice Group

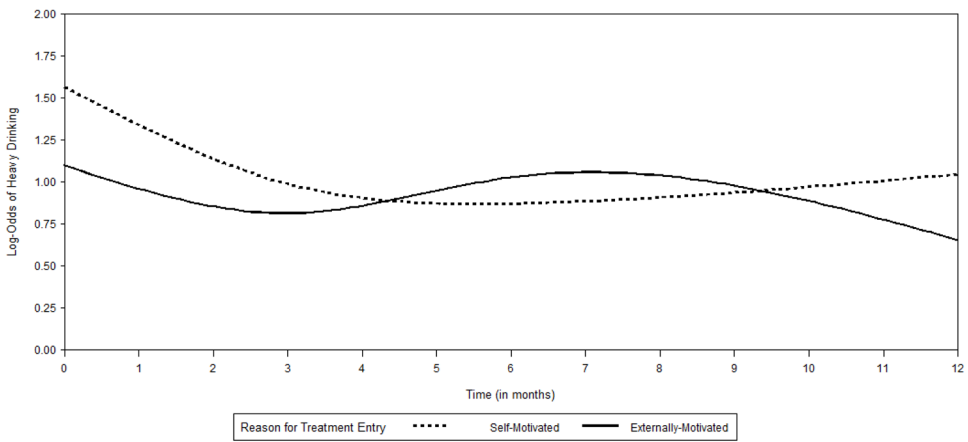## Log-Odds of Heavy Drinking by Reason for Treatment Entry

Figure 2.
Log-Odds of Heavy Drinking by a) Justice System Involvement (above); and, b) Reason for Treatment Entry (below)

Table 1

Baseline comparison of justice system-involved groups.

Variable	No JSI[a] (n = 63)	JSI[a] (n = 40)	JSI-M[a] (n = 24)	Test[b]	p
Demographic					
Age	17.1 ± 1.3	17.3 ± 1.1	17.0 ± 1.2	0.33	0.718
Female	18 (28.6)	7 (17.5)	6 (25.0)	1.63	0.442
White	56 (88.9)	33 (82.5)	21 (87.5)	0.88	0.644
Enrolled in school	56 (88.9)	26 (65.0)[†]	23 (95.8)	13.33	0.001
Clinical					
Percent days abstinent	40.4 ± 34.3	47.5 ± 34.8	53.8 ± 32.6	1.46	0.237
Substance use consequences	40.4 ± 23.0	42.5 ± 25.3	33.7 ± 25.2	0.98	0.379
Substance use severity	1.7 ± 0.6	1.9 ± 0.6	1.9 ± 0.5	1.06	0.351
12-step meeting attendance	5.1 ± 14.8[†]	21.1 ± 46.7	19.9 ± 49.0	3.08	0.049
Psychological symptoms	1.2 ± 0.7	1.0 ± 0.8	0.8 ± 0.5	2.00	0.140
Heavy drinking (yes/no)	49 (77.8)	33 (82.5)	20 (83.3)	0.52	0.773
Drug of choice: marijuana	43 (68.3)	28 (70.0)	19 (79.2)	1.85	0.763
Prior SUD treatment	32 (50.8)	24 (60.0)	14 (58.3)	0.96	0.618
Comorbid axis-I disorder	39 (61.9)	25 (62.5)	14 (58.3)	0.12	0.941
Motivational					
Importance of alcohol abstinence	4.1 ± 3.3	4.9 ± 3.3	4.7 ± 3.5	0.83	0.439
Importance of drug abstinence	4.7 ± 3.4[†]	7.4 ± 3.3	7.8 ± 3.5	11.67	0.000
Abstinence goal	11 (17.5)	10 (25.0)	6 (25.0)	5.35	0.254
Drug/alcohol problem recognition	40 (63.5)	27 (67.5)	10 (41.7)	4.62	0.099
Legal					
Arrested in past year	6 (9.5)	20 (50.0)[†]	13 (54.2)[†]	26.49	0.000

[a] Number and proportion (%) of sample reported for categorical variables, mean ± standard deviation reported for continuous variables

[b] χ^2 reported for categorical variables, F statistic reported for continuous variables

[†] Significant post-hoc between-group differences (p<.05)

Table 2

Comparison of SUD treatment exposure by justice group classification

	Justice Group				
	No JSI	JSI	JSIM	²/F	p
Inpatient (count [percentage])					
Baseline	13 (20.6)	12 (30.0)	4 (16.7)	1.86	0.395
3 Month	5 (8.5)	3 (7.9)	3 (13.0)	0.52	0.770
6 Month	7 (12.1)	3 (8.1)	3 (14.3)	0.60	0.741
12 Month	10 (17.9)	8 (22.2)	4 (21.1)	0.28	0.867
Outpatient (M, SD)					
Baseline	1.92 ± 6.36	1.40 ± 6.05	1.50 ± 5.38	0.10	0.903
3 Month	12.02 ± 7.63	13.32 ± 8.55	11.43 ± 6.57	0.51	0.603
6 Month	17.31 ± 13.07	18.35 ± 8.95	22.10 ± 13.91	1.21	0.301
12 Month	23.52 ± 22.04	26.83 ± 20.23	26.37 ± 16.32	0.33	0.721

Table 3

Substance use outcomes in relation to JSI group over 12 months.

Parameter	PDA				HD			
		SE	F	p		SE	^{2}	p
Race (other than White)	−7.507	7.136	1.11	0.294	−0.844	0.378	4.99	0.026
Time	−1.648	0.771	3.80	0.052	−0.074	0.029	6.45	0.011
JSI	8.958	6.556	1.87	0.173	−0.065	0.435	0.02	0.881
JSIM	17.833	7.774	5.26	0.022	−0.193	0.478	0.16	0.687
Time*JSI	−0.804	0.732	1.21	0.273	0.109	0.052	4.36	0.037
Time*JSIM	−2.229	0.897	6.18	0.013	0.064	0.056	1.28	0.258

Table 4

Baseline comparison of self-motivated vs. externally-motivated groups.

Variable	Self-Motivated[a](*n* = 40)	Externally-Motivated[a](*n* = 87)	Test[b]	*p*
Demographic				
Age	17.4 ± 1.1	17.0 ±1.3	2.23	0.138
Female	31 (77.5)	65 (74.7)	0.12	0.734
White	36 (90.0)	74 (85.1)	0.58	0.447
Enrolled in school	31 (77.5)	74 (85.1)	1.09	0.296
Clinical				
Percent days abstinent	49.7 ± 33.4	43.1 ± 34.7	0.99	0.321
Substance use consequences	45.1 ± 21.9	37.4 ± 24.9	2.79	0.097
Substance use severity	1.9 ± 0.6	1.8 ± 0.6	0.44	0.511
12-step meeting attendance	12.9 ± 29.0	13.0 ± 38.7	0.00	0.990
Psychological symptoms	1.3 ± 0.8	1.0 ± 0.7	5.05	0.026
Heavy drinking (yes/no)	30 (75.0)	72 (82.8)	1.04	0.307
Drug of choice: marijuana	27 (67.5)	63 (72.4)	3.00	0.223
Prior SUD treatment	26 (65.0)	44 (50.6)	2.30	0.129
Comorbid axis-I disorder	23 (57.5)	55 (63.2)	0.38	0.539
Motivational				
Importance of alcohol abstinence	4.2 ± 3.0	4.6 ± 3.5	0.32	0.571
Importance of drug abstinence	6.1 ± 3.4	6.1 ± 3.8	0.00	0.982
Abstinence goal	6 (15.4)	22 (25.6)	2.26	0.370
Drug/alcohol problem recognition	31 (77.5)	50 (52.9)	6.96	0.008
Legal				
Arrested in past year	12 (30.0)	27 (31.0)	0.01	0.907

[a]Number and proportion (%) of sample reported for categorical variables, mean ± standard deviation reported for continuous variables

[b] χ^2 reported for categorical variables, F statistic reported for continuous variables

Table 5

Comparison of SUD treatment exposure by self-reported reason for treatment entry

| | Reason for Treatment Entry | | | |
	Self-Motivated	Externally Motivated	x^2/t	p
Inpatient (count[percentage])				
Baseline	10 (25.0)	19 (21.8)	0.16	0.693
3 Month	4 (10.3)	7 (8.6)	0.08	0.774
6 Month	6 (15.8)	7 (9.0)	1.19	0.275
12 Month	6 (15.8)	16 (21.9)	0.59	0.442
Outpatient (*M, SD*)				
Baseline	2.85 ± 8.58	1.14 ± 4.39	−1.19	0.239
3 Month	14.03 ± 7.36	11.49 ± 7.80	−1.70	0.093
6 Month	20.32 ± 13.61	17.63 ± 11.29	−1.12	0.264
12 Month	28.63 ± 25.50	23.23 ± 17.20	−1.17	0.246

Table 6

Substance use outcomes in relation to self- vs. externally-motivated treatment entry over 12 months

Parameter	PDA				HD			
		SE	F	p		SE	2	p
Race (other than White)	−6.320	7.126	0.79	0.376	−0.867	0.394	4.86	0.028
Time	−0.399	0.571	0.19	0.660	−0.033	0.023	2.07	0.150
Self-Motivated	3.170	6.231	0.26	0.611	−0.349	0.405	0.74	0.388
Time*Self-Motivated	−0.491	0.699	0.49	0.483	0.003	0.048	0.00	0.945