

Employability After Substance Abuse Treatment in Kentucky:
An Analysis of the Kentucky Treatment Outcome Study

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INTRODUCTION

Public funding of substance abuse treatment (SAT) in Kentucky dates back to the 1950s when legislators sought to curb the problem of alcoholism through legislative acts. The definition of substance abuse expanded through the years to include other substances such as cocaine, marijuana and opiates.

Employment after SAT is a critically important outcome for policymakers to consider when allocating funds because it assists in social re-integration, helps to prevent relapse and promotes economic self-sufficiency¹. Because of this, employment is an important factor to consider when assessing the impact SAT has on its clients (participants).

The Kentucky Alcohol and Other Drug Abuse Prevention, Intervention and Treatment Law was enacted in summer 1994, includes language requiring any substance abuse treatment center receiving state or federal funding to participate in an outcome study designed to measure the intervention's impact, if any, on a client. The statute mandates the study measure a client's length of participation in a treatment modality and change in behavior one year after discharge from the treatment program.

To meet the requirements set forth in the legislation, the University of Kentucky Center on Drug and Alcohol Research conducts the Kentucky Treatment Outcome Study (KTOS), a report prepared annually for the Department of Behavioral Health within the Cabinet for Health and Family Services. According to the KTOS website, "the study compares client self-report information from the two data collection times and produces reports on changes in substance use, criminal justice involvement, supports for recovery, living situation, and employment one year after treatment."²

The evaluation is required to include information regarding change in alcohol and/or drug use patterns, employment status and involvement with the criminal justice system from admission to discharge from treatment. Regarding employment, data analysis was limited to examining changes in employment status, number of days paid for work and income during the previous month and year.

¹ Catalano, R. F., Howard, M. O., et al. "Relapse in the addictions: Rates, determinants, and promising relapse prevention strategies." Prepared for the Surgeon General's Report, *The health consequences of smoking: Nicotine addiction* (1987); Metzger, D.S., Platt, J.J. "Solving vocational problems for addicts in treatment." *The effectiveness of drug abuse treatment: Dutch and American perspectives*, (1990), pp. 101–111; Westermeyer, J. "Non-treatment factors affecting treatment outcomes in substance abuse." *American Journal of Drug and Alcohol Abuse* 15 (1989), pp. 13–29.

² Retrieved October 18, 2009, from Kentucky Treatment Outcome Study website: <http://cdar.uky.edu/ktos/>

This analysis seeks to determine if factors such as setting (rural vs. urban), employment history, type of criminal history, type of drug use and existence of psychological problems impact employability after substance abuse treatment. Results show those living in a metro setting more likely to be employed after SAT than those living in the non-metro and very rural settings. Clients also show a greater likelihood of being employed after SAT if marijuana and/or opiate usage in the previous 12 months were not reported at intake. Finally, logistic regression modeling shows age and employment pattern at intake to be the most powerful predictors of employment pattern at follow-up. This confirms previous research showing that younger clients are more likely to enter employment after SAT³.

BACKGROUND

In 1956 the Kentucky General Assembly first addressed the issue of substance issue by enacting legislation to establish a statewide program for the rehabilitation of alcoholics, research into the causes and prevention of alcoholism, and public education concerning the problem of alcoholism. To carry out these provisions, the Commission on Alcoholics was created.

The legislation was amended several times since the 1960's, until it was broadened in 1990 to deal with all forms of chemical dependency. The 1990 legislation also introduced the requirement that any treatment center receiving state or federal funding submit to the Cabinet for Human Resources an annual report relating to treatment effectiveness. While the phrase "relating to treatment effectiveness" seemed to indicate that a true evaluation would occur, it really just required the collection of certain data for archiving.

The legislation became known as the Kentucky Alcohol and Other Drug Abuse Prevention, Intervention and Treatment Law when amendments were passed by the 1994 General Assembly. In addition, language was added to the subsection dealing with the annual report on treatment effectiveness

³ Biegel, D., Stevenson, L., et al. (2009). Predictors of Competitive Employment Among Consumers With Co-Occurring Mental and Substance Use Disorders. Retrieved from <http://www.springerlink.com/content/k41841720w26l681/fulltext.html> November 28, 2009.

requiring a client outcome study to be conducted that measured the relative change in a client as a result of the client's participation specific treatment modalities. KRS 222.465(1) reads:

“All inpatient, residential, or outpatient treatment centers or programs licensed as a chemical dependency treatment service pursuant to KRS 216B.105 or this chapter and receiving state or federal funds, shall participate in a client-outcome study conducted by the cabinet. This scientifically-conducted client-oriented evaluation study shall measure the relative change in a client as a result of the client's participation in specific treatment modalities. The client-outcome study shall measure the client's length of stay in each treatment modality and the client's change in behavior one (1) year after being discharged from a treatment program.”

KRS 222.465(2) requires the study to be completed “by an independent organization qualified to conduct outcome evaluation” and 222.460(2) outlines specific information to be included in the report as, but not limited to, the following:

- *Total number of alcohol and drug abuse clients admitted to treatment.*
- *Total number of referrals from the District and Circuit Courts and the Department of Corrections.*
- *Client's change in alcohol and other drug use patterns from admission to discharge from treatment.*
- *Client's change in employment status from admission to discharge from treatment.*
- *Client's change in involvement with the criminal justice system from admission to discharge from treatment.*

The Center on Drug and Alcohol Research (CDAR) was established on the University of Kentucky campus in 1990 to research biological, psychological and clinical aspects of drug abuse. Carl Leukefeld came to UK from the National Institute on Drug Abuse to help establish the CDAR and, in 1992, negotiated the first contract with the state to conduct surveys at selected treatment sites. When the reporting requirements became more stringent in 1994, the CDAR was ably positioned to carry out the client outcome study and this led to what is now the Kentucky Treatment Outcome Study (KTOS).

For the past five or more years, KTOS has included clients who were referred by the court system as DUI offenders with pending court actions, or as probationers, parolees, or as diversion cases. About 50% to 60% of all clients in treatment come from one of these criminal justice referral sources. Parole and probation referrals can result in incarceration for failure to attend treatment while diversion cases may result in case dismissals and record expungement if treatment is satisfactorily completed. Another 20% or so enter SAT under pressure from the Department for Community Based Services (DCBS) in the Cabinet

for Health and Family Services as a condition of maintaining custodial rights to their children, and the remaining 15-20% of clients enter SAT voluntarily⁴.

Despite legislation mandating that the follow-up survey occur 12 months after discharge from SAT, the CDAR conducts surveys 12 months after intake. The principal investigator justified this discrepancy by the virtual impossibility of knowing when a client discharges from SAT. Treatment episodes are not easily defined since clients go in and out of treatment. He further explained that there is no standard protocol for SAT; one client may attend five SAT sessions and discharge, another may attend 10. Walker says that counties and court systems have different requirements for what constitutes completing SAT. For instance, a judge may sentence a pregnant woman to SAT until she gives birth. Because there is no formal process for recognizing completion of SAT, there is no way for the CDAR to know when to start the 12-month clock after discharge for conducting the follow-up survey¹. The intake date is recorded by the automatic date stamp on the baseline data collection and thus provides an anchor date.

ABOUT THE STUDY

Design

The KTOS uses a pre- and post-test research design to measure change in behavior from one point in time to another and discern impact of the intervention. Measures for the study were developed from the Center on Substance Abuse Treatment's primary data collection instrument, the Government Performance Results Act (GPRA) and items mandated in KRS 222.460.

Data Collection

In Kentucky, 14 community mental health centers provide the majority of state-funded treatment and thus provide the majority of data for outcome study. Treatment providers and clinicians collect baseline data during intake using personal digital assistants (PDAs). Once the intake survey is completed,

⁴ R. Walker, personal interview, October 30, 2009

clients are invited to participate in a follow-up survey 12 months later. They are provided with an informed consent document to ensure participation is truly voluntary and those that agree become eligible for the follow-up telephone interview.

Because of privacy concerns, all data are collected and accessed digitally through password-protected files, and all identifying data are removed. In addition, the U.S. Department of Health and Human Services has issued a Certificate of Confidentiality, protecting the participants and clients by making exempt from any potential court order or other legal search process. Data for this analysis were obtained through a request to Robert Walker in the Center on Drug and Alcohol Research and the Division of Behavioral Health within the Kentucky Cabinet for Health and Family Services. (The author's spouse is a data coordinator on the KTOS.)

Attrition

The 2008 follow-up study netted 1,196 participants of a possible 6,464. Past KTOS reports prepared for the Division of Behavioral Health divide causes for attrition into three categories: expired, ineligible for follow-up and refusals. Primary reasons for labeling a client ineligible are death, incarceration or residing in a controlled environment such as residential treatment or the military. Records considered expired are those that never completed a follow-up survey for reason other than being ineligible; essentially, project interviewers were never able to contact or locate the client. Refusals are those clients who directly refuse to provide information. For each of these three categories, detailed information is provided regarding efforts to reach the clients. Information regarding causes for attrition was not available for this analysis because a raw data set was used and those causes were not deemed important to analyzing employability after SAT.

Data Analyses

This analysis examines changes from intake to follow-up (12 months after intake) using two approaches. First, bivariate tests were utilized to detect variables that showed a significant relationship to

employment at follow-up by examining a particular population's employment pattern at intake and again at follow-up, while holding constant for the characteristic reported at intake. For instance, one question is whether type of prior drug use reported at intake impacts employability after SAT. To compare, two cross-tabulations were done with drug usage reported at intake: one with employment pattern at intake, another with employment pattern at follow-up. The differences in those results are shown in the corresponding charts for each cross-tabulation comparison.

In the second step, all variables examined through bivariate analysis were entered into a logistic regression model where the dependent variable was employment at follow-up, dichotomized as employed or unemployed. In the bivariate tests, employment pattern at follow-up was broken into four categories (full-time, part-time, regular unemployment and other unemployment) while in the logistic regression this variable was dichotomized as 'employed' or 'unemployed' for the simplicity of running a binary regression.

STATISTICAL SUMMARY

The sample used for the 2008 KTOS is heavily male (60%) and overwhelmingly Caucasian (87%). The mean age is thirty-two. Marital status showed only 21.9% in a defined relationship (18.5% married, 3.4% cohabiting) with the remaining portion divorced (24.7%), separated (8.9%), widowed (1.5%) or never married (43%). Table 1 shows expanded demographic information.

Table 1: Demographics (n = 1,196)

Gender	
Male	59.6%
Female	40.4%
Mean Age	
	32.6 (15-63)
Race	
White	87.04%
Black	11.96%
Native American	0.75%
Mexican	0.25%
Setting	
Metro	53.15%
Non-metro	38.86%
Very rural	7.99%
Marital Status	
Never married	43.9%
Married	19.98%
Separated	3.68%
Divorced	21.15%
Widowed	10.12%
Cohabiting	1.17%

Table 2 shows the mean education level of the sample was roughly that of a high school graduate (12.1 years of education) and just over 40% reported their usual employment pattern for the 12 months prior to intake as “full-time”. Mean monthly income at intake was \$1,063 (\$12,756 annualized), just above the annual poverty level of \$10,830 for a single income household.

Correlating to the 43% of clients who reported full-time employment status, 54% reported having a valid driver’s license. Of those with a valid driver’s license, nearly 80% reported having a car available for use. This means less than half the sample, 42.6%, reported having a valid driver’s license *and* had a car available for use, creating a Catch-22 where employment is more likely if one has a car and valid driver’s license, but employment is often times required in order for one to be able to afford a car.

Table 2: Education and employment at intake (n = 1,196)

Education	
Mean years of education completed	12.12 (3-19)
Employment	
Usual employment status in the past 12 months	
Full-time	43.06%
Part-time	10.87%
Part-time (irregular, day work)	8.28%
Unemployed	17.64%
Unemployed (student)	1.51%
Unemployed (disabled, retired)	10.03%
Unemployed (in a controlled environment)	4.93%
Unemployed (military service)	0.08%
Unemployed (homemaker, child care)	3.6%
Income	
Mean monthly income (all sources)	\$1,063
Transportation	
Has a valid driver's license	54.10%
Of those with valid driver's license (n = 647), has a car available for us	78.82%
Of those with car available for use (n = 510), owns the car	74.9%

RESULTS

I chose to examine five aspects of the relationship between substance abuse treatment (SAT) and employability not covered in the KTOS report produced by the principal investigator's group in the UK CDAR. (As mentioned earlier, the KTOS report is mandated by law to contain certain information, and other information is included as part of federal reporting guidelines. The items this analysis addresses do not fall into either category.) The questions I will address are:

- Does setting – metro, non-metro, very rural – play a role in employability after SAT?
- Does type of prior criminal history at intake affect employability after SAT?
- Does type of prior drug use at intake affect employability after SAT?
- Does type of prior psychological problems at intake affect employability after SAT?
- Does employment pattern in the 12 months prior to intake affect employability after SAT?

For the sake of clarity, employment status was broken into four categories – ‘full-time’, ‘part-time’, ‘unemployed’ and ‘unemployed, other’. The part-time category consisted of both regular and irregular work, while the unemployed category consisted of only those who were able to work but were not. Those who reported themselves as retired/disabled, student, military service, in a controlled environment or homemaker/child care were categorized as ‘unemployment, other’. The questions and their cross-tabulated data are listed below.

Question 1: Does setting – metro, non-metro, very rural – affect employability after SAT?

Residency for clients was categorized as either metro, non-metro or very rural. Tables 3 and 4 show the employment pattern for clients in the three settings at intake and following SAT.

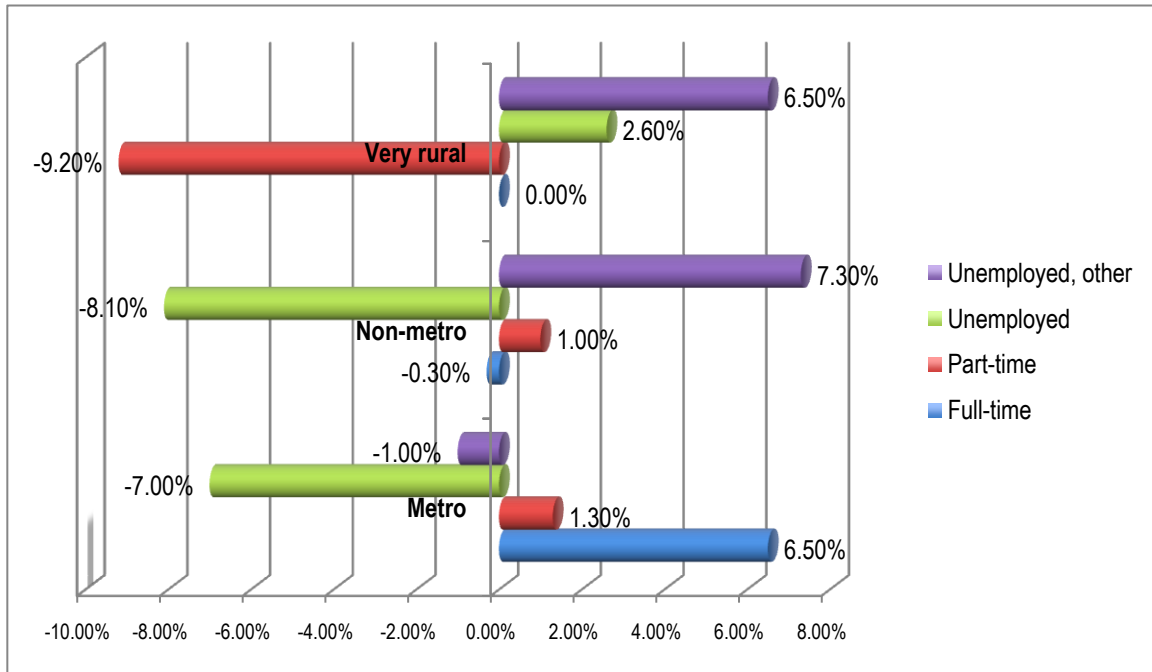
Table 3: Employment pattern for previous 12 months at intake for identified settings (n = 1,196)

Setting	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Metro	43.8%	18.1%	15.3%	22.9%	100%
	38.2%	38.5%	37.3%	40.7%	38.7%
Non-metro	47.5%	16.8%	16.5%	19.2%	100%
	54.8%	47.4%	53.4%	45.1%	51.1%
Very rural	30.3%	25%	14.5%	30.3%	100%
	7.0%	14.1%	9.3%	14.2%	10.2%
Total	44.3%	18.1%	15.8%	21.7%	100%
	100%	100%	100%	100%	100%
p	0.095 (not statistically significant at 95% CI)				

Table 4: Employment pattern for previous 12 months at follow-up for identified settings (n = 1,196)

Setting	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Metro	50.3%	19.4%	8.3%	21.9%	100%
	41.7%	41.2%	34.8%	32.8%	38.7%
Non-metro	47.2%	17.8%	8.4%	26.5%	100%
	51.7%	50%	46.4%	52.6%	51.1%
Very rural	30.3%	15.8%	17.1%	36.8%	100%
	6.6%	8.8%	18.8%	14.6%	10.2%
Total	46.7%	18.3%	9.3%	25.8%	100%
	100%	100%	100%	100%	100%
p	.010 (statistically significant at 95% CI)				

Chart 1: Change in employment patterns from intake to follow-up for identified settings



The cross-tabulations show the metro setting as the only one in which full-time employment increases while regular unemployment decreases. The non-metro setting shows slight changes in full-time employment (decrease) and part-time employment (increase), but relatively large changes in regular unemployment (decrease) and other unemployment (increase). The very rural setting shows increases in both unemployment categories, no change in full-time employment, and a significant drop in part-time employment. Other unemployment, which rose in the non-metro and very rural settings and slightly decreased in the metro setting, is broken out in Table 5 below.

Table 5: Change in “Unemployment, other” from intake to follow-up for identified settings (n = 1,196)

Setting	Employment Pattern				
	Military Service	Student	Retired/ Disabled	Homemaker/ Child care	Controlled Environment
Metro	-0.5%	+0.83%	+5.68%	+1.17%	-3.84%
Non-metro	-2.05%	+2.05%	+5.25%	+0.91%	-0.69%
Very rural	-2.22%	+7.77%	+5.56%	-1.11%	-2.22%

A closer examination of the increase in other unemployment shows those reporting themselves as “retired or disabled” increased by roughly 5.5% across each setting, while those reporting themselves as

“student” increased slightly in the metro and non-metro settings, but significantly in the very rural setting. Also, at follow-up each setting realized a decrease, albeit a slight one, in percentage of clients reporting themselves as being in controlled environments such as hospital, jail or prison. Robert Walker, the study’s principal investigator (PI), explained this pattern as being long-term, “when people get into treatment they often have conditions that lead to disability and case managers even work with people to help them get disability in place. We have seen this pattern for many years. The only thing somewhat unexpected here is that usually the rural areas have somewhat greater rates of increased disability compared to urban.”⁵

Also of note is the drop in those reporting their follow-up employment status as ‘military service’. Of the 1,196 clients, only fewer than 10 who reported any kind of drug usage prior to intake also reported this employment pattern, and zero reported this employment status at follow-up. Walker explains that for the few that did report that status at intake, they were likely discharged upon entering SAT due to criminal charges and military misconduct, thus a population of 0 at follow-up.

Question #2: Does type of criminal history affect employability after substance abuse treatment?

Clients were asked upon intake to report their prior legal involvement by selecting all charges they have had placed against them in the 12 months prior. Those charges have been categorized in four ways: violent crimes (rape, robbery, homicide, assault); property crimes (burglary, theft, arson, receiving stolen property); lesser crimes (forgery, prostitution, weapons, drug charges, disorderly conduct, driving under the influence); and violations (parole and probation violation, contempt of court). Tables 6 and 7 show the employment pattern at intake and follow-up for the type of legal involvement reported at intake.

⁵ R. Walker, personal interview, October 30, 2009

Table 6: Employment pattern for the 12 months prior to intake for clients reporting criminal history during the 12 months prior to intake (n = 1,120)

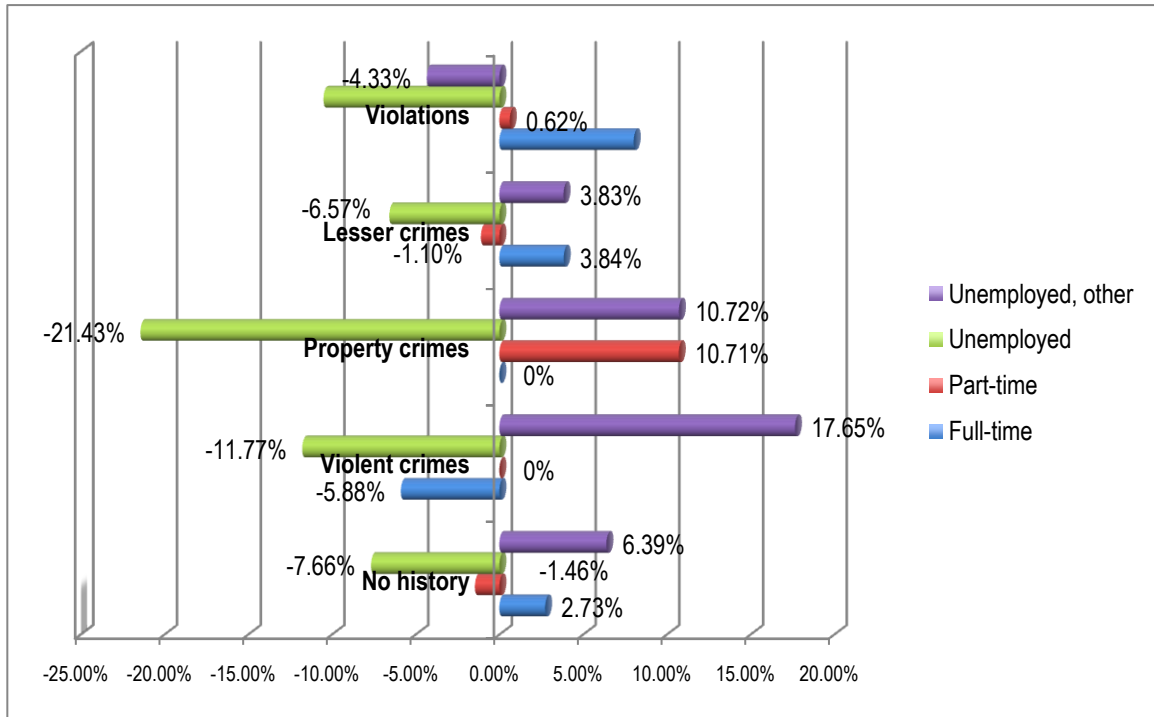
Criminal History	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
None reported	43.07%	19.71%	18.61%	18.61%	100%
	48.76%	51.18%	52.05%	44.54%	48.93%
Violent Crimes	70.59%	11.76%	17.65%	0%	100%
	2.48%	0.95%	1.53%	0%	1.52%
Property Crimes	46.43%	21.43%	25%	7.14%	100%
	2.69%	2.84%	3.57%	0.87%	2.5%
Lesser Crimes	41.64%	20%	16.71%	21.65%	100%
	31.4%	34.6%	31.12%	34.5%	32.59%
Violations	43.83%	13.58%	14.2%	28.39%	100%
	14.67%	10.43%	11.73%	20.09%	14.46%
Total	43.21%	18.84%	17.50%	20.45%	100%
	100%	100%	100%	100%	100%

Table 7: Employment pattern for the 12 months after SAT for clients reporting criminal history during the 12 months prior to intake (n = 1,120)

Criminal History	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
None reported	45.80%	18.25%	10.95%	25%	100%
	47.81%	46.95%	57.14%	49.46%	48.93%
Violent Crimes	64.71%	11.76%	5.88%	17.65%	100%
	2.09%	0.94%	0.95%	1.08%	1.52%
Property Crimes	46.43%	32.14%	3.57%	17.86%	100%
	2.48%	4.23%	0.95%	1.81%	2.5%
Lesser Crimes	45.48%	18.9%	10.14%	25.48%	100%
	31.62%	32.39%	35.24%	33.57%	32.59%
Violations	51.85%	20.37%	3.7%	24.07%	100%
	16%	15.49%	5.71%	14.08%	14.46%
Total	46.88%	19.01%	9.38%	24.73%	100%
	100%	100%	100%	100%	100%

	p
None reported	.732
Violent Crimes	.561
Property Crimes	.619
Victimless Crimes	.922
Violations	.105
<i>None statistically significant at 95% CI</i>	

Chart 2: Change in employment patterns from intake to follow-up for type of legal involvement (n = 1,120)



The cross-tabulations of prior legal involvement and employment pattern seem to show SAT having a positive effect on regular unemployment rate, regardless of prior legal involvement. The categories ‘no history’ and ‘violations’ were the only ones where full-time employment increased, though the gain seen in ‘violations’ was nearly three times higher, and ‘violations’ is the only category where both categories of unemployment fell. Perhaps this is explained by the nature of referrals to SAT where completion of SAT and meeting other requirements (such as employment) are conditions to avoiding jail and/or prison. As noted in the chi-square table, none of these cross-tabulations were shown to be statistically significant.

Question #3: Does type of prior drug use affect employability after substance abuse treatment?

Clients were asked at intake to detail their drug and alcohol use by first answering if they had ever in their lifetime used various drugs. If the client answered ‘yes’, they were asked how many of the previous 12 months they had used that particular drug. Comparisons were done against five commonly used drugs – alcohol, marijuana, cocaine, heroin and opiates – to see if usage of a particular drug affected the client’s

employability after SAT. For this comparison, frequency of drug usage in the 12 months prior to intake was disregarded; instead usage was classified as ‘yes’ or ‘no’. The rows of Table 8 show the employment pattern of people who reported usage of that particular drug and, thus, total to 100%. The columns show the percentage of people who reported using a particular drug for the identified employment pattern and do not total to 100%. Because a client for a particular employment pattern was able to report using multiple drugs, the column (bottom) percentages only show which the frequency of drug usage that particular employment pattern, i.e. opiate usage was the second most common drug used for those reporting their pattern as ‘unemployment, other’ while marijuana was for the other three employment patterns.

Table 8: Employment pattern at intake for clients who reported drug usage prior to intake (n = 1,175)

Drug Use	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Alcohol	45.98%	20.18%	17.97%	15.87%	100%
	80.97%	79.91%	77.25%	59.34%	
Marijuana	45.57%	21.20%	20.09%	13.13%	100%
	56.14%	58.77%	60.19%	34.73%	
Cocaine	46.58%	19.87%	21.19%	12.36%	100%
	41.37%	40%	45.71%	23.93%	
Heroin	46.27%	16.42%	25.37%	11.94%	100%
	6.14%	4.98%	8.25%	3.56%	
Opiates	42.66%	19.23%	20.45%	17.66%	100%
	48.03%	48.89%	56.25%	43.16%	

Table 9: Employment pattern at follow-up for clients who reported drug usage prior to intake (n = 1,175)

Drug Use	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Alcohol	47.19%	19.18%	10.69%	22.93%	100%
	76.02%	76.65%	83.62%	71.72%	
Marijuana	46.99%	18.99%	10.76%	23.26%	100%
	52.94%	53.33%	58.62%	50.86%	
Cocaine	48.12%	19.87%	10.15%	21.85%	100%
	39.28%	40.18%	40%	34.74%	
Heroin	56.72%	16.42%	11.94%	14.92%	100%
	6.99%	5.02%	7.14%	3.55%	
Opiates	44.58%	17.83%	12.41%	25.17%	100%
	46.2%	46.15%	62.28%	50%	

	p
Alcohol	.086
Marijuana	.569
Cocaine	.528
Heroin	.136
Opiates	.014*

*Statistically significant at 95% CI

Chart 3: Change in employment pattern for clients who reported drug usage in the 12 months prior to intake.

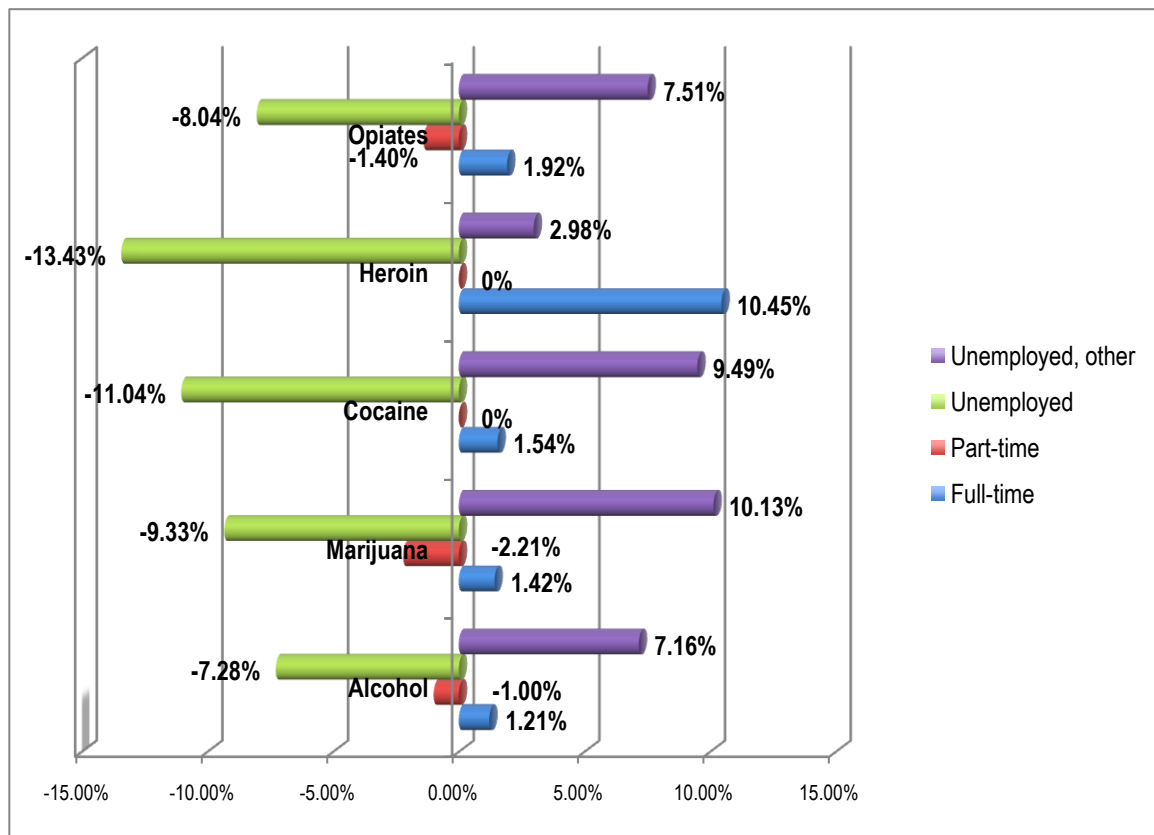


Chart 3 shows regular unemployment falling in all five drug usage categories, more so for the heroin and cocaine populations. Only the heroin category showed an increase in full-time employment commensurate with its decrease in regular unemployment; the other categories showed only slight gains in full-time employment. A commonality for all five drug categories is a rise in other unemployment and drop, or no change, in part-time employment. A breakdown of the increase in other unemployment is shown in Table 10.

Table 10: Change in ‘unemployment, other’ at follow-up by drug type usage reported at intake (n = 1,175)

Drug Type	Employment Pattern				
	Military Service	Student	Retired/ Disabled	Homemaker/ Child care	Controlled Environment
Alcohol	-0.11%	+0.67%	+5.73%	+0.99%	-0.56%
Marijuana	-0.16%	+1.58%	+6.81%	+0.63%	+0.79%
Cocaine	0%	+0.44%	+6.85%	+1.54%	+0.22%
Heroin	0%	+1.49%	+4.48%	-1.5%	-1.5%
Opiates	0%	+1.4%	+5.59%	+0.87%	-0.7%

As earlier noted, no clients reported their employment status at follow-up as ‘military service’ so the slight drop seen in alcohol and marijuana categories indicates a small percentage with that employment status at intake. As with the change in employment pattern for the metro, non-metro and very rural settings, the primary increase in other unemployment is seen in the ‘retired or disabled’ status. The marijuana and cocaine categories both show gains of nearly 7% in the ‘retired/disabled’. The only decreases came from the heroin (homemaker/child care and controlled environment) and opiate (controlled environment) categories.

Question #4: *Does type of psychological problems reported at intake affect employability after substance abuse treatment?* Clients were asked at intake to identify any emotional issues present during the 12 months prior that were not the direct result of drug or alcohol use. Like with the cross-tabulation for criminal activity and employment pattern, the row percentages on top total to 100% but the column percentages on bottom do not.

Table 11: Employment pattern at intake for clients who reported psychological problems in the 12 months prior (n = 1,196)

Psychological Problem	Employment Pattern				
	Full-time	Part-time	Unemployed	Unemployed, other	Total
Depression	34.31%	21.27%	21.28%	23.14%	100%
	25.05%	62.01%	37.91%	77.59%	
Anxiety	35.17%	20.09%	19.62%	25.12%	100%
	28.54%	65.11%	38.79%	43.57%	
Hallucinations	27.59%	20.69%	18.97%	32.76%	100%
	3.11%	5.24%	5.21%	7.88%	
Violent Thoughts	36.22%	22.83%	24.41%	16.53%	100%
	8.93%	12.66%	14.69%	7.88%	
Suicidal Thoughts	28.13%	26.56%	26.56%	18.75%	100%
	6.99%	14.85%	16.11%	9.96%	

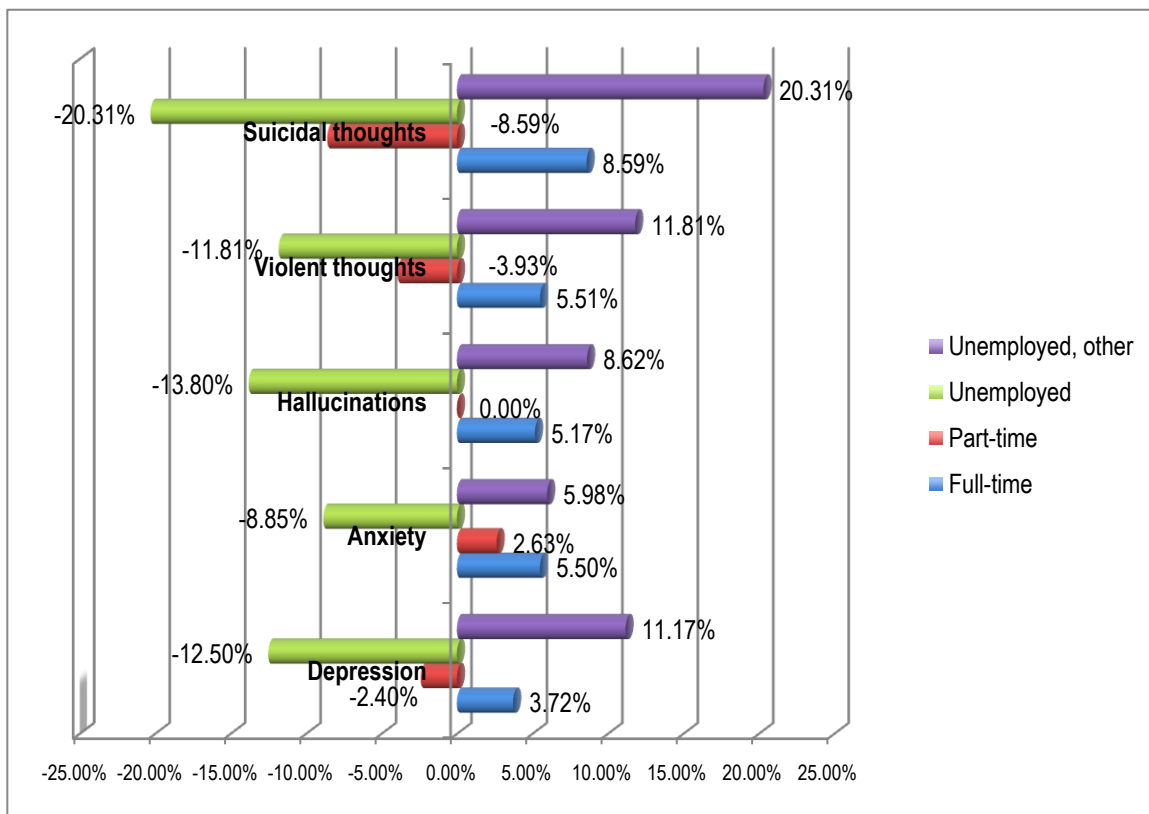
Table 12: Employment pattern at follow-up for clients who reported psychological problems in the 12 months prior to intake (n = 1,196)

Psychological Problem	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Depression	38.03%	18.88%	8.78%	34.31%	100%
	25.4%	31.28%	28.45%	44.48%	
Anxiety	40.67%	17.46%	10.77%	31.1%	100%
	30.2%	32.16%	38.79%	44.83%	
Hallucinations	32.76%	20.69%	5.17%	41.38%	100%
	3.37%	5.29%	2.59%	8.27%	
Violent thoughts	41.73%	18.9%	12.6%	26.77%	100%
	9.41%	10.57%	13.79%	11.72%	
Suicidal thoughts	36.72%	17.97%	6.25%	39.06%	100%
	8.35%	10.13%	6.9%	17.24%	

	p
Depression	.000*
Anxiety	.000*
Hallucinations	.010*
Violent Thoughts	.481
Suicidal Thoughts	.000*

**Statistically significant at 95% CI*

Chart 4: Change in employment pattern for clients who reported psychological problems in the 12 months prior to intake.



The cross-tabulation with psychological problems in the 12 months prior to intake shows the most consistent trends of any factor. Full-time employment and other unemployment increased, and regular unemployment decreased in all five categories. Part-time employment showed slight decreases in the ‘depression’ and ‘violent thoughts’ categories, no change in ‘hallucinations’ and a slight increase in ‘anxiety’, with the only significant change coming in the category of ‘suicidal thoughts’ (nearly 9%). ‘Suicidal thoughts’ is interesting in that full-time employment rose 8.59% while part-time employment dropped 8.59%, and regular unemployment fell 20.31% while other unemployment rose 20.31%. The chi-square table above shows the bivariate analysis of employment at follow-up with each mental health condition, except violent thoughts, to be statistically significant. Factoring such statistical significance with the already high unemployment rate – about 90%⁶ – of persons with serious mental illness, and it is clear that the likelihood of employment at follow-up is affected by prior mental health conditions.

Question #5: Is employability after SAT affected by employment pattern in the 12 months prior to intake? This question sought to find out if a client who reported being employed at intake was more likely to report the same after SAT than someone who reported being unemployed. Table 13 is a simple tabulation of employment patterns reported at intake and follow-up with the corresponding change.

Table 13: Employment pattern reported at intake and follow-up (n = 1,196)

	Employment Pattern				Total
	Full-time	Part-time	Unemployed	Unemployed, other	
Intake	43.06%	19.15%	17.64%	20.15%	100%
Follow-up	47.07%	18.98%	9.7%	24.25%	100%
Change	4.01%	-0.17%	-7.94%	4.1%	

Table 13 shows a greater change in the regular unemployment population than the others, with a nearly 8% drop. Those clients leaving the regular unemployment status at follow-up evenly dispersed to the full-time and other unemployment populations. The change in part-time employment was negligible (0.17% drop). In essence, those who reported themselves as part-time at intake were likely to stay that way at follow-up while the full-time and other unemployment populations drew share from the regular unemployment population. The breakdown of increase in other unemployment is shown in Table 14.

⁶ Mental Health: A Report of the Surgeon General (1999)

Table 14: Change in ‘unemployment, other’ from intake to follow-up (n= 1,196)

	Employment Pattern				
	Military Service	Student	Retired/ Disabled	Homemaker/ Child care	Controlled Environment
Intake	0.08%	1.51%	10.03%	3.6%	4.93%
Follow-up	0%	2.01%	15.47%	4.6%	1.92%
Change	-0.08%	+0.5%	+5.44%	+1%	-3.01%

A familiar pattern shows the primary increase in the population directly attributed to the rise in those reporting themselves “retired or disabled.” Table 15 provides a cross-tabulation of employment pattern at intake with employment pattern at follow-up.

Table 15: Cross-tabulation of employment pattern 12 months prior to intake and 12 months after intake (n = 1,196)

Employment Pattern, Intake	Employment Pattern, Follow-up				
	Full-time	Part-time	Unemployed	Unemployed, other	Total
Full-time	68.16%	14.76%	7.18%	9.9%	100%
	62.34%	33.48%	31.9%	17.59%	43.06
Part-time	39.3%	35.81%	10.04%	14.85%	100%
	15.98%	36.12%	19.83%	11.72%	19.15%
Unemployed	29.86%	17.53%	21.8%	30.8%	100%
	11.19%	16.3%	39.66%	22.41%	17.64%
Unemployed, other	24.48%	13.28%	4.15%	58.09%	100%
	10.48%	14.1%	8.62%	48.27%	20.15%
Total	47.07%	18.98%	9.7%	24.25%	100%
	100%	100%	100%	100%	100%
p	.000 (statistically significant at 95% CI)				

The table shows full-time employment with the highest retention rate among any category, with other unemployment the second highest. Of clients reporting their employment pattern at intake as ‘full-time’, 83% were employed (full- or part-time) at follow-up. For those reporting themselves at intake as ‘part-time’, 75% were employed at follow-up. However, fewer than half of those reporting themselves as ‘unemployed’ at intake reported being employed at follow-up and that number was even smaller, about 38%, for those who reported themselves as “unemployed, other”. For each unemployed category, more than half of the clients in one of those categories at intake remained in one of those categories at follow-up. This seems to show that being employed prior to SAT increases the likelihood of being employed afterward.

Logistic Regression

Four variables – age, education level, race and gender – were added to the 17 variables examined above with employment pattern at intake and follow-up and entered into a binary regression model. The regression is used to assess the impact of each variable on the probability of employment at follow-up, while holding the other variables constant. Several variables, including the dependent variable of employment at follow-up, were dichotomized for the sake of simplicity in analyzing employment at follow-up as a “yes” or “no” proposition. The dichotomized variables are setting (0=non-metro, 1=metro); race (0=non-white, 1=white); age (0=under 30, 1=30 and over); educational level (0=less than high school, 1=high school and more); employment pattern at intake (0=unemployed, 1=employed) and employment pattern at follow-up (0=unemployed, 1=employed). Table 16 shows the p-values of all variables in the model bivariately analyzed with employment at follow-up.

Table 16: Chi-square test results (dependent variable = employment at follow-up)

		p
Age	0=under 30; 1=30 and over	.000*
Race	0=non-white, 1=white	.106*
Gender	1=male, 2=female	.000*
Education Level	0=less than HS, 1=HS and more	.000*
Setting	0=non-metro, 1=metro	.028*
Employment at Intake	0=unemployed, 1=employed	.000*
No Crimes Past 12 mos	0=no, 1=yes	.431
Violent Crimes	0=no, 1=yes	.579
Property Crimes	0=no, 1=yes	.325
Lesser Crimes	0=no, 1=yes	.497
Violations	0=no, 1=yes	.019*
Anxiety	0=no, 1=yes	.000*
Depression	0=no, 1=yes	.000*
Hallucinations	0=no, 1=yes	.038*
Suicidal Thoughts	0=no, 1=yes	.004*
Violent Thoughts	0=no, 1=yes	.172
Marijuana	0=no, 1=yes	.976
Cocaine	0=no, 1=yes	.272
Opiates	0=no, 1=yes	.018*
Alcohol	0=no, 1=yes	.680
Heroin	0=no, 1=yes	.146
<i>*statistically significant at 90% CI</i>		

Two logistic regression models were run: One with all 21 variables shown in Table 16, and another with just the 11 variables shown to be statistically significant at 95% CI. In both cases, employment pattern at follow-up (dichotomized) is the dependent variable. The results are shown in Table 17.

Table 17: Binary logistic regression model

	All 21 variables		12 significant variables ¹	
	β	Sig.	β	Sig.
Constant	1.744	.004	1.293	.129
Age	-.744	.000*	-.671	.000*
Gender	-.374	.048*	-.334	.072
Education	.332	.081	.354	.059*
Setting	.283	.143	.326	.083
Race	-.891	.018*	-.807	.030*
Depression	-.261	.283	-.260	.274
Anxiety	-.215	.353	-.238	.297
Hallucinations	.113	.829	.007	.988
Suicidal thoughts	-.325	.318	-.357	.270
Violent thoughts	-.234	.479		
Employment at intake	1.609	.000*	1.545	.000*
Cocaine usage	.016	.937		
Marijuana usage	-.443	.023*		
Heroin usage	1.024	.049*		
Opiate usage	-.280	.151	-.316	.083
Alcohol usage	-.113	.611		
No crimes, past 12m	-.029	.927		
Violent crimes	.305	.556		
Property crimes	.292	.564		
Violations	.274	.511	.282	.442
Lesser crimes	-.108	.711		

¹ based on statistical significance in Table 16

In the first model, with all 21 variables, six variables (age, gender, race, employment at intake, marijuana usage, heroin usage) show statistical significance at a 95% CI, but in the second model, with just 12 variables, just four of those six (age, setting, race, employment at intake) show statistical significance, or close it. The latter model seems more logical given the former model's positive coefficients for prior criminal history, hallucinations and prior heroin usage. When present in a logistic function, those coefficients *increase* the probability of being employed after SAT. In addition, numerous

variables for prior criminal history, prior psychological problems, and three out of five drug usage variables, are not only shown to be statistically insignificant, but are not even close to being so.

Using the coefficients in Table 17, the probability of being employed at follow-up can be predicted with the logistic function $f(z) = 1 / 1 + e^{-z}$, where ‘f(z)’ is the output (probability) and ‘z’ is the input, defined as $z = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 \dots + \beta_nx_n$. The corresponding coefficients are as follows:

- | | |
|--------------------------|-------------------------------------|
| β_0 = constant | β_7 = anxiety |
| β_1 = age | β_8 = hallucinations |
| β_2 = gender | β_9 = suicidal thoughts |
| β_3 = education | β_{10} = employment at intake |
| β_4 = setting | β_{11} = violations |
| β_5 = opiate usage | β_{12} = race |
| β_6 = depression | |

Consider an example client who is a 28-year-old white male living in a non-metro setting and who did not graduate high school. At intake he report bouts with depression only and being employed.

$$z = 1.293 + (0)(-.671) + (1)(-.334) + (0)(.354) + (0)(.326) + (0)(-.316) + (1)(-.260) + (0)(-.238) + (0)(.007) + (0)(-.357) + (1)(1.545) + (0)(.282) + (1)(-.807)$$

$$z = 1.437$$

$$e^{-z} = .23$$

$$f(z) = 1 / 1.23$$

$$f(z) = .813$$

Thus, this client would stand an 81% chance of being employed at follow-up, given the conditions he reported at intake. Table 18 shows the change in probability when changing one variable of our example client, while holding the others constant.

Table 18: Change when one variable in the example client’s profile is switched, others holding constant

	Probability (difference)
Metro setting	85% (+4%)
Age over 30	68% (-13%)
Female	75% (-6%)
High school graduate	86% (+5%)
Not employed at intake	47% (-34%)
No depression	85% (+3%)
Non-white	90% (+9%)

Note the significant drop, 31%, in employment probability had he reported being unemployed at intake. The next most significant drop is a change in age category, from under 30 to over 30. This corresponds to recent studies showing younger clients more likely to enter employment⁷. Changes in setting (to metro), educational level (to high school graduate and above) and gender (to female) showed relatively little change in the probability. Mueser, et al., found mixed results in studies examining the impact of education level on employment, with some showing higher education as a predictor of employability⁸. And two other recent studies have shown gender to be an inadequate predictor of employment, but race as a predictor is generally thought to favor whites over non-whites⁹, but this model suggests just the opposite.

CONCLUSION

This paper set out to find out what, if any, factors identified at intake affect the employability of clients after completion of substance abuse treatment (SAT). Data from the 2008 Kentucky Treatment Outcome Study was used and factors considered were type of prior criminal history, type of prior drug use, type of prior psychological problems, residential setting and employment pattern at intake.

One constant among all factors was a rise in those reporting their employment pattern at follow-up as “retired or disabled”. Robert Walker, the study’s principal investigator, explained this to be rather common. He stated, “when people get into treatment, they often have conditions that lead to disability and case managers work with people to get disability in place.”¹⁰

With regard to residential setting, only clients in a metro area showed an increase in full-time employment and decrease in regular unemployment. The non-metro and very rural settings showed either

⁷ Cook, J., et al. (2001) Vocational outcomes among formerly homeless persons with severe mental illness in the access program. *Psychiatric Services* 52, 1075-80.

⁸ Mueser, K., Salyers, M., Mueser, P. (2001). A prospective analysis of work in schizophrenia. *Schizophrenia Bulletin*, 27, 281-296.

⁹ Campbell, K. (2007). *Consumer predictors of competitive employment outcomes in supported employment*. Unpublished doctoral dissertation, Purdue University, Indiana.; Cook, J. (2003). One-year follow-up of Illinois state vocational rehabilitation clients with psychiatric disabilities following successful closure into community employment. *Journal of Vocational Rehabilitation*, 18, 25-32.

¹⁰ R. Walker, personal interview, October 30, 2009

a drop or slight gain in full-time employment, or an increase in regular unemployment. The logit model showed setting to have a statistically significant relationship to employment at follow-up, with a slight increase in the probability of employment for those living in a metro setting.

The examination of prior criminal history showed that those who reported court crimes (parole/probation violation or contempt) with the biggest increase in full-time employment while those who reported property crimes showed the biggest gain in part-time employment. All five categories showed a decrease in regular unemployment. Those with a prior history of violent crimes showed a decrease in full-time employment and regular unemployment, but the entire population shift went to other unemployment (no change in part-time employment). Only violations (probation/parole violations, etc.) showed a statistically significant relationship to employment at follow-up in bivariate analysis, but did not show the same in multivariate analysis. Considered together, prior criminal history was statistically insignificant to and an inadequate predictor of employment after SAT.

Drug use also showed common characteristics among its five categories. Full-time employment and other unemployment increased across the board, while part-time employment had little or no change and regular unemployment showed significant decreases. Of the categories, those reporting prior heroin usage at intake showed the most positive changes at follow-up: 10.5% increase in full-time employment (the highest among the drug categories), 13.5% drop in regular unemployment (highest among the categories) and only a 3% increase in other unemployment (lowest among the categories). This seems to suggest heroin users benefit more from SAT than others. Much like prior criminal history, prior drug use was statistically insignificant to and a poor predictor of employment after SAT.

Psychological issues nearly mirrored drug usage in that full-time employment and other unemployment increased while regular unemployment decreased across the board. For the most part, part-time employment decreased, but showed significant change in only those reporting suicidal thoughts at intake (8.5% drop). While prior psychological problems, collectively, proved to be statistically significant to employment at follow-up, the logit model revealed it play a rather insignificant role in predicting the probability of employment after SAT.

The examination of whether employment pattern at intake influenced employment pattern at follow-up revealed that a much higher percentage of those employed at intake were employed at follow-up than those not employed. While the percentage of unemployed clients dropped about 4% from intake to follow-up, cross-tabulation showed that only about 48% of clients reporting themselves as unemployed (regular) at intake gained employment (full- or part-time) at follow. That number drops to 38% for those reporting themselves as 'unemployed, other' at intake. This indicates a higher likelihood of employability after SAT if employed beforehand¹¹. The impact of employment status at intake on employment status at follow-up was further illustrated in the logistic regression model where it had the highest coefficient and, thus, the most significant affect on the probability of employment at follow-up. In the example client, simply changing his status at intake from employed to unemployed caused a drop to 51% from 82% in the probability of being employed at follow-up, holding all other factors constant.

Finally, limitations for this analysis exist on two fronts. First, the clients from whom data was collected for the KTOS belong to a relatively low socioeconomic class as evidenced by the demographics listed in Tables 1 and 2. Mean education is barely a high school diploma, mean salary barely tops the poverty threshold and the majority of clients arrive in SAT on referral from the criminal justice system. The characteristics and probabilities of this analysis would likely not extend to a client base from private SAT facilities where the mean income and education level, among other variables, would be expected to higher, or the opposite of what they are with the KTOS client base.

A second limitation stems from the sampling done to develop the population on which data was examined. In FY08, 6,515 clients completed intake surveys but only 4,172 (65%) consented to participating in a follow-up survey 12 months later, with 2,022 being randomly selected for follow-up. Attrition due to ineligibility (deceased, incarcerated or in some other controlled environment) claimed 342 clients, leaving a pool of 1,680. Of those, 1,196 clients completed the follow-up survey for a rate of 71.2% (59% of the randomly selected sample, 18% of the entire pool). This means data was not collected on approximately

¹¹ These results cannot be interpreted as a causal framework, i.e. that SAT caused the drop in unemployment, but rather as a descriptive inquiry into what happens to clients after they leave SAT.

40% of the sample population, leaving one to speculate about the effect data from those clients might have on factors this analysis identified as impacting employability. This is of particular concern for those who were ineligible for follow-up due to incarceration because of the potential impact on prior criminal history and drug use variables.

[APPENDIX A]

**UK HEALTH FOLLOW-UP STUDY
Adult Survey FY 2008**

I am trying to reach [First Name Last Name]. I am [First Name Last Name] from the University of Kentucky Health Follow Up Study and I am trying to reach you as part of a follow up study because we want to ask about your satisfaction and status with a treatment program you may have been in about 12 months ago. In order to make sure I am talking to the right person, I need to verify your birth month and year. What month and year were you born?

Were client's birth month and year confirmed? 0=NO 1=YES

IF NO, was client identity confirmed in another way? 0=NO 1=YES

What did you use to confirm identity? _____

(If either the month or the year is not correct, there may have been a data entry problem. You can try to verify with the participant by asking something like, were you in counseling or asked to talk to someone about substance abuse problems (e.g., by the court system) about a year ago [insert month and year of baseline] at [insert region name]? If they are not familiar with region name then start naming some counties.)

Interviewer: _____ **Date:** ___/___/___ **Time:** ___ a.m. / p.m.

Index #: 2008 _____ **Baseline Date:** ___/___/___

[Baseline From July 1, 2007 to June 30, 2008]

Great, it sounds like I have the right person. Let me tell you a little more about what we are doing. You may remember that when you were in substance abuse treatment about 12 months ago you agreed to take part in a follow up study about satisfaction and status in order to help us improve treatment programs in the future.

- You were randomly selected from a group of individuals who agreed to be followed up.
- You will be one of between 800 and 1,200 individuals to complete this survey.
- We are not affiliated with the program at all and your name will never be attached to your answers. In other words, nobody will know what you say after you and I hang up the phone. Your name will be separated from your responses and the information will only be reported as a group of between 800 and 1,200.
- The survey takes about 15 minutes and we will pay you \$20 for your time if you choose to participate.
- Your participation in this study is completely voluntary. Also, if we ask you a question that you don't know or do not want to answer you can just skip the questions.
- Again, I want to emphasize that your opinions are important to help us improve substance abuse treatment in Kentucky.
- Do you have any questions before we begin?
- Before we get started let me get your phone number in case we are cut off. *(Interviewer note: only ask for call-ins, note it in the back).*

Section A: CLIENT SATISFACTION INFORMATION

First, I would like to ask about your satisfaction with the treatment program you attended.

1. Overall, on a scale of 1 to 10, with 1 being the worst treatment experience you can imagine and 10 being the absolute best treatment experience you can imagine, how would you rate your treatment experience?

_____ Rating

- 1a. Can you tell me a little bit about why you chose that rating?

2. Do you remember the name of your counselor?

0 = No ➔ *If No, skip to Question # 3.*

1 = Yes

2a. *If Yes*, Name: _____

(Interviewer Note: Code for the above answer by circling the corresponding number below)

- 1 = First Name
- 2 = Last Name
- 3 = First and Last Name

The next few questions ask your opinion about the treatment program. *(Interviewer note: Do NOT read “Don’t know/Don’t remember. Also do NOT read “I am neutral” unless the participant is hesitant to answer)*

Statement of satisfaction	Strongly Disagree	Disagree	I Am Neutral	Agree	Strongly Agree	Don’t Know/Remember

3.	You were treated with respect.	1	2	3	4	5	98
4.	Staff explained your rights as a client.	1	2	3	4	5	98
5.	The facility was clean.	1	2	3	4	5	98
6.	You understood your treatment plan.	1	2	3	4	5	98
7.	You understood what was expected of you during treatment.	1	2	3	4	5	98
8.	You received the services you needed to help you get better.	1	2	3	4	5	98
9.	You feel better about yourself as a result of treatment.	1	2	3	4	5	98

Section B. DEMOGRAPHIC, EDUCATION, EMPLOYMENT

The next group of questions asks about some basic demographic information.

1 What is your marital status?

1 = Married 2 = Widowed 3 = Separated 4 = Divorced 5 = Never married

2. How many years of education have you completed? (*Circle the correct answer*)

0 = Never attended	7 = 7 th grade	14 = Some college
1 = 1 st grade	8 = 8 th grade	15 = Some voc/tech school
2 = 2 nd grade	9 = 9 th grade	16 = Voc/tech diploma
3 = 3 rd grade	10 = 10 th grade	17 = Associate's degree
4 = 4 th grade	11 = 11 th grade	18 = Bachelor's degree
5 = 5 th grade	12 = 12 th grade	19 = Master's degree
6 = 6 th grade	13 = GED	20 = Doctorate degree

3. Are you a veteran?

0 = No 1 = Yes

3a. (*If YES*), what war did you **last** serve in?

1 = Korean
2 = Vietnam
3 = Iraq, 1990
4 = Operation Iraqi Freedom (OIF)
5 = Operation Enduring Freedom (OEF)

3b. (*If YES*), do you have a service-connected disability?

0 = No 1 = Yes

3c. Do you receive health services at a Veterans Administration Hospital or VA center?

0 = No 1 = Yes

4. Are you currently on active duty?

0 = No 1 = Yes

4b. Are you in the National Guard?

0 = No 1 = Yes

5. What was your usual employment pattern in the past 12 months?

1 = Employed full time (35+ hours per week, or would have been)

2 = Employed part time (< 35 hours per week)

3 = Part-time, irregular or day work

4 = Employed, in military service

5 = Unemployed, student

6 = Unemployed, disabled or retired

7 = Unemployed

8 = Unpaid homemaker, childcare

9 = Unemployed, in a controlled environment (e.g., jail, hospital, etc.)

10 = Other (specify): _____

(Interviewer note: If the client is working for assistance money, check other and put "work fair" or the type of assistance program for which he/she works.)

6. In the past 30 days, how many days were you paid for working (include "under the table work")? _____ days

7. In the past 30 days what was your monthly (*pre-tax*) income from all sources? (wages, unemployment, disability, pensions, or non-legal income) \$ _____

8. Do you have a valid driver's license? (*If no, go to #9*)

0 = No 1 = Yes

8a. Do you have an automobile available for use? (*If no, go to #9*)

0 = No 1 = Yes

8b. Do you own the automobile?

0 = No 1 = Yes

9. Now I am going to ask you some questions about some things that might have happened to you in the past 12 months:

In the past 12 months...	0 = NO	1 = YES
a. Have you/your family had difficulty paying the full amount of rent or mortgage?	0	1
b. Have you/your family been evicted from your home/apartment for not paying the rent?	0	1
d. Have you/your family been unable to pay the gas or electric bill?	0	1
e. Have you/your family had your telephone service disconnected by the telephone company because payments were not made?	0	1

6d. Percocet/Percodan/oxycodone	0 1	0 1
6e. Darvon	0 1	0 1
6f. Codeine	0 1	0 1
6g. Methadone	0 1	0 1
6h. Tylenol 2,3,4	0 1	0 1
6i. OxyContin	0 1	0 1
6j. Lortab, hydrocodone	0 1	0 1
6k. Ultram/ Tramadol	0 1	0 1
6l. Any other pain killers	0 1	0 1
Specify other: _____		

7. During the past 12 months, how many times have you had a head injury that resulted in being knocked out or unconscious? (Write 0 if none, and go to Q #8)
 _____injuries

7b. (If answer is 1 or greater, then ask about each injury. Specify injury cause then circle number for time knocked out)

	Injury event (specify auto, fight, fall, or other)	Less than 30 minutes	30 minutes – 24 hours	More than 24 hours
1		1	2	3
2		1	2	3
3		1	2	3
4		1	2	3
5		1	2	3

8. On average, how many hours of sleep per day have you gotten in the past week?

_____ Hours

9. During the past 30 days, how many days have you taken medicine to help you sleep? (Include prescription and illicit drugs as well as over the counter medicines):

_____ Days

10. During the past 30 days, for about how many days have you felt you did NOT GET ENOUGH REST or SLEEP?

Number of days _____ (If this answer is 0, go to Q #12)

11. What is the main reason you think you have had trouble sleeping? (Circle all that apply) (Interviewer note: Probe for specificity, “what do you mean by that?” Not a general problem like stress but instead, “stress or nerves from what?”)

- 1 = Physical health problems (e.g., pain, headaches, arthritis, asthma, pregnancy)
- 2 = Stress or mental health factors (e.g., stress, too much on my mind, worry over money, anxiety, nerves, depression)
- 3 = General sleep dysregulation (e.g. stay up late, lack of good sleep hygiene, light sleeper, history of sleep problems)
- 4 = Work or lifestyle factors (e.g., work long hours, go to work early)
- 5 = Distracters (e.g., noise, TV, phone)
- 6 = Children (e.g., taking care of infant, waking with children)
- 7 = Medication effects
- 8 = Nightmares
- 9 = Don't know
- 10 = Other, *specify*: _____

12. The following questions are about your **feelings** and **thoughts** during the past 30 days. Please tell me how often you have felt the following ways:

How often have you:	Never	Rarely	Some-times	Fairly Often	Very Often
a. Been upset because of something that happened unexpectedly?	0	1	2	3	4
b. Felt that you were unable to control the important things in your life?	0	1	2	3	4
c. Felt nervous and stressed?	0	1	2	3	4
d. Dealt successfully with irritating life hassles?	0	1	2	3	4
e. Felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
f. Felt confident about your ability to handle your personal problems?	0	1	2	3	4
g. Felt that things were going your way?	0	1	2	3	4
h. Found that you could not cope with all the things you had to do?	0	1	2	3	4
i. Been unable to control irritations in your life?	0	1	2	3	4
j. Felt that you were on top of things?	0	1	2	3	4
k. Been angered because of things that happened that were outside of your control?	0	1	2	3	4
l. Found yourself thinking about things that you have to accomplish?	0	1	2	3	4
m. Been unable to control the way you spend your time?	0	1	2	3	4
n. Felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

13. Overall, on a scale of 1 to 10, with 1 representing the least control at home and at work and 10 representing the most control at home and at work, how much control would you say you have over your life? _____

14. Overall, on a scale of 1 to 10, with 1 representing the people who are worst off, those who have the least money, least education, and worst jobs or no job, and 10 representing the people who are best off, those who have the most money, most education and best jobs, how would you rate yourself on that scale? _____

15. Please indicate how much each of the following statements reflects how you typically are:

	Never	Rarely	Sometimes	Often	Very Often
a. I am good at resisting temptation	1	2	3	4	5
b. I have a hard time breaking bad habits	1	2	3	4	5
c. I am lazy	1	2	3	4	5
d. I say inappropriate things	1	2	3	4	5
e. I do certain things that are bad for me, if they are fun	1	2	3	4	5
f. I refuse things that are bad for me	1	2	3	4	5
g. I wish I had more self-discipline	1	2	3	4	5
h. People would say that I have a lot of self-discipline	1	2	3	4	5
i. Pleasure and fun keep me from getting work done	1	2	3	4	5
j. I have trouble concentrating	1	2	3	4	5
k. I am able to work effectively toward long-term goals	1	2	3	4	5
l. I can't stop myself from doing something, even if I know it is wrong	1	2	3	4	5
m. I act without thinking through all the alternatives	1	2	3	4	5

16. During the past 12 months and past 30 days (not a direct result of drug/alcohol use) have you...?
(Interviewer note: This refers to the participants' subjective feelings, not a diagnosis. Also, if they report attempted suicide or serious thoughts of suicide make sure you give them phone numbers for hotlines before ending the phone call).

	12 MONTHS		30 DAYS	
	0=NO	1=YES	0=NO	1=YES
a. Experienced serious depression	0	1	0	1
b. Experienced serious anxiety or tension	0	1	0	1
c. Experienced hallucinations	0	1	0	1
d. Experienced trouble understanding, concentrating, or remembering	0	1	0	1
e. Experienced trouble controlling violent behavior	0	1	0	1
f. Experienced serious thoughts of suicide	0	1	0	1
g. Attempted suicide	0	1	0	1
h. Been prescribed medication for any psychological or emotional problem	0	1	0	1

Section D. CONTROLLED ENVIRONMENTS

1. In the past 30 days, were you in a controlled environment like a hospital, jail, or residential drug treatment program (not a shelter)? *(If no, ask a, and then skip b and c)*

0 = No 1 = Yes

1a. In the past 12 months, how many DAYS were you incarcerated (in jail, prison, or detention center)? _____ days

1b. In the past 30 days, how many days were you incarcerated (in jail, prison, or detention center)?
 _____ days

1c. In the past 30 days, how many days were you in residential alcohol or drug treatment?
 _____ days

Section E. ALCOHOL & DRUG USE

Now I am going to ask you some questions about your substance use in the 12 months, and in the past 30 days. I want to remind you that anything you say is only between us. Nobody will ever see your name attached to your answers. You can also choose to skip any question you don't want to answer.

1. During the past ... how many ... did you use...?

If there is no use during the past 12 months, skip to the next item and leave the 30 day column blank. *(Interviewer note: if there was ANY use within a month it counts as a month's use. Ask specifically about behavior in "the past 30 days." Do not use "in the past month" as a substitute—this may lead to confusion and inaccurate responses. Also, non-prescribed use of prescription medication or misuse of prescribed medication (e.g., taking more than prescribed) should be counted as the use of illegal drugs).*

SUBSTANCE	12 MONTHS (# OF MONTHS)	30 DAYS (# OF DAYS)
a. Cigarettes, cigars, smoking or smokeless tobacco		
b. Alcohol—beer, wine, liquor, grain alcohol		
c. Alcohol to intoxication		
d. Cocaine/crack—Cocaine crystal, free-base cocaine, crack, or rock cocaine.		
e. Marijuana—Hashish/Pot		
f. Heroin (smack, H, junk, skag)		

SUBSTANCE	12 MONTHS (# OF MONTHS)	30 DAYS (# OF DAYS)
g. Other Opiates, Analgesics, Prescription Pain Killers —morphine, Percodan, Dilaudid, oxycodone, hydrocodone, Oxycontin, prescription pain killers		
<i>Interviewer note: If yes, please circle which was used in each column.</i> Circle all of the following that were used: 1=Morphine 2=Dilaudid 3=Demerol 4=Percocet / Percodan 5=Darvon 6=Codeine 7=Tylenol 2, 3, 4 8=OxyContin 9= Lortab 10=Ultram, Tramadol 11=Other (<i>Specify:</i> _____ 12mths _____ 30 days)	1=Morphine 2=Dilaudid 3=Demerol 4=Pcet / dan 5=Darvon 6=Codeine 7=Tyl 2, 3, 4 8=OxyContin 9=Lortab 10=Ultram/Tram 11=Other	1=Morphine 2=Dilaudid 3=Demerol 4=Pcet / dan 5=Darvon 6=Codeine 7=Tyl 2, 3, 4 8=OxyContin 9=Lortab 0=Ultram/Tram 11=Other
h. Non-Prescription Methadone		
i. Hallucinogens/psychedelics —PCP, Other Hallucinogens/Psychedelics, LSD, Mushrooms, Mescaline, psilocybin		
j. Stimulants, such as methamphetamine or other amphetamines, uppers (speed, MDMA, Ecstasy, crank)		
<i>Interviewer note: If yes, please circle which was used and whether used in past 12 months or past 30 days.</i> Circle all of the following that were used: 1=Methamphetamines, crank 2=Other amphetamines, speed 3=MDMA, Ecstasy	1=Meth 2=Speed 3=MDMA	1=Meth 2=Speed 3=MDMA
k. Barbiturates (mephobarbital, Mebacut, pentobarbital sodium, Nembutal)		

SUBSTANCE	12 MONTHS (# OF MONTHS)	30 DAYS (# OF DAYS)
l. Tranquilizers, Other Sedatives, Hypnotics, Benzodiazepines (Valium, Xanax, Librium, Halcion) GHB , liquid ecstasy, Ketamine , (Special K, Vitamin K), downers, nerve pills		
<i>Interviewer note: If yes, please circle which was used in each column.</i> Circle all of the following that were used: 1 = Benzodiazepines 2 = Non-prescription GHB 3 = Ketamine 4 = Other tranquilizers, <i>specify:</i> _____	1 = Benzos 2 = GHB 3 = Ketamine 4 = Other tranq	1 = Benzos 2 = GHB 3 = Ketamine 4 = Other tranq
m. Inhalants —poppers, Rush, Whippets (or “huffing” paint, glue, aerosol can spray)		
o. Used More than One Substance Per Day (including alcohol, but excluding tobacco products)		

2. In the past 12 months did you inject drugs? 0 = No 1 = Yes 2=N/A
(Interviewer note: Circle N/A, if the participant used only alcohol or marijuana. Also, do NOT count injection of legal and prescribed medications, i.e., insulin, hormones).

3. How long (in months) was your last period of voluntary abstinence from your major substance?
(Enter 0 if never stopped using and skip 3a) _____ months

3a. How many months ago did your abstinence end? _____ months

4. How much money would you say you spent on ALCOHOL in the past 30 days? *(include only cash or monetary payments for alcohol the client used or was planning on using)*
 \$ _____

In The Past 30 Days			
How many days did you experience Alcohol/Drug problems (craving, withdrawal, wanting to quit but being unable)?	ALCOHOL _____ days	DRUGS _____ days	

ALCOHOL	NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	EXTREMELY
How troubled or bothered have you been by alcohol problems in the past 30 days?	0	1	2	3	4
How important to you now is treatment for these alcohol problems?	0	1	2	3	4
DRUG	NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	EXTREMELY
How troubled or bothered have you been by drug problems in the past 30 days?	0	1	2	3	4
How important to you now is treatment for these drug problems?	0	1	2	3	4

Section F. LEGAL STATUS

These questions ask about your involvement with the criminal justice system over the last 12 months.

1. Are you currently in a drug court program? 0 = No 1 = Yes
2. Are you on probation now? 0 = No 1 = Yes
3. Are you on parole now? 0 = No 1 = Yes
4. Have you been arrested and charged with any offense in the past 12 months? (*If NO, go to Section G*)
0 = No 1 = Yes

5. Please tell me which of the following you have been arrested and charged with in the past 12 months? (If a charge is noted, circle that charge and ask:) How many times were you arrested for this charge in the past 12 months? (For starred items, ask:) And did this charge involve your intimate partner as a victim?

REASON ARRESTED	12 MONTHS (# OF TIMES)	INTIMATE PARTNER WAS A VICTIM 0=NO, 1=YES
1 = Shoplifting/vandalism		
2 = Parole/Probation violation **		0 1
3 = Drug charges (Specify which drug charges with X) Trafficking _____ Possession _____ Paraphernalia _____		
4 = Forgery or theft by deception (TBD) **		0 1
5 = Weapons offense **		0 1
6 = Burglary, larceny, breaking & entering (B & E) **		0 1
7 = Robbery **		0 1
8 = Assault **		0 1
9 = Arson **		0 1
10 = Rape, sodomy, or sexual abuse **		0 1
11 = Homicide/manslaughter **		0 1
12 = Prostitution		
13 = Contempt of court **		0 1
14 = Disorderly conduct, vagrancy, public intoxication (AI, or PI)		
15 = Stalking **		0 1
16 = Child support charges		
17 = Escape charges		
18 = Receiving stolen property charges		
19 = Theft by unlawful taking (TBUT) **		0 1
20 = Wanton endangerment **		0 1
21 = Violations of a domestic violence order (EPO/DVO)		0 1
22 = Driving while intoxicated (DWI, or DUI)		
23 = Other major driving violations (reckless driving, speeding, no license, etc.)		
24 = Other charges, specify: _____ _____		

6. How many of these charges in the past 12 months resulted in convictions?

_____ charges

Section G. LIVING SITUATION, RECOVERY SUPPORTS, & DAILY LIFE

1. In the past 12 months, what were your usual living arrangements? (*Circle all that apply*) (*For all that are circled YES, ask*): How many months in the past 12 months did you live with this person (these persons)?

	0=NO 1=YES	# of MONTHS
a. With your intimate partner		
b. With your children (under age 18) (include stepchildren)		
c. With your parents		
d. With other family (include adult children, grandchildren, grandparents)		
e. With other adults (i.e., friends, roommates)		
f. Alone		
g. Controlled environment (e.g., jail, hospital, or residential recovery center)		
h. Halfway house or Oxford House		
i. Shelter		
j. Military base		

2. Do you live with anyone who has a current alcohol problem?

0 = No 1 = Yes

3. Do you live with anyone who uses non-prescribed drugs?

0 = No 1 = Yes

4. In the past 12 months, have you or your children been involved with child protective services?

0 = No 1 = Yes

RECOVERY SUPPORTS

5. In the past 30 days how many AA, NA or other self-help group MEETINGS did you attend?

___ meetings →(IF 0, go to # 7).

6. Did you have contact with an AA or NA sponsor in the past 30 days?

0 = No 1 = Yes 98 = Don't have a sponsor

7. In the past 30 days, how many times did you attend any religious or faith affiliated recovery self-help groups (*excluding those previously counted in #5*)?

___ meetings

8. Do you think of yourself as someone who is in recovery?

0 = No 1 = Yes (If NO, skip to #10)

9. Please tell me how often the following have helped in your recovery?

	Never	Rarely	Some- times	Fairly Often	Very Often
a. How much do you rely on family members to help you stay in recovery?	0	1	2	3	4
b. How much do you rely on your faith to help you stay in recovery?	0	1	2	3	4
c. How important is work in helping you stay in recovery?	0	1	2	3	4
d. How important has treatment been in helping you get into recovery?	0	1	2	3	4
e. How important is AA or NA in helping you stay in recovery?	0	1	2	3	4

10. Based on what you know about yourself and your situation, how good are the chances that you can get off (stay off) of drugs/alcohol?

- 1 = Very poor
- 2 = Moderately poor
- 3 = Uncertain
- 4 = Moderately good
- 5 = Very good

DAILY LIFE

11. In your daily life, how often would you say the following things have happened to you?

	Never	Rarely	Sometimes	Often	Very Often
a. You are treated with less courtesy than other people	0	1	2	3	4
b. You are treated with less respect than you deserve	0	1	2	3	4
c. You receive worse service than other people at restaurants or stores	0	1	2	3	4
d. People act as if you are not smart	0	1	2	3	4
e. People act as if they are afraid of you	0	1	2	3	4
f. People think you are dishonest	0	1	2	3	4
g. People act as if they are better than you	0	1	2	3	4
h. You are called names or insulted	0	1	2	3	4
i. You are threatened or harassed	0	1	2	3	4
j. Any other examples that come to mind? (Please specify):	0	1	2	3	4

12. (If responses to Qs # 11a-j are all 0, then go to #13) Now I am going to read a list of reasons why people sometimes feel that they are treated differently than other people. Please tell me if any of these apply to your situation. Do you think you treated differently because of YOUR:

	No	Yes
a. Gender	0	1
b. Ethnicity or race	0	1
c. Marital status	0	1
d. Age	0	1
e. Religion	0	1
f. Personal appearance	0	1
g. Income level/social class	0	1
h. Educational level	0	1
i. Family name/background	0	1
j. Because of your substance use	0	1
k. Because of your involvement in the criminal justice system	0	1
l. Other reasons why someone might treat you unfairly? (Please <i>specify</i>): _____	0	1

13. Thinking about the overall level of support of others you have in your life, how satisfied would you say you are? How satisfied? (Circle the response)

1	2	3	4	5	6
Extremely dissatisfied	Fairly dissatisfied	A little dissatisfied	A little satisfied	Fairly satisfied	Extremely satisfied

14. How many people can you count on when you need to? _____

Section H. INTERVIEWER COMMENTS

Please explain any case concerns (e.g., Do you feel any of the answers were dishonest? Do you think the client understood all of the questions? Was there something particularly difficult or positive about this survey? And so forth):

