Kentucky Opiate Replacement Treatment Program Outcome Study

2014 ANNUAL REPORT

EXECUTIVE SUMMARY

This report summarizes client outcomes from a statewide evaluation of opiate treatment programs (OTPs). The goal of the Kentucky Opiate Replacement Treatment Outcome Study (KORTOS) is to examine client satisfaction, recovery support, and outcomes for several targeted factors including: (1) substance use and severity of substance use, (2) mental health, (3) socioeconomic status indicators (living situation, education, employment, and difficulty meeting living and health care needs) and (4) involvement in the criminal justice system. This report presents findings on outcomes for 168 men and women who participated in an OTP from January 2012 through December 2012 and then completed a follow-up interview about 6 months later. Findings indicate Kentucky OTPs help clients achieve positive life changes.

Results show that program clients report high levels of satisfaction with their experience at the OTP. In addition, the majority of clients reported their relationships with others had improved as well as how they felt about themselves. Further, clients rated their quality of life almost three times higher after participating in the OTP. Compared to intake, significantly more individuals reported they had attended mutual help recovery group meetings in the past 30 days at follow-up. Also, more individuals reported they had contact with an AA/NA sponsor at follow-up. At follow-up, clients felt significantly more positive about their chances of staying off of alcohol/drugs.

The number of clients who met criteria for severe drug use or severe alcohol use disorder decreased significantly at follow-up.

Additionally, there were significant reductions in drug and alcohol use. Specifically, the number of individuals who reported using any illegal drugs, specifically non-prescribed opioids and heroin, both dramatically decreased such that fewer than 1 in 20 clients reported use at follow-up. Furthermore, the number of clients who met criteria for severe drug use and alcohol use decreased significantly.

The mental health of clients who participated in treatment was significantly improved in terms of fewer depression and/or anxiety symptoms, fewer individuals who had suicidal thoughts or attempts, decreased stress and fewer days of poor mental and physical health at follow-up.

Overall, fewer clients reported having difficulty meeting basic living needs (such as food, shelter, and utilities) as a result of financial problems at follow-up. Involvement in the criminal justice system, in terms of

being arrested or incarcerated, also decreased significantly from intake to follow-up.

There are, however, potential opportunities to target co-occurring problem areas including tobacco smoking, mental health symptoms, and economic difficulties reported by participants. Smoking was very high for clients at intake and remained high at follow-up. Smoking has been associated with increased mental health symptoms and physical health problems. Voluntary smoking cessation, however, has been associated with lower likelihood of alcohol and drug relapse. In addition, while the number of participants reporting a difficulty meeting basic needs for financial reasons decreased at follow-up, 4 in 10 clients still reported difficulty and an even higher percentage of clients (57.1%) reported they had difficulty meeting health care needs such as seeing a doctor when needed or obtaining a needed medical prescription. Providing referrals and support for these dimensions may help improve basic living situations for many clients and support continued recovery living for long-term positive results from treatment.

The 2014 KORTOS evaluation indicates that opiate treatment programs in Kentucky have been successful in facilitating positive changes in clients' lives in important ways

Finally, there were several key gender differences. For example, more women reported smoking and mental health problems at both intake and follow-up compared to men. Further, even though, overall, women made significant gains in their employment and financial standing by follow-up, they still lagged behind men in their economic standing. In fact, at follow-up, women made and average of $0.74 per hour for every $1 men made.

Overall, the 2014 KORTOS evaluation indicates that opiate treatment programs in Kentucky are successful in facilitating positive changes in clients' lives in a variety of ways, including decreased substance use, decreased severity of substance use, decreased mental health symptoms, decreased difficulty meeting basic living needs, and decreased involvement with the criminal justice system. Results also show that clients appreciate and value their experiences in treatment programs and have more support for recovery after participating in treatment.

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The 2014 KORTOS report includes data from 168 clients at Kentucky opiate treatment programs (OTPs) who completed both an intake interview between January 1, 2012 and December 31, 2012 and a six month follow-up interview targeted between July 2012 and June 2013.

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INTRODUCTION AND OVERVIEW

While prescription opiates can help cure many individuals of illness or allow them to cope with pain, misuse can have many consequences such as addiction or even overdose. As a result, non-medical use of prescription opiates is a continuing health concern for the United States and especially for areas like Kentucky where 4.5% of individuals 12 years and older report opiate misuse.[1] One of the key methods for treating persons addicted to opiates, who have not been successful in traditional substance abuse treatment programs, is through medication assisted treatment with methadone or buprenorphine. These federally regulated opiate treatment programs (OTPs) provide evidence-based, clinically monitored, medication-assisted treatment with methadone or buprenorphine.[2]

In 2007, Kentucky OTPs began collecting outcome data on medication-assisted treatment. The outcome project is done in collaboration with the Kentucky Division of Behavioral Health and Narcotic Treatment Authority and currently includes all 13 Kentucky licensed OTPs. The Kentucky Opiate Replacement Treatment Outcome Study (KORTOS) includes client-level intake data collected by OTPs as part of their licensure agreements. The data are submitted to the University of Kentucky Center on Drug and Alcohol Research (UK CDAR) through a contract with the Division of Behavioral Health where 6-month follow-up interviews are completed with consenting maintenance treatment clients. The KORTOS project collects data from clients at licensed OTPs since they follow clinical monitoring protocols; thus this report does not include data from independent physicians who prescribe buprenorphine outside of an OTP.

In this fourth annual KORTOS report, data are included on 168 clients from Kentucky OTPs who completed both an intake interview between January 1, 2012 and December 31, 2012 and a six month follow-up interview targeted between July 1, 2012 and June 30, 2013. A total of 1,125 clients had an intake survey. Of these clients, 685 agreed to be contacted for the follow-up survey (60.8% agreement rate).[3] A total of 271 were selected into the follow-up sample, and of these 201 were eligible for the follow-up survey 6 months later.[4] Of these 201 clients, interviewers completed follow-up surveys with 168 clients (83.5% follow-up rate). To help facilitate the honest evaluation of client outcomes and evaluation of program services, the follow-up interviews were independently conducted over the telephone by a member of the UK CDAR staff and the program and responses were kept confidential (see Appendix A for detailed information about the methods and locating efforts).

Results are reported within six main sections.

Section 1: Overview and Description of KORTOS Clients. This section briefly describes the Kentucky Opiate Replacement Treatment Outcome Study (KORTOS) including a description of clients who participated in Kentucky's licensed OTPs in calendar year 2012 as well as clients who completed a 6-month follow-up interview.

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[1] Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (January 8, 2013). *The NSDUH Report: State Estimates of Nonmedical Use of Prescription Pain Relievers*. Rockville, MD.

[2] National Institute on Drug Abuse. (2011). *Prescription drugs abuse and addiction: research report series*. NIH Publication Number 05-4881. Retrieved from http://drugabuse.gov/publications/research-reports/prescription-drugs.

[3] From this group of clients who voluntarily agreed to be contacted for the follow-up study, the research team pulled the follow-up sample by first identifying clients who had provided the minimum amount of contact information (e.g., two phone numbers or one phone number and one address), and then randomly selecting clients by intake month. Because some programs entered all or the vast majority of their intake surveys for the year within one month or few months (June and July), not all of these individuals could be selected into the follow-up sample, which is pulled based on the target month of the follow-up survey.

[4] In order to be eligible for the follow-up study, clients had to still be in an OTP at the time of the follow-up interview, not in a controlled environment, agree to be contacted for follow-up, and provide contact information in the client locator data at the end of the intake interview.

Section 2: Client Satisfaction with Substance Abuse Treatment Programs. This section describes three aspects of client satisfaction: (1) overall client satisfaction; (2) client ratings of program experiences; and, (3) quality of life ratings.

Section 3: Substance Use. This section examines change in substance use (illegal drugs, alcohol, and tobacco) for 12-month and 30-day periods at intake and follow-up. In addition, self-reported severity of alcohol and drug use based on the Addiction Severity Index (ASI) alcohol and drug use composite scores are compared at intake and follow-up. Significant differences between the genders are reported when applicable.

Section 4: Other Targeted Factors. This section examines changes in targeted factors including mental and physical health symptoms, education, employment, living situation, and involvement with the criminal justice system from intake to follow-up. Significant differences between the genders are reported when applicable.

Section 5: Change in Recovery Supports. This section focuses on three main changes in recovery supports: (1) percentage of clients attending mutual help recovery group meetings; (2) contact with an AA/NA sponsor in the past 30 days; and (3) clients' opinion of their chances of getting off and staying off drugs and/or alcohol.

Section 6: Conclusion and Implications. This section summarizes the highlights from the evaluation results and suggests implications from these findings for the state.

SECTION 1. OVERVIEW AND DESCRIPTION OF KORTOS CLIENTS

This section briefly describes the Kentucky Opiate Replacement Treatment Outcome Study (KORTOS) including how clients are selected into the outcome evaluation. In addition, this section describes characteristics of clients who participated in federally licensed Kentucky opiate treatment programs in calendar year 2012 as well as clients who completed a 6-month follow-up interview.

KORTOS includes a face-to-face intake interview conducted by opiate treatment program staff to assess targeted factors such as substance use, mental health symptoms, education, employment status, living situation, and involvement in the criminal justice system prior to entering OTP (submitted to UK CDAR from January 1, 2012 through December 31, 2012). In 2012, 1,125 adults completed an intake survey.[5] At the completion of the intake interview, staff persons inform individuals about the KORTOS follow-up study and ask if they are interested in participating. If they agree to participate they are asked to provide contact information.

DESCRIPTION OF KORTOS CLIENTS AT TREATMENT INTAKE

Table 1.1 shows that the majority of clients with an intake survey submitted in 2012 were male (53.9%) and White (96.7%). Only a minority of clients reported their race as African American/Black (0.8%) and 2.5% reported they were American Indian, Asian, Hispanic, or multiracial. Clients were, on average, 32.9 years old, ranging from 18 to 64 years old at intake. The majority of clients (52.9%) were married or cohabiting at intake, 28.2% were never married, 17.7% were separated or divorced, and 1.2% were widowed. The majority of clients reported they had at least one child (63.2%).

TABLE 1.1. DEMOGRAPHICS FOR ALL KORTOS CLIENTS AT INTAKE (N = 1,125)[6]

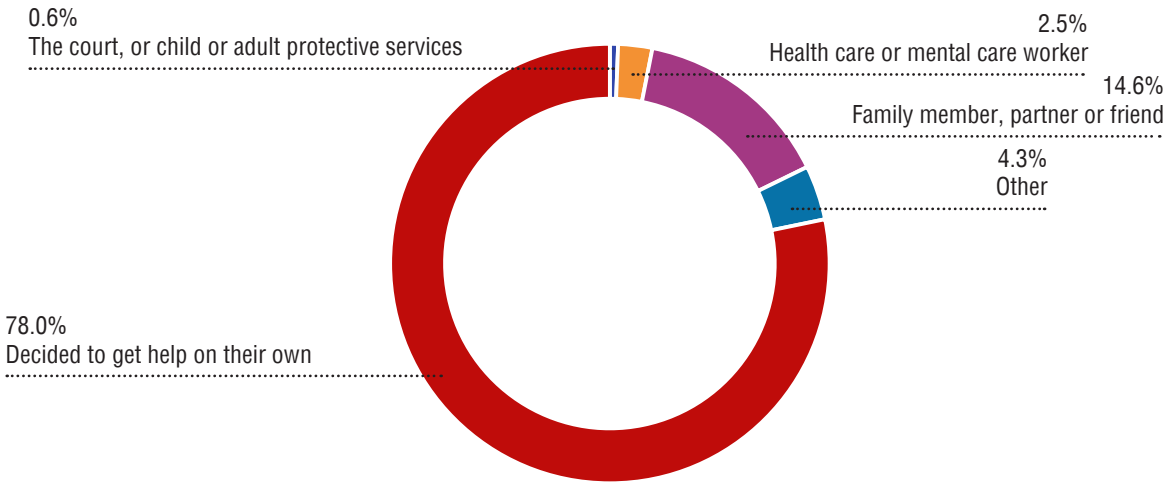
AGE	32.9 years (range of 18-64)
GENDER	
Male	53.9%
Female	46.0%
Transgender	0.2%
RACE	
White	96.7%
African American	0.8%
Other or multiracial	2.5%
MARITAL STATUS	
Never married	28.2%
Separated or divorced	17.7%
Married or cohabiting	52.9%
Widowed	1.2%
HAVE CHILDREN	63.2%

[5] When a client had more than one intake survey in the same fiscal year, the survey with the earliest submission date was kept in the data file and the other intake surveys were deleted so that each client was represented once and only once in the data set. Thus, 1,125 intake surveys were included in the file once multiple intake surveys per person were deleted.

[6] Age was missing for 2 clients at intake.

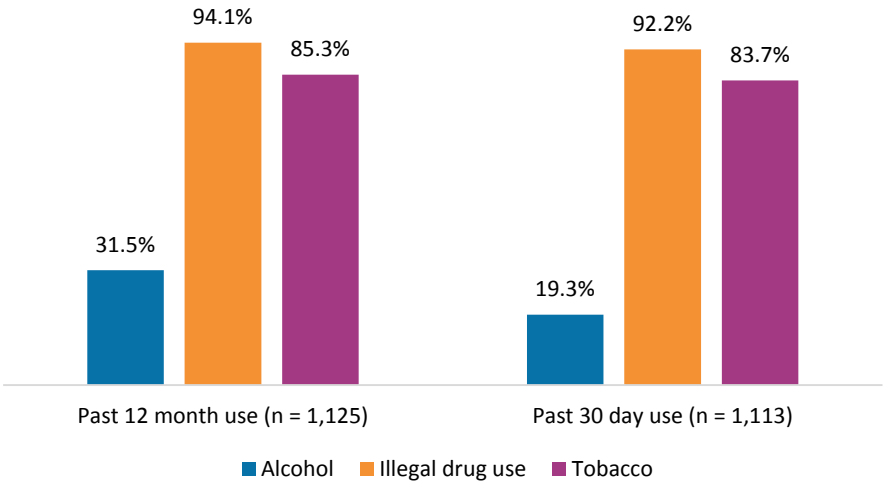
Figure 1.1 shows the treatment referral source for all KORTOS clients at intake. Over three-quarters of clients (78.0%) reported they decided to get help on their own and 14.6% were referred by a family member, partner or friend. A minority of clients (2.5%) were referred by a health care or mental health care worker Even smaller numbers of clients reported they were referred to treatment by the court (e.g., judge, court designated worker, probation officer, for DUI offense) or by Child or Adult Protective Services (0.6%) and 4.3% were referred by other sources.

FIGURE 1.1 REFERRAL SOURCE FOR ALL KORTOS CLIENTS AT INTAKE (N = 1,125)



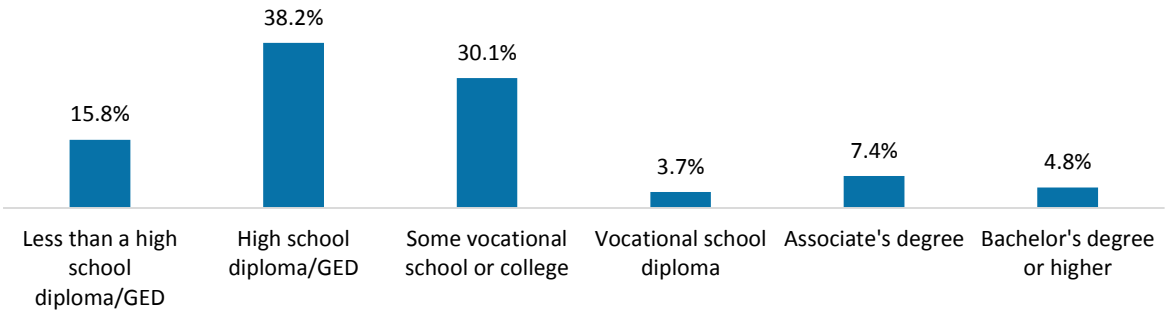
The majority of adults who completed an intake survey reported using illegal drugs (94.1%) and tobacco (85.3%) while about one-third of clients reported using alcohol (31.5%) in the 12 months before intake (see Figure 1.2). The drug classes reported by the greatest number of clients were prescription opioid/opiate (84.5%), marijuana (49.9%), and tranquilizers (36.4%). Because being in a controlled environment inhibits substance use, individuals who were in a controlled environment all 30 days before entering treatment (n = 12) are not included in the analysis of substance use in the 30 days before entering treatment. Of the 1,113 individuals who were not in a controlled environment all 30 days, 92.2% reported using illegal drugs, 19.3% reported using alcohol, and 83.7% reported using tobacco in the 30 days before entering treatment.

FIGURE 1.2 ALCOHOL, DRUG AND TOBACCO USE 12 MONTHS AND 30 DAYS BEFORE TREATMENT



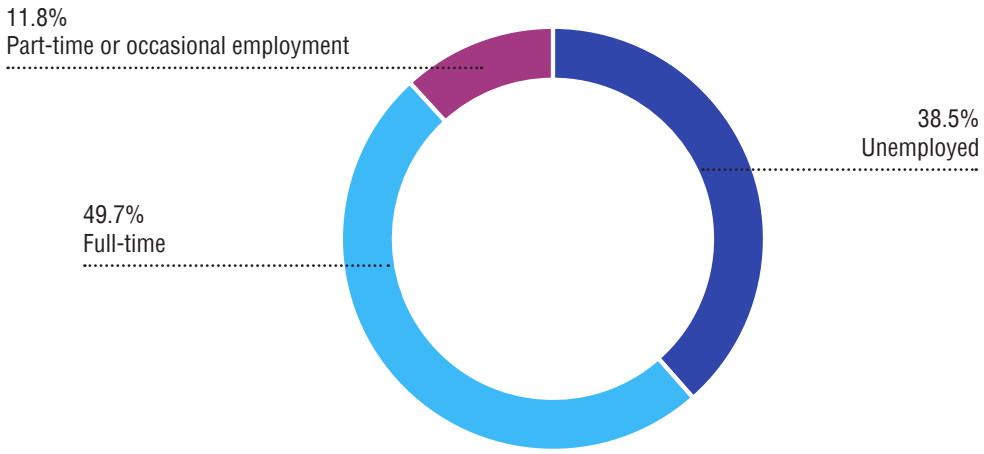
Almost 1 in 6 clients (15.8%) had less than a high school diploma or GED at intake. The highest level of education of 38.2% of the sample was a high school diploma or GED. About 30% of clients had completed some vocational/technical school or college. Only a minority of clients had completed vocational/technical school (3.7%), an associate's degree (7.4%), or a bachelor's degree or higher (4.8%).

FIGURE 1.3 HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE (N = 1,125)



One quarter of clients (25.0%) reported they had worked 0 months, 14.0% had worked 1 to 5 months, and 61.0% had worked 6 or more months in the 12 months before intake. At intake, about half of individuals reported they were currently employed full-time (49.7%), with 38.5% being unemployed, and 11.8% employed part-time or having occasional or seasonal employment currently. Among those who reported being employed full or part-time at intake, the mean hourly wage was $13.82.[7]

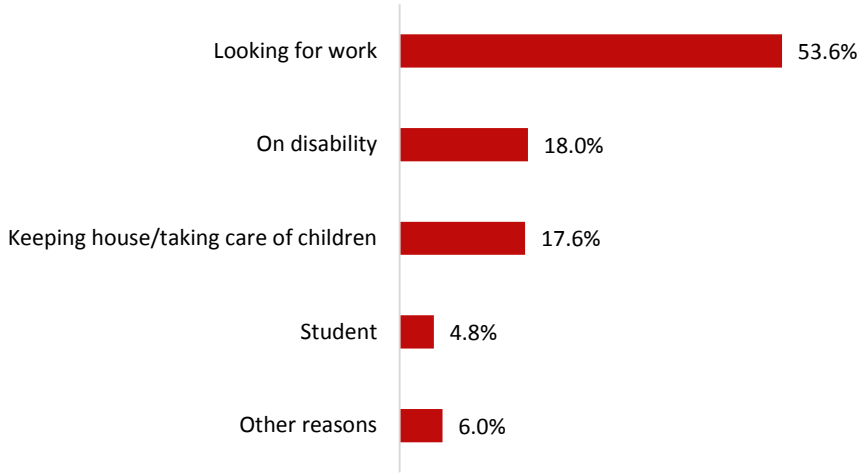
FIGURE 1.4 CURRENT EMPLOYMENT STATUS AT INTAKE (N = 1,125)



Of the individuals who were currently unemployed at intake (n = 433), the majority stated they were looking for work (53.6%), 18.0% were on disability, 17.6% were keeping the house or taking care of children full-time at home, 4.8% were students, and the remaining 6.0% gave other reasons for not being employed (e.g., on furlough or temporarily laid off, retired, other health problems prevented them from work but they weren't on disability, in a controlled environment, and they were not looking for work).

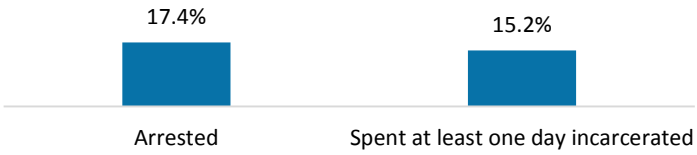
[7] Nineteen cases had missing or invalid data on hourly wage.

FIGURE 1.5 OF THOSE UNEMPLOYED, REASONS FOR BEING UNEMPLOYED (N = 433)



Fewer than 1 in 5 individuals reported being arrested at least once (17.4%) and being incarcerated at least one night (15.2%) in the 12 months before treatment (see Figure 1.6). Among those who were arrested in the past 12 months (n = 196), they were arrested an average of 1.8 times. Among those who were incarcerated in the past 12 months (n = 171), they were incarcerated an average of 21.9 nights.

FIGURE 1.6 CRIMINAL JUSTICE INVOLVEMENT 12 MONTHS BEFORE TREATMENT AT INTAKE (N = 1,125)



KORTOS FOLLOW-UP SAMPLE

Follow-up interviews are conducted with a selected sample of KORTOS clients about 6 months after the intake survey is completed. All individuals who agree to be contacted by UK CDAR for the follow-up interview and have given at least one mailing address and one phone number, or two phone numbers if they do not have a mailing address in their locator information, are eligible for the follow-up component of the study. All eligible individuals are then selected by the month in which they completed intake surveys with a couple exceptions: (1) if a person has more than one intake survey in a given year the survey with the earliest date will be selected into the follow-up sample; and (2) on occasion programs have submitted all or most of their intake surveys within a short period (not because they had a large influx of clients but because they were unable to consistently submit KORTOS intake surveys). When this happens, it is not possible to include all of the intake surveys to be included in the follow-up sample because a very large number of individuals to locate and contact in a month is not possible given that UK CDAR work on follow-up surveys by month. The follow-up interviews are conducted over the telephone by an interviewer at UK CDAR. Client responses to the follow-up interviews are kept confidential to help facilitate the honest evaluation of client outcomes and satisfaction with program services. There was a low refusal rate for follow-up participation (1.0%) and a high follow-up rate (83.6%). This means that only 15.4% of individuals included in the sample to be followed up were not successfully contacted.[8]

[8] Clients are not contacted for a variety of reasons including follow-up staff are not able to find a working address or phone number or are unable to contact any friends or family members of the client.

This report describes outcomes for 168 adults who participated in a Kentucky OTP and who completed an intake interview and a follow-up telephone interview about 6 months (average of 187.3 days) after the intake survey was submitted to UK CDAR.[9] Detailed information about the methods and follow-up efforts can be found in Appendix A.

Of the 168 adults who completed a 6-month follow-up interview, 60.7% were female and 39.3% were male. The majority of follow-up clients were White (96.4%) and 3.6% were Hispanic, American Indian, or multiracial. They were an average of 32.4 years old at the time of the intake interview. The majority of clients (54.4%) were 30 years old or older at intake.

TABLE 1.2. DEMOGRAPHICS FOR KORTOS FOLLOW-UP CLIENTS AT INTAKE (N = 168)[10]

AGE	32.4 years (range of 18-56)
GENDER	
Female	60.7%
Male	39.3%
Transgender	0.0%
RACE	
White	96.4%
African American	0.0%
Other or multiracial	3.6%

When those with a follow-up interview were compared with those who did not have a follow-up interview on a variety of intake variables, there were some significant differences for demographics, substance use, socio-economic status indicators (education, employment, and living situation), physical and mental health. Specifically, more females completed a follow-up interview than did not. Many of the other significant differences may be because more women were in the followed up group than were in the not followed up group. For example, more of the followed up clients reported they were unemployed and reported having trouble addressing health care needs as a result of financial issues and more clients who were followed up were unemployed at intake. More clients who completed a follow-up interview reporting having a chronic health problem, depression symptoms and generalized anxiety symptoms compared to clients who did not complete a follow-up interview. Clients who completed a follow-up interview were also more likely to report CNS depressant and non-prescribed methadone use. See Appendix B for detailed comparisons of clients who completed a follow-up interview (n = 168) and clients who did not complete a follow-up interview (n = 957).

[9] The actual date the intake interview was completed is not known. Some sites do the intake interviews on paper and submit them to UK CDAR through the website at a later date. Although UK CDAR requests that intake information be submitted within 7 days, it is not clear whether or not that is the case.

[10] Age was missing for one client in the follow-up sample.

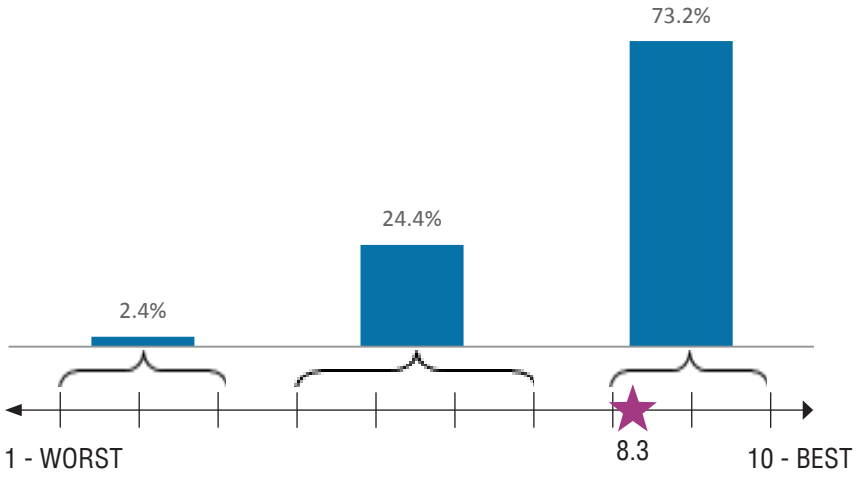
SECTION 2. CLIENT SATISFACTION RATINGS FOR OPIATE TREATMENT PROGRAMS (OTPS)

At the beginning of the follow-up interview, clients are asked to give their opinion regarding their program experience using four different questions. The items measured in this report include: (1) overall client satisfaction rating, (2) client ratings of program experiences, (3) positive and negative aspects of OTP participation, and (4) quality of life ratings.

OVERALL CLIENT SATISFACTION

At the beginning of the follow-up interview, clients are asked to rate their experience at the OTP on a scale from 1 representing the worst possible experience to 10 representing the best possible experience. The mean rating given by clients in the follow-up sample was 8.3, with 73.2% of clients giving a rating of 8 through 10 (see Figure 2.1).

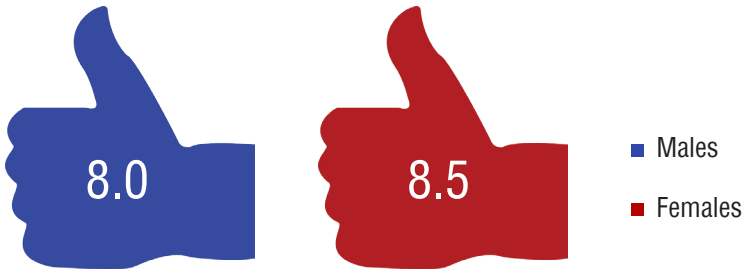
FIGURE 2.1. RATING OF EXPERIENCE AT THE OTP (N = 168)



GENDER DIFFERENCES IN CLIENT SATISFACTION

Women reported a significantly higher satisfaction rating of their experience at the OTP (8.5) compared to men (8.0).

FIGURE. 2.2 GENDER DIFFERENCES IN AVERAGE RATING OF EXPERIENCE AT THE OTP*

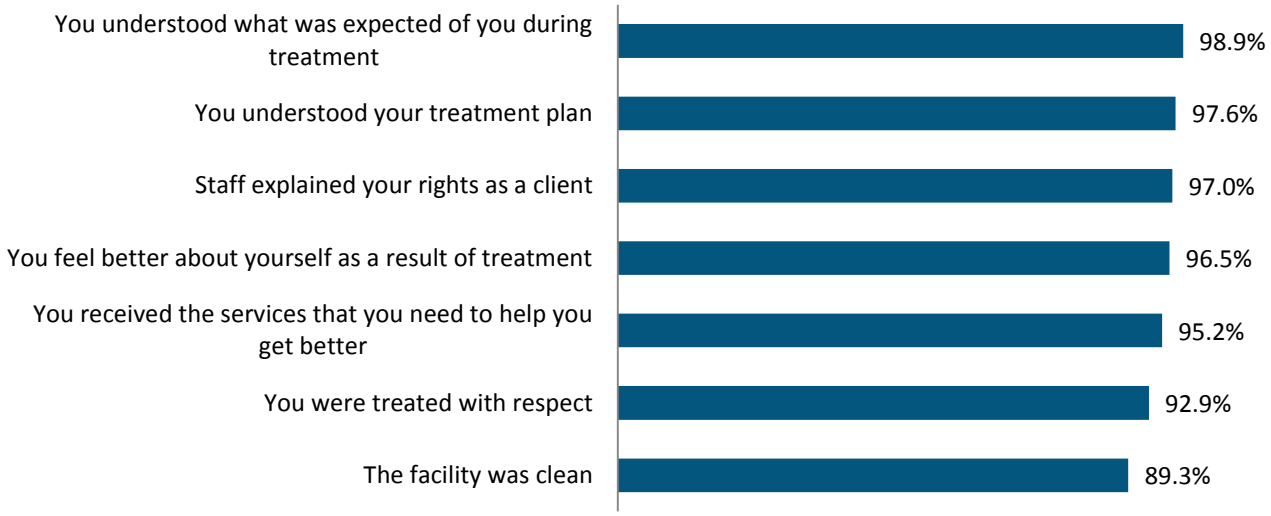


*p < .05, **p < .01, ***p < .001.

CLIENT RATINGS OF PROGRAM EXPERIENCES

When asked a series of program satisfaction questions, the majority of clients indicated each aspect of their experience was positive (see Figure 2.3). The vast majority of clients reported that they were treated with respect, understood the expectations of the program, felt better about themselves, and got the services needed to get better at the OTP.

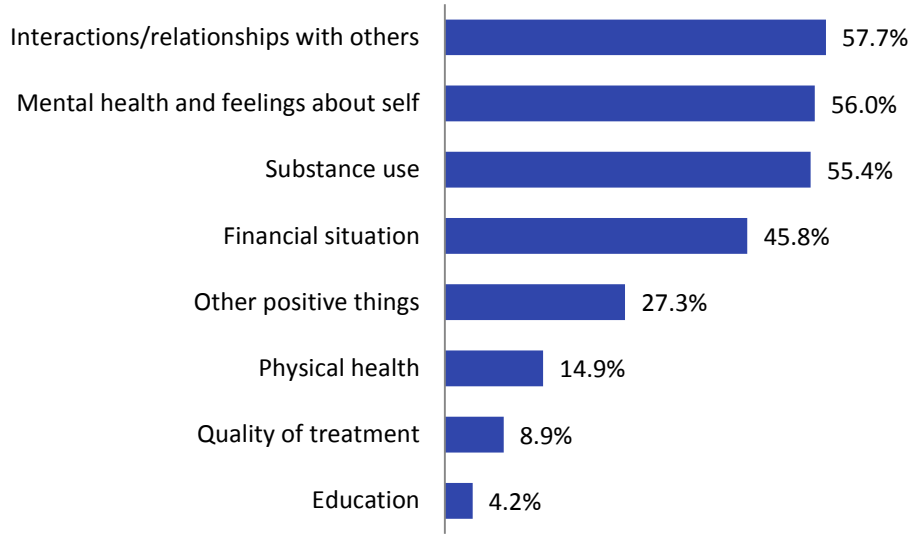
FIGURE 2.3. PERCENTAGE OF CLIENTS THAT AGREED OR STRONGLY AGREED WITH STATEMENTS ABOUT THEIR OTP EXPERIENCE (N=168)



POSITIVE AND NEGATIVE ASPECTS OF OTP

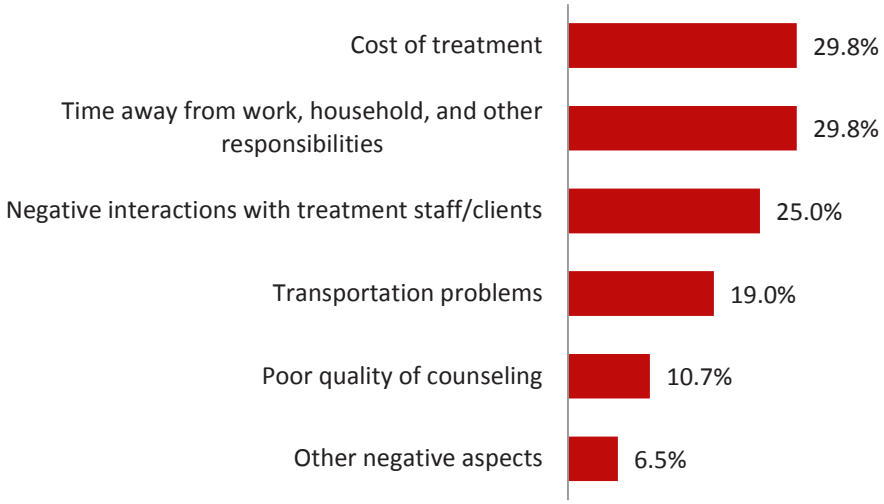
Clients were asked to identify the three most positive aspects of their participation with the OTP. The majority (57.7%) of clients reported that improved interactions and relationships with others was a positive aspect, and 56.0% stated that change in their mental health and how they felt about themselves was a positive outcome of their OTP experience (Figure 2.4). Over half of clients (55.4%) mentioned reductions in substance use as a positive OTP outcome and 45.8% of clients believed changes in their financial situation and employment were a positive outcome. Other positive outcomes were physical health, quality of treatment, education, and other positive changes (e.g., healthy baby, custody of children, normal life).

FIGURE 2.4. PERCENTAGE OF CLIENTS REPORTING POSITIVE ASPECTS OF THE OTP (N=168)



Aspects of treatment that clients identified as problematic or needing improvement are displayed in Figure 2.5. The negative aspects of the OTP program suggest barriers that clients must overcome to participate in the program including the cost and time investment. Specifically, cost of the OTP and time away from work, household, or other responsibilities were most frequently mentioned as negative aspects of OTP (both 29.8%). One in four clients stated that interactions with OTP staff or clients were sometimes problematic. Other areas of difficulty included transportation problems (19.0%), the quality of counseling (e.g., not enough counseling) (10.7%), and other negative aspects (e.g., take-home/phasing/dosing procedures, wait time, and rules being too strict, lenient, or arbitrary; 6.5%). Less than 1% of clients mentioned high staff turnover as negative aspects of their OTP experience.

FIGURE 2.5. PERCENTAGE OF CLIENTS REPORTING NEGATIVE ASPECTS OF THE OTP (N=168)



QUALITY OF LIFE

There were two main quality of life indexes that were used including: (1) quality of life rating, and (2) subjective social standing.

QUALITY OF LIFE RATINGS

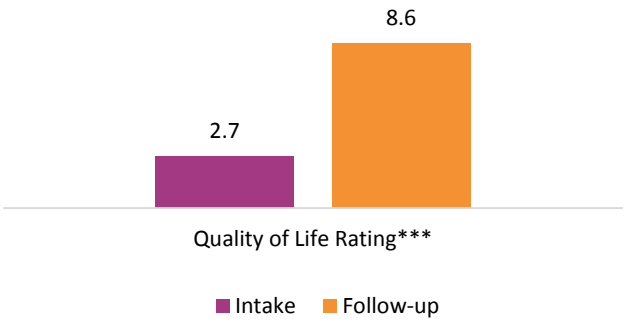
"They didn't make me feel judged for anything. I went in blind thinking I was forced to and ended up liking it. The program made me want to get clean."

- KORTOS Client quote

At follow-up, clients were asked to rate their quality of life before entering the OTP and after participating in the program. Ratings were from 1='Worst imaginable' to 5='Good and bad parts were about equal' to 10='Best imaginable'. KORTOS clients rated their quality of life before entering the OTP as on average 2.7 (see Figure 2.6). The average rating of quality of life after participating in the OTP significantly increased to 8.6.

Average rating of quality of life after entering the OTP significantly increased from 2.7 before entering the OTP to 8.6 at follow-up

FIGURE 2.6. PERCEPTION OF QUALITY OF LIFE BEFORE AND AFTER THE OTP (N = 168)

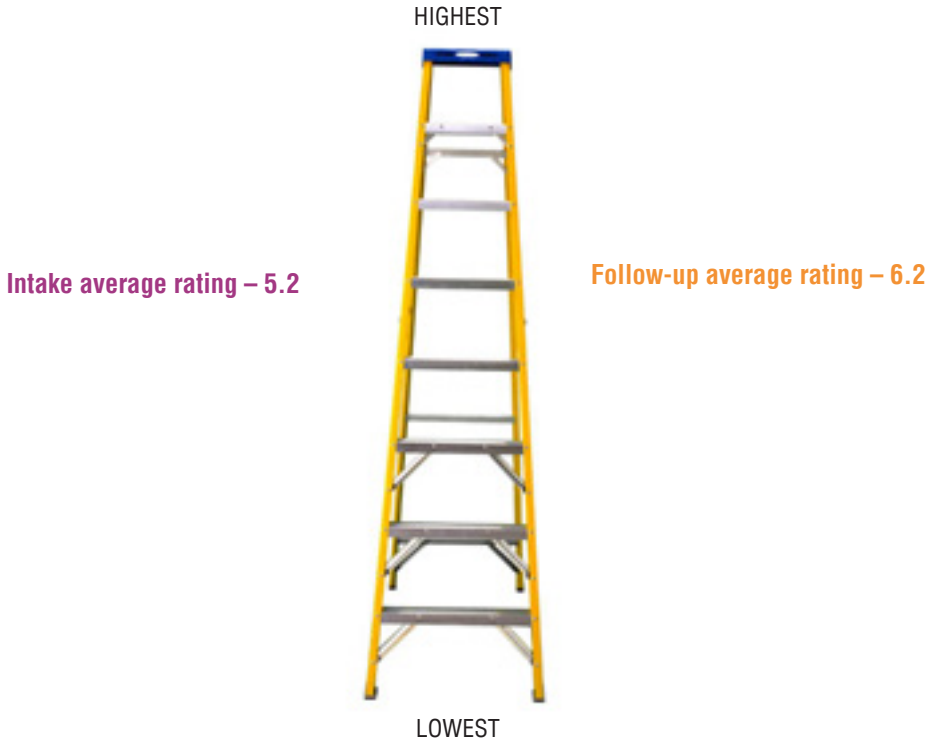


*p < .05, **p < .01, ***p < .001.

SUBJECTIVE SOCIAL STANDING

As a second index of quality of life, clients were asked to place themselves on a ladder, representing perception of their standing in society, Adler's Ladder.[11] The bottom rung, 1="people who are the worst off, those who have the least money, least education, and the worst jobs or no jobs" and the top rung, 10="people who are the best off, those who have the most money, most education, and the best jobs." Figure 2.7 shows client ratings of subjective social standing increased significantly by 19.2% from intake to follow-up: for the overall sample, from 5.2 at intake to 6.2 at follow-up.

FIGURE 2.7. CLIENT RATING OF SUBJECTIVE SOCIAL STANDING AT INTAKE AND FOLLOW-UP (N = 168)



[11] Adler, N., Epel, E.S., Castellazzo, G., Ickovics, JR. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology, 19*, 586 –92.

SECTION 3. SUBSTANCE USE

This section describes pre-program compared to post-program change in illegal drug, alcohol, and tobacco use for adult clients. Past 12-month/6-month substance use is examined as well as past 30-day substance use for clients who were not in a controlled environment all 30 days before entering treatment or the follow-up interview. Results for each targeted factor are presented for the overall sample and by gender when there were significant gender differences.

Changes in illegal drug, alcohol and tobacco use before entering the OTP and during the 6-month follow-up period are presented in this section. In addition to examining the overall use of illegal drugs, several specific categories of illegal drugs were examined including: (a) prescription opioid use [including opiates such as morphine, Percocet, Oxycontin, Lortab], (b) non-prescribed methadone, (c) non-prescribed buprenorphine, (d) heroin, and (e) non-opioid drugs other than those mentioned above [including marijuana, cocaine, amphetamines, tranquilizers, hallucinogens, inhalants, and barbiturates].[12] Analysis is presented in detail for KORTOS study participants who were not in a controlled environment for the entire period of 12 months and/or 30 days before entering treatment. Changes in substance use from intake to follow-up are presented in 4 main groups and organized by type of substance use:

1. **Change in past 12-month/6-month illegal drug, alcohol and tobacco use from intake to follow-up.** Comparisons of any illegal drugs, prescription opiates, non-prescribed methadone, non-prescribed buprenorphine, heroin, other non-opioid drug use, alcohol, and tobacco in the 12 months before the client entered the program and during the 6-month follow-up period (n = 168) are presented.

2. **Average number of months clients used substances at intake and follow-up.** For those who used any illegal drugs, alcohol, or tobacco, the average number of months of use before program entry (out of a 12 month period) and during the follow-up period (out of a projected 12 month period) are reported.[13]

3. **Change in 30-day substance use from intake to follow-up.** In addition to looking at past 12-month substance use, change in any use in the 30 days before entering the OTP and the 30 days before the follow-up interview for any illegal drug use (including prescription opiates, non-prescribed methadone, non-prescribed buprenorphine, heroin, and other non-opioid drugs), alcohol use, and tobacco use (n = 165)[14] is also examined. Because some clients were in a controlled environment (e.g., prison, jail, or residential facility) all 30 days before entering treatment (n = 3), changes in drug, alcohol, and tobacco use from intake to follow-up was analyzed for only clients who were not in a controlled environment all 30 days before entering treatment or follow-up.

4. **Change in self-reported alcohol and drug severity composite scores from intake to follow-up.** The Addiction Severity Index (ASI) self-reported severity composite scores are examined for change over

[12] Analysis of these specific illegal drugs can be found in Appendix C.

[13] Because the reference period before entering the OTP was 12 months and the reference period at follow-up was the past 6 months, the proportion of months clients reported using particular substances was calculated. Then, that proportion was applied to a projected 12 month period at follow-up to facilitate comparisons. For example, if a client reported using tobacco all 6 months before follow-up, then the percent months of use was 100%; applied to a 12 month period, the value was 12 in the projected follow-up period.

[14] Because some clients enter treatment after leaving jail or prison, substance use in the 30 days before entering the program was examined for clients who were not in a controlled environment all 30 days. The assumption for excluding clients who were in a controlled environment all 30 days before entering treatment (n = 3) from the change in past 30-day substance use analysis is that being in a controlled environment inhibits opportunities for alcohol and drug use.

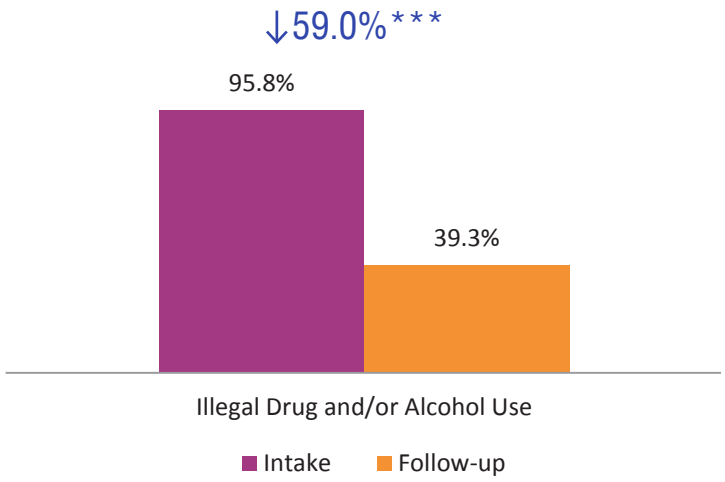
time for illegal drugs (n = 619), alcohol (n = 520) and those with both alcohol and illegal drug use (n = 793). The ASI composite score assesses self-reported addiction severity even among those reporting no substance use in the past 30 days. The alcohol and drug composite scores are computed from items about 30-day alcohol (or drug) use and the number of days individuals used multiple drugs in a day, as well as the impact of substance use on the individual's life, such as money spent on alcohol, number of days individuals had alcohol (or drug) problems, how troubled or bothered individuals were by their alcohol (or drug) problems, and how important treatment was to them.

ALCOHOL AND DRUG USE

The majority of clients (95.8%) reported using alcohol and/or illegal drugs in the 12 months before entering the OTP, which decreased to 39.3% at follow-up. There was a 59.0% significant decrease in the number of clients reporting use of alcohol and/or illegal drugs (see Figure 3.1).

The number of clients reporting alcohol and/or illegal drug use decreased by 59%

FIGURE 3.1. PAST 12-MONTH/6-MONTH ALCOHOL AND/OR DRUG USE AT INTAKE AND FOLLOW-UP (N = 168)



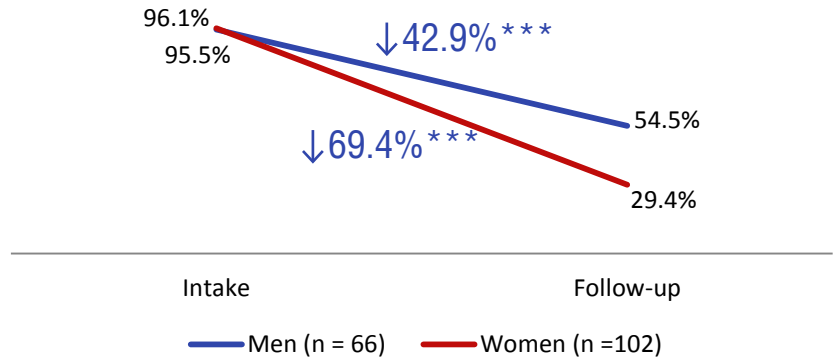
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN ALCOHOL AND/OR ILLEGAL DRUG USE, PAST 12 MONTH/6 MONTH

At follow-up, significantly more men than women reported alcohol and/or illegal drug use, 54.5% vs. 29.4%. The number of men and women who reported using alcohol and/or illegal drugs significantly decreased from intake to follow-up by 42.9% and 69.4% respectively.

Significantly more men than women reported using alcohol and/or illegal drugs at follow-up

FIGURE 3.2. GENDER DIFFERENCES IN PAST 12-MONTH/6-MONTH ALCOHOL AND/OR ILLEGAL DRUG USE AT INTAKE AND FOLLOW-UP[a]

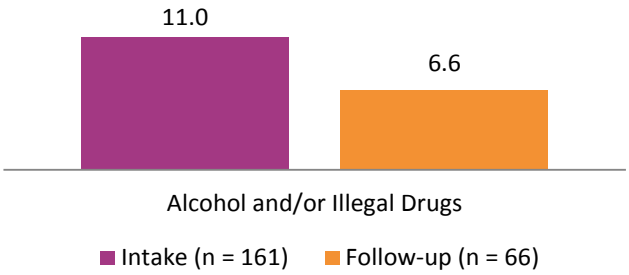


a—Significant difference by gender at follow-up, p < .01.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED ALCOHOL AND/OR ILLEGAL DRUGS

Clients who reported alcohol and/or illegal drug use at intake (n = 161) reported an average of 11.0 months of use in the 12 months before OTP entry. Among clients who reported alcohol and/or illegal drug use at follow-up (n = 66), they reported using, on average, 6.6 of the projected follow-up months (see Figure 3.3).

FIGURE 3.3. AVERAGE NUMBER OF MONTHS CLIENTS USED ALCOHOL AND/OR ILLEGAL DRUGS

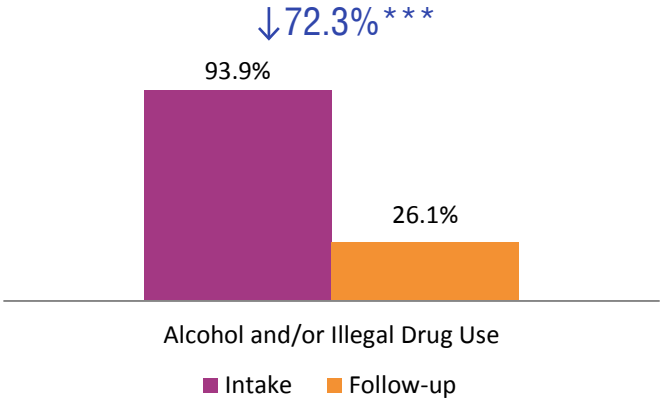


ALCOHOL AND/OR ILLEGAL DRUG USE, PAST 30 DAYS

There was a significant decrease in past 30-day alcohol and/or illegal drug use from intake to follow-up (see Figure 3.4). At intake, 93.9% of clients reported alcohol and/or illegal drug use in the 30 days before entering the OTP. At follow-up 26.1% of clients reported alcohol and/or illegal drug use in the past 30 days, which is a significant decrease of 72.3%.

There was a significant reduction of 72% in the number of clients who reported past 30-day alcohol and/or illegal drug use

FIGURE 3.4. PAST 30-DAY USE OF ALCOHOL AND/OR ILLEGAL DRUGS AT INTAKE AND FOLLOW-UP (N = 165)



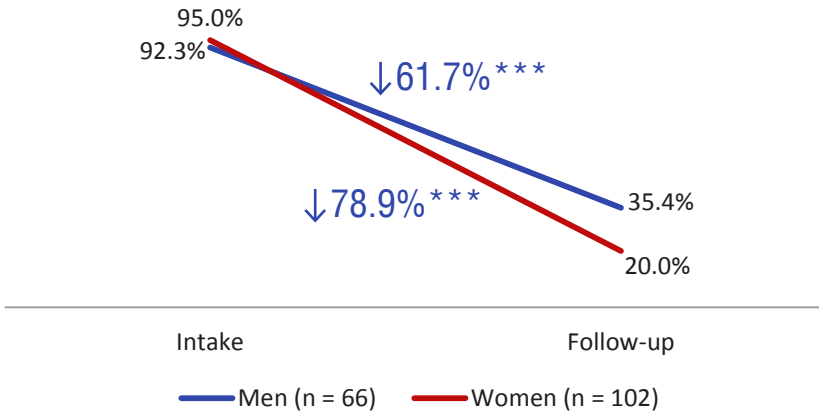
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN ALCOHOL AND/OR ILLEGAL DRUG USE, PAST 30 DAYS

At follow-up, significantly more men than women reported alcohol and/or illegal drug use, 35.4% vs. 20.0% (see Figure 3.5). The number of men and women who reported alcohol and/or illegal drug use significantly decreased from intake to follow-up by 61.7% and 78.9% respectively.

Significantly more men than women reported using alcohol and/or illegal drugs at follow-up

FIGURE 3.5. GENDER DIFFERENCES IN PAST 30-DAY ALCOHOL AND/OR ILLEGAL DRUG USE AT INTAKE AND FOLLOW-UP[a]



a—Significant difference by gender at follow-up, $p < .05$.
*p < .05, **p < .01, ***p < .001.

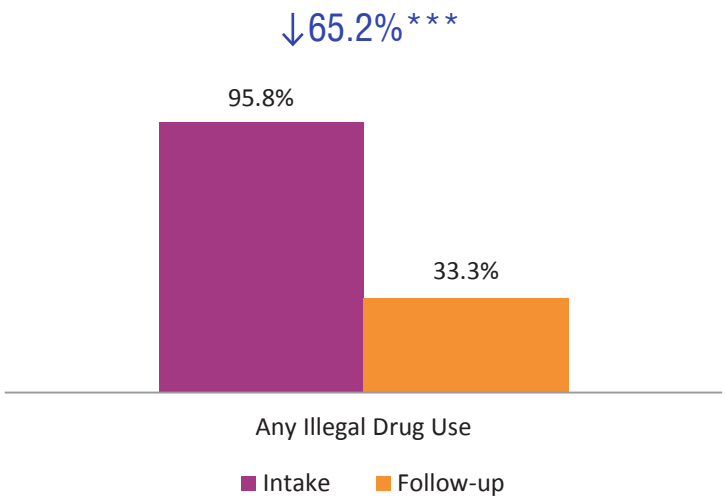
ANY ILLEGAL DRUGS

ANY ILLEGAL DRUG USE, PAST 12 MONTHS/6 MONTHS

Over 9 in 10 clients (95.8%) reported using illegal drugs in the 12 months before entering the OTP, which decreased to 33.3% at follow-up. Overall, for the KORTOS follow-up sample, there was a 65.2% significant decrease in the number of clients reporting use of any illegal drugs (see Figure 3.6).

The number of clients reporting illegal drug use decreased by 65%

FIGURE 3.6. PAST 12-MONTH/6-MONTH ILLEGAL DRUG USE AT INTAKE AND FOLLOW-UP (N = 168)



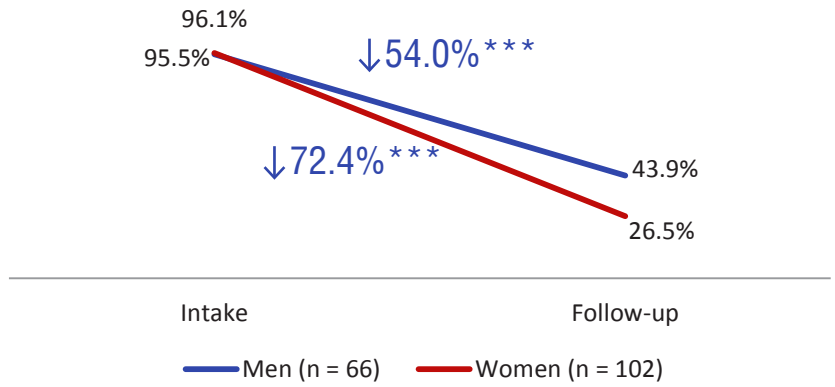
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN OVERALL ILLEGAL DRUG USE, PAST 12 MONTHS/6 MONTHS

At follow-up, significantly more men than women reported any illegal drug use, 43.9% vs. 26.5% (see Figure 3.7). The number of men and women who reported illegal drug use significantly decreased from intake to follow-up by 54.0% and 72.4% respectively.

Significantly more men than women reported using any illegal drugs at follow-up

FIGURE 3.7. GENDER DIFFERENCES IN PAST 12-MONTH/6 MONTH ILLEGAL DRUG USE AT INTAKE AND FOLLOW-UP[a]

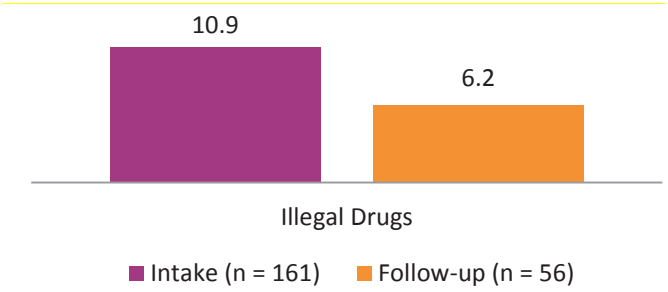


a—Significant difference by gender at follow-up, $p < .05$.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED ANY ILLEGAL DRUGS

Clients who reported any illegal drug use at intake (n = 161) reported an average of 10.9 months of use in the 12 months before OTP entry. Among clients who reported any illegal drug use at follow-up (n = 56), they reported using, on average, 6.2 of the projected follow-up months (see Figure 3.8).

FIGURE 3.8. AVERAGE NUMBER OF MONTHS CLIENTS USED ILLEGAL DRUGS

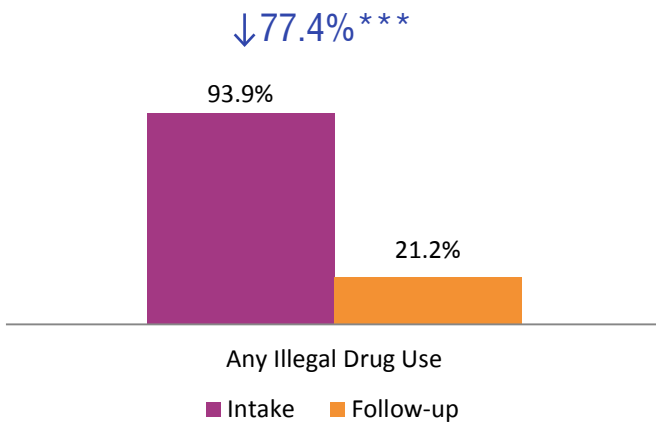


ANY ILLEGAL DRUG USE, PAST 30 DAYS

There was a significant decrease in past 30-day illegal drug use from intake to follow-up (see Figure 3.9). At intake, 93.9% of clients reported any illegal drug use in the 30 days before entering the OTP. At follow-up 21.2% of clients reported any illegal drug use in the past 30 days, which is a significant decrease of 77.4%.

There was a significant reduction of 77% in the number of clients who reported past 30-day illegal drug use

FIGURE 3.9. PAST 30-DAY USE OF ANY ILLEGAL DRUGS AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

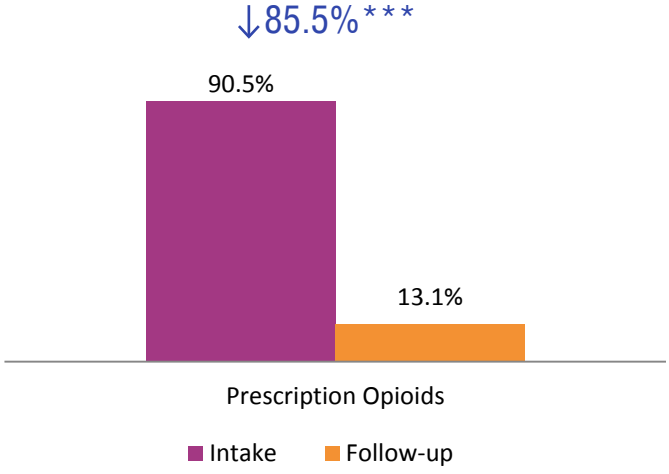
PRESCRIPTION OPIOID USE

PRESCRIPTION OPIOID USE, PAST 12 MONTHS/6 MONTHS

The majority of KORTOS clients (90.5%) reported prescription opioid use (such as morphine, Percocet, Oxycontin, Lortab) in the 12 months before OTP entry. At follow-up, 13.1% of clients reported misusing prescription opioids (see Figure 3.10). This means there was an 85.5% significant decrease in the number of clients reporting prescription opioid use.

The number of clients reporting prescription opioid use decreased by 86%

FIGURE 3.10. PAST 12-MONTH/6-MONTH PRESCRIPTION OPIOID USE AT INTAKE AND FOLLOW-UP (N = 168)

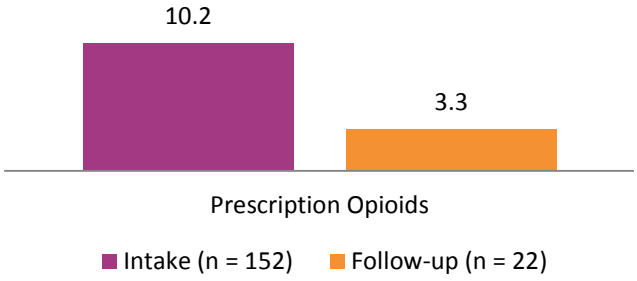


*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED PRESCRIPTION OPIOIDS

Figure 3.11 shows the average number of months prescription opioid users reported misusing prescription opioids at intake and during the projected 12 month follow-up. Among the clients who reported using prescription opioids before entering the program (n = 152), clients reported using prescription opioids an average of 10.2 of the 12 months. Among clients who reported using opioids at follow-up (n = 22), clients reported using an average of 3.3 of the projected 12 follow-up months.

FIGURE 3.11. AVERAGE NUMBER OF MONTHS CLIENTS USED PRESCRIPTION OPIOIDS

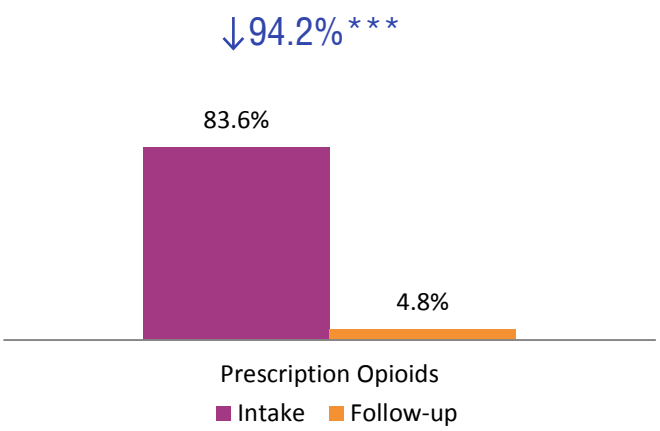


PRESCRIPTION OPIOID USE, PAST 30 DAYS

There was a decrease in the past 30-day misuse of prescription opioids from intake to follow-up (Figure 3.12). At intake, 83.6% of clients reported misuse of prescription opioids in the 30 days before entering the OTP. At follow-up 4.8% of clients reported use of prescription opioids. This reflects a significant decrease of 94.2% in the number of clients reporting use of prescription opioids.

The number of clients who used opioids decreased significantly by 94%

FIGURE 3.12. PAST 30-DAY PRESCRIPTION OPIOID USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

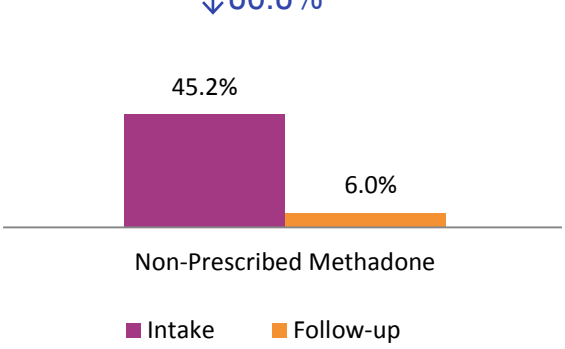
NON-PRESCRIBED USE OF METHADONE

NON-PRESCRIBED METHADONE, PAST 12 MONTHS/6 MONTHS

A little more than 45% of KORTOS clients reported using non-prescribed methadone in the 12 months before intake and at follow-up, only 6.0% of clients reported non-prescribed use of methadone. This is an 86.8% significant decrease in the number of clients reporting non-prescribed use of methadone (see Figure 3.13).

The number of clients reporting non-prescribed methadone use decreased 87%

FIGURE 3.13. PAST 12-MONTH/6-MONTH NON-PRESCRIBED METHADONE USE AT INTAKE AND FOLLOW-UP (N = 168)

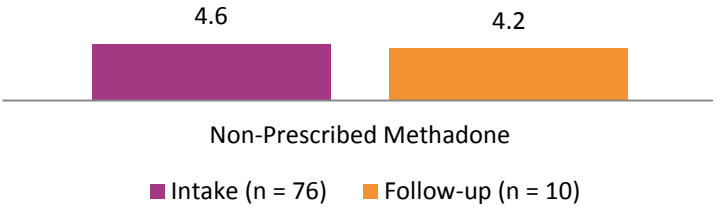


*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED NON-PRESCRIBED METHADONE

Among the clients who reported non-prescribed use of methadone in the 12 months before entering the program (n = 76), they reported using on average 4.6 of the intake months (see Figure 3.14). Among clients who reported non-prescribed use of methadone at follow-up (n = 10), they reported using, on average, 4.2 of the projected follow-up months.

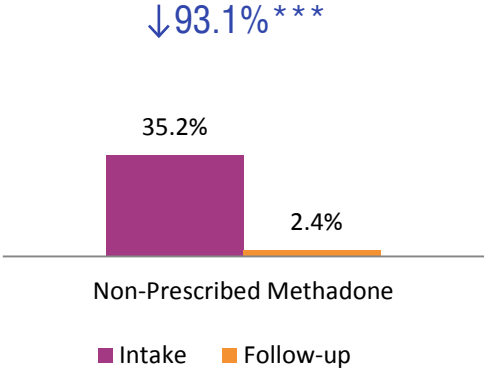
FIGURE 3.14. AVERAGE NUMBER OF MONTHS CLIENTS USED NON-PRESCRIBED METHADONE



NON-PRESCRIBED METHADONE, PAST 30 DAYS

Over one-thirds of clients (35.2%) reported using non-prescribed methadone in the 30 days before entering the OTP and at follow-up 2.4% of clients reported past 30-day use of non-prescribed methadone (Figure 3.15). There was a 93.1% significant decrease in the number of clients who reported past 30 day use of non-prescribed methadone.

FIGURE 3.15. PAST 30-DAY NON-PRESCRIBED METHADONE USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

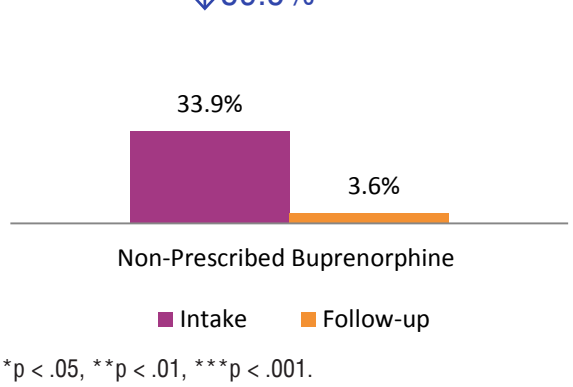
NON-PRESCRIBED USE OF BUPRENORPHINE

NON-PRESCRIBED USE OF BUPRENORPHINE, PAST 12 MONTHS/6 MONTHS

Figure 3.16 shows that about one-third (33.9%) of KORTOS clients reported using non-prescribed buprenorphine in the 12 months before intake. At follow-up, only 3.6% of clients reported using non-prescribed buprenorphine--a significant decrease of 89.5%.

The number of clients reporting buprenorphine use decreased 90%

FIGURE 3.16. PAST 12-MONTH/6-MONTH NON-PRESCRIBED USE OF BUPRENORPHINE AT INTAKE AND FOLLOW-UP (N = 168)

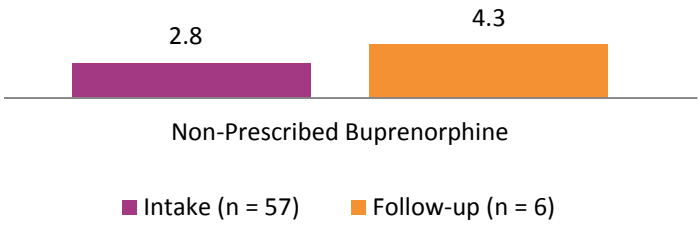


*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED NON-PRESCRIBED BUPRENORPHINE

Among the clients who reported non-prescribed use of buprenorphine in the 12 months before entering the program (n = 57), they reported using non-prescribed buprenorphine, on average, 2.8 of the intake months (see Figure 3.17). Among clients who reported non-prescribed use of buprenorphine at follow-up (n = 6), they reported using, on average, 4.3 of the projected follow-up months.

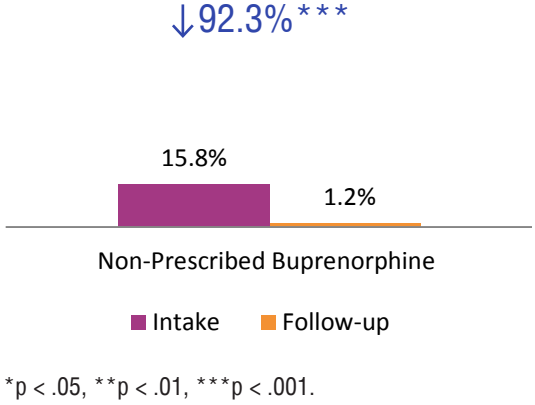
FIGURE 3.17. AVERAGE NUMBER OF MONTHS CLIENTS USED NON-PRESCRIBED BUPRENORPHINE



NON-PRESCRIBED BUPRENORPHINE, PAST 30 DAYS

At intake, 15.8% of clients reported using non-prescribed buprenorphine in the 30 days before entering the OTP (see Figure 3.18). At follow-up, only 1.2% of clients reported past 30-day use of non-prescribed buprenorphine--a significant decrease of 92.3%.

FIGURE 3.18. PAST 30-DAY NON-PRESCRIBED BUPRENORPHINE USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

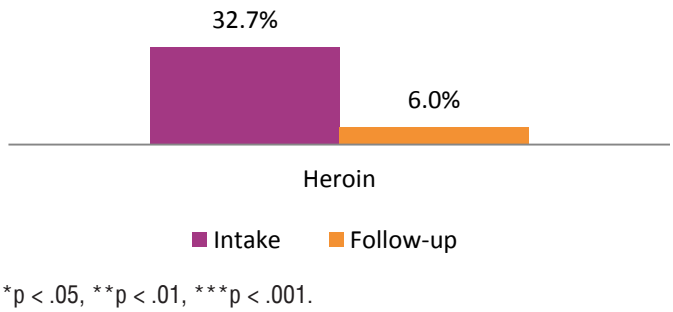
HEROIN

HEROIN USE, PAST 12 MONTHS/6 MONTHS

About one-third of clients (32.7%) reported using heroin in the 12 months before entering treatment, which significantly decreased 81.8% to 6.0% at follow-up (see Figure 3.19).

The number of clients reporting heroin use decreased by 82%

FIGURE 3.19. PAST 12-MONTH/6-MONTH HEROIN USE AT INTAKE AND FOLLOW-UP (N = 168)

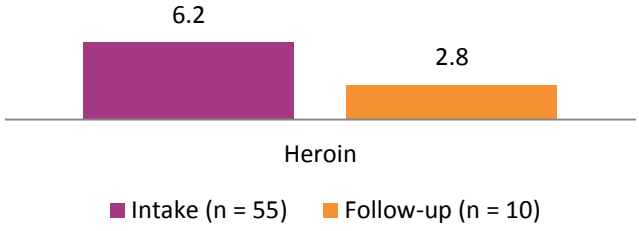


*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED HEROIN

Among the clients who reported using heroin in the 12 months before entering treatment (n = 55), they reported using heroin, on average, 6.2 months (see Figure 3.20). Among clients who reported using heroin at follow-up (n = 10), they reported using, on average, 2.8 months.

FIGURE 3.20. AVERAGE NUMBER OF MONTHS CLIENTS USED HEROIN

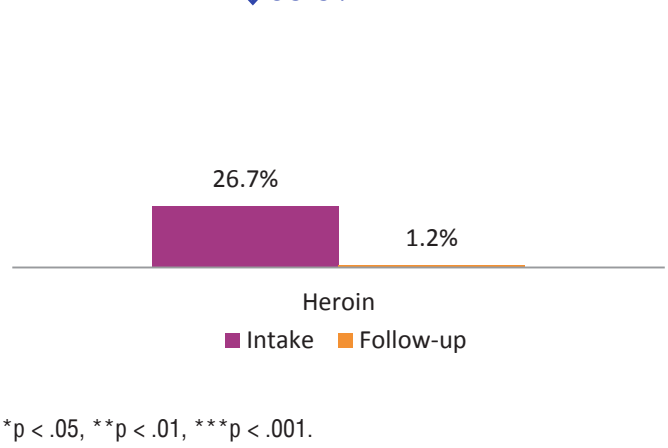


HEROIN USE, PAST 30 DAYS

Slightly over one-quarter of clients (26.7%) reported using heroin in the 30 days before intake. At follow-up, 1.2% reported using heroin in the past 30 days, a significant decrease of 95.5% (see Figure 3.21).

The number of clients who used heroin decreased significantly by 96%

FIGURE 3.21. PAST 30-DAY HEROIN USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

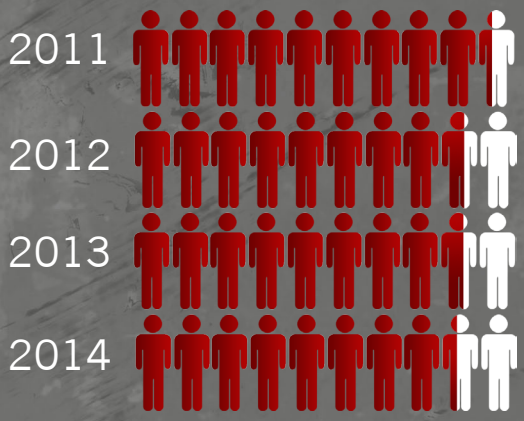
"I've been having trouble staying sober my whole life, but now I've never been happier and more stable. I can enjoy my life and be a good mom."

- KORTOS Client quote

Trend Alert

OPIATE USE in KENTUCKY

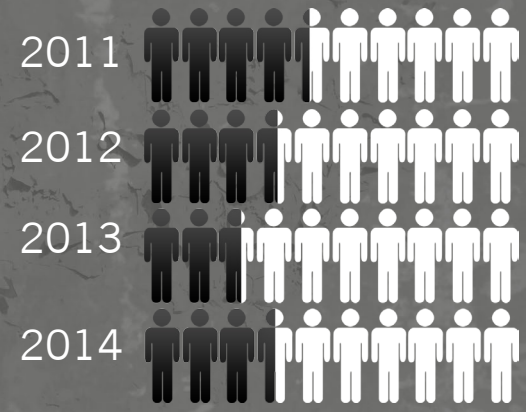
Non-medical use of prescription drugs is a continuing health concern for the United States and especially for areas like Kentucky. Kentucky ranks as third in the U.S. for the highest rate of deaths from drug overdose (23.6 per 100,000[a]), the majority stemming from prescription drugs.



Prescription Opiates

In 2014 A LITTLE OVER 8 OUT OF EVERY 10 CLIENTS REPORTED PRESCRIPTION OPIATE MISUSE IN THE 30 DAYS BEFORE ENTERING OPIATE TREATMENT PROGRAM

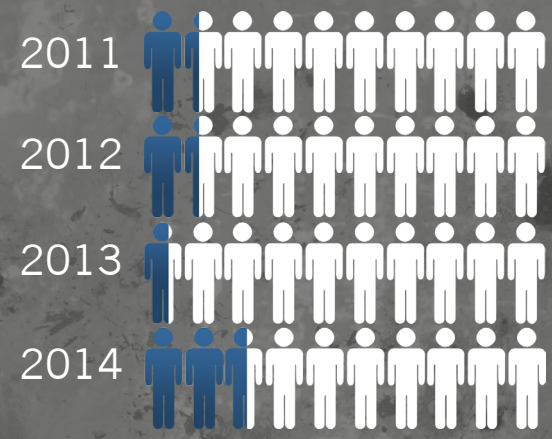
IN 2012, OF THE OVERDOSE DEATHS IN KENTUCKY, 26% WERE FROM HYDROCODONE, AND 24% WERE FROM OXYCODONE[2]



Methadone

In 2014 A LITTLE OVER 3 OUT OF EVERY 10 CLIENTS REPORTED NON-PRESCRIBED METHADONE USE IN THE 30 DAYS BEFORE ENTERING OPIATE TREATMENT PROGRAM

IN 2012, OF THE OVERDOSE DEATHS IN KENTUCKY, 14% WERE FROM METHADONE[2]



Heroin

In 2014 A LITTLE OVER 2 OUT OF EVERY 10 CLIENTS REPORTED HEROIN USE IN THE 30 DAYS BEFORE ENTERING OPIATE TREATMENT PROGRAM

IN 2012, OF THE OVERDOSE DEATHS IN KENTUCKY, 20% WERE FROM HEROIN[2]

In 2012, the state legislature passed House Bill 1 which requires physicians to use the KASPER prescription drug monitoring system in order to track how often and how much controlled substances are being prescribed. As a result of this recent drug control policy change, prescription opiates are more difficult to obtain. However, while heroin use has remained relatively low over the past several years, it is widely presumed that heroin is making a resurgence in many areas of the state because of its ease to access. In fact, according to the Kentucky Office of Drug Control Policy, deaths as a result of heroin overdose increased 650% in 2012 from 2011.[b]

[a] Trust for America's Health. (October 2013). Prescription Drug Abuse: Strategies to Stop the Epidemic. Retrieved October 25, 2013 from http://healthyamericans.org/reports/drugabuse2013/;
[b] Kentucky Office of Drug Control Policy. (2013). 2012 Overdose Fatality Report. Retrieved October 25, 2013 from dcp.ky.gov/NR/.../0/2012ODCPOverdoseDeathReportEDITS3.pdf

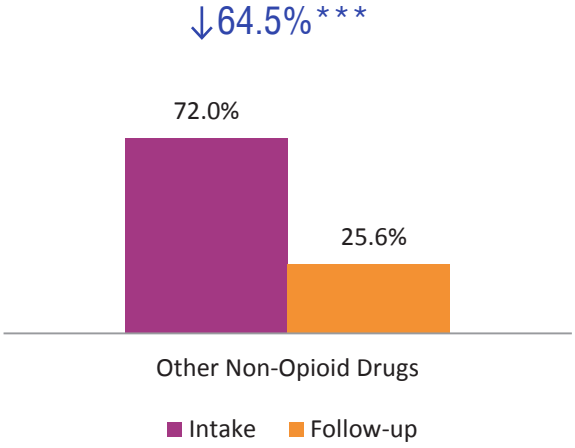
OTHER NON-OPIOID DRUG USE

OTHER NON-OPIOID DRUGS, PAST 12 MONTH/6 MONTH

Almost three-fourths of clients (72.0%) used illegal drugs other than prescription opiates, non-prescribed methadone, non-prescribed buprenorphine, or heroin in the 12 months before entering the program (see Figure 3.22). Drugs in this category include marijuana, cocaine, amphetamines, tranquilizers, hallucinogens, inhalants, and barbiturates. The number of clients who reported use of other non-opioid drugs decreased to 25.6% at follow-up (a significant decrease of 64.5%).

Other non-opioid drug use was reported by 65% fewer clients at follow-up

FIGURE 3.22. PAST 12-MONTH/6-MONTH OTHER NON-OPIOID DRUG USE AT INTAKE AND FOLLOW-UP (N = 168)



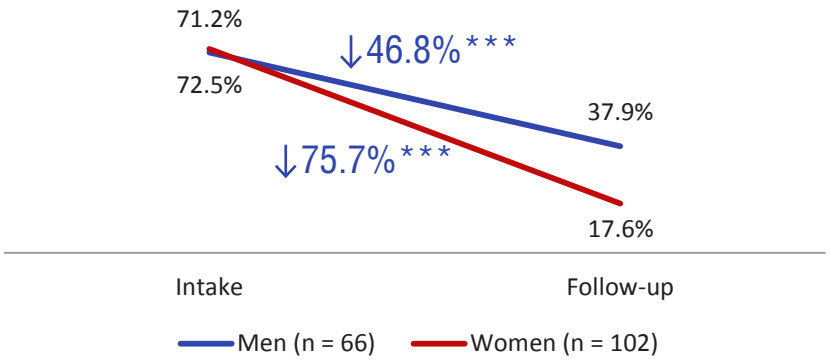
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN OTHER NON-OPIOID DRUGS, PAST 12 MONTHS/6 MONTHS

In the 12 months before OTP entry, 71.2% of men and 72.5% of women reported using other non-opioid drugs. The number of men and women who reported using other non-opioid drugs decreased significantly by follow-up; however, the decrease was greater for women (75.7%) than for men (46.8%). By follow-up significantly more men than women reported using marijuana, 37.9% vs. 17.6% (see Figure 3.23).

Significantly more men than women reported other non-opioid drug use at follow-up

FIGURE 3.23. GENDER DIFFERENCES IN PAST 12-MONTH/6-MONTH OTHER NON-OPIOID DRUG USE AT INTAKE AND FOLLOW-UP[a]



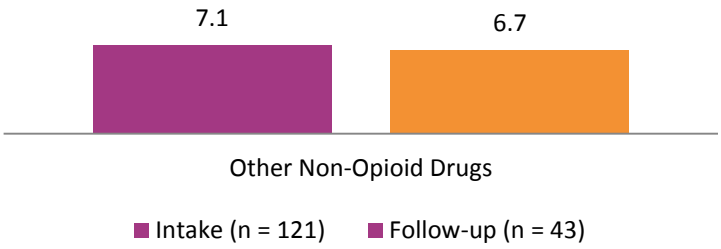
a—Significant difference by gender at follow-up, p < .01.

*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED OTHER NON-OPIOID DRUGS

Figure 3.24 shows the maximum number of months clients that used other non-opioid drugs reported using these illegal drugs (e.g., marijuana, cocaine, amphetamine, tranquilizers, barbiturates, inhalants, hallucinogens).[15] Among the clients who reported using other non-opioid drugs in the 12 months before entering the program (n = 121), clients reported using these substances an average of 7.1 months. Among clients who reported using other non-opioid drugs at follow-up (n = 43), clients reported using an average of 6.7 of the projected follow-up months.

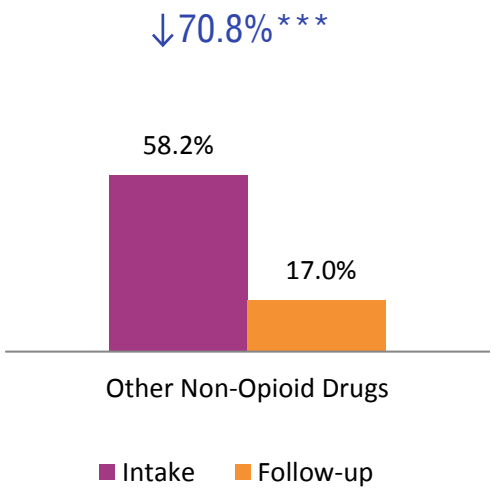
FIGURE 3.24. AVERAGE MAXIMUM NUMBER OF MONTHS CLIENTS USED OTHER NON-OPIOID DRUGS



OTHER NON-OPIOID DRUGS, PAST 30 DAYS

Over half of clients (58.2%) reported using other non-opioid drugs in the 30 days before intake (see Figure 3.25). At follow-up 17.0% of clients reported other non-opioid drug use, which is a 70.8% significant decrease.

FIGURE 3.25. PAST 30 DAY OTHER NON-OPIOID DRUG USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

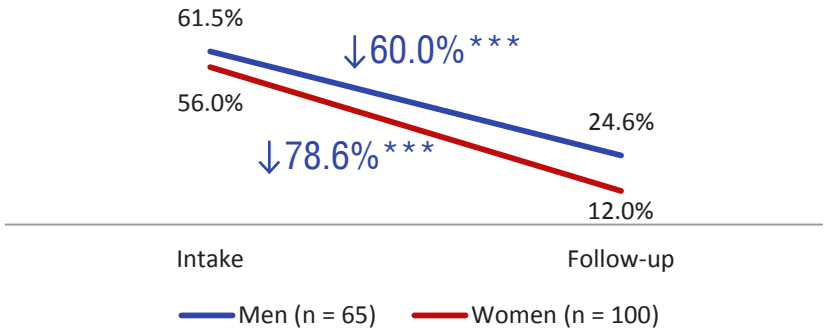
[15] Because number of months of use of each class of substance was measured separately (e.g., marijuana, cocaine, amphetamines, tranquilizers, barbiturates, hallucinogens, inhalants), the value is a calculation of the maximum number of months clients used any substance class.

GENDER DIFFERENCES IN OTHER NON-OPIOID DRUGS, PAST 30 DAYS

Over half of women (56.0%) and 61.5% of men reported other non-opioid drug use at intake (see Figure 3.26). The number of women and men who reported other non-opioid drug use significantly decreased from intake to follow-up by 78.6% and 60.0% respectively. However, the decrease was greater for women, such that, at follow-up significantly more men reported using other non-opioid drugs compared to women.

Significantly more men than women reported other non-opioid drug use in the past 30 days at follow-up

FIGURE 3.26. GENDER DIFFERENCES 30-DAY OTHER NON-OPIOID DRUG USE AT INTAKE AND FOLLOW-UP[a]



a—Significant difference by gender at follow-up, $p < .05$.
*$p < .05$, **$p < .01$, ***$p < .001$.

ALCOHOL USE

There were three measures of alcohol use including: (1) any alcohol use, (2) alcohol use to intoxication, and (3) binge drinking. Binge drinking was defined as having 5 or more (4 or more if client was female) alcoholic drinks in a period of about 2 hours.

ALCOHOL USE, PAST 12 MONTHS/PAST 6 MONTHS

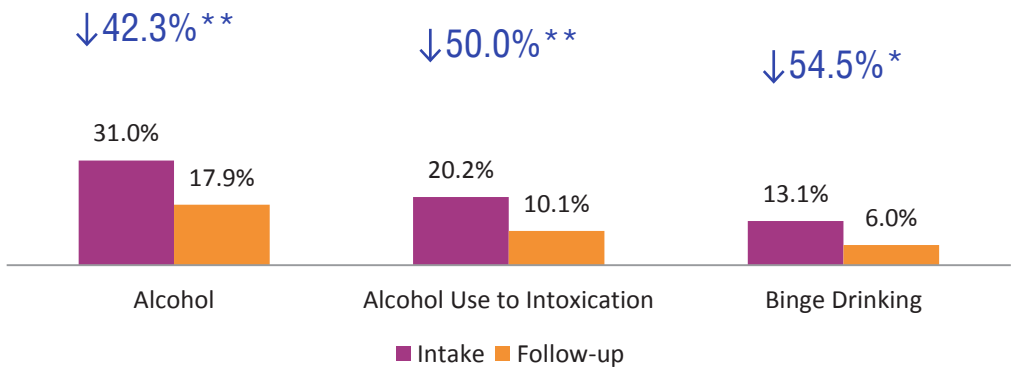
Less than one-third of clients (31.0%) reported using alcohol in the 12 months before entering treatment while 17.9% of clients reported alcohol use in the 6 months before follow-up (see Figure 3.27). Overall, for the KORTOS follow-up sample, there was a 42.3% significant decrease in the number of clients reporting alcohol use. About 1 in 5 clients reported using alcohol to intoxication at intake, with 1 in 10 clients reporting alcohol use to intoxication in the 6 months before follow-up—a significant decrease of 50.0%. Similarly there was a significant decrease of 54.5% in the number of clients who reported binge drinking from intake to follow-up (13.1% vs. 6.0%).

The number of clients reporting alcohol use decreased by 42%

"It is so thorough. They are very gentle with you and your addiction. They don't treat you like scum because you're an addict."

- KORTOS Client quote

FIGURE 3.27. PAST 12-MONTH/6-MONTH ALCOHOL USE AT INTAKE AND FOLLOW-UP (N = 168)



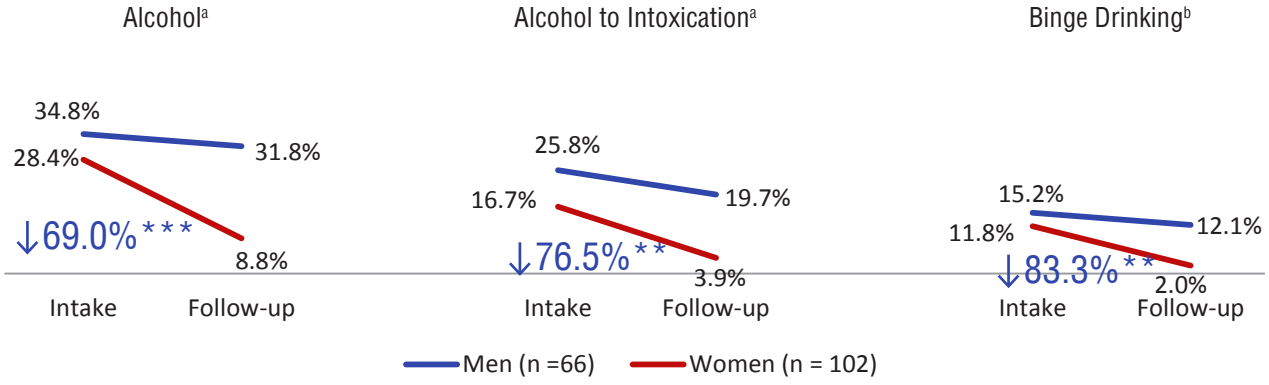
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN ALCOHOL USE

Significantly more men than women reported using alcohol, alcohol to intoxication, and binge drinking in the 6 months before follow-up

Significantly more men than women reported alcohol use at follow-up (see Figure 3.28). The number of women who reported alcohol use in the 6 months before follow-up was significantly decreased by 69.0% while the number of men who reported alcohol use at follow-up did not significantly change. Significantly more men than women reported alcohol use to intoxication at follow-up. The number of women who reported alcohol use to intoxication in the 6 months before follow-up was significantly decreased by 76.5%. Significantly more men than women also reported binge drinking at follow-up. The number of women who reported binge drinking in the 6 months before follow-up was significantly decreased by 83.3%. The number of men who reported alcohol use to intoxication and binge drinking did not change significantly from intake to follow-up.

FIGURE 3.28. GENDER DIFFERENCES IN PAST 12-MONTH/6-MONTH ALCOHOL USE, ALCOHOL TO INTOXICATION, AND BINGE DRINKING AT INTAKE AND FOLLOW-UP

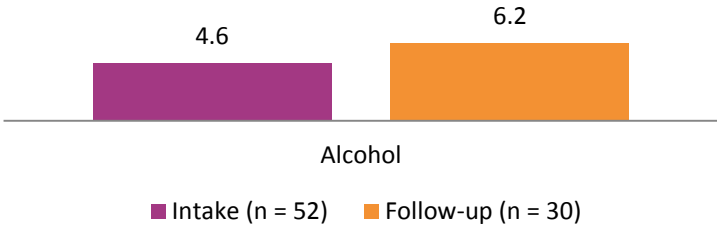


a—Significant difference by gender at follow-up, p < .001.
b—Significant difference by gender at follow-up, p < .01.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED ALCOHOL

Figure 3.29 shows the average number of months alcohol users reported using alcohol at intake and follow-up. Among the clients who reported using alcohol in the 12 months before entering treatment (n = 52), they reported using alcohol, on average, 4.6 months. Among clients who reported using alcohol in the 6 months before follow-up (n = 30), they reported using, on average, 6.2 months of a projected 12 months.

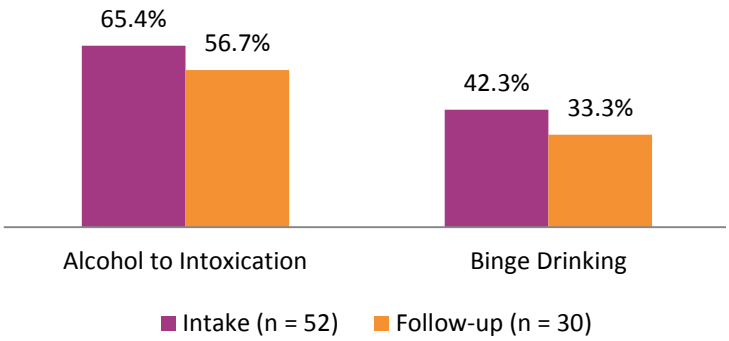
FIGURE 3.29. AVERAGE NUMBER OF MONTHS OF ALCOHOL USE



ALCOHOL INTOXICATION AND BINGE DRINKING AMONG THOSE WHO USED ALCOHOL, PAST 12 MONTHS/6 MONTHS

Of the clients who used alcohol in the 12 months before entering treatment (n = 52), 65.4% used alcohol to intoxication and 42.3% reported binge drinking in the 12 months before intake (see Figure 3.30). Of the clients who used alcohol in the 6 months before follow-up (n = 30), 56.7% of clients reported alcohol use to intoxication and 33.3% reported binge drinking.

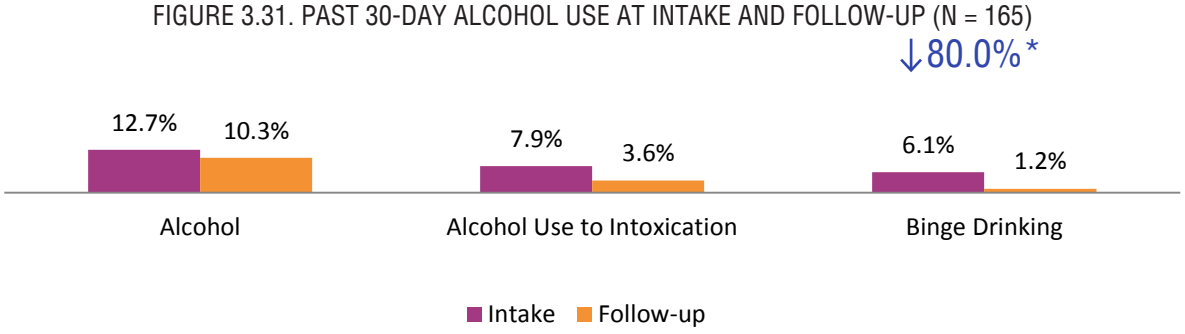
FIGURE 3.30. PAST 12-MONTH/6-MONTH ALCOHOL USE TO INTOXICATION AND BINGE DRINKING AT INTAKE AND FOLLOW-UP, AMONG THOSE REPORTING ALCOHOL USE AT EACH POINT



ALCOHOL USE, PAST 30 DAYS

There was no significant decrease in the percentage of clients who reported using alcohol in the past 30 days from intake (12.7%) to follow-up (10.3%). The number of clients who reported using alcohol to intoxication did not change significantly from intake (7.9%) to follow-up (3.6%) either. However, there was a significant decrease (80.0%) in the number of clients who reported binge drinking at follow-up compared to the 30 days before entering treatment.

FIGURE 3.31. PAST 30-DAY ALCOHOL USE AT INTAKE AND FOLLOW-UP (N = 165)



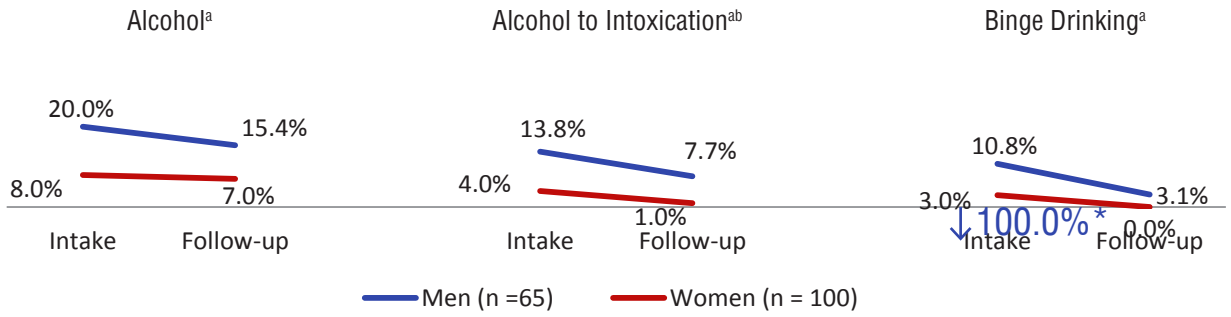
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN ALCOHOL USE IN THE PAST 30 DAYS

Significantly more men than women reported alcohol use in the 30 days before intake and follow-up (see Figure 3.32). Additionally, significantly more men than women reported alcohol use to intoxication and binge drinking at intake. Also, significantly more men than women reported using alcohol use to intoxication at follow-up. The number of women who reported binge drinking decreased significantly by 100%.

Significantly more men than women reported using alcohol, alcohol to intoxication, and binge drinking in the 30 days before entering treatment and using alcohol to intoxication the 30 days before follow-up

FIGURE 3.32. GENDER DIFFERENCES IN PAST 30-DAY ALCOHOL USE, ALCOHOL TO INTOXICATION, AND BINGE DRINKING AT INTAKE AND FOLLOW-UP



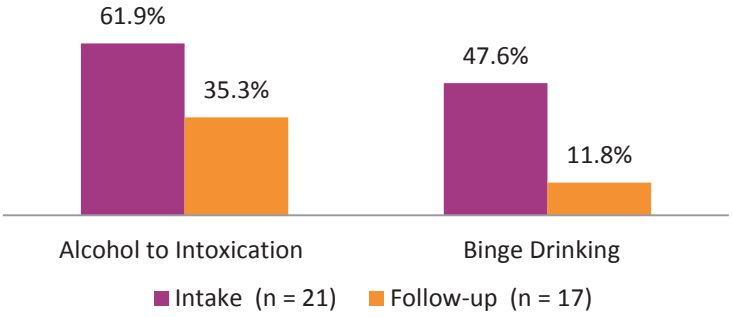
a—Significant difference by gender at intake, $p < .05$.
b—Significant difference by gender at follow-up, $p < .05$.
*$p < .05$, **$p < .01$, ***$p < .001$.

ALCOHOL INTOXICATION AND BINGE DRINKING AMONG THOSE WHO USED ALCOHOL IN THE PAST 30 DAYS

Of the 21 clients who used alcohol in the 30 days before intake, 61.9% used alcohol to intoxication and 47.6% binge drank in the 30 days before intake (see Figure 3.33).

Of the 17 clients who reported using alcohol in the 30 days before follow-up, 35.3% reported using alcohol to intoxication and 11.8% reported binge drinking in the 30 days before follow-up.

FIGURE 3.33. PAST 30-DAY ALCOHOL USE TO INTOXICATION AND BINGE DRINKING AT INTAKE AND FOLLOW-UP, AMONG THOSE REPORTING ALCOHOL USE AT EACH POINT



SELF-REPORTED SEVERITY OF ALCOHOL AND DRUG USE

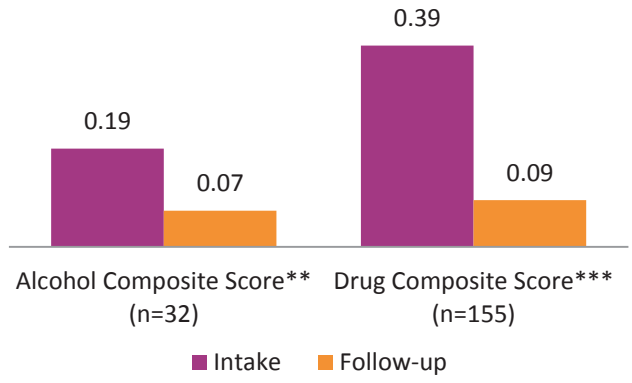
Another way to examine overall change in degree of severity of substance use is to use the Addiction Severity Index (ASI) composite score for alcohol and drug use. These composite scores are computed based on self-reported severity of past 30-day alcohol and drug use, taking into consideration a number of issues including:

- The number of days of alcohol (or drug) use,
- Money spent on alcohol,
- The number of days individuals used multiple drugs (for drug use composite score),
- The number of days individuals experienced problems related to their alcohol (or drug) use,
- How trouble or bothered they are by their alcohol (or drug) use, and
- How important treatment is to them for their alcohol (or drug) problems (see sidebar).

Change in the average ASI composite score for alcohol and drug use was examined for clients who were not in a controlled environment all 30 days before entering treatment. Also, individuals who reported abstaining from alcohol at intake and follow-up were not included in the analysis of change for alcohol composite score. Similarly, clients who reported abstaining from drugs at both intake and follow-up were not included in the analysis of change in drug composite score.

Figure 3.34 displays the change in average composite scores. The average for the alcohol composite score decreased significantly from 0.19 at intake to 0.07 at follow-up. The average for the drug composite score decreased significantly from 0.39 at intake to 0.09 at follow-up.

FIGURE 3.34. AVERAGE ASI ALCOHOL AND DRUG COMPOSITE SCORES AT INTAKE AND FOLLOW-UP



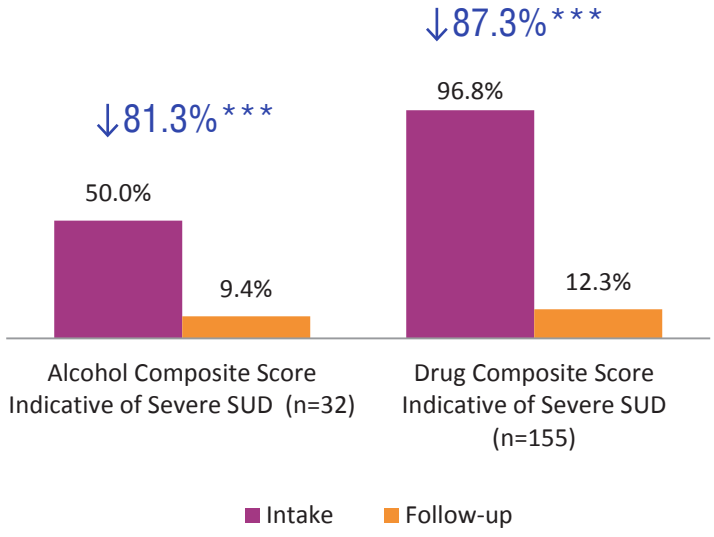
*p < .05, **p < .01, ***p < .001.

ASI ALCOHOL AND DRUG COMPOSITE SCORES AND SUBSTANCE DEPENDENCE

Rikoon et al. (2006) conducted two studies to determine the relationship between the ASI alcohol and drug use composite scores and DSM-IV substance dependence diagnosis. They identified alcohol and drug use composite score cutoffs that had 85% sensitivity and 80% specificity with regard to identifying DSM-IV substance dependence diagnosis: .17 for alcohol composite score and .16 for drug composite score. These composite score cutoffs can be used to estimate the number of individuals who are likely to meet criteria for active alcohol or drug dependence and to show reductions in self-reported severity of substance use. In previous years we have used the ASI composite scores to estimate the number and percentage of clients who met a threshold for alcohol and drug dependence. However, recent changes in the diagnostics for substance abuse call into question the distinction between dependence and abuse. While the clients who were followed up in this study were provided with treatment under previous DSM-IV-TR conditions, we relate their severity of use in terms that are compatible with current nosology. Thus, ASI composite scores that met the threshold can be considered indicative of severe substance use disorder to be compatible with current thinking about substance use disorders in the DSM-V (American Psychiatric Association, 2013), where we would have previously referred to them as meeting the threshold for dependence. Change from intake to follow-up in the severity rating has the same clinical relevance as moving from dependence to abuse in the older criteria.

The percentage of individuals who had ASI composite scores that met the cutoff for severe substance use disorder (SUD) decreased significantly from intake to follow-up (see Figure 3.35). Half of individuals who used alcohol had alcohol composite scores that met the cutoff for severe SUD at intake (50.0%). Only 9.4% of clients had an alcohol composite score that met the cutoff for severe SUD at follow-up, which was a significant decrease of 81.3%. Nearly all of individuals (96.8%) who used illegal drugs had drug composite scores that met the cutoff for severe SUD at intake. At follow-up, there was a significant decrease of 87.3% in the number of individuals who met criteria for severe drug use disorder.

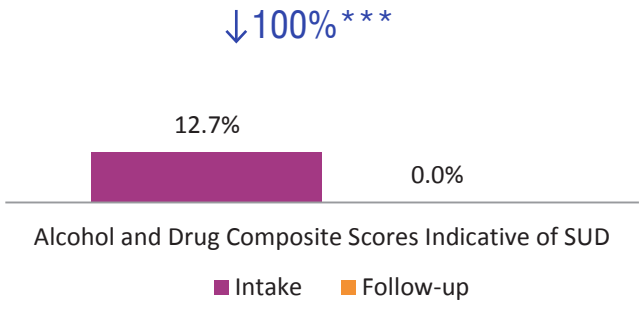
FIGURE 3.35. INDIVIDUALS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR SEVERE SUBSTANCE USE DISORDER AT INTAKE AND FOLLOW-UP



*p < .05, **p < .01, ***p < .001.

Among the individuals who were not in a controlled environment all 30 days before entering the OTP and who reported using alcohol and/or drugs at intake or follow-up, 12.7% of clients had alcohol and drug composite scores that met the cutoff for severe SUD at intake (see Figure 3.36). The percentage of clients who had composite scores that met the cutoff for severe SUD for both alcohol and drugs decreased significantly by 100% to 0.0% at follow-up.

FIGURE 3.36. CLIENTS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR BOTH ALCOHOL AND DRUG SEVERE SUBSTANCE USE DISORDERS AT INTAKE AND FOLLOW-UP (N = 165)



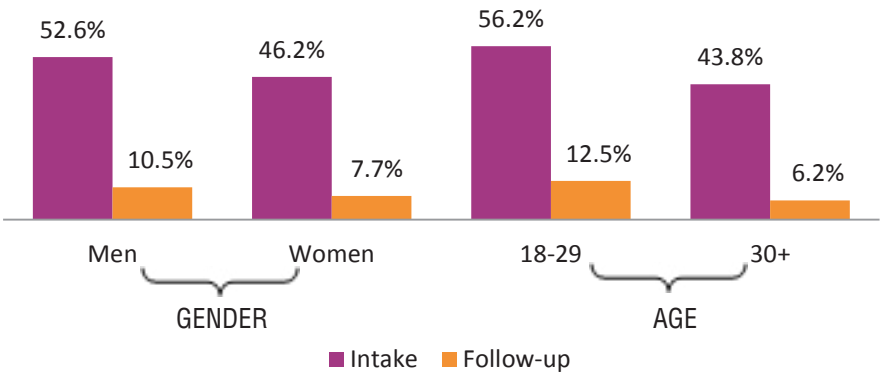
*p < .05, **p < .01, ***p < .001.

The data were examined to determine whether clients who had alcohol composite scores indicative of severe SUD at intake and follow-up differed by gender or age (see Figure 3.37).[16] There were no significant

[16] Race/ethnicity was not included in the analysis because there were only 6 clients who were considered non-white or multi-racial.

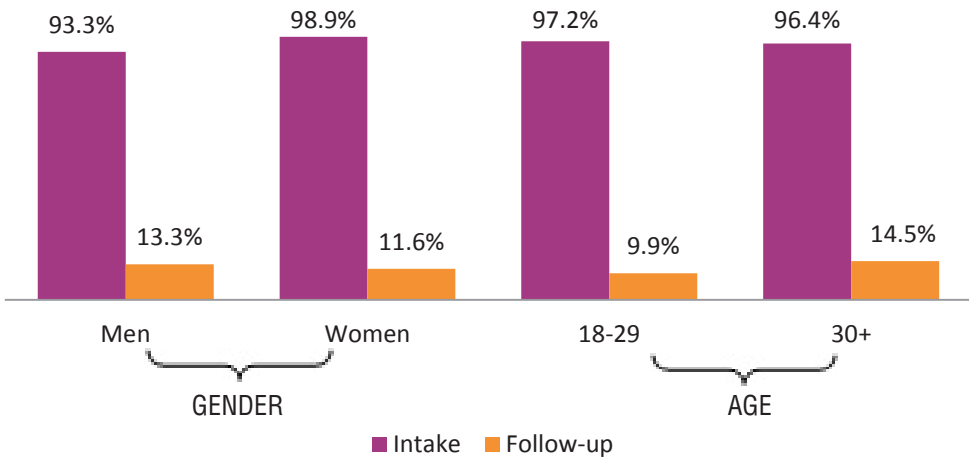
differences for alcohol composite score indicative of severe SUD at intake and follow-up between any of the groups.

FIGURE 3.37. ALCOHOL-USING CLIENTS WITH AN ALCOHOL COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 32)



Analyses were also conducted to determine if clients who had a drug composite score indicative of severe SUD at intake and follow-up differed by gender or age (see Figure 3.38). There were no significant differences for drug composite score indicative of severe SUD at intake and follow-up between men and women or between younger and older clients.

FIGURE 3.38. DRUG-USING CLIENTS WITH A DRUG COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 155)

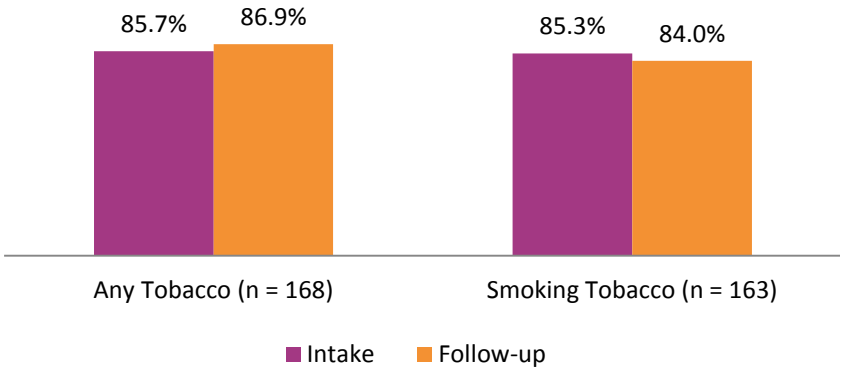


TOBACCO USE

TOBACCO USE AND SMOKING, PAST 12 MONTHS/6 MONTHS

Overall, there was no change in tobacco use from intake to follow-up (see Figure 3.39). Most clients reported using tobacco in the 12 months before entering treatment (85.7%) and in the 6 months before follow-up (86.9%). The majority of clients (85.3%) reported smoking tobacco in the 12 months before entering treatment, remaining stable at follow-up (84.0%).

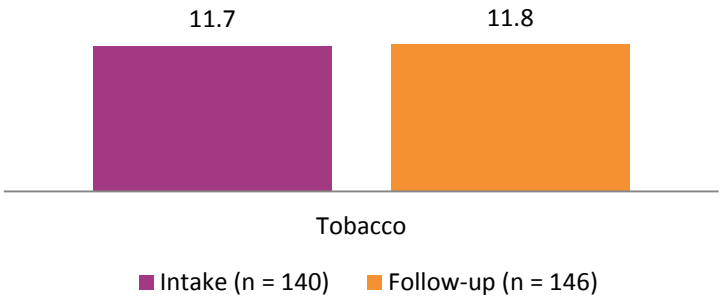
FIGURE 3.39. PAST 12-MONTH/6-MONTH TOBACCO USE AT INTAKE AND FOLLOW-UP[17]



AVERAGE NUMBER OF MONTHS OF TOBACCO USE

Figure 3.40 shows that among clients who reported using tobacco in the 12 months before entering treatment (n = 140), they reported using tobacco, on average, 11.7 months. Among clients who reported using tobacco in the 12 months before follow-up (n = 146), they reported using, on average, 11.8 months.

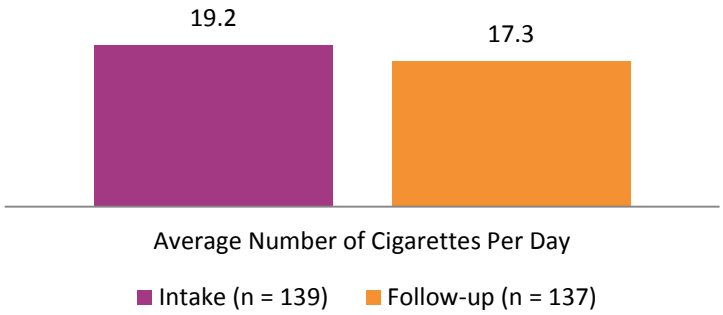
FIGURE 3.40. AVERAGE NUMBER OF MONTHS OF TOBACCO USE



AVERAGE NUMBER OF CIGARETTES SMOKED

The average number of cigarettes clients reported smoking at intake and follow-up decreased slightly (see Figure 3.41). Of those who smoked tobacco at intake, clients reported smoking an average of 19.2 cigarettes. At follow-up, among clients who reported smoking tobacco, they reported smoking an average of 17.3 cigarettes.

FIGURE 3.41. NUMBER OF CIGARETTES SMOKED IN AN AVERAGE DAY AMONG CLIENTS WHO SMOKED TOBACCO

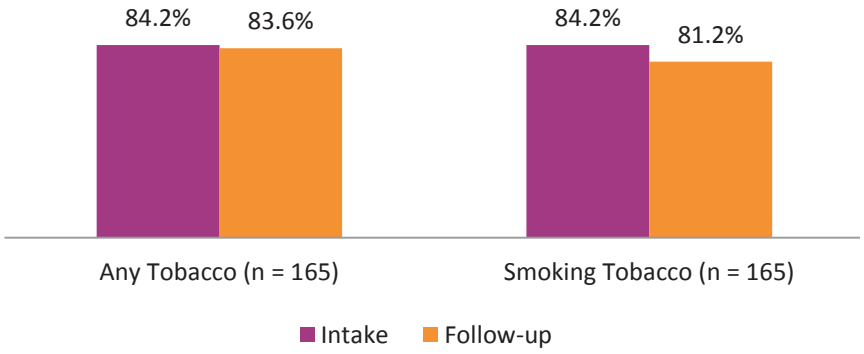


[17] Missing data on smoking tobacco use at intake and follow-up for 5 cases.

TOBACCO, PAST 30-DAY USE

The number of clients who reported any past 30-day tobacco use (including smoking and smokeless tobacco) did not change from intake to follow-up. Similarly, there was no significant change in the number of clients who reported smoking tobacco from intake to follow-up (see Figure 3.42).

FIGURE 3.42. TOBACCO USE AT INTAKE AND FOLLOW-UP

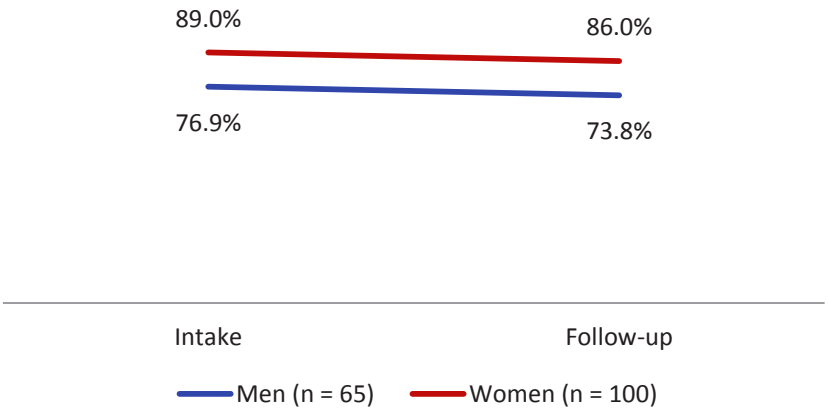


GENDER DIFFERENCES IN SMOKING TOBACCO IN THE PAST 30 DAYS

Significantly more women than men reported smoking tobacco in the 30 days before intake and follow-up (see Figure 3.43). The number of men and women who reported smoking tobacco in the past 30 days remained stable from intake to follow-up.

Significantly more women reported smoking tobacco at both intake and follow-up compared to men

FIGURE 3.43. GENDER DIFFERENCES IN PAST 30-DAY SMOKING TOBACCO FROM INTAKE TO FOLLOW-UP[a]



a—Significant difference by gender at intake and follow-up, $p < .05$.

SECTION 4: OTHER TARGETED FACTORS

This section describes pre-program compared to post-program change on three primary targeted factors including: (1) mental and physical health, (2) socioeconomic status indicators (living situation, highest level of education completed, employment (number of months employed, hourly wage)), and (3) criminal justice system involvement. Results for each targeted factor are presented for the overall sample and separately by gender when there were significant differences.

4A. MENTAL AND PHYSICAL HEALTH PROBLEMS

This subsection examines changes in mental health and stress symptoms from intake to follow-up. Specifically, this subsection examines: (1) depression; (2) generalized anxiety; (3) comorbid depression and generalized anxiety; (4) suicide ideation and attempts; and, (5) perceptions of physical and mental health. The mental health and physical health questions in the KORTOS intake and follow-up surveys were self-report measures.

DEPRESSION SYMPTOMS

To assess depression, participants were first asked two screening questions:

(1) "Did you have a two-week period when you were consistently depressed or down, most of the day, nearly every day?" and

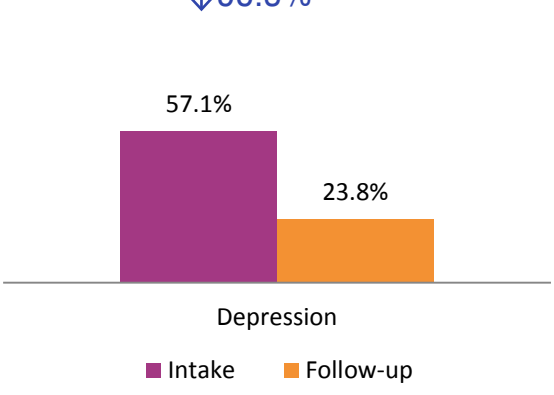
(2) "Did you have a two-week period when you were much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?"

If participants answered "yes" to at least one of these two screening questions, they were then asked seven additional questions about symptoms of depression (e.g., sleep problems, weight loss or gain, feelings of hopelessness or worthlessness). To meet study criteria for depression, clients had to say "yes" to at least one of the two screening questions and at least 4 of the other symptoms.

The percentage of clients meeting criteria for depression decreased significantly by 58% from intake to follow-up

Over half of clients (57.1%) met study criteria for depression in the 12 months before they entered treatment (see Figure 4A.1). At follow-up, 23.8% met study criteria for depression—a significant decrease of 58.3%.

FIGURE 4A.1. MEETING STUDY CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP (N = 168)



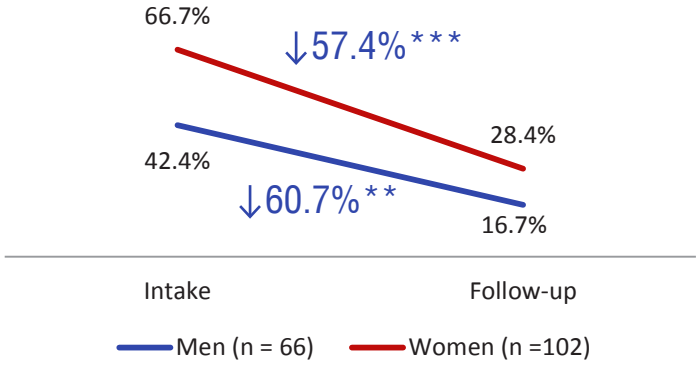
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN DEPRESSION

Significantly more women met study criteria for depression at intake compared to men (see Figure 4A.2). The number of women and men who met criteria for depression decreased significantly by 57.4% and 60.7%, respectively.

Significantly more women met study criteria for depression at intake compared to men

FIGURE 4A.2. GENDER DIFFERENCES IN PERCENTAGE OF CLIENTS MEETING STUDY CRITERIA FOR DEPRESSION[a]

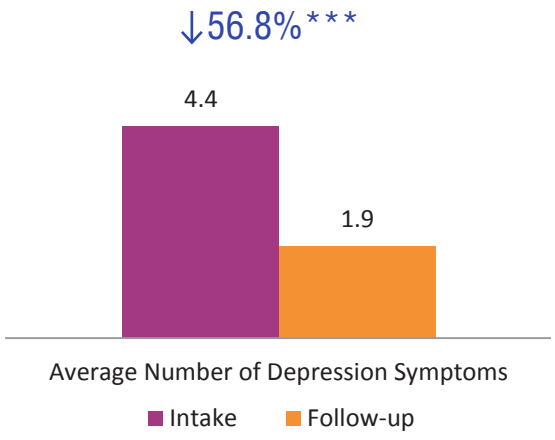


a—Statistical difference by gender at intake, p < .01.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER DEPRESSION SYMPTOMS

At intake, clients reported an average of 4.4 depression symptoms and at follow-up, clients reported an average of 1.9 symptoms—a significant decrease of 56.8% (see Figure 4A.3).

FIGURE 4A.3. AVERAGE NUMBER OF DEPRESSION SYMPTOMS AT INTAKE AND FOLLOW-UP (N = 168)



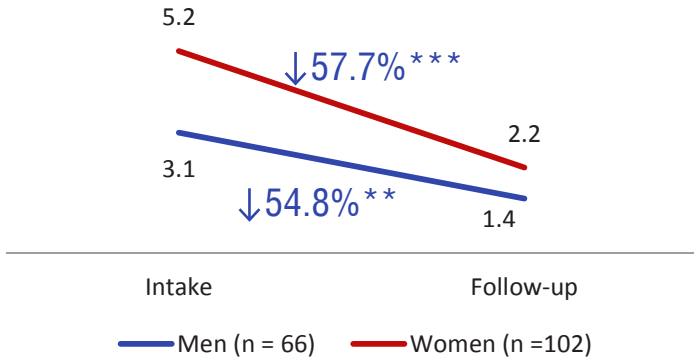
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN THE AVERAGE NUMBER OF DEPRESSION SYMPTOMS

Women reported significantly more depression symptoms at intake compared to men. Women reported an average of 5.2 depression symptoms at intake and an average of 2.2 depression symptoms at follow-up – a significant decrease of 57.7% (see Figure 4A.4). At intake, men reported an average of 3.1 symptoms and at follow-up men reported an average of 1.4 symptoms—a significant decrease of 54.8%.

Women reported significantly more depression symptoms at intake compared to men

FIGURE 4A.4. GENDER DIFFERENCES IN THE AVERAGE NUMBER OF SYMPTOMS FOR DEPRESSION[a]



a—Statistical difference by gender at intake; p < .001.
*p < .05, **p < .01, ***p < .001.

ANXIETY SYMPTOMS

To assess for generalized anxiety symptoms, participants were first asked:

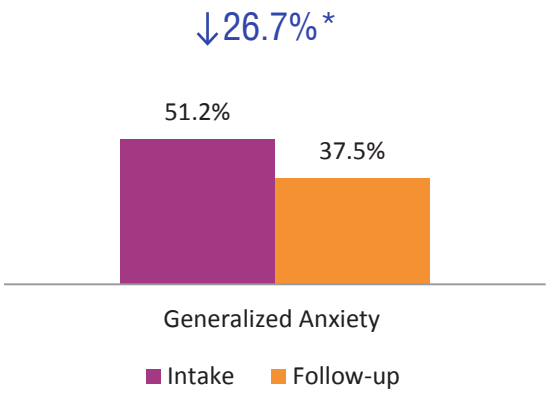
(1) "In the 12 months before you entered this program, did you have a period lasting 6 months or longer where you worried excessively or were anxious about multiple things on more days than not (like family, health, finances, school, or work difficulties)?"

Participants who answered "yes" were then asked 6 additional questions about anxiety symptoms (e.g., felt restless, keyed up or on edge, have difficulty concentrating, feel irritable). To meet study criteria for generalized anxiety, clients had to answer "yes" to the screening question and to at least 3 of the symptom items.

The percentage of clients meeting study criteria for generalized anxiety decreased significantly from intake to follow-up

In the 12 months before entering treatment, 51.2% of clients reported symptoms that met study criteria for generalized anxiety and 37.5% reported symptoms at follow-up – a significant decrease of 26.7% (see Figure 4A.5).

FIGURE 4A.5. CLIENTS MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 168)



*p < .05, **p < .01, ***p < .001.

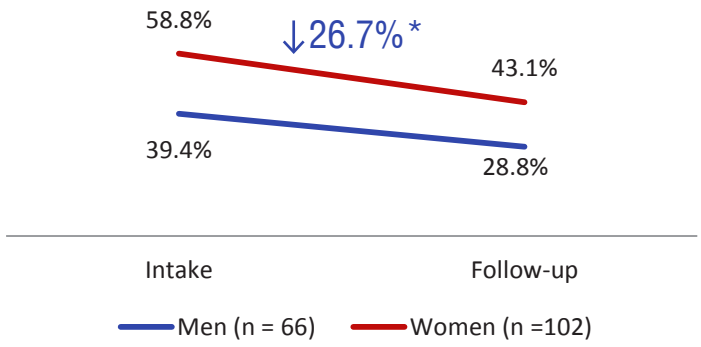
GENDER DIFFERENCES IN GENERALIZED ANXIETY SYMPTOMS

Significantly more women met study criteria for generalized anxiety at intake compared to men (see Figure 4A.6). The number of women who met criteria for generalized anxiety decreased significantly by 26.7% from

Significantly more women met study criteria for generalized anxiety at intake compared to men

intake to follow-up. The decrease in the number of men who met criteria for generalized anxiety was not statistically significant.

FIGURE 4A.6. GENDER DIFFERENCES IN PERCENTAGE OF CLIENTS MEETING SELF-REPORTED STUDY CRITERIA FOR GENERALIZED ANXIETY[a]



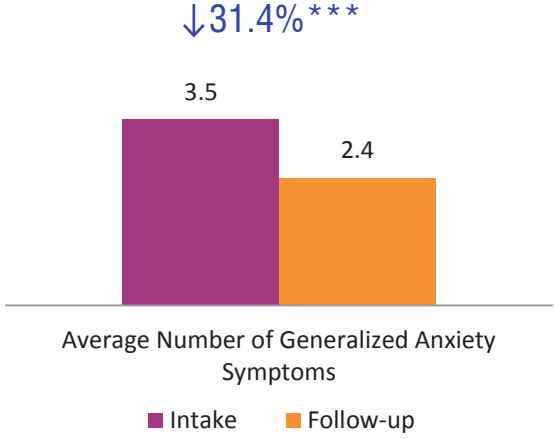
a—Statistical difference by gender at intake, $p < .05$.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF GENERALIZED ANXIETY SYMPTOMS

The average number of generalized anxiety symptoms decreased significantly from intake and follow-up. Clients reported an average of 3.5 generalized anxiety symptoms at intake and 2.4 symptoms at follow-up—a significant decrease of 31.4% (see Figure 4A.7).

The average number of generalized anxiety symptoms decreased significantly from intake and follow-up

FIGURE 4A.7. AVERAGE NUMBER OF GENERALIZED ANXIETY SYMPTOMS AT INTAKE AND FOLLOW-UP (N = 168)



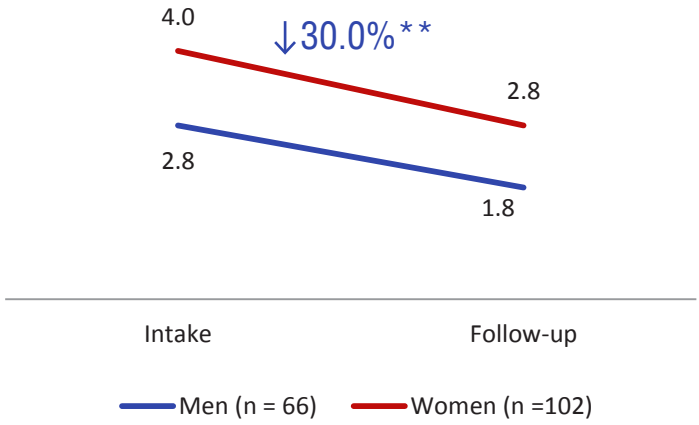
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN THE AVERAGE NUMBER OF GENERALIZED ANXIETY SYMPTOMS

Women reported significantly more generalized anxiety symptoms at both intake and follow-up compared to men (see Figure 4A.8). Women reported an average of 4.0 generalized anxiety symptoms at intake and an average of 2.8 symptoms at follow-up – a significant decrease of 30.0%. At intake, men reported an average of 2.8 generalized anxiety symptoms and at follow-up men reported an average of 1.8 symptoms.

Women reported significantly more generalized anxiety symptoms at intake and follow-up compared to men

FIGURE 4A.8. GENDER DIFFERENCES IN THE AVERAGE NUMBER OF SYMPTOMS FOR GENERALIZED ANXIETY[a]

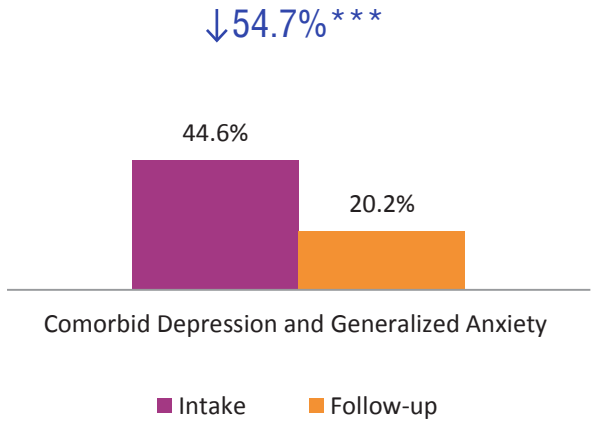


a—Statistical difference by gender at intake and follow-up, p < .05.
*p < .05, **p < .01, ***p < .001.

COMORBID DEPRESSION AND ANXIETY SYMPTOMS

Figure 4A.9 shows that at intake, 44.6% met study criteria for both depression and generalized anxiety and there was significant change of 54.7% to 20.2% at follow-up.

FIGURE 4A.9. CLIENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 168)



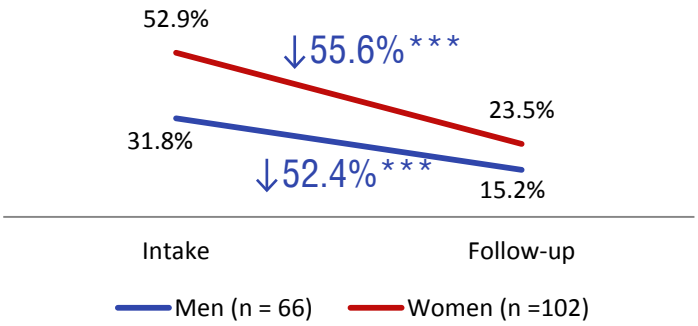
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN COMORBID DEPRESSION AND GENERALIZED ANXIETY SYMPTOMS

Significantly more women met study criteria for comorbid depression and generalized anxiety at intake compared to men (see Figure 4A.10). The number of women who met criteria for depression and generalized anxiety decreased significantly by 55.6%, from 52.9% at intake to 23.5% at follow-up. The number of men who reported comorbid depression and anxiety symptoms decreased significantly by 52.4%, from 31.8% at intake to 15.2% at follow-up.

Significantly more women met criteria for both depression and generalized anxiety at intake compared to men

FIGURE 4A.10. GENDER DIFFERENCES IN PERCENTAGE OF CLIENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]



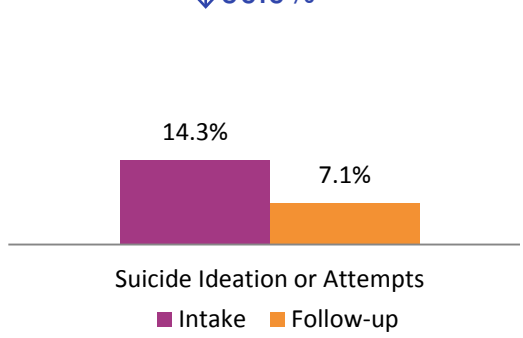
a—Statistical difference by gender at intake, p < .01.
*p < .05, **p < .01, ***p < .001.

SUICIDE IDEATION AND/OR ATTEMPTS

Suicide ideation and attempts were measured with self-reported questions about thoughts of suicide, specific plans for suicide, and actual attempts to commit suicide. In the 12 months before entering treatment 14.3% of clients reported thoughts of suicide or attempted suicide and 7.1% of clients reported thoughts of suicide or attempted suicide in the 6 months before follow-up. There was a significant 50.0% decrease from intake to follow-up in the number of clients reporting suicidal ideation and attempts (see Figure 4A.11).

The percentage of clients reporting suicidal ideation and/or attempts decreased 50% at follow-up

FIGURE 4A.11. CLIENTS REPORTING SUICIDAL IDEATION AND/OR ATTEMPTS AT INTAKE AND FOLLOW-UP (N = 168)



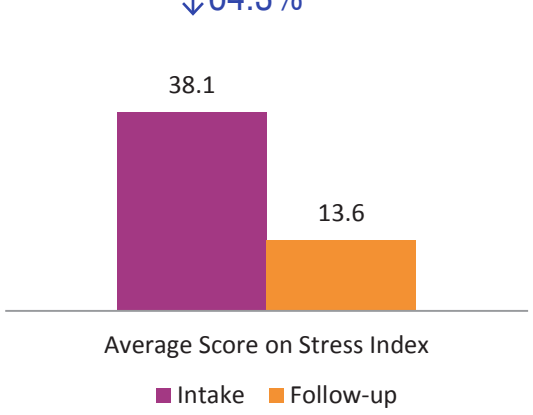
*p < .05, **p < .01, ***p < .001.

PHYSIOLOGICAL SYMPTOMS ASSOCIATED WITH STRESS

Clients were also asked about their physiological symptoms often associated with higher stress called the Stress Index.[18] The index contains 15 symptoms and clients indicate how often they have experienced these symptoms in the past 7 days (e.g., experienced unexplained aches and pains, slept poorly, experienced an increased heart rate). Higher scores on the scale indicate higher stress and greater physiological indicators of stress. The minimum score is 0 and the maximum score is 75. For the overall sample, Stress Index scores decreased significantly from 38.1 at intake to 13.6 at follow-up, representing a significant decrease of 64.3% (see Figure 4A.12).

[18] Stress Index measure created by Logan, TK and Walker, R. Stress and Allostatic Load.

FIGURE 4A.12. AVERAGE SCORES ON THE STRESS INDEX AT INTAKE AND FOLLOW-UP



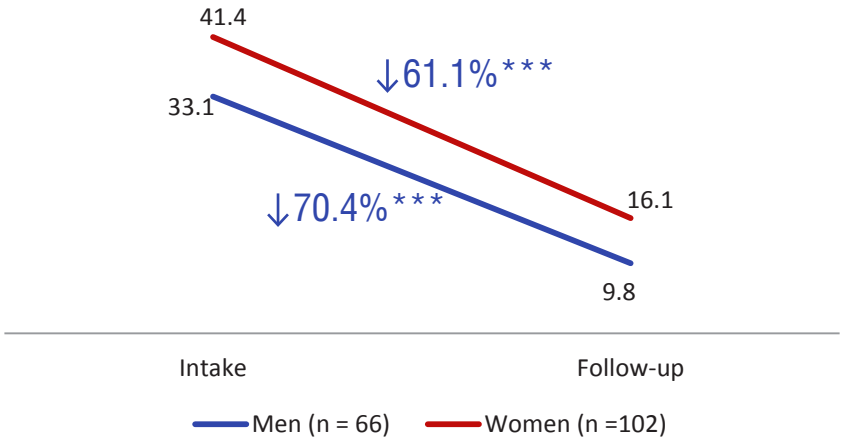
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN PHYSIOLOGICAL SYMPTOMS ASSOCIATED WITH STRESS

Figure 4A.13 shows that Stress Index scores for men decreased significantly by 70.4% and women's Stress Index scores decreased significantly by 61.1%. At intake, women's average scores were significantly higher than men's scores (41.4 compared to 33.1) and were still significantly higher at follow-up (16.1 compared to 9.8).

At intake and follow-up, women's average Stress Index scores were significantly greater than men's scores

FIGURE 4A.13. GENDER DIFFERENCES IN STRESS INDEX SCORES AT INTAKE AND FOLLOW-UP[a]



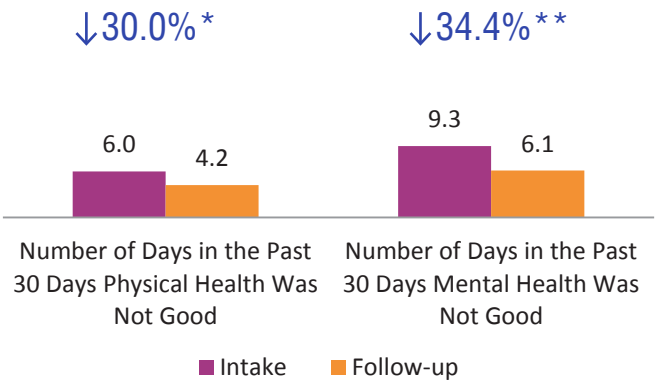
a—Statistical difference by gender at intake (p < .01) and follow-up (p < .05).
*p < .05, **p < .01, ***p < .001.

PERCEPTIONS OF PHYSICAL AND MENTAL HEALTH

Clients were asked how many days in the past 30 days their physical and mental health were not good, at intake and follow-up (see Figure 4A.14). The number of days clients reported their physical health was not good decreased significantly by 30.0% from an average of 6.0 days at intake to 4.2 days at follow-up. The number of days clients' mental health was not good decreased significantly by 34.4% from intake (9.3) to follow-up (6.1).

The average number of days clients' physical and mental health was not good decreased significantly

FIGURE 4A.14. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 168)[19]

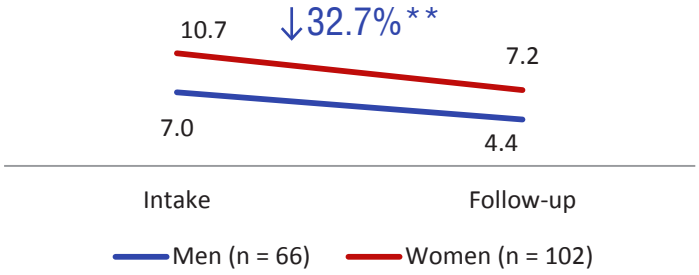


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN PERCEPTIONS OF MENTAL HEALTH

Women's reported number of days mental health was not good was higher at intake compared to men (see Figure 4A.15). By follow-up, there was no significant difference by gender.

FIGURE 4A.15. GENDER DIFFERENCES IN NUMBER OF DAYS IN THE PAST 30 DAYS MENTAL HEALTH WAS NOT GOOD[a]



a—Statistical difference by gender at intake, p < .05.
*p < .05, **p < .01, ***p < .001.

PERCEPTIONS OF POOR PHYSICAL OR MENTAL HEALTH LIMITING ACTIVITIES

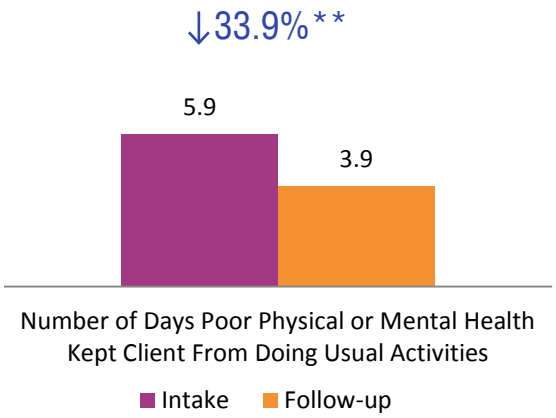
Clients were also asked to report the number of days in the past 30 days poor physical or mental health had kept them from doing their usual activities. The number of days clients reported their physical or mental health kept them from doing their usual activities decreased significantly by 33.9% from 5.9 days at intake to 3.9 days at follow-up (see Figure 4A.16).

"They've been really good about counseling and the medicine has completely turned my life around."

- KORTOS Client quote

[19] One client was missing information on the number of days mental health was not good at follow-up.

FIGURE 4A.16. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH LIMITING ACTIVITIES IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 168)

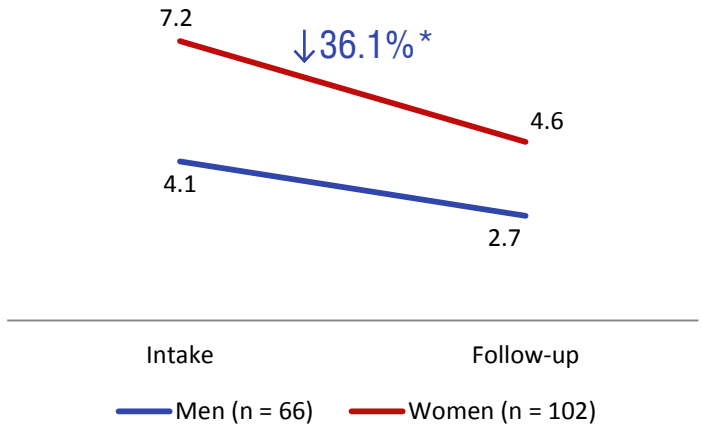


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN PERCEPTIONS OF PHYSICAL OR MENTAL HEALTH

The average number of days clients indicated their poor physical or mental health had kept them from doing their usual activities was higher for women than for men at intake (see Figure 4A.17). The number of days poor physical or mental health limited activities did not change significantly for men but decreased significantly by 36.1% for women.

FIGURE 4A.17. GENDER DIFFERENCES IN THE NUMBER OF DAYS POOR PHYSICAL OR MENTAL HEALTH KEPT CLIENT FROM DOING USUAL ACTIVITIES[a]



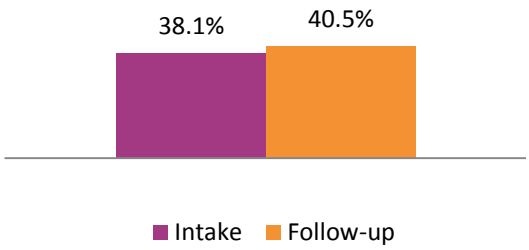
a—Statistical difference by gender at intake, p < .05.
*p < .05, **p < .01, ***p < .001.

PHYSICAL HEALTH ISSUES

CHRONIC PAIN

There was no significant change from intake to follow-up in the percentage of clients who reported chronic pain that is persistent and lasts at least 3 months (see Figure 4A.18). At intake, 38.1% of clients reported chronic pain and 40.5% of clients reported chronic pain at follow-up.

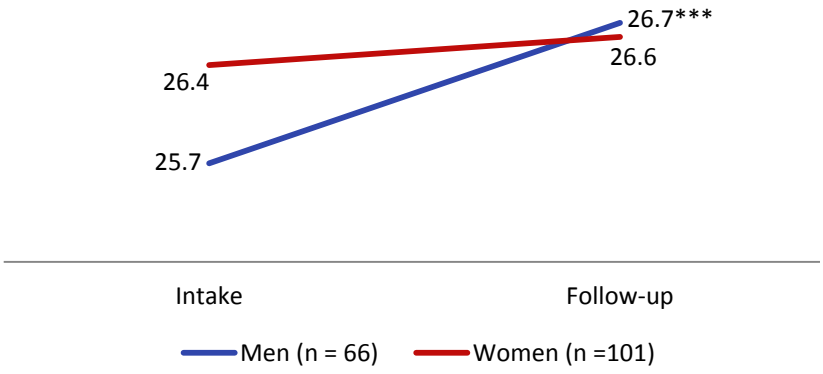
FIGURE 4A.18. PERCENTAGE OF CLIENTS REPORTING CHRONIC PAIN AT INTAKE AND FOLLOW-UP (N = 168)



BODY MASS INDEX

Body mass index (BMI) was calculated from clients' self-reported height and weight at intake and follow-up (see Figure 4A.19).[20] Because their overall body size is larger, the BMI for men were calculated separately from women so as to get a more accurate picture of the BMI of KORTOS clients. There was no significant change in BMI for women; however, the average BMI for men increased significantly from 25.7 at intake to 26.7 at follow-up.

FIGURE 4A.19. BODY MASS INDEX BASED ON SELF-REPORTED HEIGHT AND WEIGHT AT INTAKE AND FOLLOW-UP (N = 168)



*p < .05, **p < .01, ***p < .001.

4B. SOCIOECONOMIC STATUS INDICATORS

This subsection examines changes in clients' socio-economic status including living situation, education, employment, and access to basic living and health care needs from intake to follow-up. Specifically, this subsection examines: (1) living situation (i.e., own home or someone else's home, residential program, shelter), (2) highest level of education completed, (3) the number of months employed full-time or part-time in the 12 months before they entered the OTP and 6 months before follow-up, (4) current employment status, (5) current hourly wage for clients employed at intake and follow-up, and (6) difficulty meeting living and health care needs.

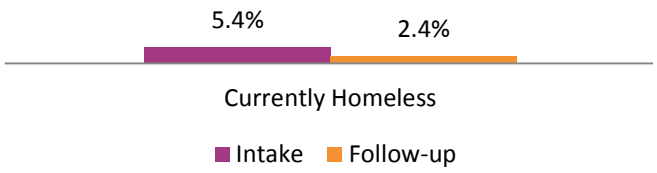
[20] 1 case had missing weight at intake.

LIVING SITUATION

HOMELESSNESS

A little over 5% of clients reported at treatment intake they were currently homeless and at follow-up 2.4% of clients reported they were currently homeless (see Figure 4B.1).

FIGURE 4B.1. CLIENTS REPORTING CURRENT HOMELESSNESS AT INTAKE AND FOLLOW-UP (N=168)

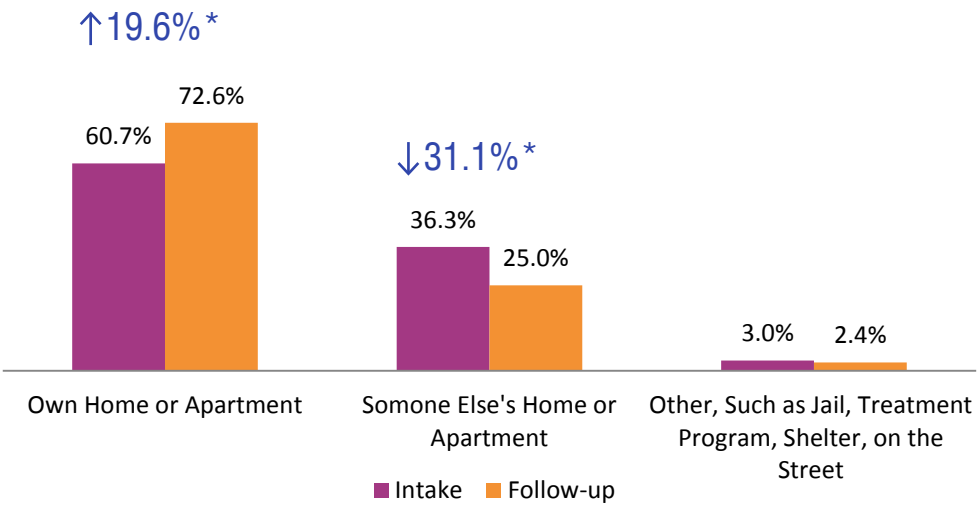


LIVING SITUATION

The number of clients who reported living in their own home or apartment increased at follow-up (see Figure 4B.2). Significantly more clients reported they were living in their own home or apartment in the past 6 months at follow-up than the 12 months before OTP intake (72.6% vs. 60.7%). Furthermore, the number of clients in the sample who reported living in someone else's home or apartment decreased significantly from intake (36.3%) to follow-up (25.0%).

Significantly more clients reported they were living in their own home or apartment at follow-up

FIGURE 4B.2 LIVING SITUATION AT INTAKE AND FOLLOW-UP (N = 168)

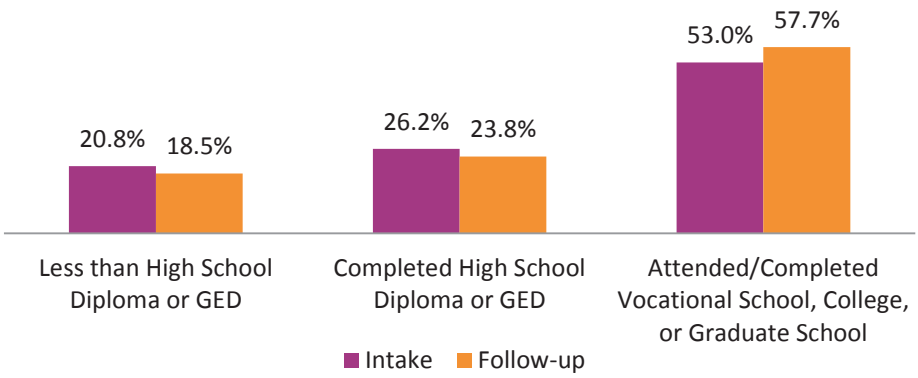


*p < .05, **p < .01, ***p < .001.

EDUCATION

While there was no significant change in education from intake to follow-up for any category (see Figure 4B.3), the percentage of clients who reported vocational school or college increased therefore making the other categories decrease. Over three-quarters of clients at both intake and follow-up had completed at least a high school diploma/GED or higher.

FIGURE 4B.3. HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE AND FOLLOW-UP (N = 168)

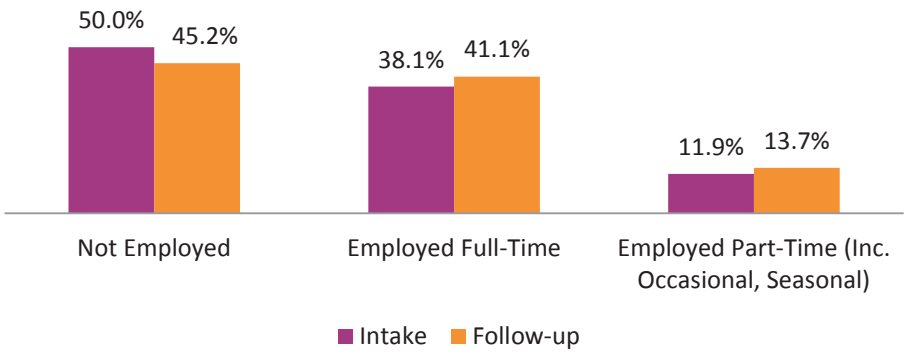


EMPLOYMENT

CURRENT EMPLOYMENT STATUS

There were no significant changes in current employment status from intake to follow-up (see Figure 4B.4). At intake, half of the clients were not employed and at follow-up, 45.2% were not employed. Over one third (38.1%) of clients were employed full-time at intake and 41.1 % were employed full-time at follow-up.

FIGURE 4B.4. CHANGE IN CURRENT EMPLOYMENT STATUS (N = 168)



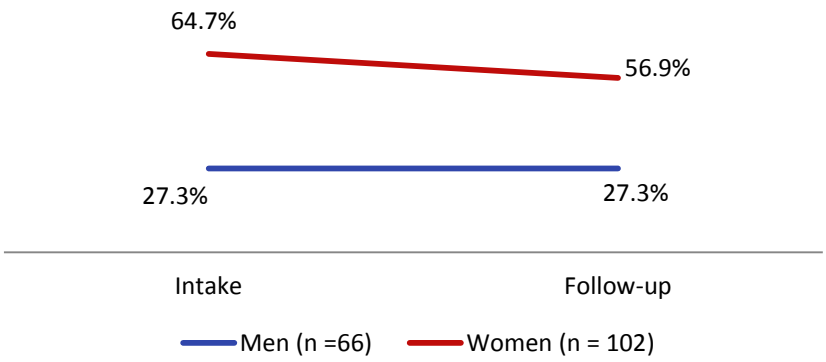
GENDER DIFFERENCES IN CURRENT EMPLOYMENT STATUS

CURRENTLY UNEMPLOYED

Significantly more women reported at intake and follow-up that they were currently unemployed compared to men: 64.7% vs. 27.3% at intake and 56.9% vs. 27.3% at follow-up. The number of clients who were currently unemployed did not change significantly for either women or men (see Figure 4B.5).

Significantly more women reported at intake and follow-up that they were currently unemployed compared to men

FIGURE 4B.5. GENDER DIFFERENCES IN UNEMPLOYMENT STATUS AT INTAKE AND FOLLOW-UP[a]

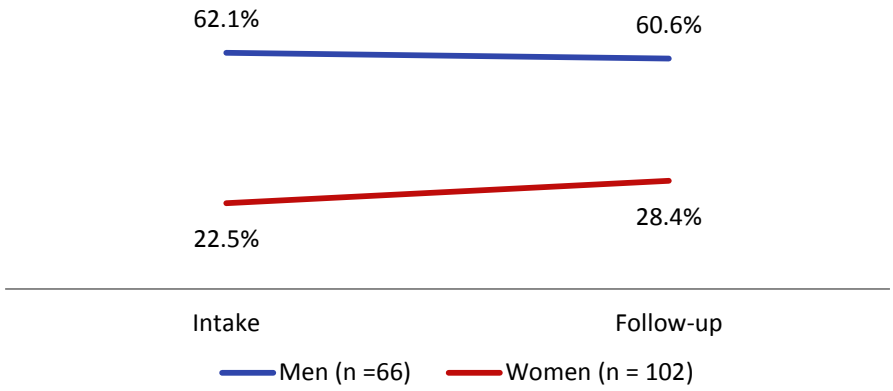


a—Significant difference by gender at intake and follow-up, $p < .001$.

CURRENTLY EMPLOYED FULL-TIME

The number of men who reported they were employed full-time was 2.75 times higher than the number of women who were employed full-time at intake (62.1% vs. 22.5%), whereas at follow-up the number of men who were employed full-time was about double the number of women (60.6% vs. 28.4%; see Figure 4B.6).

FIGURE 4B.6. GENDER DIFFERENCES IN CURRENT FULL-TIME EMPLOYMENT STATUS AT INTAKE AND FOLLOW-UP[a]



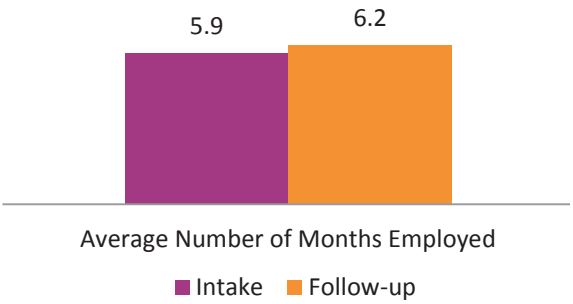
a—Significant difference by gender at intake and follow-up, $p < .001$.

AVERAGE NUMBER OF MONTHS EMPLOYED

Clients were asked in the intake survey to report the number of months they were employed full-time or part-time in the 12 months before they entered the OTP. At follow-up they were asked to report the number of months they were employed full-time or part-time in the 6 months before the follow-up survey.[21] Figure 4B.7 shows there was no significant increase in the number of months clients were employed from intake (5.9 months) to follow-up (6.2 projected months).

[21] Because the reference period was not the same at intake (i.e., 12 months) and follow-up (i.e., 6 months) the proportion of months the client reported working full-time or part-time was computed for each period to allow for comparison of employment at intake and follow-up. The change in proportion was analyzed to determine if the change was statistically significant. To facilitate interpretation of the results, the mean proportion found for the follow-up was projected to a 12-month period and presented. Figure 4B.7 shows the number of months clients reported working in the 12 months before entering the OTP and the number of months clients worked in the projected 12-month follow-up.

FIGURE 4B.7. AVERAGE NUMBER OF MONTHS EMPLOYED AT INTAKE AND FOLLOW-UP (N = 168)

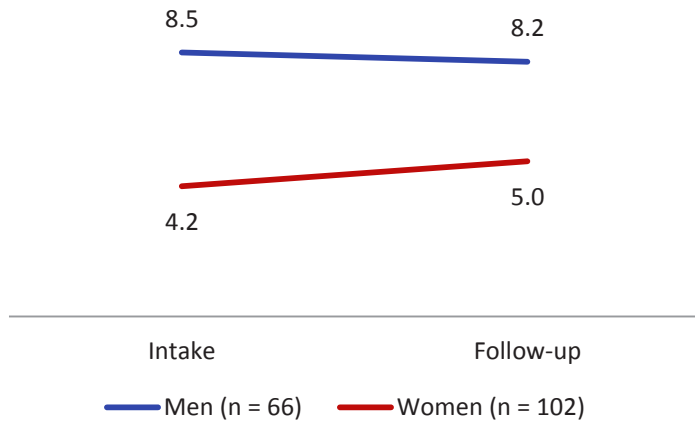


GENDER DIFFERENCES IN THE NUMBER OF MONTHS EMPLOYED

Men reported working significantly more months at both periods compared to women (intake 8.5 vs. 4.2 and follow-up 8.2 vs. 5.0). There were no significant increases in the number of months employed from intake to follow-up for men or women (see Figure 4B.8).

Men reported more months of employment than women at intake and follow-up

FIGURE 4B.8 GENDER DIFFERENCES IN NUMBER OF MONTHS EMPLOYED AT INTAKE AND FOLLOW-UP[a]

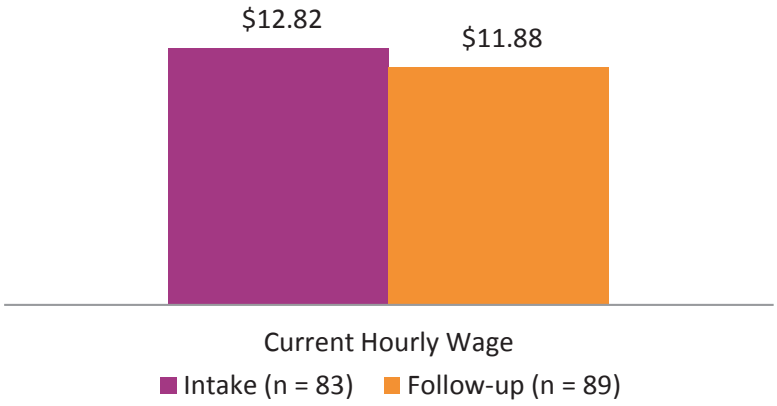


a—Significant difference in number of months worked at intake and follow-up by gender, $p < .001$.
*$p < .05$, **$p < .01$, ***$p < .001$.

HOURLY WAGE

Of those clients who were employed at intake (n = 83), the average hourly wage was $12.82. At follow-up, the average hourly wage was $11.88 (see Figure 4B.9).

FIGURE 4B.9. CURRENT HOURLY WAGE AT INTAKE AND FOLLOW-UP, AMONG THOSE WHO WORKED

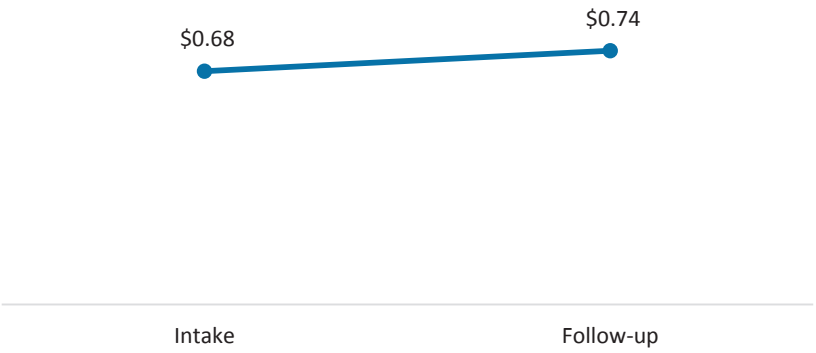


GENDER DIFFERENCES IN HOURLY WAGE

Of those clients who were employed at each period, men had significantly higher hourly wages than women. At baseline, working women made $0.68 for every dollar working men made in this sample ($13.03 for men and $10.62 for women), while at follow-up, working women made $0.74 for every dollar men made ($13.83 for men and $10.27 for women).

At follow-up, working women made only $0.74 for every $1 men made

FIGURE 4B.10 AVERAGE HOURLY WAGE EMPLOYED WOMEN MAKE FOR EVERY DOLLAR EMPLOYED MEN MAKE AT INTAKE AND FOLLOW-UP[a]



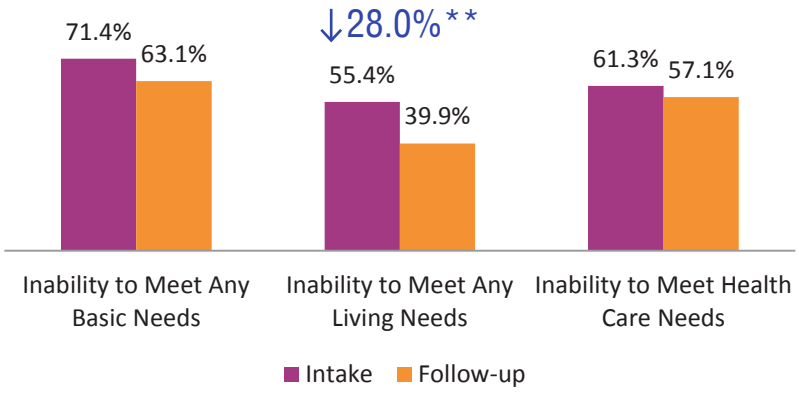
a—Significant difference in hourly wage at intake ($p < .05$) and follow-up by gender, $p < .01$.

CHANGE IN DIFFICULTY MEETING LIVING AND HEALTH CARE NEEDS FOR FINANCIAL REASONS

Clients were asked eight items, five of which asked about the clients' inability to meet basic living needs such as food, shelter, utilities, and telephone, while three items asked about the clients' inability to receive medical care for financial reasons.

The number of clients who reported having difficulty meeting basic living needs such as food, shelter, telephone, and utilities decreased from intake to follow-up (see Figure 4B.11). While the number of clients reporting an inability to meet any basic needs (food, shelter, water or medical care) and the inability to meet health care needs did not change significantly from intake to follow-up, the number of clients reporting an inability to meet living needs did significantly decrease. In the 12 months before OTP entry, over half of clients (55.4%) reported they had difficulty meeting any living needs and similarly, at follow-up, 39.9% of clients reported having difficulty meeting any living needs—a significant decrease of 28.0%.

FIGURE 4B.11. INABILITY TO MEET BASIC NEEDS AND HEALTH CARE NEEDS FOR FINANCIAL REASONS AT INTAKE AND FOLLOW-UP (N = 168)



*$p < .05$, **$p < .01$, ***$p < .001$.

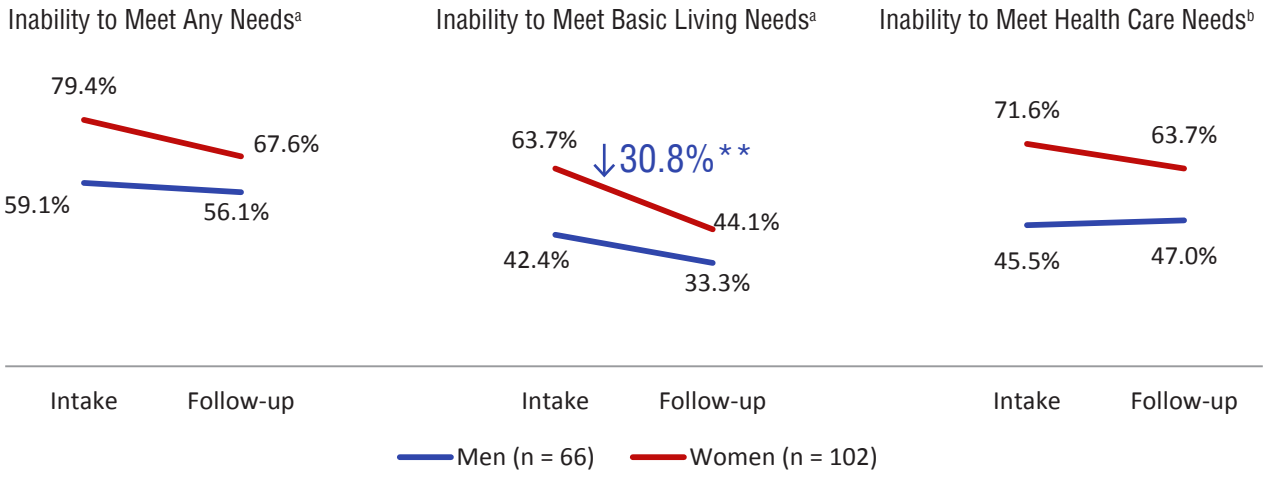
GENDER DIFFERENCES IN DIFFICULTY MEETING BASIC LIVING AND HEALTH CARE NEEDS

There were significant gender differences in clients' inability to meet any basic needs, basic living needs and health care needs at intake and follow-up (see Figure 4B.12). More specifically, compared to men, more women reported having difficulty meeting their basic living needs (e.g., housing, utilities, telephone, and food) at intake. Almost two-thirds of women (63.7%) reported difficulty meeting basic living needs at intake compared to 42.4% of men. At follow-up, 44.1% of women reported having difficulty meeting their basic living needs compared to 33.3% of men. The number of women who reported an inability to meet basic living needs significantly decreased by 30.8%.

Further, 71.6% of women reported an inability to meet health care needs at intake compared to 45.5% of men. Similarly, at follow-up, 63.7% of women reported the inability to meet health care needs compared to 47.0% for men.

Women reported greater inability to meet basic living needs at intake and greater inability to meet health care needs than men at intake and follow-up

FIGURE 4B.12 GENDER DIFFERENCES IN INABILITY TO MEET BASIC LIVING NEEDS AND HEALTH CARE NEEDS FOR FINANCIAL REASONS AT INTAKE AND FOLLOW-UP (N = 168)



a—Significant difference at intake by gender, $p < .01$
b—Significant difference by gender at intake ($p < .001$) and follow-up ($p < .05$).
*$p < .05$, **$p < .01$, ***$p < .001$.

"I'm 42 years old and this is the only program that has really helped me. I was homeless before and now I have my own home and can hold down a job."

- KORTOS Client quote

4C. INVOLVEMENT IN THE CRIMINAL JUSTICE SYSTEM

This subsection describes change in client involvement with the criminal justice system during the 12-month period before entering treatment and during the 6-month period before the follow-up interview. Specifically, results include changes in: (1) any arrest, (2) the number of times arrested, (3) any incarceration, (4) the number of nights incarcerated, and (5) criminal justice supervision status.

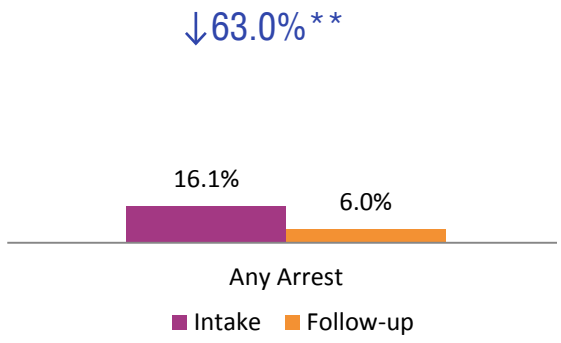
ARRESTS

ARRESTS IN THE PAST 12 MONTHS/6 MONTHS

Clients were asked about their arrests in the 12 months before they entered treatment (at intake) and the past 6 months (at follow-up). In the 12 months before entering treatment, 16.1% reported an arrest and at follow-up, this percentage had decreased significantly by 63.0% to 6.0% (see Figure 4C.1).

Percentage of clients reporting any arrest significantly decreased 63% at follow-up

FIGURE 4C.1. PAST 12-MONTH/6-MONTH ARRESTS AT INTAKE AND FOLLOW-UP (N = 168)

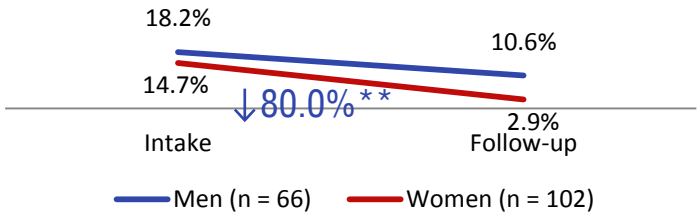


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN ARRESTS

Significantly more men than women reported being arrested in the 6 months before follow-up (see Figure 4C.2). The number of women who reported being arrested decreased significantly (80%) from intake to follow-up.

FIGURE 4C.2 GENDER DIFFERENCES IN BEING ARRESTED AT INTAKE AND FOLLOW-UP[a]

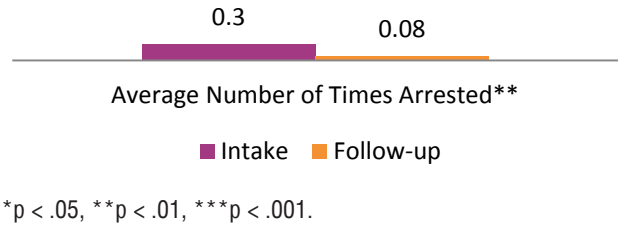


a—Significant difference in the number of clients arrested at follow-up by gender, p < .05.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF ARRESTS

At intake, the average number of times clients reported being arrested in the past 12 months was 0.3 times (see Figure 4C.3). In the 6 months before follow-up, the average number of times arrested was 0.08 times, which was a statistically significant decrease.

FIGURE 4C.3. AVERAGE NUMBER OF TIMES ARRESTED AT INTAKE AND FOLLOW-UP (N = 168)

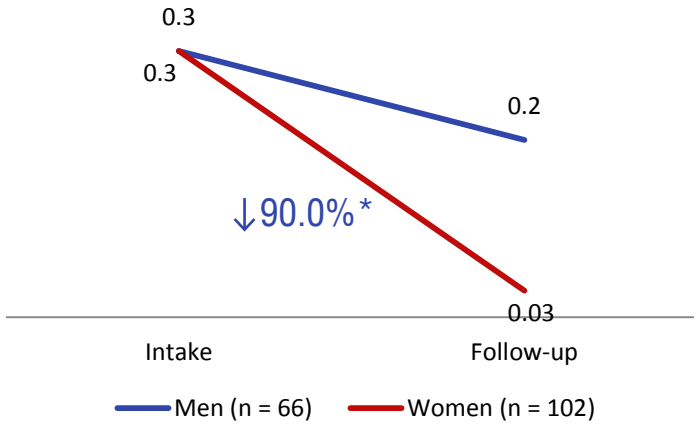


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN AVERAGE NUMBER OF ARRESTS

Men reported significantly more arrests in the 6 months before follow-up compared to women (see Figure 4C.4). Significant decreases in number of arrests were found for women.

FIGURE 4C.4 GENDER DIFFERENCES IN NUMBER OF ARRESTS AT INTAKE AND FOLLOW-UP[a]



a—Significant difference in number of arrests at follow-up by gender, p < .05.
*p < .05, **p < .01, ***p < .001.

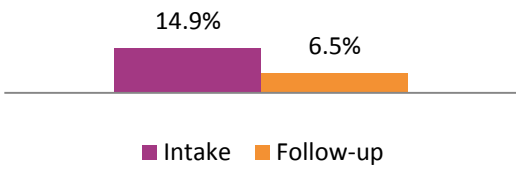
INCARCERATION AND SELF-REPORTED CRIMINAL JUSTICE SYSTEM SUPERVISION

INCARCERATION

At intake, 14.9% of clients reported they had spent at least one night in jail or prison in the 12 months before they entered the OTP. At follow-up, only 6.5% of clients reported they had spent at least one night in jail or prison in the 6 months before follow-up. The percentage of clients reporting any jail time decreased significantly by 56.0% (see Figure 4C.5).

The number of clients who spent at least one day incarcerated decreased by 56%

FIGURE 4C.5. CLIENTS REPORTING INCARCERATION AT INTAKE AND FOLLOW-UP (N = 168)



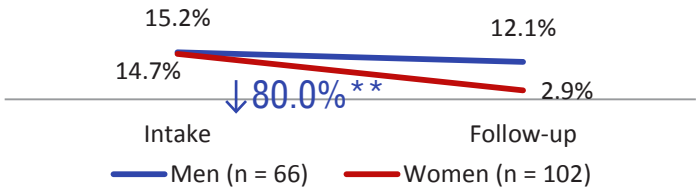
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN INCARCERATION

Significantly more men than women reported being incarcerated in the 6 months before follow-up (see Figure 4C.6). The number of women who reported being incarcerated decreased significantly from intake to follow-up; however, there was no significant change for men.

Significantly more men than women reported being incarcerated before follow-up

FIGURE 4C.6. GENDER DIFFERENCES IN PERCENTAGE OF CLIENTS REPORTING INCARCERATION (N = 168)[a]



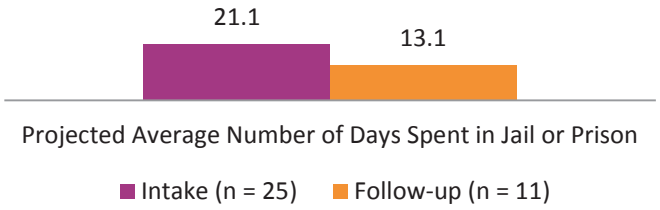
a— Significant difference by gender at follow-up, p < .05.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF DAYS SPENT INCARCERATED, AMONG CLIENTS WHO REPORTED INCARCERATION

To take into account the different periods measured at intake (i.e., 12 months) and follow-up (i.e., 6 months) the proportion of days in each period clients reported being incarcerated in jail or prison was calculated. These proportions were then applied to the 12 month period at intake and a projected 12-month period at follow-up. Comparisons of those proportions showed a decrease from intake to follow-up. Overall, clients spent 3.1 days incarcerated in the 12 months before entering the OTP, and 0.9 days in the projected follow-up period (not depicted in a Figure).

Among clients who reported incarceration, the average number of days incarcerated was 21.1 at intake (n = 25) and 13.1 at follow-up (n = 11).

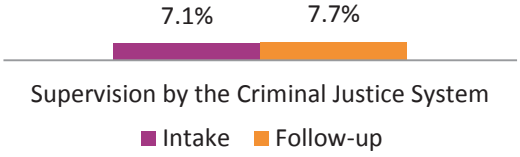
FIGURE 4C.7. NUMBER OF DAYS INCARCERATED IN THE 12 MONTHS BEFORE ENTERING THE OTP AND THE PROJECTED FOLLOW-UP PERIOD



SELF-REPORTED CRIMINAL JUSTICE SYSTEM SUPERVISION

The number of clients that self-reported they were under criminal justice system supervision (e.g., drug court, probation, or parole) increased slightly but not significantly from 7.1% at intake to 7.7% at follow-up (see Figure 4C.8).

FIGURE 4C.8. CLIENTS REPORTING SUPERVISION BY THE CRIMINAL JUSTICE SYSTEM AT INTAKE AND FOLLOW-UP (N = 168)



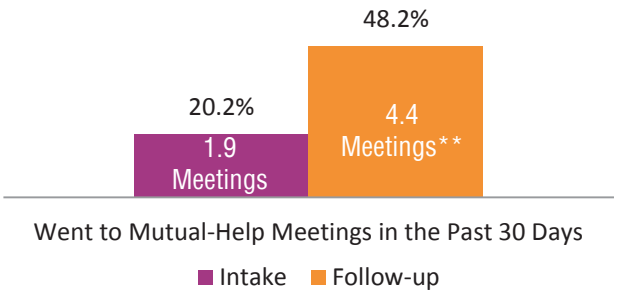
SECTION 5. RECOVERY SUPPORTS

This section focuses on three main changes in recovery supports: (1) percentage of clients attending mutual help recovery group meetings, (2) contact with an AA/NA sponsor in the past 30 days, and (3) clients' opinion of their chances of getting off and staying off drugs and/or alcohol.

MUTUAL HELP RECOVERY GROUP MEETING ATTENDANCE

At intake, only 20.2% of clients reported going to mutual help recovery group meetings (e.g., AA, NA, or faith-based) in the past 30 days (See Figure 5.1). At follow-up, there was a significant increase of 138.2%, with 48.2% of clients reporting they had gone to mutual help recovery group meetings in the past 30 days. The number of meetings attended increased significantly from 1.9 at intake to 4.4 at follow-up; a 131.6% increase for the overall sample.

FIGURE 5.1. CLIENTS REPORTING MUTUAL HEALTH RECOVERY GROUP ATTENDANCE AT INTAKE AND FOLLOW-UP (N=168)



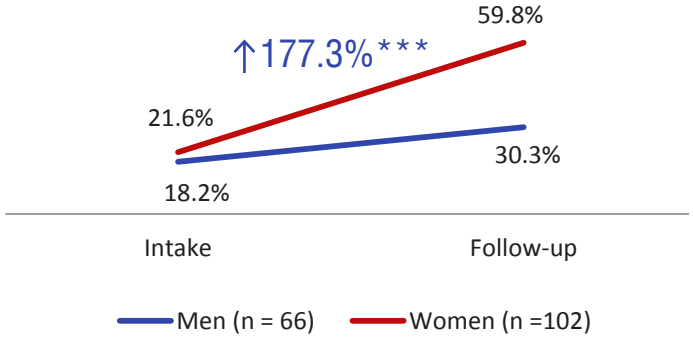
*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN MUTUAL HELP RECOVERY GROUP MEETING ATTENDANCE

Significantly more women than men reported they attended mutual help recovery group meetings in the 30 days before follow-up (see Figure 5.2). The number of women that attended mutual help recovery meetings increased significantly by 177.3%.

Compared to men more women reported attending mutual help recovery group meetings at follow-up

FIGURE 5.2. GENDER DIFFERENCES IN CLIENTS ATTENDING MUTUAL HELP RECOVERY GROUP MEETINGS[a]

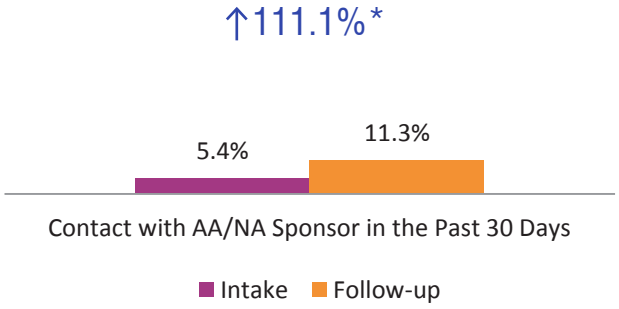


a—There was a significant difference by gender at follow-up, p < .001.
*p < .05, **p < .01, ***p < .001.

CONTACT WITH AA/NA SPONSOR

There was a significant increase in the number of clients reporting contact with an AA/NA sponsor in the past 30 days from intake (5.4%) to follow-up (11.3%).

FIGURE 5.3. CLIENTS REPORTING CONTACT WITH AA/NA SPONSOR AT INTAKE AND FOLLOW-UP (N=168)

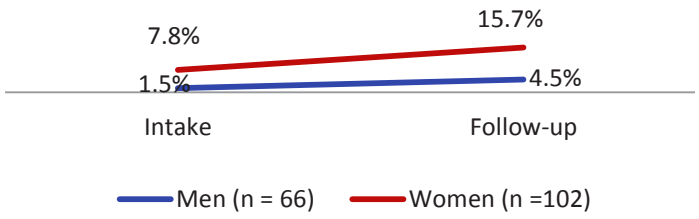


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN CONTACT WITH AA/NA SPONSOR

While there were no gender differences at intake, significantly more women reported having contact with their AA/NA sponsor at follow-up (15.7%) compared to men (4.5%).

FIGURE 5.4. GENDER DIFFERENCES IN CLIENTS HAVING CONTACT WITH AA/NA SPONSOR AT INTAKE AND FOLLOW-UP[a]



a—There was a significant difference by gender at follow-up, p < .05.

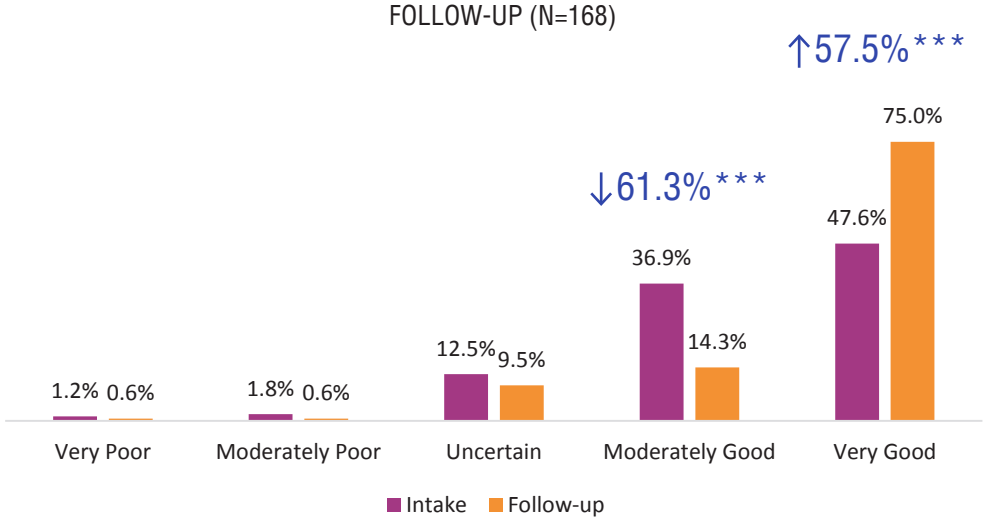
CHANCES OF STAYING OF DRUGS/ALCOHOL

At intake and follow-up, clients were asked, based upon their situation, how good they believed their chances were of getting off and staying off drugs/alcohol (see Figure 5.5). At intake, over one-third of clients (36.9%) felt the chances were moderately good while less than half (47.6%) felt the chances were very good. At follow-up, however, the number of clients who felt their chances of getting off and staying off drugs/alcohol were very good significantly increased by 57.5% to 75.0%.

"I've been on drugs since I was 12 and nothing's ever helped me stop. Once I got in the routine of going there, it helped me get clean. Being around people going through the same things you are is great."

- KORTOS Client quote

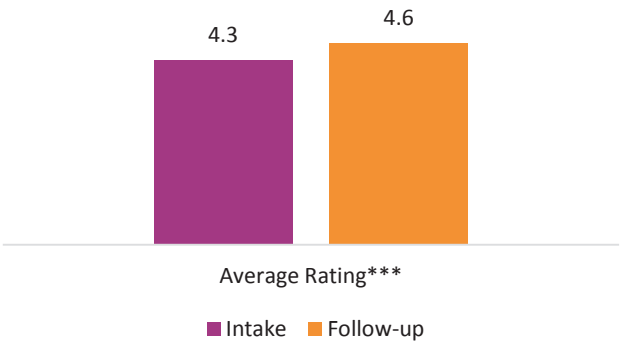
FIGURE 5.5. CLIENTS REPORTING THEIR CHANCES OF GETTING OFF AND STAYING OFF ALCOHOL/DRUGS AT INTAKE AND FOLLOW-UP (N=168)



*p < .05, **p < .01, ***p < .001.

The average rating clients reported about their chances of getting off and staying off alcohol/drugs (with 1 representing very poor and 5 representing very good) increased significantly from intake to follow-up (see Figure 5.6).

FIGURE 5.6. AVERAGE RATING OF CHANCES OF GETTING OFF AND STAYING OFF ALCOHOL/DRUGS AT INTAKE AND FOLLOW-UP (N = 168)

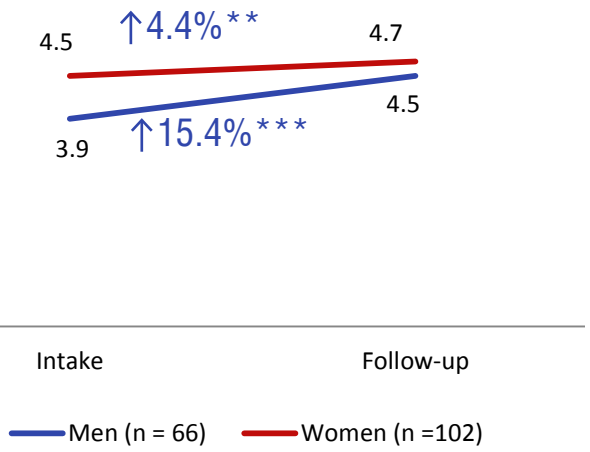


GENDER DIFFERENCES IN CLIENT RATING OF STAYING OF DRUGS/ALCOHOL

Women were significantly more positive about their chances of getting off/staying off drugs/alcohol at both intake and follow-up (see Figure 5.7). At intake, women reported an average rating of 4.5 compared to 3.9 for men. At follow-up, women reported their chances of getting off and staying off alcohol/drugs was 4.7 compared to 4.5 for men. Both genders had significant improvement in their ratings from intake to follow-up.

Women were significantly more positive about their chances of getting off/ staying off drugs/alcohol at both intake and follow-up

FIGURE 5.7. GENDER DIFFERENCES IN CLIENTS RATING OF CHANCES OF STAYING OFF ALCOHOL/DRUGS AT INTAKE AND FOLLOW-UP[a]



a—There was a significant difference by gender at intake ($p < .001$) and follow-up ($p < .05$).
*$p < .05$, **$p < .01$, ***$p < .001$.

SECTION 6. IMPLICATIONS AND CONCLUSIONS

The KORTOS 2014 annual follow-up report describes outcomes for 168 clients who participated in opiate treatment programs during calendar year 2012 and completed a follow-up telephone interview 6 months after the intake survey was submitted to UK CDAR. Findings show that clients made substantial improvements in several areas of their lives including significant reductions in illegal drug use, the severity of their drug use, reductions in mental health problems and stress, reduction in the number of individuals who had trouble meeting basic living needs, decrease in involvement with the criminal justice system, and increases in recovery supports by the 6-month follow-up interview. Moreover, individuals rated their quality of life at follow-up significantly higher than at treatment intake.

Clients reported high levels of satisfaction with the opiate treatment program. The majority of clients agreed that the programs helped them get better and feel better about themselves, program staff treated them with respect, and clients understood their treatment plan and what staff expected of them in the program. The majority of clients also gave an overall rating of the program that was highly positive (between 8 and 10, where 1 represents the worst possible experience and 10 represents the best experience).

KORTOS clients reported significant reductions in substance use and severity of substance use. There was a significant decrease of 65.2% in the number of individuals who reported using any illegal drugs (including opioids/opiates) in the follow-up period compared to intake (95.8% vs. 33.3%). Moreover, among those individuals who reported any illegal drug use at intake or follow-up, the average number of months they used was lower for the projected follow-up period than at intake, after controlling for the shorter follow-up period. Specifically, the number of individuals who reported using each of the drug classes we examined decreased significantly: prescription opioids (86% decrease), heroin (82% decrease), and other non-opioid drugs (65%). The number of individuals who reported using alcohol, using alcohol to intoxication, or binge drinking also decreased significantly. Not only were significant decreases in substance use found, but also self-reported severity of substance use also significantly decreased. For example, 96.8% of individuals who reported using illegal drugs in the 30 days before intake had ASI drug composite scores that met the cutoff for severe drug use disorder, whereas the percentage was only 12.3% at follow-up, representing an 87% decrease.

Clients' mental health also showed significant improvements. Specifically, significant reductions in depression and anxiety symptoms as well as suicidality were found at follow-up. Additionally, individuals reported significantly lower scores on the Stress Index, suggesting lower physiological symptoms associated with stress. Moreover, individuals reported significantly fewer days in the past 30 days their physical health and mental health were not good at follow-up compared to intake.

"I've been in the program for several months and it's completely changed my life."

- KORTOS Client quote

Overall, KORTOS clients had stable socioeconomic status (e.g., education, employment) with some improvements from intake to follow-up. The majority of KORTOS clients reported living in their own home/apartment at both intake and follow-up, with a significant increase from intake to follow-up. The percentage of KORTOS clients who reported having a high school diploma or GED (79.2%) was similar to the overall rate for Kentucky (77.2% in 2010).

Even though only a minority of KORTOS clients reported involvement with the criminal justice system at treatment intake, there were significant reductions in the number of clients who reported being arrested and incarcerated from intake to follow-up. Individuals also reported significant increases in recovery supports from intake to follow-up, which is critical in maintaining recovery. The following discusses potential implications to be considered based on these findings including co-occurring and gender differences.

Co-occurring Problems. Several findings suggest opportunities to target co-occurring problem areas including tobacco smoking, mental health symptoms, and economic difficulties reported by participants.

Smoking. Smoking rates are very high for clients with 85.3% reporting smoking at follow-up. There is a commonly held belief that individuals should not attempt to quit smoking while in substance abuse treatment, because smoking cessation can endanger their sobriety. This belief has been debunked by recent empirical research studies.[22] Voluntary smoking cessation during substance abuse treatment has been associated with lower relapse. Because tobacco use is associated with increased mental health symptoms as well as well-known physical health problems, including increased mortality, and smoking cessation has been associated with lower alcohol and drug relapse, voluntary smoking cessation interventions may be helpful in treatment programs.[23]

Meeting Basic Needs as a Potential Relapse Factor. A little more than half of clients reporting difficulty in meeting basic living needs such as paying for rent/mortgage, utilities, phone, or food at intake. By follow-up, the number of clients reporting difficulty meeting basic living needs decreased significantly by 28.0% to 39.9%. An even higher percentage of clients reported they had difficulty meeting health care needs such as seeing a doctor when needed or obtaining a needed medical prescription at intake (61.3%). There was no significant change in the number of clients who had difficulty meeting health care needs because of financial constraints. Meeting basic needs including health care needs, stable living arrangements, having a purpose with daily meaningful activities, and recovery community are the four key dimensions to recovery.[24] Providing referrals and support for these dimensions may help improve basic living situations for many clients and support continued recovery living for long-term positive results from treatment.

Gender Differences. More men than women reported alcohol use, using alcohol to intoxication, binge drinking, and other non-opioid drugs in the 6 months before follow-up. More women reported using illegal drugs at intake. The decrease in the number of women who used illegal drugs was greater than the decrease for men, such that by follow-up, significantly more men reported using illegal drugs compared to women. Significantly more women reported smoking tobacco in the past 30 days at intake and follow-up compared to men.

At intake and follow-up, compared to men, women reported significantly higher scores on the Stress Index at intake and follow-up. Further, women reported their mental health was not good more days than men at intake and women also indicated their physical or mental health had kept them from doing their usual activities at intake. Men and women have been shown to use different coping styles and thus may benefit from separate groups to plan recovery support.

Even though overall women made significant gains in their employment and financial standing by follow-up, they still lagged behind men in their economic standing. Specifically, the number of women who

[22] Baca, C., & Yahne, C. (2009). Smoking cessation during substance abuse treatment: What you need to know. *Journal of Substance Abuse Treatment, 36*, 205-219.

[23] Proschaska, J. (2010). Failure to treat tobacco use in mental health and addiction treatment settings: A form of harm reduction? *Drug and Alcohol Dependence, 110*, 177-182.

[24] http://blog.samhsa.gov/2012/03/23/defintion-of-recovery-updated/

reported unemployment was significantly higher than the number of men who reported unemployment at intake and follow-up. Furthermore, the number of men who reported they were employed full-time was 2.75 times higher than the number of women who were employed full-time at intake. Even among those employed, men had significantly higher hourly wages than women at both intake and follow-up. At intake, women made only $0.68 for every dollar men made and by follow-up women made $0.74 for every dollar men made. Also, more women than men reported difficulty in accessing basic living needs at intake and more difficulty in meeting health care needs at intake and follow up.

Study Limitations

The study findings must be considered within the context of the study's limitations. First, because there is no appropriate group of opiate dependent individuals who would like treatment but do not receive it to compare with the KORTOS individuals who participate in treatment, one cannot attribute all changes from intake to follow-up to substance abuse treatment. Second, because not all clients agree to participate in the 6-month follow-up survey, it is unclear how generalizable the findings are to the entire client population that completes an intake survey. Analysis comparing those individuals who completed a follow-up survey with those who did not complete a follow-up survey (for any reason, for example, they did not agree to be in the follow-up study, they were not selected into the follow-up sample, or they were not successfully contacted for the follow-up survey) found some significant differences between the two groups, several of which were due to the fact that significantly more females were followed up than were not followed up (e.g., employment, depression, generalized anxiety, used CNS depressants). More individuals who completed a follow-up survey had higher levels of education, were unemployed, reported depression and generalized anxiety, had trouble meeting health care needs, and reported using CNS depressants and non-prescribed methadone when compared to individuals who did not complete the follow-up survey.

Third, data included in this report were self-reported by clients. There is reason to question the validity and reliability of self-reported data, particularly with regard to sensitive topics, such as illegal behavior and stigmatizing issues such as mental health and substance use. However, recent research has supported findings about the reliability and accuracy of individuals' reports of their substance use.[25,26,27,28] Earlier studies found that the context of the interview influences reliability.[29] During the informed consent process for the KORTOS follow-up study, interviewers tell participants that the research team operates independently from the opiate treatment programs, responses will be reported in group format and will not be identifiable at the individual level, and that the research team has a Federal Certificate of Confidentiality. These assurances of confidentiality and lack of affiliation with the data collectors may minimize individuals' concern about reporting stigmatizing or illegal behavior or conditions.

Conclusion

Kentucky is the only state known to date that collects annual outcome data from all of its federally licensed

[25] Del Boca, F. and Noll, J. (2000), Truth or consequences: the validity of self-report data in health services research on addictions. *Addiction, 95*, 347–360.

[26] Harrison, L., Martin, S., Enev, T., & Harrington, D. (2007).*Comparing drug testing and self-report of drug use among youths and young adults in the general population* (DHHS Publication No. SMA 07-4249, Methodology Series M-7). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

[27] Shannon, E., Mathias, C., Marsh, D., Dougherty, D., & Liguori, A. (2007). Teenagers do not always lie: Characteristics and correspondence of telephone and in-person reports of adolescent drug use. *Drug and Alcohol Dependence, 8*(90),288-291.

[28] Rutherford, M., Cacciola, J., Alterman, A., McKay, J., & Cook, T. (2000). Contrasts between admitters and deniers of drug use. *Journal of Substance Abuse Treatment, 18*, 343-348.

[29] Babor, T., Stephens, R., & Marlatt, A. (1987). Verbal report methods in clinical research on alcoholism: Response bias and its minimization. *Journal of Studies on Alcoholism,48*, 410-424.

OTPs, both public and private agencies. This KORTOS 2014 report provides a valuable look at the client outcomes of licensed opiate treatment programs in Kentucky—a state with high rates of opioid abuse. The significant decreases in substance use across all substances (except tobacco), decreased mental health problems, more stable housing, decreased unemployment, decreased involvement in the criminal justice system, and increased use of recovery supports indicate Kentucky's OTPs play a significant role in reduced substance use and increased life improvements for clients.

APPENDIX A. METHODS

The KORTOS evaluation uses a pre- and post-intervention research design, meaning that client data is collected at treatment intake and compared to data collected 6 months later at follow-up. At the end of the intake survey, clinicians explain the follow-up study to clients and give them the opportunity to volunteer to participate in the follow-up study. To participate in the follow-up study, clients must first volunteer and give informed consent. During the consent process clients are informed that the research staff at the University of Kentucky have obtained a Certificate of Confidentiality from the U.S. Department of Health and Human Services to protect the research team from being forced to release client-identifying data to law enforcement or other government agencies. Identifying data are encrypted as the data are submitted on the web-based survey. Electronic data are stored on password protected computers and servers in secure facilities. Clients who agree to participate in the follow-up study give their consent using an electronic consent form on the web survey, which is approved by the University of Kentucky Medical Institutional Review Board (IRB).

Of the 1,125 clients who completed an intake survey, 685 (60.9%) agreed to be contacted for the follow-up study. From this group of clients who voluntarily agreed to be contacted for the follow-up study, the research team pulled the follow-up sample by first identifying clients who had provided the minimum amount of contact information (e.g., two phone numbers or one phone number and one address), and then randomly selecting clients by intake month. Because some programs entered all or the vast majority of their intake surveys for the year within one month or few months (June and July), not all of these individuals could be selected into the follow-up sample, which is pulled based on the target month of the follow-up survey.

Follow-up surveys were conducted by interviewers on the research team at the University of Kentucky Center on Drug and Alcohol Research via telephone 6 months after the intake survey was submitted. Of the 271 clients included in the follow-up sample, 70 were ineligible for participating in the follow-up survey for a variety of reasons (e.g., incarcerated, in residential treatment, deceased), which left 201 clients eligible for follow-up. Of these clients, 168 completed a follow-up survey (see Table AA.1). Thus, the follow-up rate was 83.6%. The remaining clients either (1) refused (1.0%) to complete the follow-up survey, or (2) were never successfully contacted, or if contacted they never completed the follow-up survey (15.4%).

TABLE AA.1. FINAL CASE OUTCOMES FOR FOLLOW-UP EFFORTS (N = 271)

	Number of Records	Percent (n = 271)
Ineligible for follow-up survey	70	25.8%
	Number of cases eligible for follow-up (n = 201)	
Completed follow-up surveys	168	
Follow-up rate is calculated by dividing the number of completed surveys by the number of eligible cases and multiplying by 100		83.6%
Expired cases (i.e., never contacted, did not complete the survey during the follow-up period)	31	
Expired rate ((the number of expired cases/eligible cases)*100)		15.4%
Refusal	2	
Refusal rate ((the number of refusal cases/eligible cases)*100)		1.0%
Cases accounted for (i.e., records ineligible for follow-up + completed surveys + refusals)	240	
Percent of cases accounted for ((# of cases accounted for/total number of records in the follow-up sample)*100)		88.6%

Clients were considered ineligible for follow-up if they were living in a controlled environment during the follow-up period (see Table AA.2). Of the 70 cases that were ineligible for follow-up, the majority (70.0%) were ineligible because they were no longer in treatment at the OTP during the follow-up period. Twelve clients were ineligible because they were incarcerated at the time of follow-up. Other reasons a small number of clients were ineligible for follow-up were because they had provided invalid locator data or were in residential treatment at the time of follow-up.

TABLE AA.2. REASONS CLIENTS WERE INELIGIBLE FOR FOLLOW-UP (N = 70)

	Number	Percent
Not in treatment at OTP	49	70.0%
Incarcerated	12	17.1%
Invalid locator data	6	8.5%
Residential treatment	3	4.3%

Appendix B presents analysis on comparisons between clients who completed a follow-up interview and clients who did not complete a follow-up interview for any reason on key variables included in the intake survey.

APPENDIX B. CLIENT CHARACTERISTICS AT INTAKE FOR THOSE WHO COMPLETED FOLLOW-UP INTERVIEWS AND THOSE WHO DID NOT COMPLETE A FOLLOW-UP INTERVIEW

Clients who completed a follow-up interview are compared in this section with clients who did not complete a follow-up interview for any reason[30] (e.g., did not agree to be contacted for the follow-up survey, not selected into the follow-up sample, ineligible for follow-up, unable to be located for the follow-up).

DEMOGRAPHICS

The majority of the sample for this annual report was White and male (see Table AB.1).[31] Significantly more clients who completed a follow-up survey were female compared to clients who did not complete a follow-up survey. There were no significant differences on other demographics between clients who completed a follow-up survey and those who did not. The average client age for both groups was in the early 30s with no difference by follow-up status.

TABLE AB.1. COMPARISON OF DEMOGRAPHICS FOR CLIENTS WHO WERE FOLLOWED UP AND CLIENTS WHO WERE NOT FOLLOWED UP

	FOLLOWED UP	
	NO n = 957	YES n = 168
AGE	33.0 years	32.4 years
GENDER**		
Female	43.4%	60.7%
Male	56.4%	39.3%
RACE		
White	96.8%	96.4%
African American	0.9%	0.0%
Other or Multiracial	2.3%	3.6%
MARITAL STATUS		
Never married	28.3%	27.4%
Married or cohabiting	52.9%	53.0%
Separated or divorced	17.6%	18.5%
Widowed	1.3%	1.2%

*p < .01, **p < .001.

[30] Significance is reported for p<.01.

[31] 2 cases had missing data on age because date of birth had incorrect year.

SOCIOECONOMIC INDICATORS

Almost two-thirds of clients reported that their usual living arrangement in the 12 months before entering the OTP was living in their own home or apartment (see Table AB.2). Around one-third was living in someone else's home or apartment. Three percent or less reported that they lived in an institutional facility, such as jail, prison, or a hospital, a hotel, or on the street. There were no differences between the groups on the number of clients who considered themselves homeless at intake.

TABLE AB.2 LIVING SITUATION OF CLIENTS BEFORE ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
USUAL LIVING ARRANGEMENT IN THE 12 MONTHS BEFORE ENTERING THE PROGRAM		
Own home or apartment	65.9%	60.7%
Someone else's home or apartment	31.9%	36.3%
Institutional facility, hotel or on the street	2.2%	3.0%
Consider themselves to be currently homeless	2.6%	5.4%

Measures of economic hardship may be better indicators of the actual day-to-day stressors clients face than a measure of income. Therefore, the baseline survey included several questions about clients' ability to meet expenses for basic needs and food insecurity (SIPP[32]). Clients were asked eight items, five of which asked about inability to meet basic needs such as food, shelter, utilities, and telephone, and three items asked about inability to receive medical care for financial reasons.

Table AB.3 presents the percentage of clients who reported inability to meet any of the basic needs, any of the basic living needs (e.g., food, shelter, utilities, telephone), and any of the health care needs, along with the percentages that reported each item. Well over half of clients reported they were unable to meet at least one of the basic needs for financial reasons. There were no significant differences between the groups on difficulty meeting the basic living needs of food, shelter, utilities, or telephone because of financial reasons. Significantly more clients in the follow-up sample, however, reported they were unable to receive needed health care for financial reasons (61.3% compared to 46.8%).

TABLE AB.3. INABILITY TO MEET BASIC NEEDS IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
HAD INABILITY TO MEET ANY OF THE BASIC NEEDS LISTED BELOW	62.9%	71.4%
Was unable to meet basic living needs (e.g. shelter, utilities, phone, food)	54.2%	55.4%
Had difficulty paying the full amount of rent or mortgage	44.3%	41.7%
Evicted from home/apartment for not paying the rent or mortgage	13.3%	8.9%
Unable to pay the gas or electric bill	32.8%	30.4%

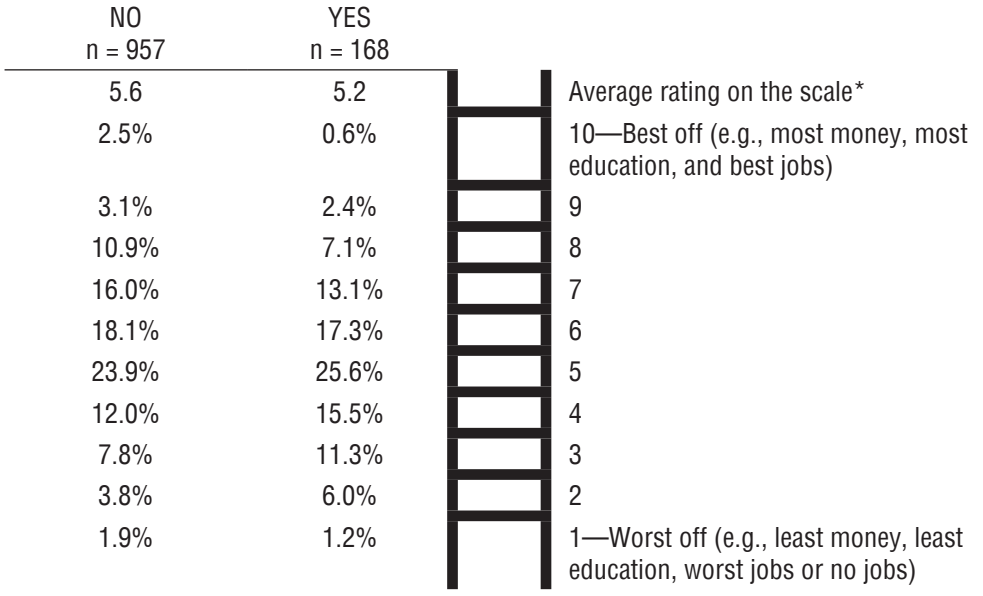
[32] She, P. and Livermore, G. (2007), Material Hardship, Poverty, and Disability Among Working-Age Adults. *Social Science Quarterly, 88*, 970–989.

	FOLLOWED UP	
	NO n = 957	YES n = 168
Had telephone service disconnected because of non-payment	30.9%	29.2%
There was a time when there was not enough food in the household	20.0%	23.8%
*Was unable to receive needed health care for financial reasons***	46.8%	61.3%
Needed to see a doctor or go to the hospital but wasn't able to because of financial reasons	35.0%	42.9%
Needed to see a dentist but wasn't able to because of financial reasons	41.0%	50.0%
Needed to fill a prescription but wasn't able to because of financial reasons	30.5%	39.3%

*p < .01, **p < .001.

Clients were asked to place themselves on a ladder, representing their perception of their standing in society, Adler's Ladder (Adler et al., 2000). The bottom rung, 1, represents "people who are the worst off, those who have the least money, least education, and worst jobs or no jobs" and the top rung, 10, represents "people who are the best off, those who have the most money, most education, and best jobs." The majority of KORTOS clients (57.8%) rated themselves as being on the 5th, 6th, or 7th rung on the ladder (see Figure AB.1). Clients who were followed up gave a significantly lower rating than clients who were not followed up (5.2 vs. 5.6).

FIGURE AB.1 SUBJECTIVE SOCIAL STANDING OF THE FOLLOW-UP SAMPLE BEFORE ENTERING TREATMENT



*p < .01, **p < .001.

Table AB.4 describes clients' level of education when entering treatment. A significantly greater number of clients who were not followed up reported having a GED or high school diploma compared to clients who were followed up. Significantly more followed up clients reported they had vocational school or higher level of education compared to clients who did not complete a follow-up survey.

TABLE AB.4. CLIENTS' HIGHEST LEVEL OF EDUCATION COMPLETED AT BASELINE

	FOLLOWED UP	
	NO n = 957	YES n = 168
HIGHEST LEVEL OF EDUCATION COMPLETED*		
Less than GED or high school diploma	14.9%	20.8%
GED or high school diploma or more	40.2%	26.2%
Vocational school to graduate school	44.8%	53.0%

*p < .01, **p < .001.

Significantly more clients who were followed up were not currently employed at intake compared to clients who were not followed up. Of the clients who reported working at least part-time in the 12 months before entering treatment, the average number of months worked was 9.8 for clients not followed up and 9.5 for clients followed up, with no difference by group.

TABLE AB.5. EMPLOYMENT IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
EMPLOYMENT*		
Not currently employed	36.5%	50.0%
Full-time	51.7%	38.1%
Part-time	8.7%	9.5%
Occasional	3.1%	2.4%
Among those who were employed:	n = 608	n = 84
Average # of months employed in the past 12 months	9.8 months	9.5 months

*p < .01, **p < .001.

CRIMINAL JUSTICE SYSTEM INVOLVEMENT AT INTAKE

There were no significant differences between the groups on criminal justice system involvement at intake. A sizable minority of clients was under supervision by the criminal justice system when they entered the OTP (e.g., probation, parole, drug court), with no significant difference by follow-up status (see Table AB.6). Less than 20% of clients reported they had been arrested in the 12 months before entering the OTP (see Table AB.6). Of those who had been arrested, both groups had fewer than 2 arrests in the 12 months before intake. In addition, fewer than 1 in 6 clients had been incarcerated in the 12 months before entering the OTP. Of those who had been incarcerated, there were no significant differences in the average number of nights spent in jail with clients who completed a follow-up reporting an average of 21.1 nights and clients who did not complete a follow-up reporting an average of 22.0 nights.

TABLE AB.6. CRIMINAL JUSTICE SYSTEM INVOLVEMENT WHEN ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
Currently under supervision by the criminal justice system	13.0%	7.1%
Arrested for any charge in the 12 months before entering treatment	17.7%	16.1%
Of those arrested	n = 169	n = 27
Average number of arrests	1.9	1.7
Incarcerated in the 12 months before OTP	15.3%	14.9%
Of those incarcerated	N = 146	N = 25
Average number of nights in jail	22.0	21.1

PHYSICAL HEALTH AT INTAKE

To give an idea of the physical health of clients when they entered treatment, Table AB.9 presents the percentage of the follow-up sample that reported health problems at intake. Overall, about 3 in 10 clients were experiencing chronic pain (pain that lasted more than 3 months) at intake with no difference between groups. About one-quarter of clients had ever experienced a head injury that resulted in loss of consciousness or hospitalization in their lifetime. Finally, clients were asked at intake if a doctor had ever told them they had any of the 12 chronic medical problems listed (e.g., asthma, arthritis, cardiovascular disease, diabetes, chronic obstructive pulmonary disease (COPD), tuberculosis, severe dental disease, cancer, Hepatitis B, Hepatitis C, HIV, and other sexually transmitted diseases). Significantly more clients who were followed up reported they had been told by a doctor that they had at least one of the chronic medical problems compared to clients who were not followed up (39.3% vs. 25.4%). The most commonly reported chronic medical problems are presented in Table AB.9: arthritis, asthma, severe dental disease, and Hepatitis C. Compared to clients who were not followed up, significantly more clients who were followed up reported they had been diagnosed with Hepatitis C.[33]

TABLE AB.9. PHYSICAL HEALTH STATUS AT INTAKE

	FOLLOWED UP	
	NO n = 957	YES n = 168
Chronic pain (lasting at least 3 months)	29.8%	38.1%
Ever had a head injury that resulted in being knocked out or hospitalized for at least one night	26.0%	24.4%
Ever told by a doctor that client had one of the 12 chronic medical problems listed**	25.4%	39.3%
Arthritis	7.9%	10.1%
Asthma	6.9%	9.5%
Severe dental disease	4.2%	8.3%
Hepatitis C**	8.4%	17.3%

*p < .01, **p < .001.

[33] The following medical problems were reported by fewer than 5% of clients in both groups and therefore are not presented in the table below: cardiovascular disease, chronic obstructive pulmonary disease, cancer, diabetes, sexually transmitted infections, hepatitis B, tuberculosis, and HIV.

MENTAL HEALTH AT INTAKE

The mental health questions included in the KORTOS intake and follow-up surveys are not clinical measures, but instead are research measures. A total of 9 questions were asked to determine if they met self-reported study criteria for depression, including at least one of the two leading questions: (1) "Did you have a two-week period when you were consistently depressed or down, most of the day, nearly every day?" and (2) "Did you have a two-week period when you were much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?" Significantly more clients who completed a follow-up interview than clients who did not complete a follow-up interview reported symptoms that met criteria for depression: 57.1% vs. 45.4% (see Table AB.10).

A total of 7 questions were asked to determine if clients met criteria for Generalized Anxiety Disorder, including the leading question: "In the 12 months before you entered this program, did you have a period lasting 3 months or longer where you worried excessively or were anxious about multiple things on more days than not (like family, health, finances, school, or work difficulties)?" Significantly more clients who completed a follow-up interview than clients who did not complete a follow-up interview reported symptoms that met criteria for Generalized Anxiety Disorder (GAD): 51.2% vs. 37.8%.

Two questions were included in the baseline survey that asked about thoughts of suicide and attempted suicide in the 12 months before clients entered treatment. A minority of clients reported suicidal ideation or attempts, with no difference by follow-up status (see Table AB.10).

TABLE AB.10. PERCENTAGE OF CLIENTS REPORTING MENTAL HEALTH PROBLEMS IN THE 12 MONTHS BEFORE ENTERING THE OTP

	FOLLOWED UP	
	NO n = 957	YES n = 168
Depression*	45.4%	57.1%
Generalized Anxiety Disorder*	37.8%	51.2%
Suicidality (e.g., thoughts of suicide or suicide attempts)	12.0%	14.3%

*p < .01, **p < .001.

SUBSTANCE USE AT INTAKE

Use of illegal drugs in the 12 months before entering treatment is presented by follow-up status in Table AB.11. There were no significant differences by follow-up status in the percentage of clients who reported using any illegal drug. The most frequently reported illegal drugs used in the 12 months before entering treatment were marijuana, prescription opioids/opiates, CNS depressants, and stimulants. Significantly more clients who were followed up reported using CNS depressants (46.4% vs. 35.6%) and non-prescribed methadone (45.2% vs. 34.5%) compared to clients who did not complete a follow-up interview. Less than 10% of clients reported using barbiturates, hallucinogens, and inhalants in the 12 months before entering the OTP.

TABLE AB.11. PERCENTAGE OF CLIENTS REPORTING ILLEGAL DRUG

	FOLLOWED UP	
	NO n = 957	YES n = 168
Any illegal drug	93.8%	95.8%
Marijuana	50.1%	48.8%
Prescription opioid/opiate (illegal use)	83.5%	90.5%
CNS depressants*	35.6%	46.4%
Stimulants (cocaine, amphetamines, methamphetamine, prescription stimulants)	33.3%	39.3%
Non-prescribed buprenorphine (Suboxone, Subutex)	24.8%	33.9%
Non-prescribed methadone*	34.5%	45.2%
Heroin	31.2%	32.7%
Barbiturates	3.2%	4.2%
Hallucinogens	4.2%	4.8%
Inhalants	0.9%	1.2%

*p < .01, **p < .001.

Similar patterns were found in the past 30-days substance use measure with fewer clients reporting use of each substance (not depicted in a Table or Figure).

Less than one-third of clients reported alcohol use in the 12 months before entering treatment. Around 2 in 10 clients in both groups reported alcohol use to intoxication in the same period. Smaller percentages of clients reported binge drinking in the 12 months before entering treatment. There were no differences in alcohol use in the 12 months before entering treatment by follow-up status (see Table AB.12).

TABLE AB.12. PERCENTAGE OF CLIENTS REPORTING ALCOHOL USE IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
Alcohol	31.6%	31.0%
Alcohol to intoxication	18.9%	20.2%
Binge drank alcohol (i.e., drank 5 or more (4 for women) drinks in 2 hours	13.7%	13.1%

In the 12 months before entering the OTP, the vast majority of the clients reported use of tobacco products, including smoked and smokeless tobacco, with no difference between those who completed a follow-up interview and those who did not (see Table AB.13).

TABLE AB.13. PERCENTAGE OF CLIENTS REPORTING TOBACCO USE IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	FOLLOWED UP	
	NO n = 957	YES n = 168
Tobacco (smoke and smokeless)	85.3%	85.7%
Smoked tobacco	85.1%	85.5%

Self-reported severity of alcohol and drug use was measured with Addiction Severity Index (ASI) alcohol and drug composite scores. Alcohol and drug composite scores are presented in Table AB.14 separately for those clients who were not in a controlled environment all 30 days before entering treatment and clients who were in a controlled environment all 30 days. The highest composite score is 1.0 for each of the two substance categories.

The majority of clients who were not in a controlled environment all 30 days met or surpassed the Addiction Severity Index (ASI) composite score cutoff for alcohol and/or drug severe SUD with a significantly greater number of clients who were not in the follow-up sample meeting the cutoff. Specifically, a significantly greater number of clients who were not followed up met the cutoff for severe drug use disorder (97.0% vs. 92.7%). The average score on the alcohol composite score was .13 for clients who did not complete a follow-up interview and .11 for followed up clients. The average score for the drug severity composite score was .38 for clients who did not complete a follow-up interview and .37 for followed up clients. These average cutoff scores include clients with scores of 0 on the composites.

TABLE AB.14. SUBSTANCE ABUSE AND DEPENDENCE PROBLEMS AT BASELINE

Recent substance use problems among clients who were….	Not in a controlled environment all 30 days before entering treatment	
	FOLLOWED UP	
	NO n = 957	YES n = 168
Percentage of clients with ASI composite score equal to or greater than cutoff score for …		
Severe alcohol or drug use disorder*	97.2%	92.7%
Severe alcohol use disorder	15.9%	12.7%
Severe drug use disorder*	97.0%	92.7%
Average composite score for alcohol use[a]	.13	.11
Average composite score for drug use[b]	.38	.37

a- Score equal to or greater than .17 is indicative of severe alcohol use disorder.
b- Score equal to or greater than .16 is indicative of severe drug use disorder.
*p < .01, **p < .001.

Almost two-thirds of clients reported ever having been in substance abuse treatment in their lifetime, with no significant difference by follow-up status (see Table AB.15). Among clients who reported a history of substance abuse treatment, the mean number of lifetime treatment episodes was less than 3 for the two groups.

TABLE AB.15. HISTORY OF SUBSTANCE ABUSE TREATMENT IN LIFETIME

	FOLLOWED UP	
	NO n = 957	YES n = 168
Ever been in substance abuse treatment in lifetime	60.9%	63.1%
Among those who had ever been in substance abuse treatment in lifetime,	(n = 583)	(n = 106)
Mean number of times in treatment	2.5	2.9

Most of the significant differences between clients who were followed up and those who were not may be due to gender differences between the two groups, wherein more of the followed up clients were female compared to the clients who did not complete a follow-up survey. Specifically, more of the clients who completed a follow-up survey reported using CNS depressants and methadone, reported depression and generalized anxiety symptoms, were currently not employed, and had difficulty meeting health care needs due to financial constraints.

APPENDIX C. SUBSTANCE USE AT INTAKE AND FOLLOW-UP FOR OTHER SPECIFIC, NON-OPIOID DRUG USE

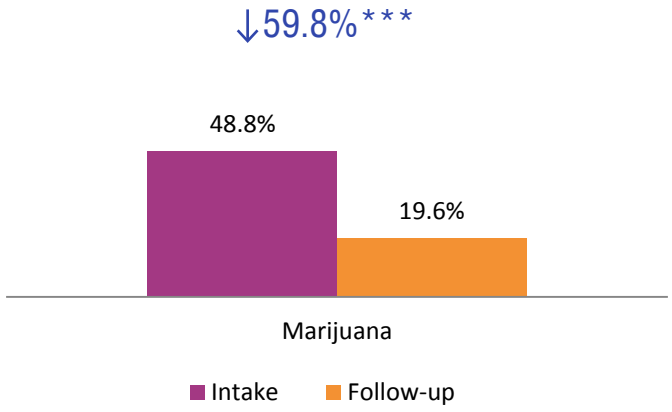
Appendix C provides specific information on past 12-month/6-month and past 30-day change in use of drugs that were analyzed as a group called "Other Non-Opioid Drug Use". The figures compare changes from intake to follow-up by gender on the use of marijuana, CNS depressants (i.e., tranquilizers, benzodiazepines, sedatives, and barbiturates), stimulants (i.e., cocaine, methamphetamine, Ecstasy, MDMA, and non-prescription Adderall and Ritalin), and other illegal drugs (i.e., hallucinogens and inhalants) among the KORTOS sample.

MARIJUANA

MARIJUANA USE, PAST 12 MONTHS/6 MONTHS

Nearly half of clients (48.8%) reported using marijuana in the 12 months before entering the OTP, which decreased to 19.6% at follow-up. Overall, for the KORTOS follow-up sample, there was a 59.8% significant decrease in the number of clients reporting marijuana use (see Figure AC.1).

FIGURE AC.1. PAST 12-MONTH/6-MONTH MARIJUANA USE AT INTAKE AND FOLLOW-UP (N = 168)

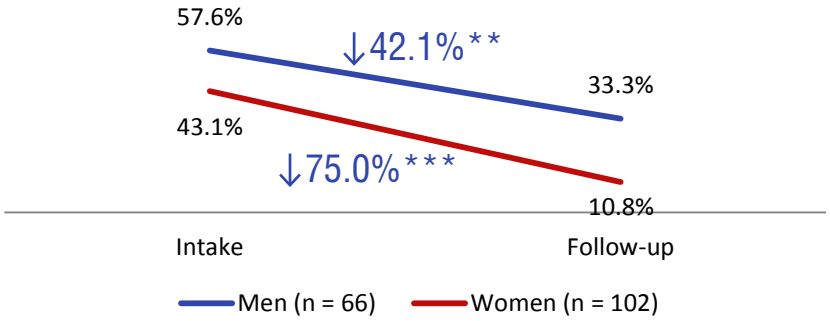


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN MARIJUANA USE, PAST 12 MONTHS/6 MONTHS

In the 12 months before OTP entry, 57.6% of men and 43.1% of women reported using marijuana. The number of men and women who reported using marijuana decreased significantly by follow-up; however, the decrease was greater for women (75.0%) than for men (42.1%). By follow-up significantly more men than women reported using marijuana, 33.3% vs. 10.8% (see Figure AC.2).

FIGURE AC.2. GENDER DIFFERENCES IN PAST 12-MONTH/6-MONTH MARIJUANA USE AT INTAKE AND FOLLOW-UP[a]

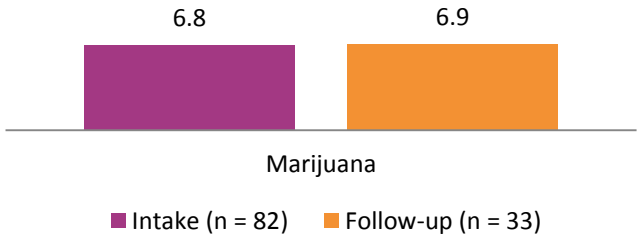


a—Significant difference by gender at follow-up, p < .001.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED MARIJUANA

Among the clients who reported using marijuana in the 12 months before entering treatment (n = 82), they reported using marijuana, on average, 6.8 months (see Figure AC.3). Among clients who reported using marijuana at follow-up (n = 33), they reported using, on average 6.9 months.

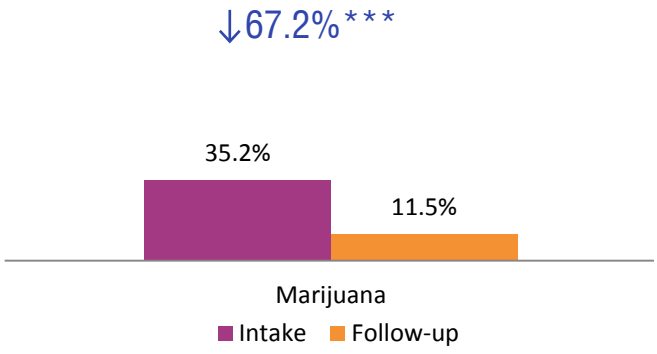
FIGURE AC.3. AVERAGE NUMBER OF MONTHS CLIENTS USED MARIJUANA



MARIJUANA USE, PAST 30 DAYS

The number of clients who reported using marijuana in the past 30 days decreased significantly by 67.2%, from 35.2% at intake to 11.5% at follow-up (see Figure AC.4).

FIGURE AC.4. PAST 30-DAY MARIJUANA USE AT INTAKE AND FOLLOW-UP (N = 165)

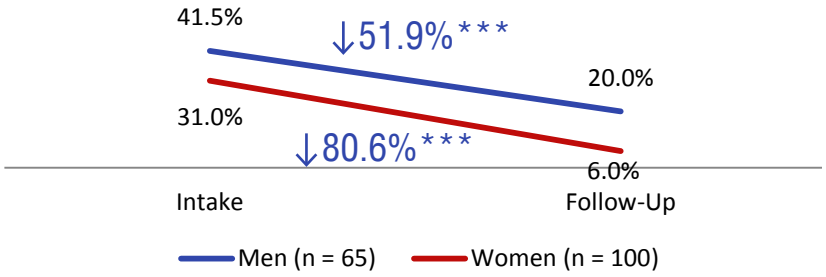


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN MARIJUANA USE, PAST 30 DAYS

Thirty-one percent of women and 41.5% of men reported past 30-day marijuana use at intake (see Figure AC.5). The number of women and men who reported marijuana use significantly decreased from intake to follow-up by 80.6% and 51.9% respectively. However, the decrease was greater for women, such that, at follow-up significantly more men reported using marijuana compared to women.

FIGURE AC.5. GENDER DIFFERENCES 30-DAY MARIJUANA USE AT INTAKE AND FOLLOW-UP[a]



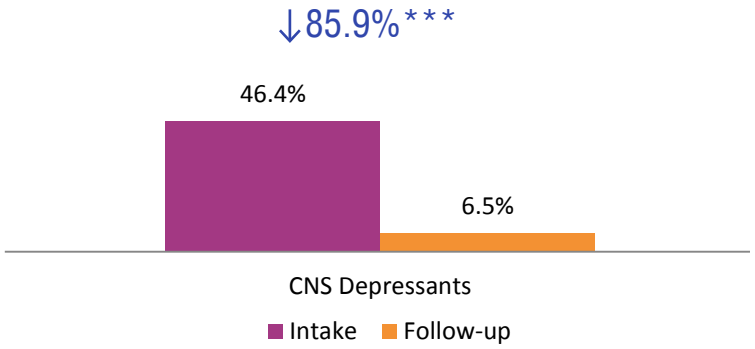
a—Significant difference by gender at follow-up, p < .01.
*p < .05, **p < .01, ***p < .001.

CNS DEPRESSANTS

CNS DEPRESSANT USE, PAST 12 MONTHS/PAST 6 MONTHS

Not quite half of clients (46.4%) reported using CNS depressants, including tranquilizers, benzodiazepines, sedatives, and barbiturates in the 12 months before entering treatment, which decreased to 6.5% at follow-up. Overall, for the KORTOS follow-up sample, there was an 85.9% decrease in the number of clients reporting CNS depressant use (see Figure AC.6).

FIGURE AC.6. PAST 12-MONTH/6-MONTH CNS DEPRESSANT USE AT INTAKE AND FOLLOW-UP (N = 168)

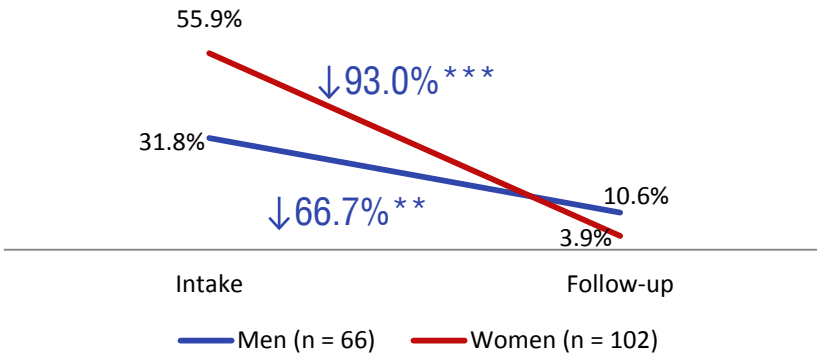


*p < .05, **p < .01, ***p < .001.

GENDER DIFFERENCES IN CNS DEPRESSANT USE, PAST 12 MONTHS/6 MONTHS

Significantly more women than men reported CNS depressant use in the 12 months before intake, 55.9% vs. 31.8% (see Figure AC.7). The number of women and men who reported CNS depressant use significantly decreased from intake to follow-up by 93.0% and 66.7% respectively.

FIGURE AC.7. GENDER DIFFERENCES IN CNS DEPRESSANT USE IN THE PAST 12 MONTHS/6 MONTHS AT INTAKE AND FOLLOW-UP[a]

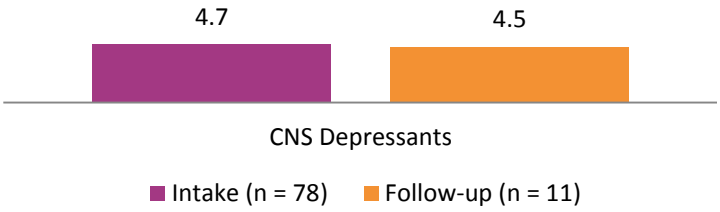


a—Significant difference by gender at intake, p < .01.
*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED CNS DEPRESSANTS

Figure AC.8 shows the average maximum number of months clients who used CNS depressants reported using these illegal drugs.[34] Among the clients who reported using these substances in the 12 months before entering treatment (n = 78), they reported using CNS depressants an average 4.7 months in the 12 months before entering treatment. Among clients who reported using CNS depressants in the projected 12 months before follow-up (n = 11), they reported using on average 4.5 months.

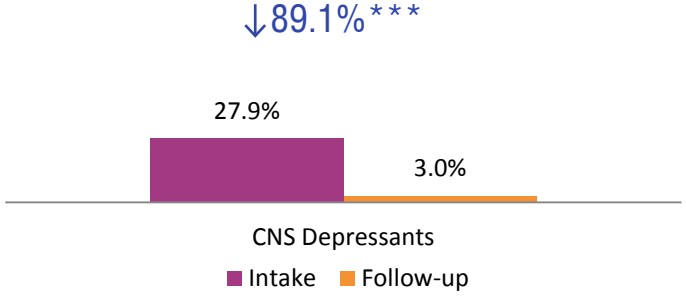
FIGURE AC.8. AVERAGE NUMBER OF MONTHS OF CNS DEPRESSANT USE



CNS DEPRESSANT USE, PAST 30 DAYS

The number of clients who reported using CNS depressants decreased significantly by 89.1%, from 27.9% at intake to 3.0% at follow-up (see Figure AC.9).

FIGURE AC.9. PAST 30-DAY CNS DEPRESSANT USE AT INTAKE AND FOLLOW-UP (N = 165)



*p < .05, **p < .01, ***p < .001.

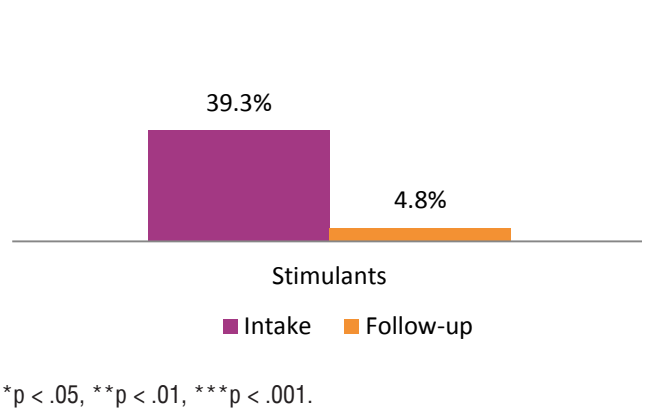
[34] Because number of months of use of barbiturates and tranquilizers/sedatives/benzodiazepines were measured separately, the value is a calculation of the maximum number of months clients used any substance class.

STIMULANTS

STIMULANT USE, PAST 12 MONTHS/6 MONTHS

Almost 4 in 10 clients (39.3%) reported using stimulants, including cocaine, methamphetamine, Ecstasy, MDMA, and non-prescription Adderall and Ritalin in the 12 months before entering treatment. The number of clients who reported stimulant use decreased to 4.8% at follow-up. Overall, for the KORTOS follow-up sample, there was an 87.9% significant decrease in the number of clients reporting stimulant use (see Figure AC.10).

FIGURE AC.10. PAST 12-MONTH/6-MONTH STIMULANT USE AT INTAKE AND FOLLOW-UP (N = 168)

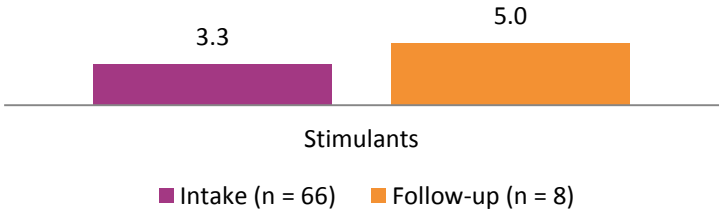


*p < .05, **p < .01, ***p < .001.

AVERAGE NUMBER OF MONTHS USED STIMULANTS

Among the clients who reported using stimulants in the 12 months before entering treatment (n = 66), they reported using stimulants an average 3.3 months in the 12 months before entering treatment (see Figure AC.11). Among clients who reported using stimulants at follow-up (n = 8), they reported using stimulants, on average, 5.0 months.

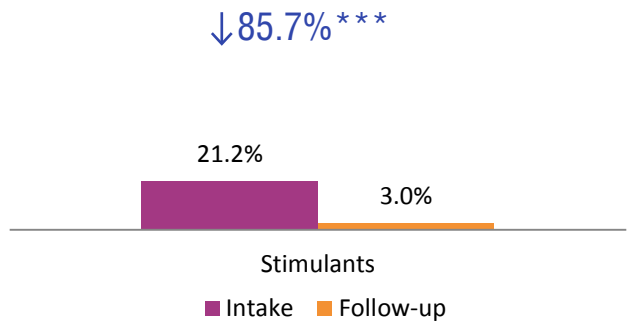
FIGURE AC.11. AVERAGE NUMBER OF MONTHS OF STIMULANT USE



STIMULANT USE, PAST 30 DAYS

The number of clients who reported using stimulants decreased significantly by 85.7%, from 21.2% at intake to 3.0% at follow-up (see Figure AC.12).

FIGURE AC.12. PAST 30-DAY STIMULANT USE AT INTAKE AND FOLLOW-UP (N = 165)



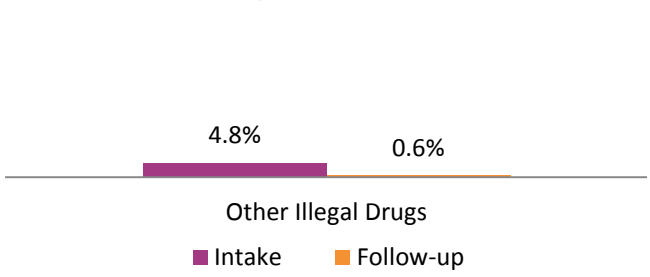
*p < .05, **p < .01, ***p < .001.

OTHER ILLEGAL DRUGS

OTHER ILLEGAL DRUGS, PAST 12 MONTHS

A small minority of KORTOS clients (4.8%) reported using any other illegal drugs (i.e., hallucinogens, inhalants) in the 12 months before entering treatment. The number of clients who reported using other illegal drugs decreased significantly to 0.6% at follow-up – a significant decrease of 87.5% from intake to follow-up (see Figure AC.13).[35]

FIGURE AC.13. PAST 12-MONTH/6-MONTH USE OF OTHER ILLEGAL DRUGS AT INTAKE AND FOLLOW-UP (N = 168)

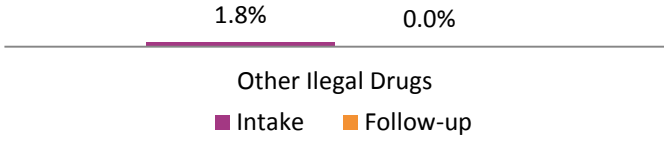


*p < .05, **p < .01, ***p < .001.

OTHER ILLEGAL DRUG USE, PAST 30 DAYS

The number of clients who reported using other illegal drugs at intake was 1.8% with no clients reporting using other illegal drugs at follow-up (see Figure AC.14).

FIGURE AC.14. PAST 30-DAY USE OF OTHER ILLEGAL DRUGS AT INTAKE AND FOLLOW-UP (N = 165)



[35] Because so few clients reported using other drugs at intake (n = 8) and follow-up (n = 1), analysis on the average number of months other drugs were used was not conducted.