FINDINGS FROM THE RECOVERY CENTER OUTCOME STUDY

2025 REPORT

Center on Drug and Alcohol Research

Project Acknowledgments

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Executive Summary

Recovery Kentucky is a joint effort by the Kentucky Department for Local Government, the Department of Corrections, and Kentucky Housing Corporation. Local governments and communities at each Recovery Kentucky center location have also contributed greatly to making these centers a reality. This is the thirteenth annual Recovery Center Outcome Study (RCOS) follow-up report conducted by the Behavioral Health Outcome Study team at the University of Kentucky Center on Drug and Alcohol Research (UK CDAR).

This 2025 report presents: (1) demographics and targeted factors for 1,696 individuals who entered Phase 1 in one of the Recovery Kentucky programs, agreed to participate in RCOS, who completed an RCOS intake interview in FY 2023; and (2) outcomes for 282 men and women who were randomly selected and completed a 12-month follow-up survey between July 2023 and June 2024. In addition, this report includes analysis and estimates of avoided costs to society in relation to the cost of recovery service programs.

Information from the intake survey data indicates that clients (N = 1,696) were an average of 38 years old ranging from 18 to 74 years old. The majority of clients were male (63.0%) and 36.9% were female, because a larger number of centers are for male clients.[1] A very small percentage reported they were transgender (0.1%).The majority of clients (82.8%) self-reported they were referred to the recovery center by the criminal legal system (e.g., judge, probation officer, Department of Corrections).

Comparisons of clients who completed a follow-up survey and clients who did not for any reason (e.g. not selected into the follow-up sample, never successfully contacted to complete the follow-up survey) showed only two significant differences. One difference was a result of the stratification by gender when selecting the follow-up sample: significantly more clients who completed a follow-up interview were female compared to clients who did not complete a follow-up interview. Second, a significantly smaller percentage of followed-up clients met criteria for posttraumatic stress disorder (PTSD) compared to clients who did not complete a follow-up interview. There were no other demographic, substance use, mental health, physical health, living situation, employment, education, or criminal legal system differences at program entry between followed-up and not followed-up individuals.

Substance Use

RCOS clients predominately engage in polysubstance use when they enter Recovery Kentucky programs with a history of prior substance use disorder (SUD) treatment. Only 38.9% of clients who completed an intake interview reported one of the following: (1) no substance use (8.9%), (2) alcohol use only (4.5%), or (3) alcohol use and only one drug class (25.5%) in the 6 months

[1] Intake surveys were completed in 18 Recovery Kentucky programs. The closure of one program in 2022 resulted clients from 17 Recovery Kentucky programs in the follow-up sample: 9 provided services to men and 8 to women.

before they entered the program.[2] Nearly one-third of clients who were not in a controlled environment 180 days before entering the program (32.3%) reported using 3 or more drug classes with or without alcohol in the 6-month period.

A trend analysis shows that the age of first use for each substance has remained steady reports 2014 - 2021. In the 2022 report, the average age of first use of illicit drugs (16.0) was higher than in previous years. Clients' average age of first alcoholic drink is consistently younger than the age reported for illicit drug and tobacco use while initiation of smoking regularly and drug use tend to co-occur at similar ages.

A trend analysis of intake data from the 2012 through 2025 annual reports examines substance use patterns in the 6 months before clients entered programs. Even though a higher percentage of clients reported using opioids than using heroin each fiscal year, the percent of clients reporting they used prescription opioids and non-prescribed methadone has decreased. In contrast, the percentage of clients that used heroin increased through the 2019 report, before the percentages began to slowly decline. Beginning in the 2017 report, the percentage of individuals who reported using methamphetamine has increased substantially from the high 20s to 53% in 2025. In the 2020 report, the percentage of clients who reported they had used prescription opioids and methamphetamine were the same: 54%. In the 2021 report, a higher percentage of RCOS clients reported they had used methamphetamine in the past 6 months than had used prescription opioids, which was the first year this has happened in the RCOS sample. This pattern continued through the 2025 report, with 53% of clients reporting methamphetamine use and 33% reporting prescription opioid use in the 6 months before entering the program. This trend corresponds to other data sources, including the National Survey on Drug Use and Health.[3]

In this year's data, decreases in substance use from intake to follow-up were statistically significant. Specifically, the percent of clients who used illicit drugs decreased by 73.5%, from 87.4% at intake to 13.9% at follow-up. Smaller numbers of individuals reported alcohol use at intake and follow-up; there was a significant decrease for alcohol use from 40.8% at intake to 10.1% at follow-up. Furthermore, the percent of individuals who met criteria for severe substance use disorder (SUD) decreased significantly from 73.5% at intake to 4.6% at follow-up. At the other end of the continuum, the percent of individuals who met study criteria for no substance use disorder increased significantly from 18.5% at intake to 92.9% at follow-up.

Most individuals reported smoking tobacco in the 6 months before entering the recovery center (83.2%) and in the 6 months before follow-up (60.1%). At intake, half of followed-up respondents reported use of vaporized nicotine (e.g., battery-powered nicotine delivery devices that vaporize a liquid mixture consisting of propylene glycol, glycerin, flavorings, nicotine, and other chemicals). There

[2] This is the percent among individuals who were not in a controlled environment all 180 days before entering the program.

[3] Substance Abuse and Mental Health Services Administration. (September, 2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health* (HHS Publication No. PEP20-07-01-001, NSDUH Series H-55). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data.

was a significant increase to 58.8% at follow-up. The percentage of individuals who reported using smokeless tobacco decreased significantly from intake (21.4%) to follow-up (13.0%).

Mental Health

Many clients reported significant improvements in their mental health at follow-up. The majority of respondents (64.9%) met study criteria for either depression or generalized anxiety at intake. By follow-up, only 25.9% met study criteria for either depression or anxiety. There were significant decreases from intake to follow-up in the percentage of respondents who met criteria for depression (by 37.6%), generalized anxiety (by 38.3%), comorbid depression and generalized anxiety (by 36.9%), suicidality (by 18.8%), and PTSD (by 14.2%). Also, the average number of days respondents said their mental health was not good decreased significantly from 14.5 (out of the past 30) at intake to 3.3 at follow-up.

Physical Health

General health status also improved from intake to follow-up. Only 19.9% of respondents reported their health was very good or excellent at intake. By follow-up that percentage had increased to 40.4%. The average number of days (out of the past 30 days) of poor physical significantly decreased from intake to follow-up. For example, clients reported an average of 8.7 days at intake and 2.7 days follow-up that their physical health was not good. Importantly, the average number of days poor physical or mental health kept individuals from doing their usual activities decreased significantly from 11.7 at intake to 2.1 at follow-up. The percent of respondents who reported chronic pain decreased significantly from 22.3% at intake to 13.5% at follow-up.

Experiences with Interpersonal Violence

One-fourth of respondents reported they had experiences with interpersonal violence in the 6 months before they

Overall, Recovery Kentucky clients made significant strides in all of the targeted areas

REPORTED ANY ILLICIT DRUG USE***

87% at intake | **14%** at follow-up

MET STUDY CRITERIA FOR EITHER DEPRESSION OR GENERALIZED ANXIETY***

65% at intake | **26%** at follow-up

CURRENTLY HOMELESS

29% at intake | **6%** at follow-up

SPENT AT LEAST ONE DAY INCARCERATED***

82% at intake | **12%** at follow-up

***p < .001.

entered the program. By follow-up, less than 1 in 20 (4.6%) reported they had experienced interpersonal violence in the past 6 months. This was a statistically significant decrease.

Criminal Legal Involvement

The percent of clients who reported being arrested decreased significantly from 61.7% in the 6 months before involvement in the program to 7.4% after involvement in the program. Likewise, the percent of clients reporting they spent at least one day in jail or prison decreased from 81.6% at intake to 12.1% at follow-up. Additionally, the percentage of individuals who reported they had been convicted for a misdemeanor and a felony offense decreased significantly from intake to follow-up. About three-fourths (77.3%) of respondents were under criminal legal system supervision at intake and the percentage decreased significantly to 59.6% at follow-up.

Quality of Life

Respondents reported a significantly higher quality of life at follow-up than they did at program entry. On a scale of 1 (worst imaginable) to 10 (best imaginable), the average quality of life rating at intake was a 4.2. This increased significantly to 8.4 at follow-up.

Education and Employment

Education and employment improved from intake to follow-up. At intake, 83.7% of individuals had a high school diploma/GED or higher degree and this increased to 88.7% at follow-up. Less than half of respondents (48.9%) reported working (full- or part-time) at least 1 month in the 6 months before program entry. At follow-up, significantly more respondents had worked at least one month in the past 6 months (78.4%), which was an increase of 29.5%.

Living Situation

The percent of clients who considered themselves currently homeless decreased from 29.1% at intake to 6.4% at follow-up. At intake, similar percentages of clients reported their usual living situation in the 30 days before entering the program was in jail or prison (41.1%) and in a private residence (their own home or someone else's home; 45.0%). At follow-up, however, the majority of clients (75.9%) reported their usual living situation was a private residence and only 1.1% of the clients reported their usual living situation had been in jail or prison at follow-up. Even though the target date for the follow-up survey is 12 months after individuals complete their intake survey and entry into Phase 1, 21.6% reported at follow-up living in a recovery center, residential program, or sober living home in the past 30 days. At the time of the follow-up survey, 25 individuals reported they were living in a recovery center facility. More than half of the individuals who were living in a recovery center said they were living in transitional housing connected to the program, 36.0% were a peer mentor, and 12.0% were in one of the program phases.

Further, at intake 33.2% of clients reported they had difficulty meeting basic living needs (e.g., food, shelter, utilities, telephone). By follow-up, this number had decreased significantly to 15.5%. More than one-fifth of clients (22.7%) reported having difficulty in obtaining health care needs (e.g., doctor visits, dental visits, and filling prescriptions) for financial reasons at intake, with a significant decrease to 12.8% at follow-up.

Recovery Support

There was a significant increase in the percent of individuals reporting they had attended mutual help recovery group meetings in the past 30 days, from 28.7% at intake to 77.0% at follow-up. Among individuals who did not attend meetings in the 30 days before program entry (n = 201), 74.1% had attended meetings in the 30 days before follow-up.

Even though more than three-fourths of respondents had interactions with family/friends who were supportive of their recovery, the percentage increased significantly to 96.9% at follow-up. Additionally, significantly more respondents had supportive interactions with an AA/NA sponsor at follow-up compared to intake. The average number of people individuals reported they could count on for recovery support significantly increased from intake (5.6) to follow-up (21.4). Additionally, the majority of clients (93.6%) reported they felt their chances of getting off and staying off drugs or alcohol was moderately or very good at follow-up.

Multidimensional Recovery

In the follow-up sample, only 1.4% of respondents had all positive dimensions of recovery at intake. By follow-up, 67.0% of clients had all eight positive dimensions of recovery, which was a statistically significant increase. In multivariate analysis, completing Phase I of the program was significantly associated with greater odds of having all eight positive dimensions of recovery at follow-up, controlling for numerous intake factors and the self-reported number of months in the program.

Perceptions of Care in the Program

Results show that clients were largely satisfied (overall average of 8.4 out of 10 as the highest possible score) with their Recovery Kentucky program experience. The majority of clients agreed with a number of statements about positive aspects of the recovery program experience. For example, the majority of clients reported that: their expectations and hopes for the program and recovery were met, they had a connection with a staff person during the program, program staff believed in them and that the program would work for them, they felt the program staff cared about them and their progress, the program approach and method was a good fit for them, they had input into their goals and how they were progressing over time, they worked on and talked about the things that were most important to them, when clients spoke about personal things they felt listened to by their counselors and staff, and they fully discussed or talked about everything with their counselor/staff. Two-thirds of followed-up respondents reported the program length was just right as opposed to too short or too long (33.3%).
Respondents who completed Phase I rated the following dimensions of their

I thought I knew everything, but I didn't. Hearing everyone's stories helped me. Advice given to me was great, and the center opened doors for me. Everything has been great, I feel good and I know he can go to the center if I ever need to. I made close connections with people there.

- RCOS FOLLOW-UP CLIENT

experiences in the program higher (i.e., more positively) compared to individuals who did not complete Phase I: shared decision-making, respect, communication, therapeutic alliance, and perceived effectiveness of the program.

The majority of individuals stated that the beginning of the program was good for them (66.3%), but an even higher percent reported the program ending was good for them (74.3%) among individuals whose participation had ended. The majority of clients stated the program worked extremely well (73.3%) or pretty well (18.9%) for them. Only a small minority reported the program worked somewhat for them (3.9%), and 3.9% reported the program did not work at all for them. Respondents reported the greatest benefits of the program were positive interactions and relationships with other people, reduced substance use, improved mental health and feelings about self, major positive life changes, and lessons learned in the program.

Association of Program Completion with Outcomes

At follow-up, more than three-fourths of respondents (77.7%) reported they had completed Phase I of the recovery center program. Analysis of how the majority of individuals who ended up completing Phase I may have differed from the minority of individuals who did not end up completing Phase I by follow-up was conducted. There were few differences between the two groups at program entry. For example, a significantly higher percentage of women did not complete Phase I. Additionally, at intake, significantly higher percentages of individuals who did not complete Phase I had children under the age of 18 and had difficulty paying for basic living needs relative to individuals who completed Phase I. Also, individuals who had not completed Phase I had fewer people they could count on for recovery support, and a higher average number of adverse childhood experiences.

By follow-up, significantly more individuals who had not completed Phase I reported they had used illicit drugs, in general, and specifically, cannabis, and stimulants (including cocaine and methamphetamine). Moreover, more individuals who had not completed Phase I reported they had engaged in polydrug use in the 6 months before follow-up compared to individuals who had completed Phase I of the program. Other differences between the two groups were found in usual employment status, homelessness, arrests, and incarceration in the follow-up period. For each of these targeted factors, more of individuals who had not completed Phase I had the worse outcome relative to individuals who had completed Phase I.

Analysis of Return to Substance Use

Using a logistic regression, targeted factors were examined in relation to having reported drug and/or alcohol use in the 6 months before follow-up. Results of the analysis show when controlling for intake variables in the model, being male, being older, and not completing Phase I of the program were associated with return to substance use during the follow-up period.

Length of Service

Overall, the clients who were followed up received, on average, about 7.6 months of services from the recovery centers.

Clients who were referred to the program by DOC and clients who were not referred by DOC did not have significantly different length of stays in the recovery centers. Multivariate analysis examining the relationship between length of service, DOC referral status, and several targeted outcomes showed no significant associations between DOC referral status and the outcomes, but significant associations were found between length of service and three outcomes at follow-up. Specifically, lower length of service was associated with greater odds of:

- using drugs or alcohol in the preceding 6 months
- meeting criteria for depression or anxiety in the preceding 6 months, and
- not being employed full- or part-time in the preceding 6 months.

Estimate of Avoided Costs

Conducting a cost-benefit analysis was beyond the scope of this outcome evaluation. Instead, we applied estimates of national costs of drug and alcohol use disorders to society to RCOS participants in the year before and after their entry in the recovery programs to estimate costs of their substance use. We then calculated the cost of each participant's stay in the recovery programs from the number of days they were in the program multiplied by the daily cost of operating the programs. Estimates suggest that for every dollar invested in Recovery Kentucky programs there was a $2.86 return in avoided costs (or costs that would have been expected given the costs associated with drug and alcohol use before participation in Recovery Kentucky programs).

Conclusion

Overall, RCOS results indicate that Recovery Kentucky programs have been successful in facilitating positive changes in clients' lives in a variety of areas including decreased substance use, improved mental health and physical health, decreased involvement in the criminal legal system, improved education and employment situations, lower economic hardship, and improved living circumstances. These trends in decreases in substance use, mental health symptoms, physical health problems, homelessness, economic hardship, and involvement in the criminal legal system as well as increases in quality of life, employment, and recovery supports have remained consistent over time across multiple annual reports. For example, trends show the vast majority of clients have reported illicit drug use in the 6 months before entering the program, with only 5.0% to 19.3% reporting illicit drug use at follow-up across the 13 years examined. Moreover, examining RCOS respondents' multiple dimensions of recovery, the majority reported having all positive dimensions of recovery at follow-up, which was a significant and substantial improvement from program entry. Findings also show that respondents who reported at follow-up that they had completed Phase I had lower illicit drug use, lower homelessness, lower unemployment, and lower involvement with the criminal legal system when compared to individuals who had not completed Phase I. Results also show that respondents appreciate their experiences in the recovery centers and believe the program was helpful, worked for them, and was a good fit for them.

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Overview of Report

Recovery Kentucky is a Social Model, Recovery Housing program created to help Kentuckians recover from Substance Use Disorder, which often leads to chronic homelessness. Kentuckians participating in this Recovery Housing model benefit in multiple ways: reducing their substance use, increasing their employment, decreasing involvement in the criminal legal system, reducing mental health problems, preventing future physical health problems and increasing their involvement in a recovery support system that leads to long term sobriety and free from the use of drugs of abuse. In most of FY 2023, there were 17 Recovery Kentucky centers across the Commonwealth, providing housing and recovery services for up to 2,200 persons simultaneously.

Recovery Kentucky is a joint effort by the Kentucky Department for Local Government, the Department of Corrections, and Kentucky Housing Corporation. Local governments and communities at each Recovery Kentucky center have also contributed greatly to making these centers a reality.[4]

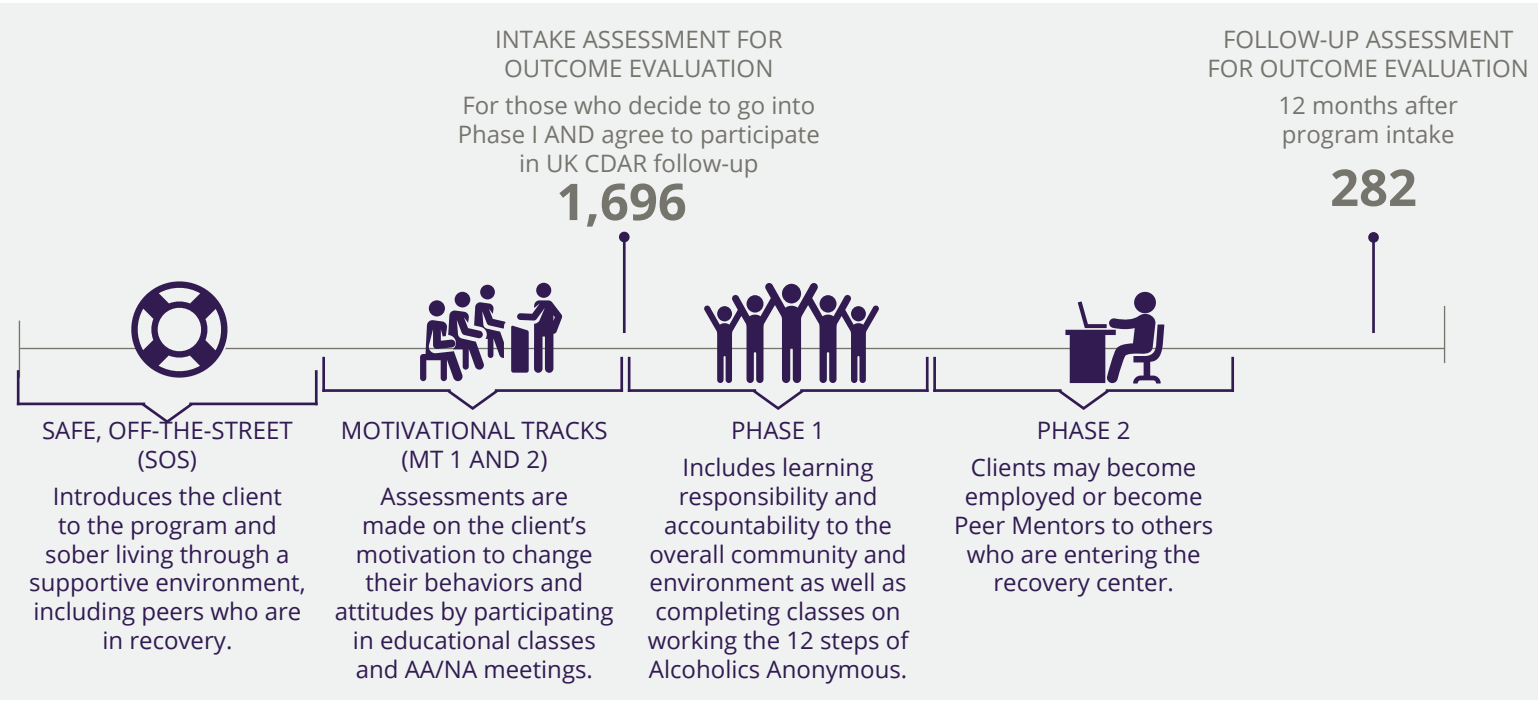
This is the fourteenth annual Recovery Center Outcome Study (RCOS) follow-up report conducted by the Behavioral Health Outcome Study team at the University of Kentucky Center on Drug and Alcohol Research (UK CDAR). Seventeen Recovery Kentucky programs operating in FY 2023 participated in this year's Recovery Center Outcome Study (RCOS) by having clients who completed intake and follow-up interviews for this year's report.[5]

Figure 1 below shows the program modules and how the RCOS fits into the timing of the program modules. The first component of the program is the Safe, Off-the-Street (SOS) program which lasts about 3-7 days. Once clients successfully complete SOS they move into the Motivational Tracks which includes assessments of a client's readiness for recovery. Motivational Tracks I and II last approximately 5-6 weeks. After SOS and the Motivational Tracks are completed clients enter Phase I. Phase I lasts about 5 months on average, and then clients can move to Phase 2 which can last 6 months or more. If clients drop out of the program during the motivational tracks or Phase I, they may reenter the program but will restart the SOS program.

[4] For more information about Recovery Kentucky, contact KHC's Mike Townsend toll-free in Kentucky at 800-633-8896 or 502-564-7630, extension 715; TTY711; or email MTownsend@kyhousing.org.

[5] Women's facilities include: Trilogy Center for Women – Hopkinsville; Women's Addiction Recovery Manor – Henderson; Brighton Recovery Center for Women – Florence; Liberty Place for Women – Richmond; Cumberland Hope Community Center for Women – Evarts; The Healing Place for Women – Louisville; The Hope Center for Women – Lexington; and Sky Hope Recovery Center.
Men's facilities include: Owensboro Regional Recovery Center for Men – Owensboro; The Healing Place for Men – Louisville; The Transitions Grateful Life Center for Men – Erlanger; The Healing Place of Campbellsville – Campbellsville; George Privett Recovery Center– Lexington; CenterPoint Recovery Center for Men – Paducah; Hickory Hill Recovery Center – Knott County; Men's Addiction Recovery Campus—Bowling Green; and Genesis Recovery Kentucky Center--Grayson.

FIGURE 1. PROCESS OF RECOVERY KENTUCKY PROGRAM PARTICIPATION



Recovery Kentucky staff conduct a face-to-face interview with clients as they enter Phase 1; thus, only individuals who have progressed through Safe, Off-the-Street, Motivational Tracks 1 and 2, and have entered Phase 1 are offered the opportunity to participate in the outcome evaluation. At the Phase 1 intake, an evidence-based assessment is used to inform about substance use, mental health symptoms, adverse childhood experiences and victimization experiences, health and stress, criminal legal involvement, quality of life, education and employment status, living situation, and recovery supports prior to entering the recovery center.[6] Most items in the intake interview ask about the 6 months or 30 days before clients entered the recovery center. Then, an evidence-based follow-up interview is conducted with a selected sample of clients about 12 months after the intake interview is completed (see Figure 1). Follow-up interview items ask about the past-6-month or past-30-day periods. Interviewers at UK CDAR conduct the follow-up interviews over the telephone. Clients' responses to the follow-up interviews are kept confidential to help facilitate an honest evaluation of client outcomes and satisfaction with program services and in accord with human participations protections guidelines.

Trends across report years are presented throughout this report. Statistical tests of significant change across report years were not conducted. Descriptions of changes in percentages of individuals across report years are descriptive only. However, changes from intake to follow-up were analyzed with statistical tests of significance. Results are presented for the overall sample and by gender when there were statistically significant gender differences. There are thirteen main sections including:

[6] Logan, T., Cole, J., Miller, J., Scrivner, A., & Walker, R. (2024). *Evidence Base for the Recovery Center Outcome Study Assessment and Methods*. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research. (Available upon request).

Section 1. Overview of RCOS Methods and Client Characteristics. This section briefly describes the Recovery Center Outcome Study (RCOS) method including how clients are selected into the follow-up sample for the outcome evaluation. In addition, this section describes characteristics of clients who entered Phase 1 of a recovery center program and agreed to participate in RCOS between July 1, 2022 and June 30, 2023. This section also describes characteristics for clients who completed a 12-month follow-up survey conducted by UK CDAR between July 1, 2023 and June 30, 2024.

Section 2. Substance Use. This section describes change in illicit drug, alcohol, tobacco and vaporized nicotine use for clients. Past-6-month substance use is examined, as well as past-30-day substance use, separately for clients who were not in a controlled environment all 30 days before entering the Recovery Kentucky program and clients who were in a controlled environment all 30 days before entering the program.

Section 3. Mental Health and Physical Health. This section describes change in mental health and physical health including the following factors: (1) depression, (2) generalized anxiety, (3) comorbid depression and generalized anxiety, (4) suicidal thoughts or attempts, (5) posttraumatic stress symptoms, (6) general health status, and (7) chronic pain.

Section 4. Criminal Legal System Involvement. This section examines change in clients' involvement with the criminal legal system from intake to follow-up. Specifically, information about: (1) arrests, (2) incarceration, (3) self-reported misdemeanor and felony convictions, and (4) self-reported supervision by the criminal legal system.

Section 5. Quality of Life Ratings. This section shows change over time for one measure of quality of life from intake to follow-up.

Section 6. Education and Employment. This section examines changes in education and employment including: (1) highest level of education completed, (2) the percent of clients who worked full-time or part-time, (3) the number of months clients were employed full-time or part-time, among those who were employed the 6 months prior to program entry, (4) median hourly wage among employed individuals, and (5) the percent of clients who expect to be employed in the next 6 months.

Section 7. Living Situation. This section examines the clients' living situation before they entered the program and at follow-up. Specifically, clients are asked at both points: (1) if they consider themselves currently homeless, (2) in what type of situation (i.e., own home or someone else's home, residential program, shelter) they have lived, and (3) about economic hardship.

Section 8. Multidimensional Recovery. This section describes change from intake to follow-up in a measure of multiple dimensions of recovery that is based on: having no substance use disorder, being employed full-time or part-time, not being homeless, having no arrests or incarceration, having no suicidal thoughts or attempts, having fair to excellent health, having recovery support, and having a mid to high quality of life. Change in the multidimensional measure of recovery from intake to follow-up is presented.

Furthermore, a multivariate analysis was conducted to examine the intake indicators of having all positive dimensions of recovery at follow-up.

Section 9. Recovery Supports. This section focuses on five main changes in recovery supports: (1) attending mutual help recovery group meetings, (2) recovery supportive interactions in the past 30 days, (3) the number of people the individual said they could count on for recovery support, (4) what will help them stay off drugs or alcohol, and (5) how good their chances are of staying off drugs or alcohol.

Section 10. Respondents' Perceptions of Care in Recovery Kentucky Programs. This section describes three aspects of client engagement with the program: (1) overall client satisfaction, (2) client ratings of program experiences, and (3) client ratings of the most positive outcomes of program participation.

Section 11. Association of Completion of Phase I and Outcomes. This section compares individuals who ended up completing Phase I of the program (as reported by respondents at follow-up) with individuals who did not complete Phase I on characteristics and targeted factors at program entry and outcomes at follow-up.

Section 12. Multivariate Analysis of Return to Substance Use. This section presents a comparison of those who reported drug and/or alcohol use at follow-up and those who did not on targeted factors. It also focuses on a multivariate analysis examining factors related to return to use in the 2025 RCOS follow-up sample.

Section 13: Estimate of Avoided Costs. This section examines cost reductions or avoided costs to society after Recovery Kentucky Program participation. Using the number of individuals who reported drug or alcohol use at intake and follow-up, a national per person cost was applied to the sample used in this study to estimate the cost to society of drug and alcohol use for the year before individuals were in recovery and then for the same individuals in the year following entry to Phase I.

Section 14. Conclusion and Study Limitations. This section summarizes the report findings and discusses some major implications within the context of the limitations of the outcome evaluation study.

Section 1. Overview of RCOS Method and Client Characteristics

This section briefly describes the Recovery Center Outcome Study (RCOS) method including how clients are selected into the outcome evaluation. In addition, this section describes characteristics of clients who entered Phase I of a recovery center program and participated in RCOS between July 1, 2022, and June 30, 2023.

RCOS Intake Sample

RCOS is comprised of a face-to-face intake interview using an evidence-based assessment conducted by recovery center staff with clients as they enter Phase I. This interview includes demographic questions as well as questions in four main targeted factors (substance use, mental health symptoms, criminal legal system involvement, and quality of life) and four supplemental areas (health and stress-related health consequences, adverse childhood experiences and victimization experiences, economic and living circumstances, and recovery supports).[7] Intake interviews are conducted with clients as they enter Phase I of the recovery center programs. Items related to adverse childhood experiences and interpersonal victimization experiences and overdose ask about lifetime experiences. However, most intake interview items ask about the 6 months or 30 days before clients entered the recovery center (i.e., intake). This report examines responses on intake interviews conducted between July 1, 2022 and June 30, 2023 (i.e., FY 2023) for 1,696 clients.[8]

Characteristics of RCOS Clients at Phase I Intake

Demographics

Table 1.1 presents demographic information on clients with an intake survey completed in FY 2023. Clients' average age was 38.1 years old and men made up 63.0% of the sample. The majority of clients (89.1%) were White and 6.6% were Black, 1.0% were Hispanic, 2.7% were multiracial, and the remaining 0.6% reported they were American Indian, Asian or Pacific Islander, or another race. Nearly two-fifths of the RCOS clients reported they had never been married and were not cohabiting at intake (39.8%), 33.1% were separated or divorced, 24.6% were married or cohabiting, and 2.4% were widowed. The majority of RCOS clients (54.3%) had children under the age of 18. A small minority of individuals (2.8%) reported they were currently serving in the military or a veteran.

[7] For more information about the evidence-based assessment, see: Logan, T., Cole, J., Miller, J., Scrivner, A., & Walker, R. (2024). Evidence Base for the Recovery Center Outcome Study Assessment and Methods. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research. (Available upon request).

[8] 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.

TABLE 1.1. DEMOGRAPHICS FOR ALL RCOS CLIENTS AT PHASE I INTAKE IN FY 2023 (N = 1,696)[9]

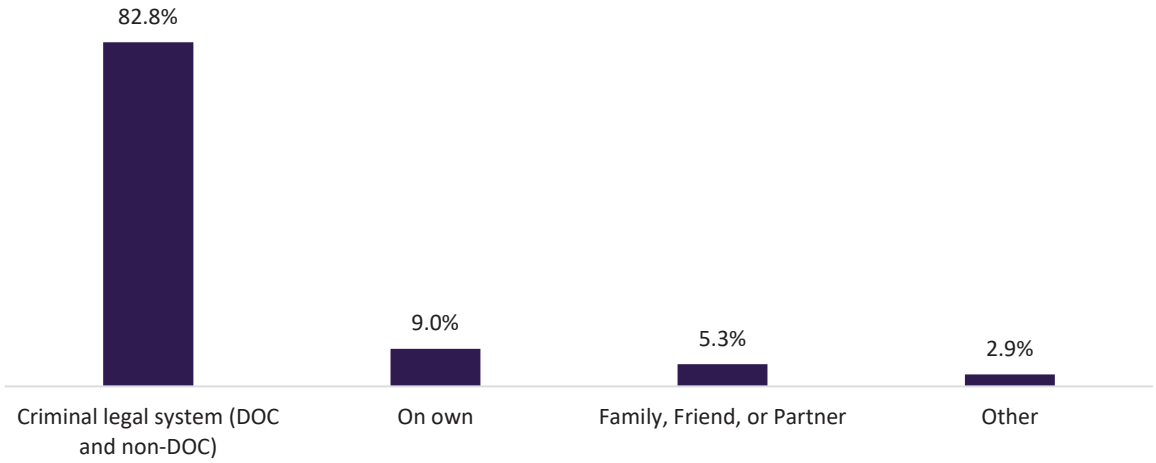
Age	38.1 *(Min. = 18, Max. = 74)*
Gender	
Male	63.0%
Female	36.9%
Transgender	0.1%
Race	
White	89.1%
Black/African American	6.6%
Hispanic	1.0%
Asian, Pacific Islander, American Indian, or other race	0.6%
Multiracial	2.7%
Marital status	
Never married (and not cohabiting)	39.8%
Separated or divorced	33.1%
Married or cohabiting	24.6%
Widowed	2.4%
Has children under 18 years old	54.3%
Active duty or military veteran	2.8%

Self-reported Referral Source

Figure 1.1 shows the self-reported referral source for RCOS clients. More than four-fifths of clients (82.8%) self-reported they were referred to the recovery center by the criminal legal system (e.g., judge, probation officer, Department of Corrections). The next two largest referral categories were the client decided to get help on his/her own (9.0%) and the client was referred to the recovery center by a relative, friend, or partner (5.3%). The remaining 2.9% indicated another referral source such as a treatment program, a health care provider, a mental health care provider, or another recovery center. In a separate question, 78.2% of clients reported that the court or other state agency ordered them to participate in a recovery center program (not depicted in a figure).

[9] Eleven clients had missing or invalid data for date of birth; thus, their age was not calculated. One client had missing data about their race/ethnicity, and 13 clients had missing information about the number of their children under the age of 18.

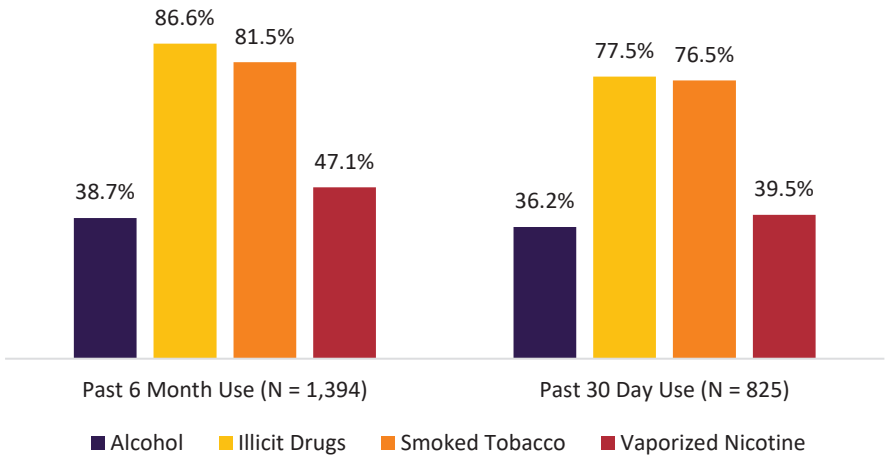
FIGURE 1.1. REFERRAL SOURCE FOR ALL RCOS CLIENTS (N = 1,696)



Substance Use

The majority of clients reported using illicit drugs and smoking tobacco in the 6-month period before entering the recovery center (see Figure 1.2). Less than two-fifths of clients reported any alcohol use and a little less than one-half of clients reported using vaporized nicotine in the 6 months before entering the program.[10] A similar pattern was found when past-30-day use was examined for clients who were not in a controlled environment all 30 days before entering the recovery center.[11]

FIGURE 1.2. ALCOHOL, DRUG AND TOBACCO USE 6 MONTHS AND 30 DAYS BEFORE ENTERING RECOVERY CENTER



[10] Because being in a controlled environment reduces access to alcohol and illicit drugs, individuals who were in a controlled environment the entire intake 6-month period of the study (n = 258) and 44 individuals for whom this data was missing were not included in the analysis of substance use during that period (n = 302).

[11] Because being in a controlled environment reduces access to alcohol and illicit drugs, individuals who were in a controlled environment the entire intake 30-day period assessed for the study (n = 871) are not included in the analysis of substance use during that period.

Figure 1.3 presents the percent distribution of individuals who used alcohol and/or illicit drugs in the 6 months before entering the program. The largest percentage of clients reported using illicit drugs solely (48.8%), and an additional 29.4% reported alcohol and illicit drug use. Among the individuals who were not incarcerated all 180 days before entering the program, 52.4% reported illicit drug use solely and 34.2% reported alcohol and illicit drug use.

FIGURE 1.3. PAST-6-MONTH ALCOHOL AND ILLICIT DRUG USE AT INTAKE FOR THE TOTAL SAMPLE (N = 1,696) AND FOR THOSE NOT INCARCERATED ALL 180 DAYS BEFORE ENTERING THE PROGRAM (N = 1,394)

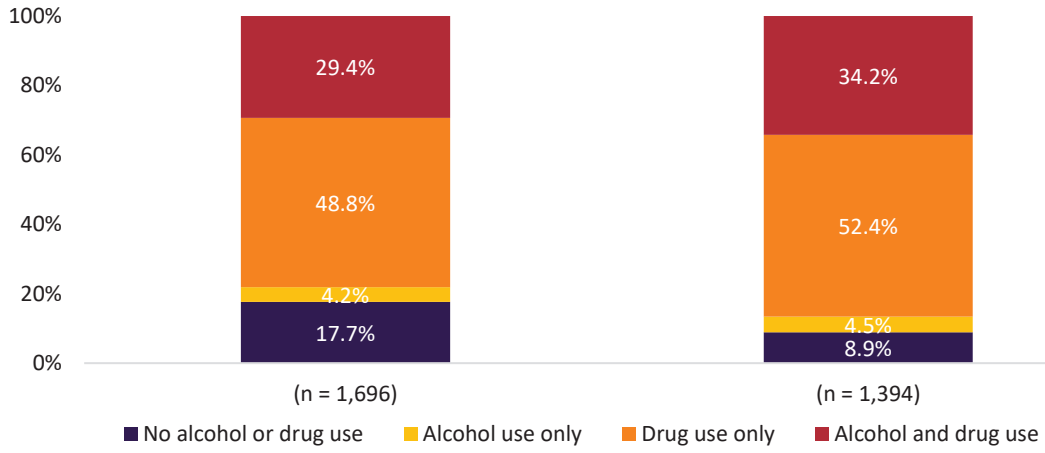
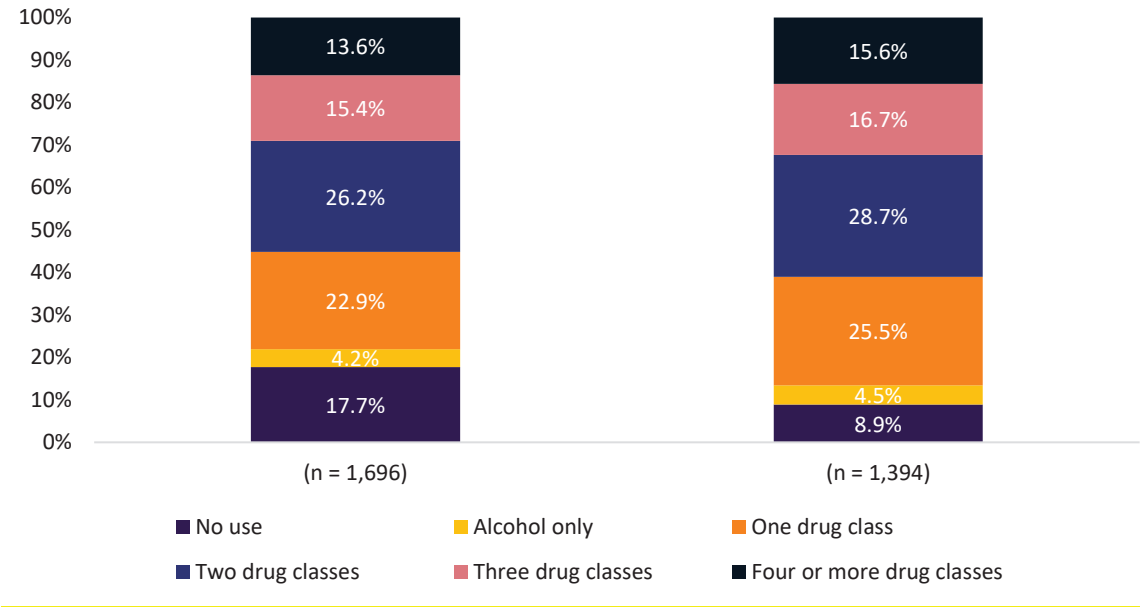


Figure 1.4 presents the percentages of RCOS clients who reported using no drugs, alcohol only, and then various numbers of broad drug classes from the following: cannabis, opioids (including prescription opioids, buprenorphine, methadone, heroin), CNS depressants (such as benzodiazepines, sedatives, barbiturates), stimulants (including amphetamines and cocaine), hallucinogens, synthetic marijuana, and inhalants. RCOS clients predominately engage in polysubstance use before entering recovery centers. Among clients who were not in a controlled environment 180 days before entering the program, 39.0% of clients reported either no substance use, alcohol use only, or alcohol use with only one broad drug class, while the majority reported using 2 or more broad drug classes (61.0%).

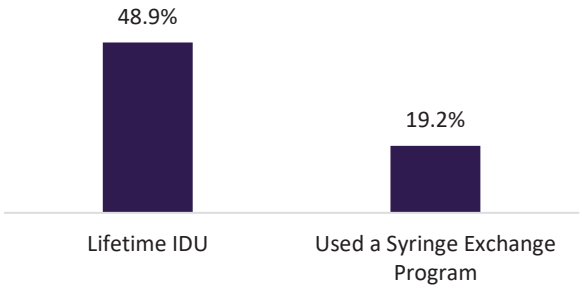
> ***They helped me sit down and deal with my issues. Nothing worked for me before this program.***
>
> - RCOS FOLLOW-UP CLIENT

FIGURE 1.4. PAST-6-MONTH POLYSUBSTANCE USE AT INTAKE FOR THE TOTAL SAMPLE (N = 1,696) AND FOR THOSE NOT INCARCERATED ALL 180 DAYS BEFORE ENTERING THE PROGRAM (N = 1,394)



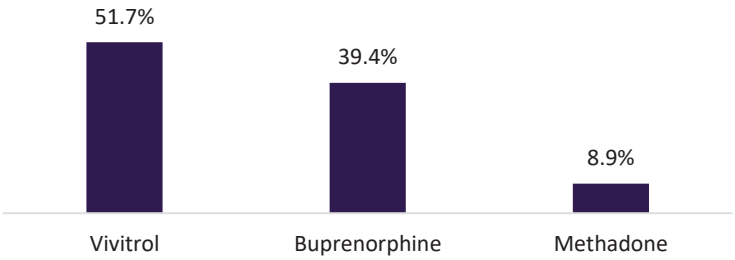
About 7 in 10 clients (71.3%) reported they had attended SUD treatment in their lifetime (not depicted in a figure). Less than half of clients (48.9%) had injected drugs in their lifetime. About 19.2% of the entire sample (or 39.2% of individuals who had ever reported they had injected drugs) reported they had used a syringe exchange program in Kentucky (see Figure 1.5).

FIGURE 1.5. LIFETIME INJECTING DRUG USE AND USED SYRINGE EXCHANGE PROGRAM (n = 1,696)



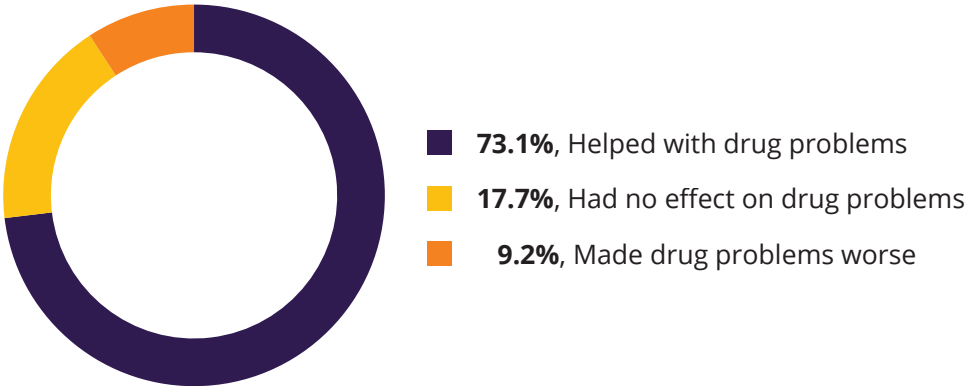
More than one-third of clients (37.1%, n = 630) reported they had participated in medication-assisted treatment (MAT) treatment in their lifetime. Among the 630 clients who reported they had participated in MAT in their lifetime, the most recently taken medication was: Vivitrol for 51.7%, buprenorphine (e.g., Suboxone, Subutex) for 39.4%, and methadone for 8.9% (see Figure 1.6). At intake, 23.3% (n = 396) of clients reported they had participated in MAT in the 6 months before entering the recovery center.

FIGURE 1.6. MEDICATIONS MOST RECENTLY TAKEN IN MEDICATION-ASSISTED TREATMENT AMONG CLIENTS WHO REPORTED LIFETIME PARTICIPATION IN MAT (n = 630)



Among the individuals who reported they had participated in MAT in the 6 months before entering the recovery center, individuals reported using a medication prescribed for them for an average of 3.1 months out of the past 6 months (not depicted in a figure).[12] Of the individuals who reported participating in MAT in the 6 months before entering the recovery program (n = 396), 46.5% obtained the medication from a physician in a general medical practice, 32.3% obtained the medication from a physician in a specialty clinic, and 21.2% obtained the medication from an OTP clinic. The majority stated the prescribed medication had helped with their drug problem (73.0%), 9.6% stated the medication made their drug problem worse, and 17.4% stated the medication had no effect on their drug problems (see Figure 1.7). Of clients who reported past-6-month participation in MAT, 34.3% reported they had received a prescribed medication within the past 48 hours.

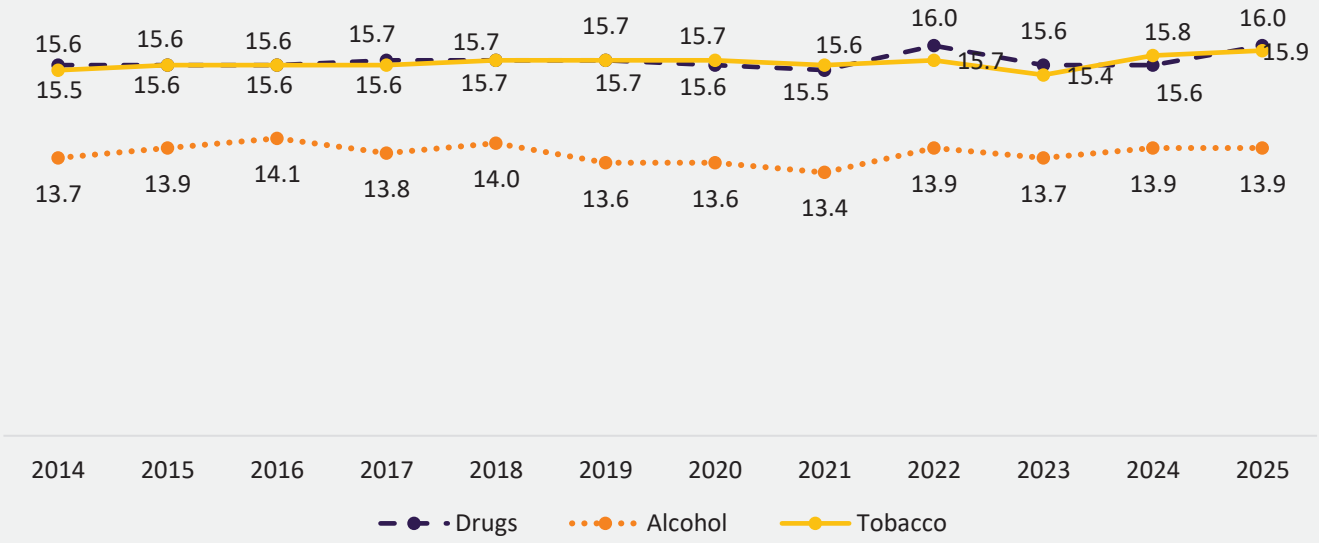
FIGURE 1.7. CLIENTS' PERCEPTION OF HOW HELPFUL THE PRESCRIBED MEDICATION WAS FOR THEIR DRUG PROBLEMS (n = 396)



[12] Seven individuals reported they engaged in MAT in the 6 months but did not know the number of months, thus, they were not included in the average number of months.

Trend Alert: Age of First Use

Clients were asked, at intake, how old they were when they first began to use illicit drugs, when they had their first alcoholic drink (more than a few sips), and when they began smoking regularly.[13] The age of first use for each substance has remained steady for the first eight report years. In the 2022 report, the average age of first use of illicit drugs (16.0) was higher than in previous years and is 16.0 again in the 2025 report. Clients' average age of first alcoholic drink is consistently younger than the age reported for illicit drug and tobacco use while initiation of smoking regularly and drug use tend to co-occur at similar ages.



Adverse Childhood Experiences

Items about ten types of adverse childhood experiences from the Adverse Childhood Experiences Study (ACE) were included in the intake interviews.[14, 15, 16] In addition to providing the percent of men and women who reported each of the types of adverse childhood experiences before the age of 18 years old captured in ACE, the number of types of experiences was computed such that items individuals answered affirmatively were added to create a score equivalent to the ACE score. A score of 0 means the

[13] The data reported here is for the entire RCOS intake sample over the past twelve annual reports of intake data, regardless of whether or not they were in a controlled environment.

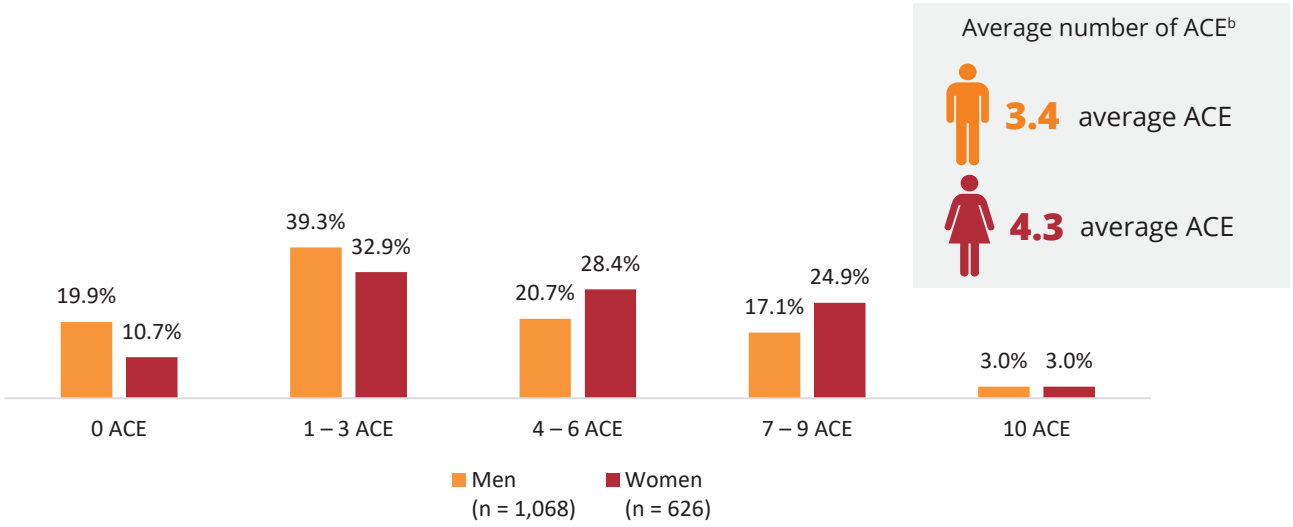
[14] Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine, 14(4), 245-258.

[15] Centers for Disease Control and Prevention. (2014). Prevalence of individual adverse childhood experiences. Atlanta, GA: National Center for Injury Prevention and Control, Division of Violence Prevention. http://www.cdc.gov/violenceprevention/acestudy/prevalence.html.

[16] The intake assessment asked about 10 major categories of adverse childhood experiences: (a) three types of abuse (e.g., emotional maltreatment, physical maltreatment, and sexual abuse), (b) two types of neglect (e.g., emotional neglect, physical neglect), and (c) five types of family risks (e.g., witnessing partner violence victimization of parent, household member who was an alcoholic or drug user, a household member who was incarcerated, a household member who was diagnosed with a mental disorder or had committed suicide, and parents who were divorced/separated).

participant answered "No" to the five abuse and neglect items and the five household dysfunction items in the intake interview. A score of 10 means the participant reported all five forms of child maltreatment and neglect, and all 5 types of household dysfunction before the age of 18. The average number of ACE clients reported was 3.7 (not depicted in figure). Figure 1.8 shows that 19.9% of men and 10.7% of women reported experiencing none of the ACE included in the interview. Nearly two-fifths of men reported experiencing 1 to 3 ACE, one-fifth of men reported experiencing 4 – 6 ACE, and 17.1% of men reported 7 – 9 ACE. A very small percent (3.0%) reported experiencing all 10 types of adverse childhood experiences. Significantly more men than women reported experiencing 0 types of ACE (19.9% vs. 10.7%) and 1 – 3 types of ACE (39.3% vs. 32.9%), whereas significantly more women than men reported experiencing 4 - 6 – types of ACE (28.4% vs. 20.7%), and 7 – 9 types of ACE 24.9% vs. 17.1%).

FIGURE 1.8. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES BY GENDER (n = 1,694)[17a]

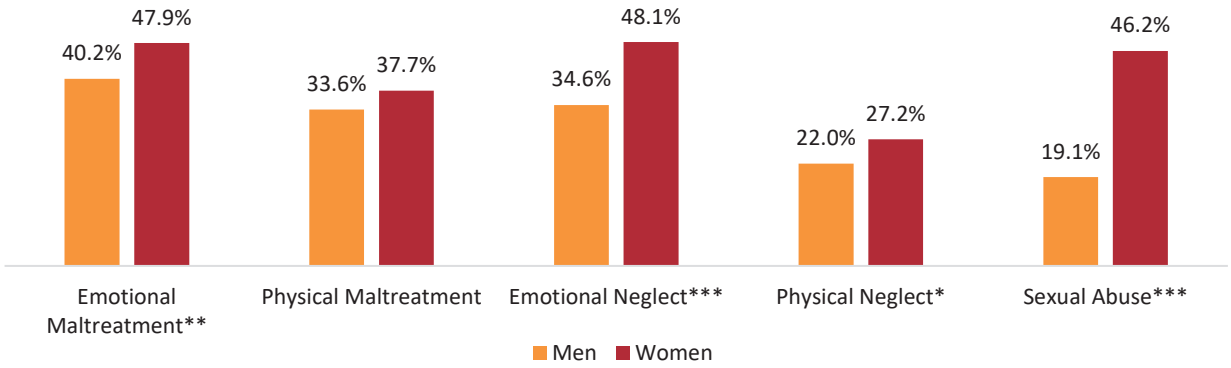


a—Statistically significant difference by gender, tested with chi square ($p < .001$).
b—Statistically significant difference by gender, tested with student t-test ($p < .001$).

Significantly more women reported emotional maltreatment, emotional neglect, physical neglect, and sexual abuse relative to men. Less than half of men and women reported they had experienced emotional maltreatment in their childhood (see Figure 1.9). About one-third of men (33.6%) and 37.7% of women reported physical maltreatment, which was not significantly different by gender. Around one-third of men and nearly half of women reported emotional neglect, and 22.0% of men and 27.2% of women reported physical neglect in their childhood. More than twice as many women reported they had experienced sexual abuse before the age of 18 than men reported; yet, about 1 in 5 men reported childhood sexual abuse.

[17] Data on ACE for two clients who reported being transgender are not presented in Figure 1.8.

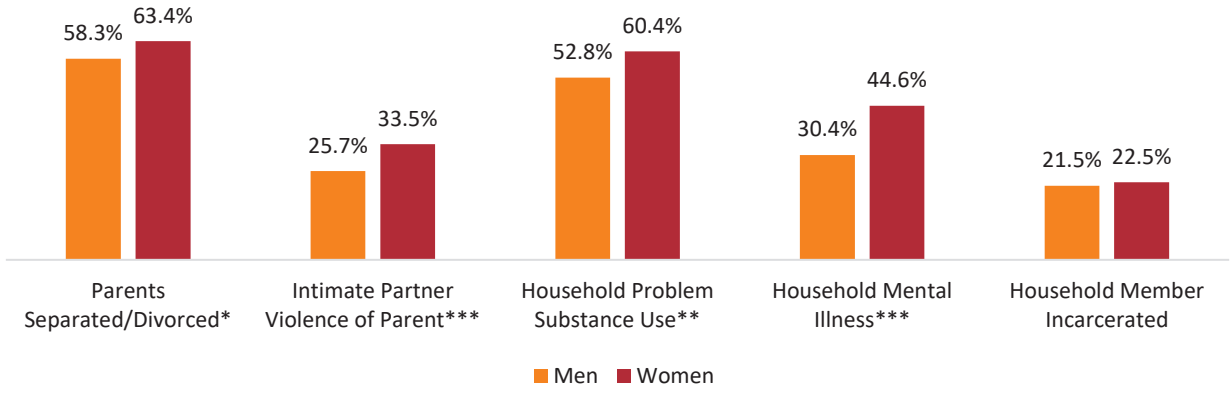
FIGURE 1.9. MALTREATMENT AND ABUSE EXPERIENCES IN CHILDHOOD BY GENDER (n = 1,694)[18]



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

The majority of individuals reported their parents were divorced or lived separately and had a household member with problem substance use (i.e., used illicit drugs and/or engaged in problem alcohol use; see Figure 1.10). Significantly more women than men reported they their parents were divorced/lived separately, they had witnessed intimate partner violence (IPV) of a parent, had a household member with problem substance use, had a household member with a mental illness or had committed suicide. Similar percentages of men and women reported that a household member had been incarcerated in their childhood.

FIGURE 1.10. HOUSEHOLD RISKS IN CHILDHOOD BY GENDER (n = 1,694)[19]



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

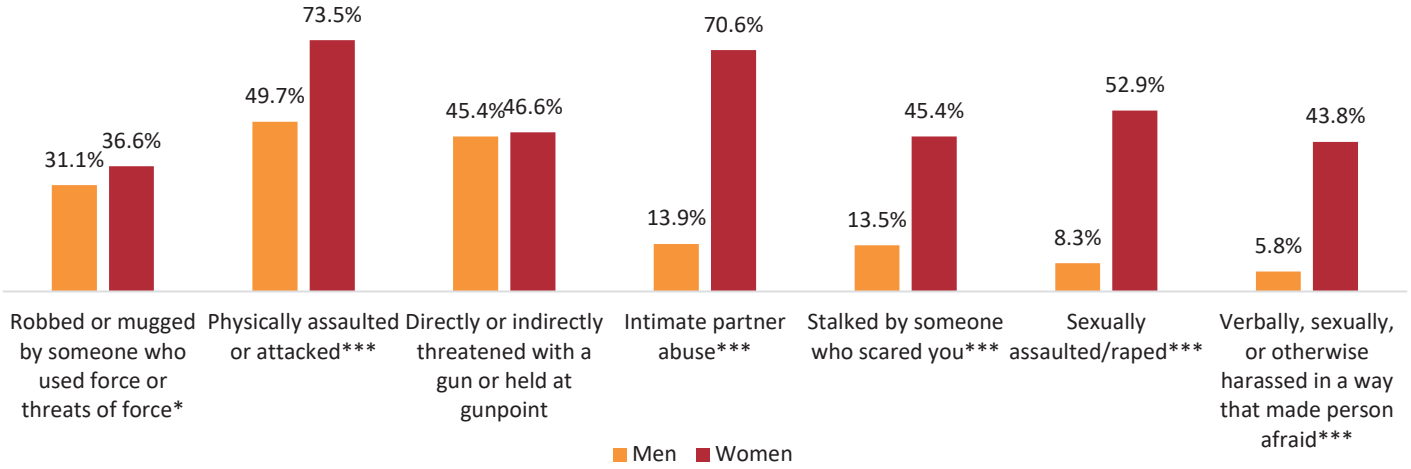
Individuals were also asked about victimization experiences (including when they may have been the victim of a crime, harmed by someone else, or felt unsafe) they had in their lifetime and in the 6 months before entering the recovery center program. The results for lifetime experiences of interpersonal victimization are presented by gender in Figure 1.11. Similar percentages of men and women reported they had ever been directly or indirectly

[18] Two transgender individuals were not represented in the data presented by gender.

[19] Two transgender individuals were not represented in the data presented by gender.

threatened with a gun. Significantly more women than men reported the other types of interpersonal victimization measured in their lifetime: robbed or mugged, physically assaulted/attacked, abused by an intimate partner (including controlling behavior), stalked by someone who scared them, sexually assaulted or raped, and verbally, sexually, or otherwise harassed in a way that made him/her afraid.

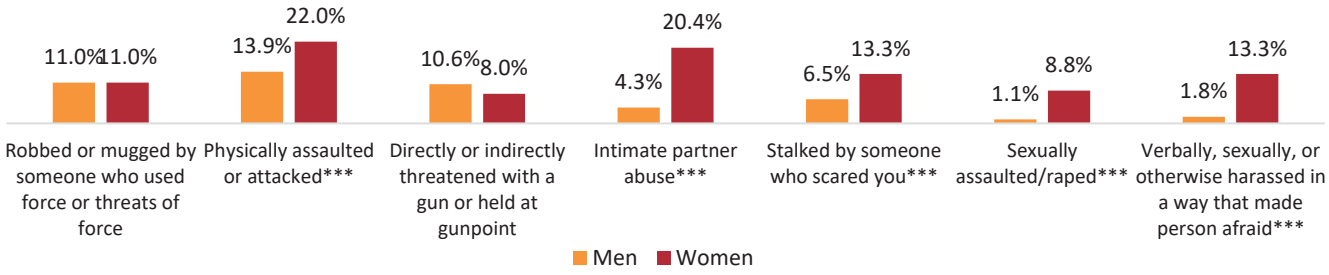
FIGURE 1.11. LIFETIME EXPERIENCES WITH INTERPERSONAL VIOLENCE BY GENDER (n = 1,694)[20]



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

Smaller percentages of clients reported experiences with interpersonal violence in the 6 months before entering programs than in their lifetime (see Figure 1.12). Significantly higher percentages of women than men reported they had been physically assaulted or attacked, abused by an intimate partner (including controlling behavior), stalked by someone who scared them, sexually assaulted or raped, and verbally, sexually, or otherwise harassed.

FIGURE 1.12. PAST-6-MONTH EXPERIENCES WITH INTERPERSONAL VIOLENCE BY GENDER (n = 1,694)[21]



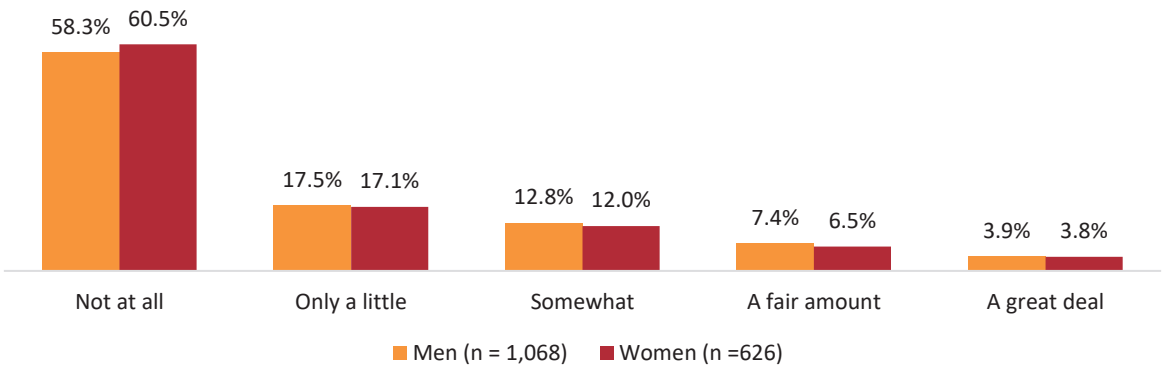
***p < .001.

[20] Two transgender individuals were not represented in the data presented by gender.

[21] Two transgender individuals were not represented in the data presented by gender.

More than half of the sample reported they did not worry at all about their personal safety, with no significant difference by gender (see Figure 1.13). Only 11.0% of the sample reported they worried a fair amount or a great deal.

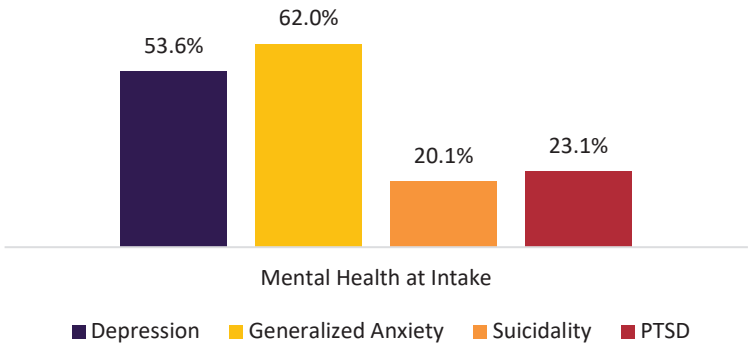
FIGURE 1.13. WORRY ABOUT PERSONAL SAFETY (n = 1,694)[22]



Mental Health

At intake, more than one-half of RCOS clients (53.6%) met study criteria for depression in the past 6 months (see Figure 1.14), and 62.0% of clients met study criteria for generalized anxiety at intake. One-fifth reported suicidal thoughts or attempts, and 23.1% had met study criteria for PTSD in the 6 months before entering the recovery center.

FIGURE 1.14. DEPRESSION, GENERALIZED ANXIETY, SUICIDALITY, AND POST TRAUMATIC STRESS DISORDER IN THE PAST 6 MONTHS AT INTAKE (N = 1,696)



Physical Health

At intake, clients reported an average of 7.6 days of poor physical health in the past 30 days and an average of 14.4 days of poor mental health in the past 30 days (see table 1.2). Less than one-fourth of RCOS clients reported chronic pain in the 6 months before

[22] One transgender individual was not represented in the data presented by gender.

entering the recovery center. Among the 399 individuals who reported chronic pain at intake, they reported experiencing chronic pain an average of 5.5 months out of the 6 months before entering the program, 26.4 days out of the 30 days before entering the recovery center, with an average pain level of 6.5 (with 10 as the maximum rating), and they reported first experiencing chronic pain at 28.8 years old, on average (see Table 1.2).

The majority of individuals (64.1%) reported they had at least one of the 16 chronic health problems listed on the intake interview. The most common health problems were hepatitis C, arthritis, cardiovascular disease, severe dental problems, asthma, and sexually transmitted infections (other than HIV).

TABLE 1.2. HEALTH-RELATED CONCERNS FOR ALL RCOS CLIENTS AT INTAKE (N = 1,696)

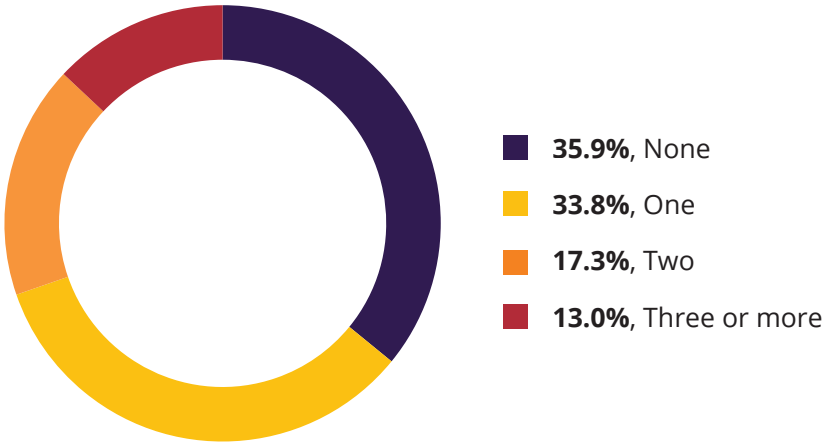
Average number of poor physical health days in past 30 days	7.6
Average number of poor mental health days in past 30 days	14.4
Chronic pain	23.5%
Among those who reported chronic pain	(n = 399)
Average number of months experienced chronic pain in the 6 months before entering the program[23]	5.5
Average number of days experienced chronic pain in the 30 days before entering the program	26.4
Average age first began having chronic pain	28.8
Average intensity of pain in the 30 days before entering the recovery program [0 = No pain, 10 = Pain as bad as you can imagine]	6.5
At least one chronic health problem	64.1%
Hepatitis C	27.2%
Arthritis	16.3%
Cardiovascular/heart disease	14.4%
Severe dental problems	13.0%
Asthma	11.6%
Sexually transmitted infections (other than HIV)	9.7%

Figure 1.15 shows the percent of clients who reported having different numbers of chronic health problems at intake. One-third reported one chronic health problem, and 30.3% reported 2 or more chronic health problems.

> ***It's a good program and they helped a lot of people. Their success rate isn't high, but recovery is not easy to go through. I'm very grateful for the people there.***
>
> - RCOS FOLLOW-UP CLIENT

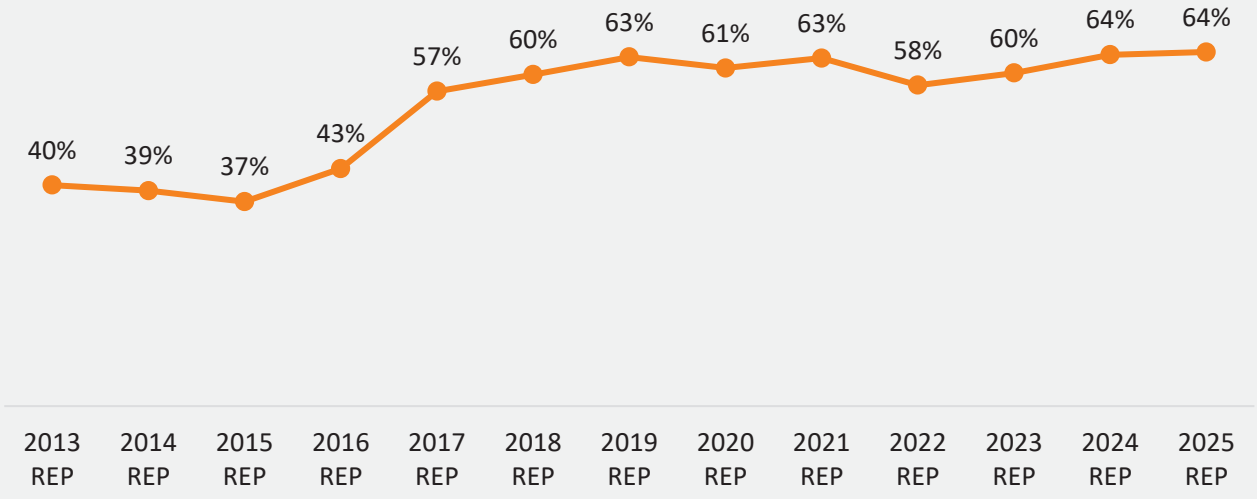
[23] Seven individuals with chronic pain had missing data for number of months they had chronic pain.

FIGURE 1.15. NUMBER OF CHRONIC HEALTH PROBLEMS AT INTAKE FOR TOTAL SAMPLE (N = 1,696)



Trend Alert: Chronic Health Problems at Intake

At intake, clients were asked if, in their lifetime, they have been told by a doctor they have any of the chronic health problems listed (e.g., diabetes, arthritis, asthma, heart disease, chronic obstructive pulmonary disease, seizures, kidney disease, cancer, hepatitis B, hepatitis C, pancreatitis, tuberculosis, severe dental problems, cirrhosis of the liver, HIV/AIDS, and other sexually transmitted infections). The percent of RCOS clients reporting at least one chronic health problem in their lifetime remained steady from the 2013 Report (40%) to the 2016 Report (37%) and has increased beginning in the 2017 report to between 57% to 64%.



The most common insurance provider reported at intake was Medicaid (69.6%; see Table 1.3), followed by Medicare (12.6%). More than 1 in 10 (11.6%) did not have any insurance. Small numbers of clients had insurance through an employer, including through a spouse, partner, or self-employment, and through the Health Exchange.

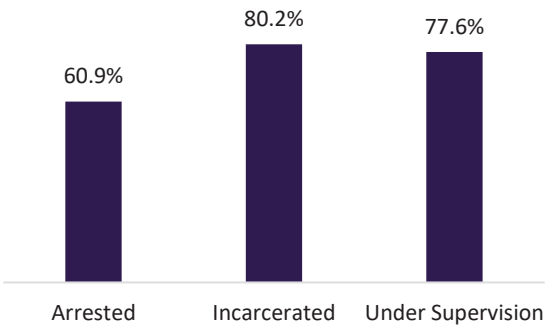
TABLE 1.3. SELF-REPORTED INSURANCE FOR ALL RCOS CLIENTS AT INTAKE (N = 1,694)[24]

No insurance	11.6%
Medicaid	69.6%
Through employer (including own or spouse's employer, parents' employer)	4.8%
Medicare	12.6%
Through Health Exchange	0.4%
Private insurance	0.5%
Could not be classified[25]	0.1%
VA/Champus/Tricare	0.8%

Criminal Legal Involvement

The majority of individuals reported they had been arrested at least once (60.9%) and 80.2% reported they had been incarcerated at least one night in the 6 months before they entered the recovery center (see Figure 1.16). Three-fourths of clients reported they were currently under criminal legal supervision (i.e., probation, parole) at intake.

FIGURE 1.16. CRIMINAL LEGAL INVOLVEMENT BEFORE ENTERING THE RECOVERY CENTER (N = 1,696)



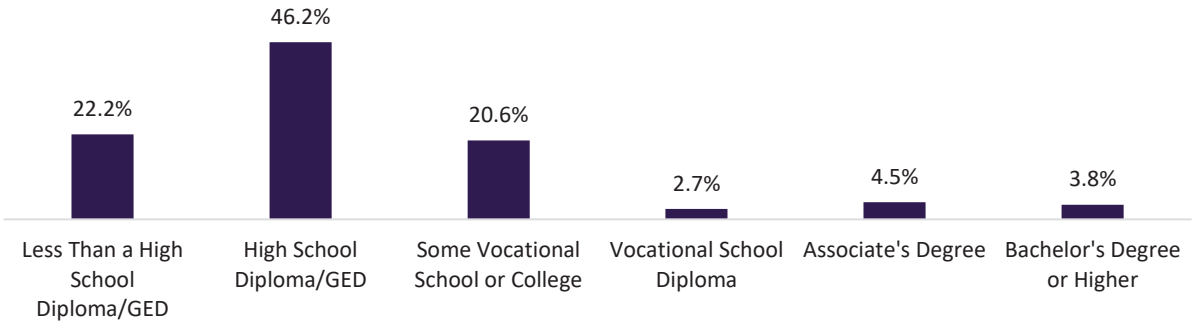
Education and Employment Status

A minority of clients (22.2%) had less than a high school diploma or GED at intake (see Figure 1.17). Less than half of clients had a high school diploma or GED as their highest level of education (46.2%), 20.6% had completed some vocational/technical school or college as their highest level of education. Small minorities of clients had completed vocational/technical school (2.7%), an associate's degree (4.5%), or a bachelor's degree or higher (3.8%).

[24] Two individuals had missing values for medical insurance.

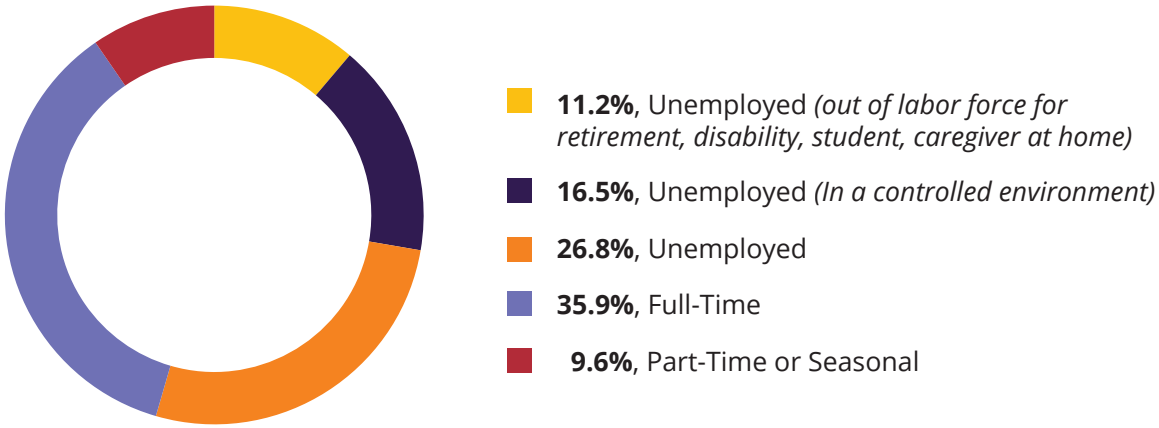
[25] One individual provided an answer that could not be classified into categories because they mentioned an insurance carrier but it was not clear the mechanism through which the client had the insurance (employer, family member, private, health exchange).

FIGURE 1.17. EDUCATION BEFORE ENTERING THE RECOVERY CENTER (N = 1,696)



More than one-third of clients (35.9%) reported their usual employment status in the 6 months before they entered the recovery center was full-time employment and 9.6% reported part-time or seasonal work (see Figure 1.18). More than one-tenth of clients (11.2%) reported they were out of the labor force because they were a full-time student, parent/homemaker, retired, or disabled. A minority were unemployed because they were in a controlled environment (16.5%) and 26.8% reported they were unemployed for some other reason (i.e., looking for work).

FIGURE 1.18. USUAL EMPLOYMENT STATUS AT INTAKE (N = 1,696)

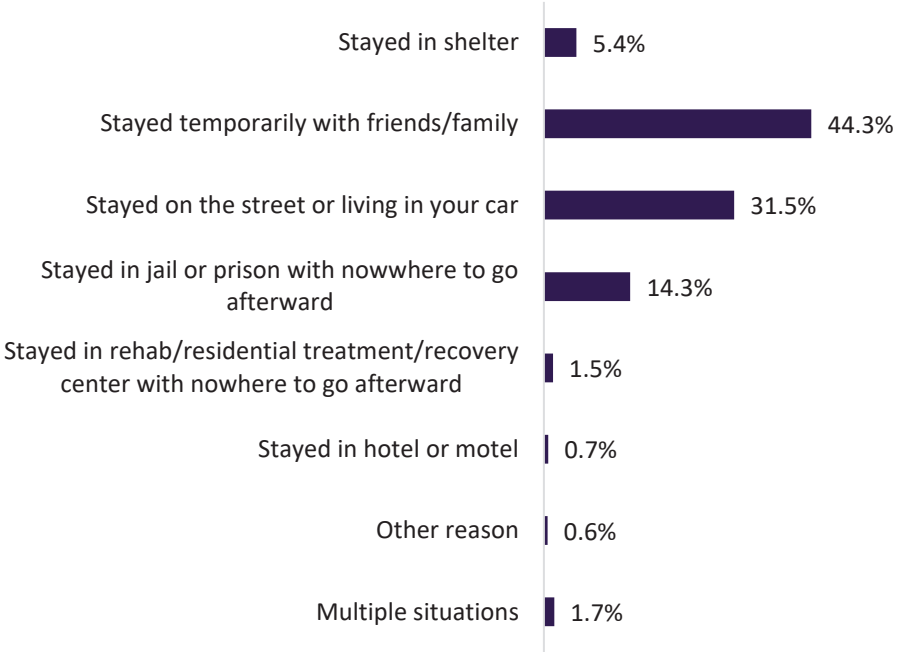


Homelessness

In the 6 months before entering the recovery center, 32.0% (n = 543) of individuals considered themselves homeless. Of those clients (n = 537)[26], 44.3% reported they were staying temporarily with friends/family, 31.5% reported they were staying on the street or living in their car, and 14.3% reported they had nowhere to go after leaving jail or prison (see Figure 1.19). Small minorities of unhoused clients reported they had stayed in a shelter (5.4%), had stayed in rehabilitation/residential treatment/recovery center with nowhere to go afterward (1.5%), or staying in a hotel or motel (0.7%), and 1.7% reported multiple situations.

[26] Five clients had missing data for why the individual considered themselves homeless at intake.

FIGURE 1.19. REASONS INDIVIDUAL CONSIDERED THEMSELVES HOMELESS AT INTAKE (N = 543)



RCOS Follow-up Sample

The following sections of this report describe outcomes for 282 men and women who completed both an intake and a follow-up interview about 12 months (average of 372.5 days) after the intake survey was completed.

Data from Kentucky Housing Corporation shows that the average length of service for the program participants included in this report was 7.6 months, which includes time in Safe Off the Streets, Motivational Tracks, Phase 1 and Phase 2. In the follow-up interview, interviewers asked individuals how many months they were in the recovery center program (not counting Phase 2); the average months clients reported they were in the recovery program through Phase 1 was 4.7, with a minimum of 1 and a maximum of 13.[27] About three-fourths of individuals (77.7%) reported at the follow-up that they had completed Phase 1 of the program. At follow-up, 3.2% (n = 9) individuals reported they were currently a client in a recovery center program.

In the follow-up interview, individuals were asked several questions about their participation in different aspects of recovery center programs. While in the program, 36.9% of clients reported they had participated in extra educational classes and 56.7% participated in volunteer projects. Over half of individuals reported they had transitioned to Phase 2 or becoming a peer mentor/assistant staff person in a Recovery Kentucky program. At follow-up, 20 individuals (7.1%) were working as assistant staff at follow-up, for an average of 5.3 months. Individuals were also asked to report the length of time

[27] Comparison of the admission date reported in the intake survey with the admission date from the HMIS data matched to the follow-up cases found that 75.5% of the cases had the exact same date. Discrepancies between the HMIS start date and the admission date in the RCOS intake survey were the following: 11.3%, 1 to 7 days difference; 2.5%, 8 to 30 days difference; and 10.6%, 31 days or more difference.

since they left Phase 1 of the program, which was an average of 8.9 months, including 25 individuals who were currently living at a recovery center facility.[28]

Detailed information about the methods can be found in Appendix A. Individuals who gave at least one mailing address and one phone number, or two phone numbers if they did not have a mailing address in their locator information, were eligible for selection into the 12-month follow-up component of the study.[29] The follow-up interviews were conducted over the telephone by an interviewer at UK CDAR with eligible individuals. Client responses to the follow-up interview were kept confidential to help facilitate an accurate and unbiased evaluation of client outcomes and satisfaction with program services. Overall, 24 completed follow-up interviews are targeted for each month. Due to the cost of the follow-up component of the study, the follow-up sample is targeted for as close to 280 follow-up interviews as possible.

This report's sample was stratified by target month (i.e., 12 months after intake is the target month for each client) and gender. Samples in the reports predating the 2020 report were stratified by target month, gender, and DOC status. The primary reason the prior years' samples were stratified by DOC status was to allow examination of whether length of service differs by DOC referral status, and whether either of these factors are related to key targeted outcomes. Analysis in past years' reports showed that DOC referral status was not associated with any of the targeted outcomes, while length of service was associated with several targeted outcomes.

See Appendix B for detailed information about clients who were followed up (n = 282) compared to clients who were not followed up (n = 1,414). The only significant differences between individuals who were followed-up and individuals who were not followed-up were gender and meeting criteria for PTSD at intake. First, a significantly higher percent of women completed a follow-up than did not, because of the stratification of the follow-up sample by gender. Second, significantly fewer followed-up clients met criteria for PTSD compared to clients who did not complete a follow-up interview. There were no significant differences in other sociodemographic, substance use, mental health, physical health, living situation, education, and employment at intake by follow-up status.

Of the 282 individuals who completed a follow-up survey, 3.2% (n = 9) reported they were a client in a recovery center at the time of the follow-up (not necessarily the same recovery center where they had their intake conducted). For those clients who were in a recovery center at the time of the follow-up, 8 clients were in Phase 2, and one client had missing data for this question.[30]

[28] Twenty-one individuals could not remember the month they left Phase 1, so these 21 cases have missing values for length of time since leaving Phase 1.

[29] 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.

[30] Two cases had missing data for this item.

About RCOS Locating Efforts

In 2014, 527 cases that were included in the follow-up sample were used to examine efforts in locating and contacting participants. In 2019, 2020, and 2021, the research team repeated these efforts to compare how locating efforts and the quality of contact information provided at the end of intake interviews have changed over time.[31]

Locator efforts

	2014 (n = 527)	2019[32] (n = 521)	2020 (n = 526)	2021 (n = 534)
Phone Calls				
Average number of outgoing calls to reach client	3.3 (0-28)	6.4 (0-32)	7.5 (0-30)	4.4 (0-24)
Average number of outgoing calls to reach any contact	2.3 (0-37)	2.6 (0-35)	1.0 (0-24)	1.3 (0-15)
Total number of outgoing calls to reach client or any contact	2,958	4,715	4,482	3,047
Average outgoing calls for each completed follow-up	10.5	16.8	15.8	10.8
Mail				
Average number of mailings sent (to client/contact/other)	1.7 (0-7)	2.5 (0-5)	3.0 (1-6)	1.9 (1-6)
Total number of mailings sent (to client/contact/other)	896	1,286	1,587	992
Average outgoing mail for each completed follow-up	3.2	4.6	5.6	3.5

[31] The number of clients included in the sample of individuals to contact to complete the follow-up surveys were the following by year: n = 527 for 2014, n = 521 for 2019, n = 526 for 2020, and n = 534 for 2021.

[32] There were 7 missing files when the extraction project was completed.

Quality of Contact Information

	2014 (n = 527)	2019 (n = 521)	2020 (n = 526)	2021 (n = 534)
First Contact Locator Number				
None listed, or number listed was already listed as the client's number	31.9%	42.0%	55.7%	53.6%
Number worked	25.4%	17.9%	6.3%	12.7%
Number worked but not successful	15.0%	17.1%	12.5%	17.6%
Number was disconnected	7.8%	5.2%	1.3%	3.0%
Number listed but never called	19.9%	17.9%	24.1%	13.1%
Second Contact Locator Number				
None listed, or number listed was already listed as the client's or first contact person's phone number	57.0%	76.2%	69.8%	64.8%
Number worked	10.6%	4.6%	3.2%	6.2%
Number worked but not successful	10.6%	5.6%	4.7%	10.5%
Number was disconnected	1.9%	2.1%	.9%	1.3%
Number listed but never called	19.8%	11.5%	21.3%	17.2%
Phone number listed but not unique to contact			12.9%	9.9%

Efforts to locate and contact potential follow-up clients increased from 2014 to 2020 for two main reasons. First, because of the increase in robo and other scam calls people are more hesitant to pick up their phones and more skeptical when they do. Second, the quality of locator information is lower in recent years making it more difficult to find correct information for clients. Comparison of the efforts interviewers put into conducting the follow-up interviews from 2014 to 2020 shows that the average number of calls had almost doubled, and the average number of mailings had almost doubled.

Characteristics of RCOS Follow-up Clients at Intake

Demographics

Table 1.4 presents demographic information on clients with an intake survey submitted in FY 2023 and a follow-up interview completed between July 2023 and June 2024. Clients' average age was 38.8 years old and women made up 52.5% of the followed-up sample. The majority of clients (88.3%) were White and 8.2% were Black. The largest percentage of RCOS follow-up clients reported they had never been married (and were not cohabiting) at intake (42.2%), 32.3% were separated or divorced, and 24.1% were married or cohabiting. The majority (54.1%) of RCOS clients had children under the age of 18. A small percentage (1.1%) reported they were currently serving in the military or a veteran.

TABLE 1.4. DEMOGRAPHICS FOR FOLLOWED-UP RCOS CLIENTS AT PHASE I INTAKE IN FY 2023 (N = 282)

Age	38.8 *(Min. = 19, Max. = 74)*
Gender	
Male	47.5%
Female	52.5%
Race	
White	88.3%
Black/African American	8.2%
Other or multiracial	3.5%
Marital status	
Never married (and not cohabiting)	42.2%
Separated or divorced	32.3%
Married or cohabiting	24.1%
Widowed	1.4%
Has children under 18 years old[33]	54.1%
Active duty or military veteran	1.1%

Self-reported Referral Source

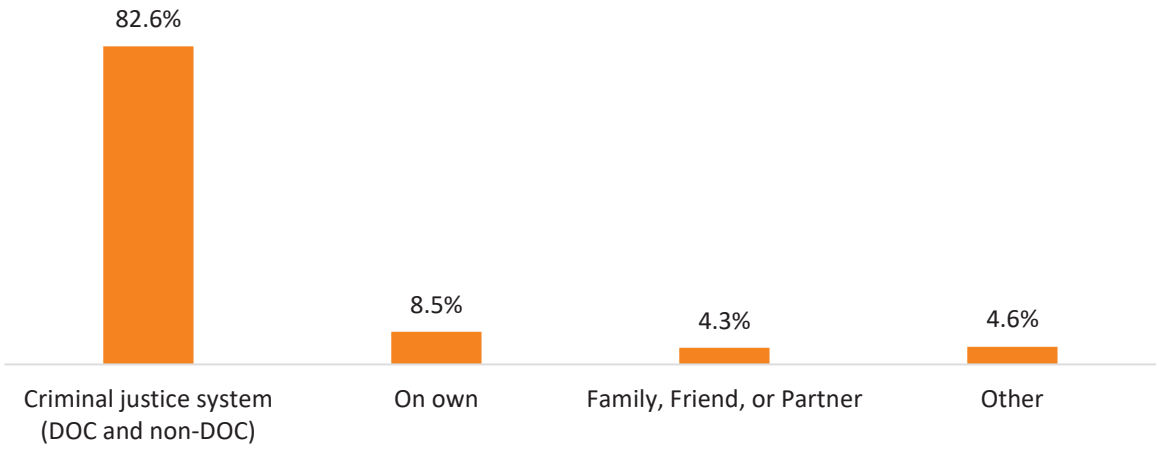
Figure 1.20 shows the self-reported referral source for RCOS clients in the follow-up sample. The majority of clients (82.6%) self-reported they were referred to the recovery center by the criminal legal system (e.g., judge, probation officer, Department of Corrections). A small minority (8.5%) reported they entered the program on their own, and 4.3% were referred to the program by a family member, friend, or partner. The remaining

[33] One individual had missing data for number of children under the age of 18.

4.6% indicated another referral source such as a treatment program or none of the other categories.

A separate question asked participants if they were ordered to the recovery program by the court or other state agency: 78.4% stated at intake that they were ordered to the program (not depicted in a figure).

FIGURE 1.20. SELF-REPORTED REFERRAL SOURCE FOR FOLLOWED-UP RCOS CLIENTS (N = 282)



Substance Use

The majority of the follow-up sample reported using illicit drugs and smoking tobacco, about half reported using vaporized nicotine, and less than half of clients reported using alcohol in the 6-month period before entering the recovery center (see Figure 1.21).[34] A similar pattern, but with smaller percentages, was found when past-30-day use was examined for clients who were not in a controlled environment all 30 days before entering the recovery center.[35]

> ***Got my GED there, started college, and now I'm working at the Recovery Center full-time.***
>
> - RCOS FOLLOW-UP CLIENT

[34] Because being in a controlled environment reduces access to alcohol and illicit drugs, individuals who were in a controlled environment the entire intake 6-month period of the study (n = 36) and 7 individuals who did not know the number of days they were in a controlled environment were not included in the analysis of substance use during that period; a total of 43 individuals were excluded from this analysis.

[35] Because being in a controlled environment reduces access to alcohol and illicit drugs, individuals who were in a controlled environment the entire intake 30-day period assessed for the study (n = 147) are not included in the analysis of substance use during that period.

FIGURE 1.21. ALCOHOL, DRUG AND TOBACCO USE 6 MONTHS AND 30 DAYS BEFORE ENTERING RECOVERY CENTER AMONG THE FOLLOW-UP SAMPLE

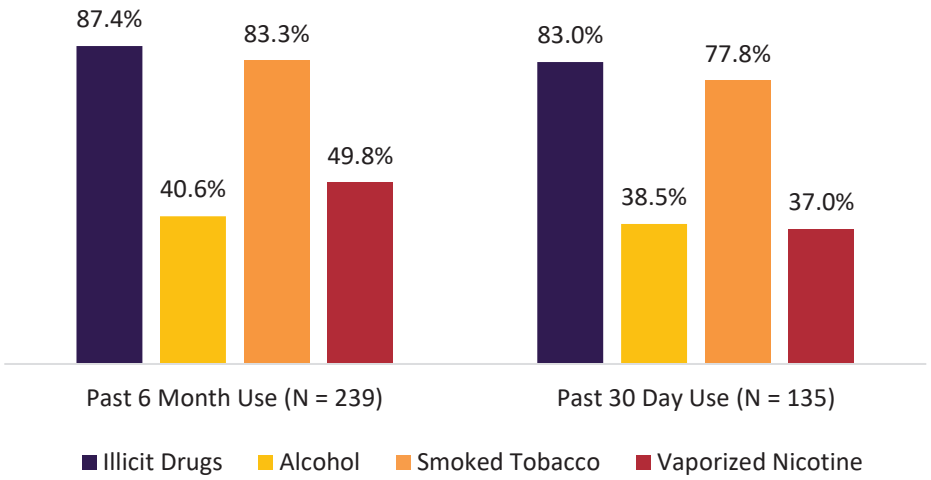


Figure 1.22 presents the percent distribution of individuals who used alcohol and/or illicit drugs in the 6 months before entering the program. Among the entire follow-up sample 46.5% reported illicit drug use solely and an additional 31.9% reported alcohol and illicit drug use. Among the individuals who were not incarcerated all 180 days before entering the program, more the half (51.0%) reported illicit drug use solely and 36.4% reported alcohol and illicit drug use.

FIGURE 1.22. PAST-6-MONTH ALCOHOL AND ILLICIT DRUG USE AT INTAKE FOR THE FOLLOW-UP SAMPLE (N = 282) AND FOR THOSE NOT INCARCERATED ALL 180 DAYS BEFORE ENTERING THE PROGRAM (N = 239)

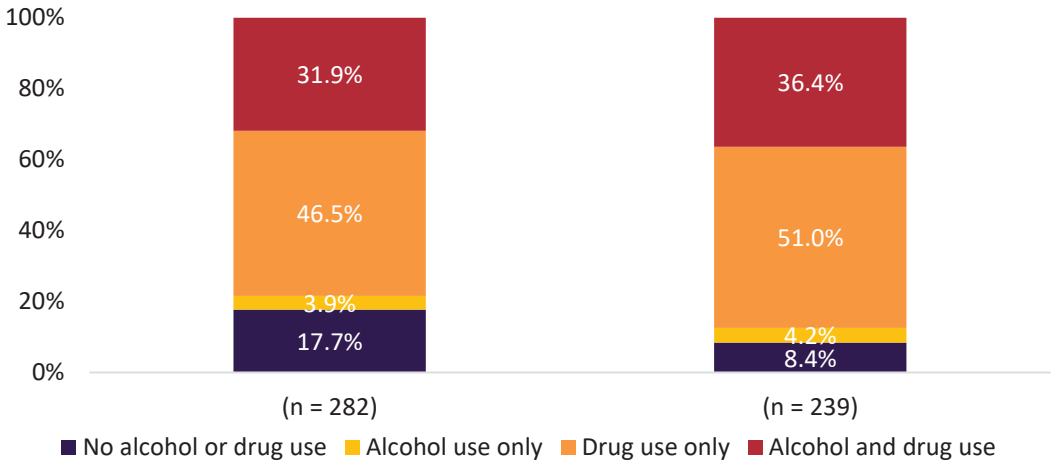
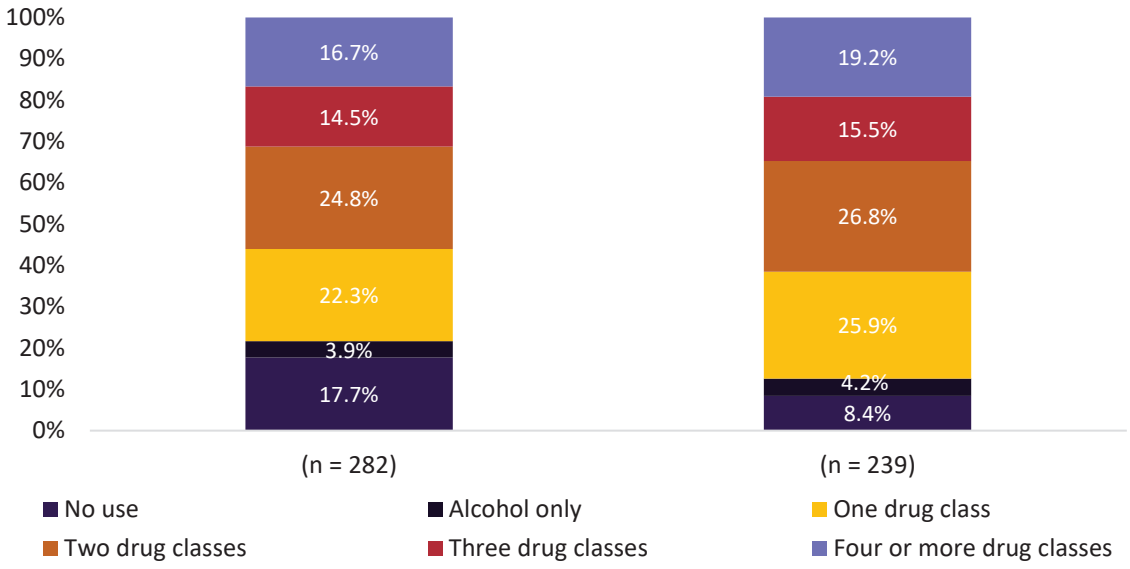


Figure 1.23 presents the percentages of RCOS followed-up participants who reported using no drugs, alcohol only, and then various numbers of drug classes from the following: (1) cannabis, (2) opioids (including prescription opioids, buprenorphine, methadone, heroin), (3) CNS depressants (such as benzodiazepines, sedatives, barbiturates), (4) stimulants (including amphetamines and cocaine), (5) hallucinogens, (6) synthetic marijuana, (7) inhalants, and (8) Tianeptine. RCOS follow-up clients are predominately polysubstance users when they enter programs. Among clients who were

not in a controlled environment 180 days before entering the program, only 38.5% of clients reported either no substance use, alcohol use only, or alcohol use with only one drug class, while more than one-third reported using 3 or more broad classes of drugs (34.7%).

FIGURE 1.23. PAST-6-MONTH POLYSUBSTANCE USE AT INTAKE FOR THE FOLLOW-UP SAMPLE (N = 282) AND FOR THOSE NOT INCARCERATED ALL 180 DAYS BEFORE ENTERING THE PROGRAM (N = 239)

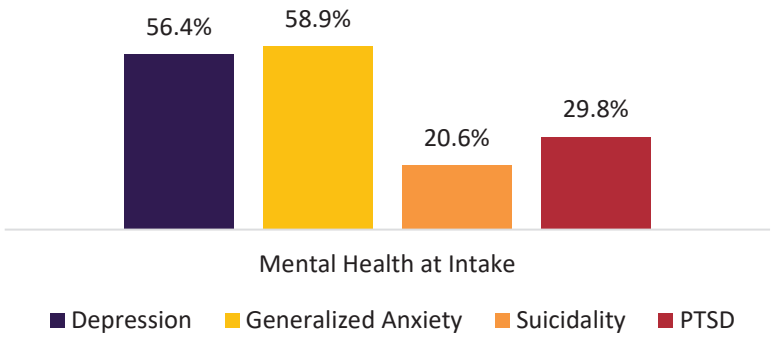


In the follow-up sample, 12.8% (n = 36) reported at follow-up that they had been in a treatment program since leaving the recovery center program. The majority of the 36 individuals (91.7%) reported they had had one treatment episode since leaving the recovery center, and the remaining 8.3% had two episodes (not depicted in a figure).

Mental Health

At intake, 56.4% of RCOS clients in the follow-up sample met study criteria for depression in the past 6 months (see Figure 1.24). The majority of followed-up clients (58.9%) met study criteria for generalized anxiety at intake. One-fifth (20.6%) reported suicidal thoughts or attempts in the 6 months before entering the recovery center, and more than one-fourth (29.8%) had PTSD scores that indicated a risk of PTSD.

FIGURE 1.24. DEPRESSION, GENERALIZED ANXIETY, SUICIDALITY, AND POST TRAUMATIC STRESS DISORDER IN THE PAST 6 MONTHS AT INTAKE FOR FOLLOWED-UP RCOS CLIENTS (N = 282)



Physical Health

At intake, clients in the follow-up sample reported an average of 8.7 days of poor physical health in the past 30 days and an average of 14.5 days of poor mental health in the past 30 days (see Table 1.5). Less than one-fourth (22.3%) of RCOS followed-up clients reported chronic pain in the 6 months before entering the recovery center. The majority of individuals in the follow-up sample (66.3%) reported they had at least one of the 15 chronic health problems listed on the intake interview. The most common medical problems were hepatitis C, arthritis, severe dental problems, sexually transmitted diseases, cardiovascular disease, asthma, and seizures.

TABLE 1.5. HEALTH-RELATED CONCERNS FOR FOLLOWED-UP RCOS CLIENTS AT INTAKE (N = 282)

Average number of poor health days in past 30 days	8.7
Average number of poor mental health days in past 30 days	14.5
Chronic pain	22.3%
At least one chronic health problem	66.3%
Hepatitis C	29.8%
Arthritis	16.7%
Severe dental problems	16.3%
Sexually transmitted infections other than HIV (e.g., chlamydia, gonorrhea, genital herpes, syphilis)	15.6%
Cardiovascular/heart disease	15.2%
Asthma	13.8%
Seizures	5.3%

Figure 1.25 shows the percent of followed-up clients who reported having different numbers of chronic health problems at intake. About one-third of followed-up clients (33.7%) reported no problems, 30.5% reported having one chronic health problem, 18.4% reported two problems, and 17.4% had three or more chronic health problems.

FIGURE 1.25. NUMBER OF CHRONIC HEALTH PROBLEMS AT INTAKE FOR FOLLOW-UP SAMPLE (N = 282)

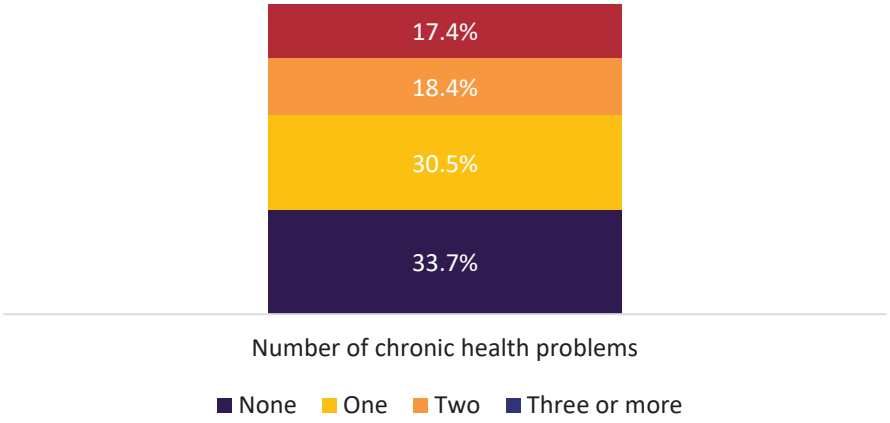


Table 1.6 shows the percent of followed-up clients who reported having different types of medical insurance at intake. At intake, three-fourths of the follow-up sample (75.9%) reported they had Medicaid, 8.5% reported they had no medical insurance, and 8.5% had Medicare. A small percent (6.0%) had medical insurance through their employer or a family member's employer.

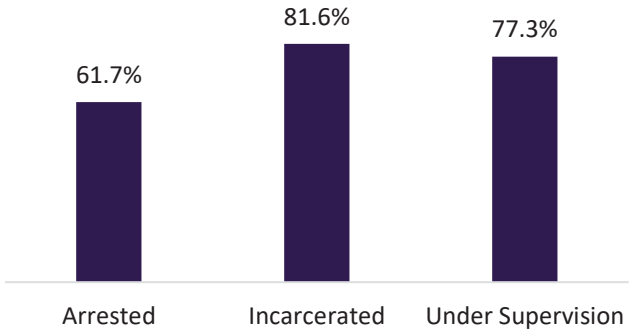
TABLE 1.6. TYPE OF MEDICAL INSURANCE AT INTAKE FOR FOLLOW-UP SAMPLE (N = 282)

No insurance	8.5%
Medicaid	75.9%
Through employer *(including own or spouse's employer, parents' employer)*	6.0%
Medicare	8.5%
VA/Champus/Tricare	0.4%
Private insurance	0.7%

Criminal Legal Involvement

The majority of followed-up individuals reported they had been arrested at least once (61.7%) and the majority reported they had been incarcerated at least one night (81.6%) in the 6 months before they entered the recovery center (see Figure 1.26). Additionally, 77.3% of clients reported they were currently under criminal legal supervision (i.e., probation, parole) at intake.

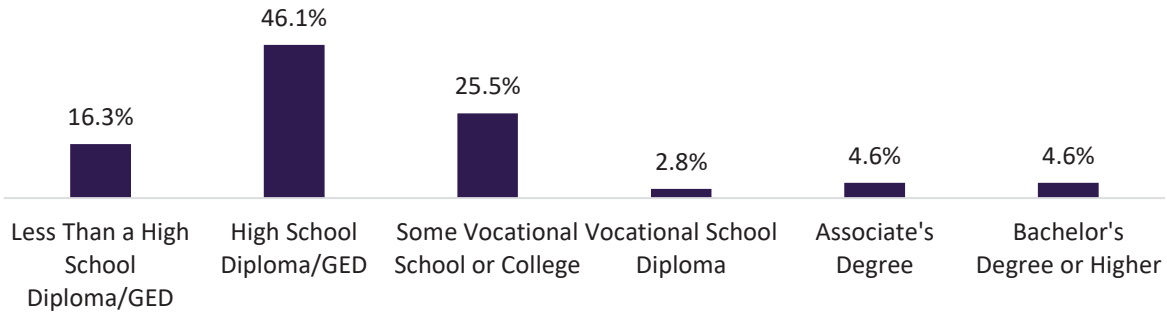
FIGURE 1.26. CRIMINAL LEGAL INVOLVEMENT BEFORE ENTERING THE RECOVERY CENTER FOR FOLLOW UP SAMPLE (N = 282)



Education and Employment Status

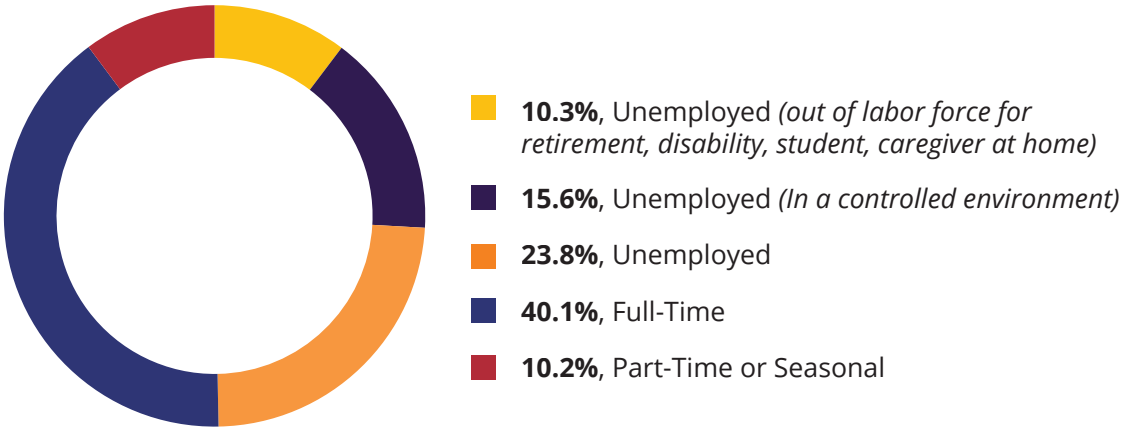
A minority of followed-up clients (16.3%) had less than a high school diploma or GED, and 46.1% had a high school diploma or GED as their highest level of education at intake (see Figure 1.27). One-fourth (25.5%) had attended some vocational/technical school or college. Only small minorities of clients had completed vocational/technical school (2.8%), an associate's degree (4.6%), or a bachelor's degree or higher (4.6%).

FIGURE 1.27. HIGHEST LEVEL OF EDUCATION COMPLETED BY FOLLOW-UP SAMPLE AT INTAKE (N = 282)



Two-fifths of followed-up clients (40.1%) reported their usual employment status in the 6 months before they entered the recovery center was full-time employment and 10.2% reported part-time or seasonal work (see Figure 1.28). A minority of clients (10.3%) reported they were unemployed because they were a full-time student, parent/homemaker, retired, or disabled. A minority of participants (15.6%) reported their usual employment status was unemployed because they were in a controlled environment and 23.8% reported they were unemployed for some other reason (i.e., looking for work).

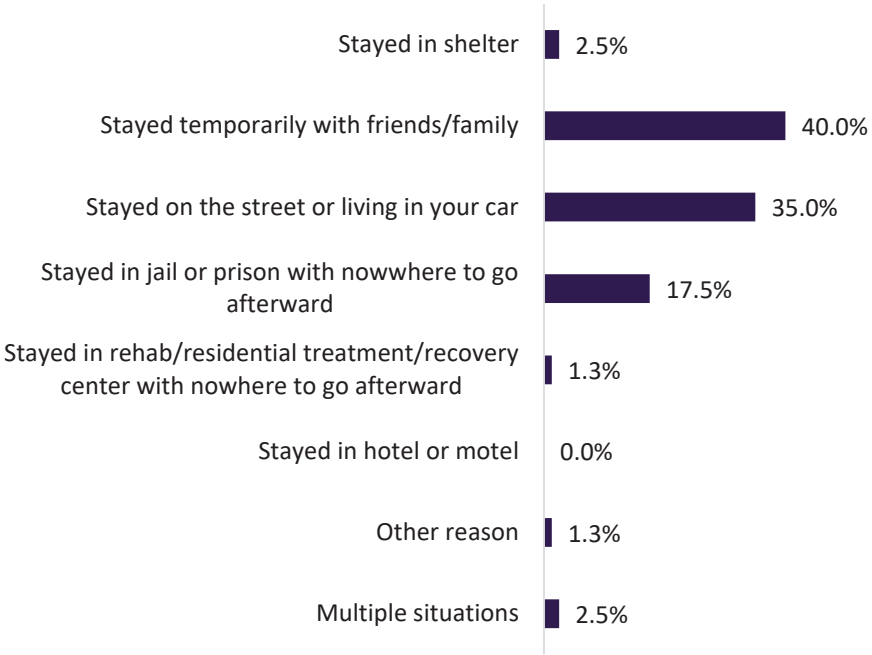
FIGURE 1.28. USUAL EMPLOYMENT STATUS FOR FOLLOW-UP SAMPLE AT INTAKE (N = 282)



Homelessness

In the 6 months before entering the recovery center, 29.1% of individuals considered themselves homeless. Of those clients (n = 82)[36], two-fifths (40.0%) reported they were staying temporarily with friends/family and 35.0% reported they were staying on the street or living in their car (see Figure 1.29). A minority of clients were staying in jail or prison with nowhere to go afterward (17.5%). Very few clients were staying in a shelter (2.5%), staying in rehabilitation/residential treatment/recovery center with nowhere to go afterward (1.3%), and described multiple kinds of situations (2.5%).

FIGURE 1.29 REASONS INDIVIDUALS CONSIDERED THEMSELVES HOMELESS FOR FOLLOW-UP SAMPLE AT INTAKE (N = 80)



[36] Two individuals had missing data for how they were homeless.

Section 2. Substance Use

This section describes intake (before entry into SOS) compared to follow-up (i.e., 6 months and 30 days before the follow-up interview) change in illicit drug, alcohol, and tobacco use.[37] Both past-6-months substance use and past 30-day substance use is examined separately for clients who were not in a controlled environment the entire period before entering a recovery program and clients who were in a controlled environment the entire period before entering the program (for the 30 day use). Results for each analysis are presented for the overall sample and then by gender if there were significant gender differences.

Section 2A examines change in the use of (1) any illicit drugs, (2) alcohol,[38] and (3) tobacco before entering the recovery center and before the follow-up for clients who were not in a controlled environment the entire period before entering the program (i.e., 6 months or 30 days).[39] Results and significant gender differences are presented for each substance group in four main subsections:

1. **Change in 6-month substance use from intake to follow-up for clients not in a controlled environment.** Comparisons of use of substances (any illicit drug use, alcohol use, and tobacco use) in the 6 months before the client entered the program and use of substances during the 6-month follow-up period are presented (n = 238). Appendix C provides change over time on specific substances for men and women.

2. **Average number of months individuals used substances.** For those who used the substances, the number of months they used the substance before program entry and during the follow-up period are analyzed.

3. **Change in 30-day substance use from intake to follow-up for clients not in a controlled environment.**[40] Comparisons of any use in the 30 days before program entry and the 30 days before the follow-up interview for any illicit drugs, alcohol, and tobacco for clients who were not in a controlled environment all 30 days before entering the recovery center (n = 133) are presented.

4. **Change in self-reported severity of substance use disorder from intake to follow-up.** There are two indices of substance use severity presented in this report. One way to examine overall change in degree of severity of substance use is to ask

[37] If the client progresses through the phases of the Recovery Kentucky Program in a typical manner, the follow-up interview should occur about 6 months after they are discharged from Phase I. However, because clients progress through phases at their own pace and many factors can affect when they are discharged from Phase 1, the follow-up timing varies by client. For example, some individuals may not complete Phase 1 and may be discharged before the approximate 6 months it should take to complete Phase 1.

[38] Alcohol use was asked three main ways: (1) how many months/days did you drink any alcohol (alcohol use), (2) how many months/days did you drink alcohol to intoxication (alcohol to intoxication), and (3) how many months/days did you have 5 or more (4 if female) alcoholic drinks in a period of about 2 hours (i.e., binge drinking).

[39] McNemar's test was used for significance testing of substance use; Chi-square test of independence was used to test for significant differences for gender at intake and then at follow-up.

[40] Forty-four individuals were not included in the analysis of change in substance use from the 6 months before entering the recovery center to the 6 months before follow-up because they reported being incarcerated the entire period measured at intake (n = 36), or they did had missing data on the number of days incarcerated in the 6 months before entering the program (n = 7), or they were incarcerated the entire 6-month period before the follow-up (n = 1).

participants to self-report whether they met the 11 criteria included in the DSM-5 for diagnosing substance use disorder in the past 6 months. Under DSM-5 anyone meeting any two of the 11 criteria during the same 6-month period would receive a diagnosis of substance use disorder (SUD) if their symptoms were causing clinically significant impairments in functioning. The severity of the substance use disorder in this report (i.e., none, mild, moderate, or severe) is based on the number of criteria met. The percent of individuals in each of the four categories at intake and follow-up is presented.[41]

The Addiction Severity Index (ASI) composite scores are examined for change over time among individuals who reported any illicit drug use (n = 110), among individuals who reported using any alcohol (n = 54) and those who reported both alcohol and/or illicit drug use (n = 120). 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.

Section 2B presents results for each substance group in two main subsections for clients who were in a controlled environment all 30 days before entering the program:

1. **Change in 30-day substance use from intake to follow-up for clients who were in a controlled environment all 30 days before entering the recovery center.** Comparisons of any use in the 30 days before program entry and the 30 days before the follow-up interview for any illicit drugs, alcohol, and tobacco for clients who were in a controlled environment all 30 days before entering the recovery center or follow-up (n = 149) are presented.

2. **Change in self-reported severity of substance use disorder for clients who were in a controlled environment all 30 days before entering the recovery center.** ASI alcohol and drug severity composite scores are examined for change over time for clients who reported alcohol use in the past 30 days (n = 25) and for clients who reported drug use in the past 30 days (n = 74) at intake and/or follow-up.

2a. Substance Use for Clients Who Were Not in a Controlled Environment

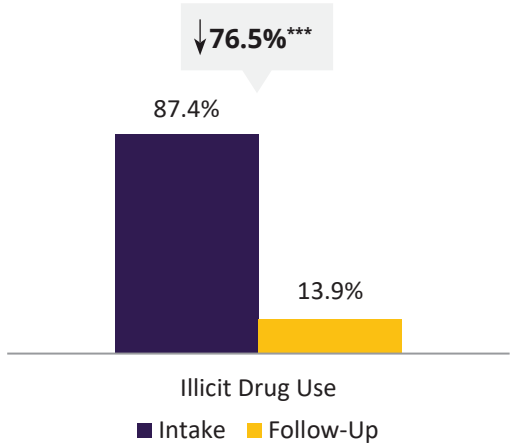
Any Illicit Drug Use

[41] Because many individuals enter the Recovery Kentucky program after leaving jail or prison, substance use in the 30 days before entering the program was examined separately for individuals who were in a controlled environment all 30 days (n = 149) from individuals who were not in a controlled environment all 30 days (n = 133). The assumption for this divided analysis is that being in a controlled environment inhibits opportunities for alcohol and drug use. A total of 147 individuals were in a controlled environment all 30 days before entering the program, and 2 additional individuals were in a controlled environment all 30 days before follow-up.

Past-6-month Illicit Drug Use

At intake, 87.4% of clients reported using any illicit drugs (including prescription drug misuse and other illicit drugs) in the 6 months before entering the recovery center. At follow-up, 13.9% of clients reported using illicit drugs in the 6 months before follow-up (a significant decrease of 73.5%; see Figure 2A.1).

FIGURE 2A.1 ANY ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP (N = 238)



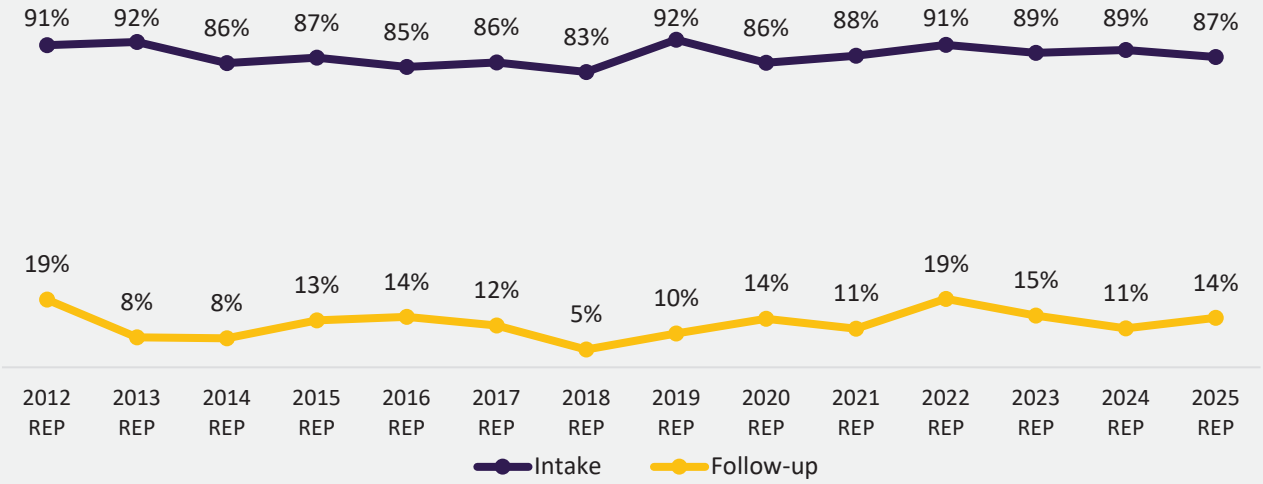
***p < .001.

At intake, clients were asked how old they were when they first used any illicit drug. RCOS follow-up clients, on average, reported they were 16.3 years old when they first used an illicit drug.[a]

a—Eleven clients had missing data for this question.

Trends in Past-6-month Illicit Drug Use

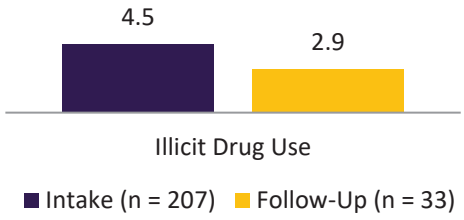
The number of RCOS clients reporting illicit drug use in the 6 months before intake has been consistently high. Each year, the percent of clients reporting illicit drug use was significantly lower at follow-up than at intake.



Average Number of Months Used Any Illicit Drugs

Among clients who reported illicit drug use in the 6 months before entering the program (n = 207)[42], they reported using drugs an average of 4.5 months (see Figure 2A.2). Among individuals who reported using illicit drugs at follow-up (n = 33), they reported using an average of 2.9 months.

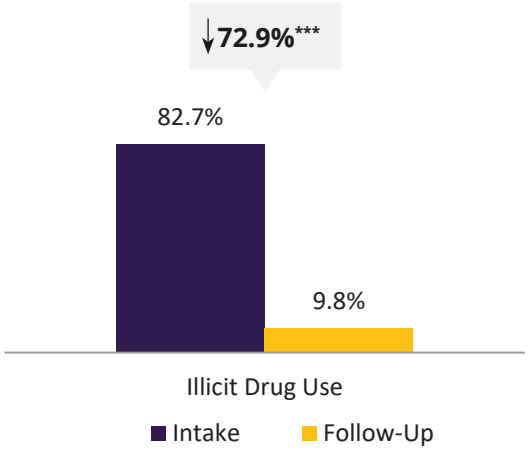
FIGURE 2A.2. AMONG CLIENTS WHO USED ANY ILLICIT DRUGS, THE AVERAGE NUMBER OF MONTHS INDIVIDUALS USED ILLICIT DRUGS



Past-30-day Illicit Drug Use

Around four-fifths of individuals (82.7%) who were not in a controlled environment all 30 days reported they had used illicit drugs (including prescription misuse and other illicit drugs) in the 30 days before entering the recovery center (see Figure 2A.3). At follow-up, only 9.8% of individuals reported they had used illicit drugs in the past 30 days—a significant decrease by 72.9%.

FIGURE 2A.3. PAST 30-DAY USE OF ANY ILLICIT DRUG USE AT INTAKE TO FOLLOW-UP (n = 133)



***p < .001.

[42] One individual had missing data for the maximum number of months they used illicit drugs in the 6 months before entering the program.

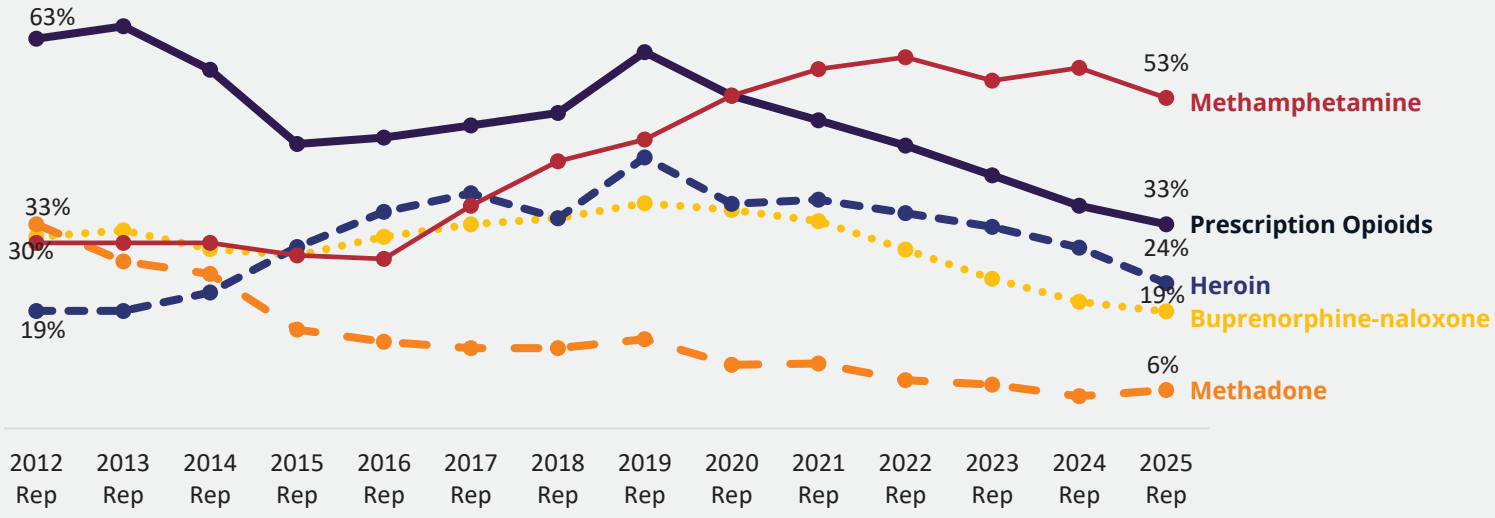
Trend Alert: How Much Has Opioid and Methamphetamine Use Changed Over Time?

This trend analysis examines the percent of RCOS clients who reported misusing prescription opiates/opioids, non-prescribed methadone, non-prescribed buprenorphine-naloxone (bup-nx), heroin, and methamphetamine in the 6 months before entering the program from FY 2010 to FY 2022. This analysis examined data among the RCOS clients who completed an intake interview each fiscal year. Individuals who were incarcerated all 6 months before entering the program are excluded from this analysis.

As the figure shows, about two-thirds of clients reported misusing prescription opioids in the 2013 report. A significant decline in the percent of clients reporting opioid misuse began in the 2014 report (58%) and continued through 2017 report (49%). This number began to slightly rise again in the 2018 report (51%) and continued until the 2019 report (61%). By the 2025 report, the percent of individuals who reported illicit use of prescription opioids decreased to 33%.

The number of clients reporting non-prescribed bup-nx has fluctuated from a high of 36% in the 2019 report to a low of 19% in the 2025 report. The percent of individuals reporting non-prescribed methadone use has steadily decreased from the 2012 report (33%) to this year's report (6%). Heroin use, however, increased from 19% in the 2012 report to a high of 44% in the 2019 report, before beginning a decline to 24% in this year's report. The percent of clients reporting methamphetamine use began increasing in the 2017 report, with the highest percentage in the 2022 report (60%).

In the 2021 report a higher percentage of RCOS clients reported they had used methamphetamine in the past 6 months (58%) than had used prescription opioids, which was the first year this had happened in the RCOS sample. This has continued through the 2025 report, with 53% of clients reporting methamphetamine use in the past 6 months in FY 2023 compared to 33% of clients reporting prescription opioid use.



Alcohol

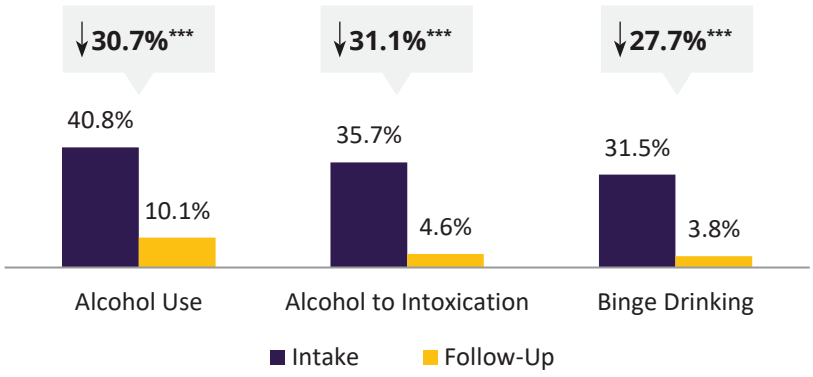
Past-6-month Alcohol Use

Alcohol use was asked three main ways: (1) how many months/days did you drink any alcohol (i.e., alcohol use), (2) how many months/days did you drink alcohol to intoxication (i.e., alcohol to intoxication), and (3) how many months/days did you have 5 or more (4 or more if female) alcoholic drinks in a period of about 2 hours (i.e., binge drinking).

> At intake, clients were asked how old they were when they had their first alcoholic drink (other than a few sips). RCOS follow-up clients, on average, reported they were 14.1 years old when they began drinking.[a]
>
> a—Seven clients reported never using alcohol so they are not included

About two-fifths of clients (40.8%) reported using alcohol in the 6 months before entering the recovery center, which decreased significantly to 10.1% of clients reported alcohol use in the 6 months before follow-up. There was a 30.7% decrease in the number of individuals reporting alcohol use (see Figure 2A.4). There were significant reductions in the percentage of clients who reported using alcohol to intoxication and binge drinking from intake to follow-up: 31.1% decrease for alcohol use to intoxication, and 27.7% reduction for binge drinking.

FIGURE 2A.4. PAST-6-MONTH ALCOHOL USE AT INTAKE AND FOLLOW-UP (N = 238)

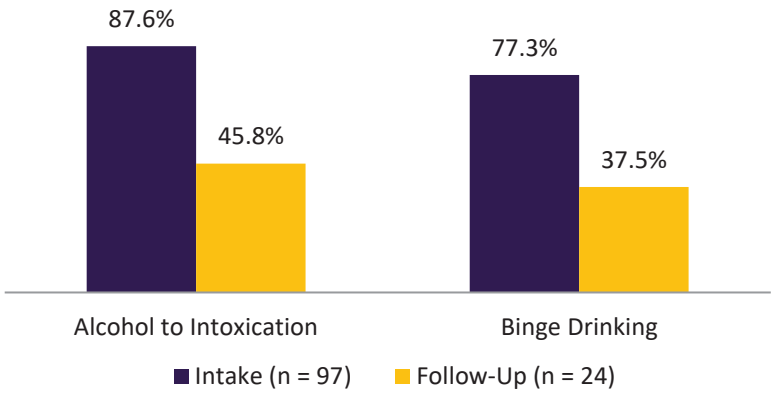


***p < .001.

Past-6-month Alcohol Intoxication and Binge Drinking Among Those Who Used Alcohol

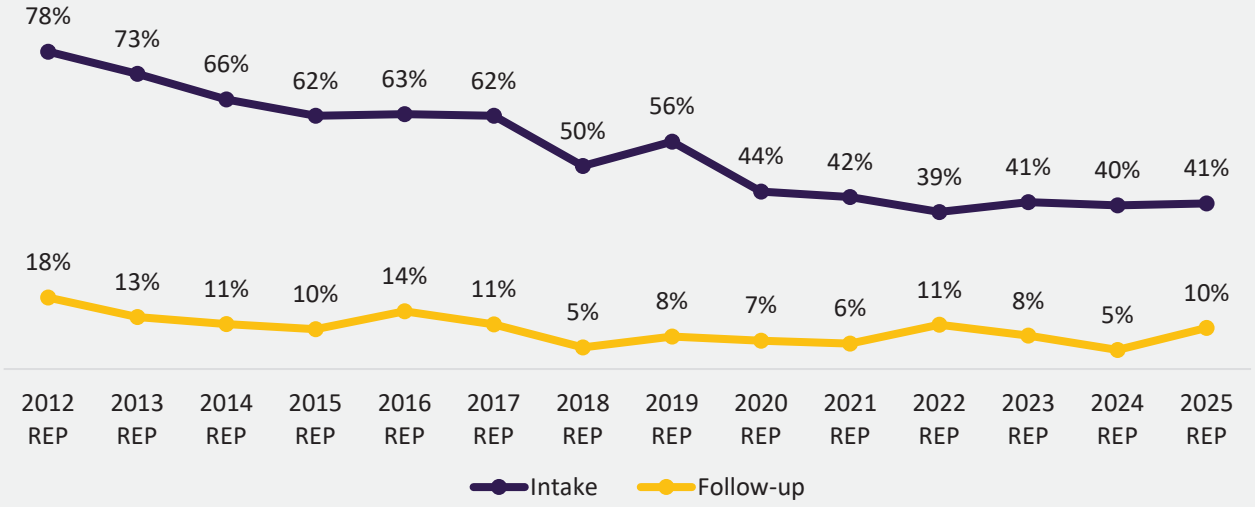
Of the individuals who used alcohol in the 6 months before entering the recovery center (n = 97), 87.6% used alcohol to intoxication and 77.3% binge drank alcohol (see Figure 2A.5). Of the individuals who used alcohol in the 6 months before follow-up (n = 24), only 45.8% of clients reported alcohol use to intoxication and 37.5% reported binge drinking.

FIGURE 2A.5. PAST-6-MONTH ALCOHOL USE TO INTOXICATION AND BINGE DRINKING AT INTAKE TO FOLLOW-UP, AMONG THOSE REPORTING ALCOHOL USE AT EACH POINT



Trends in Alcohol Use

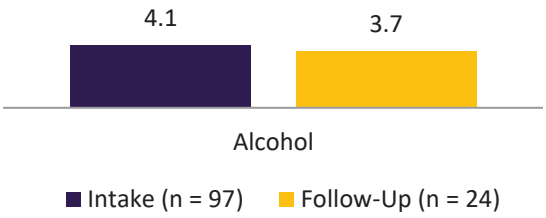
The percent of RCOS clients reporting alcohol use in the 6 months before intake was high but has decreased over time, with the lowest percentage in the 2022 report (39%). Each year the percent of clients reporting alcohol use has decreased significantly from intake to follow-up. In this year's report, 10% of individuals reported past-6-month alcohol use at follow-up.



Average Number of Months Used Alcohol

Figure 2A.6 shows the number of months of alcohol use for those who reported using any alcohol in the 6 months before intake and any alcohol in the 6 months before follow-up. Among the individuals who reported using alcohol in the 6 months before entering the program (n = 97), they used an average of 4.1 months. Among individuals who reported using alcohol at follow-up (n = 24), they used an average of 3.7 months.

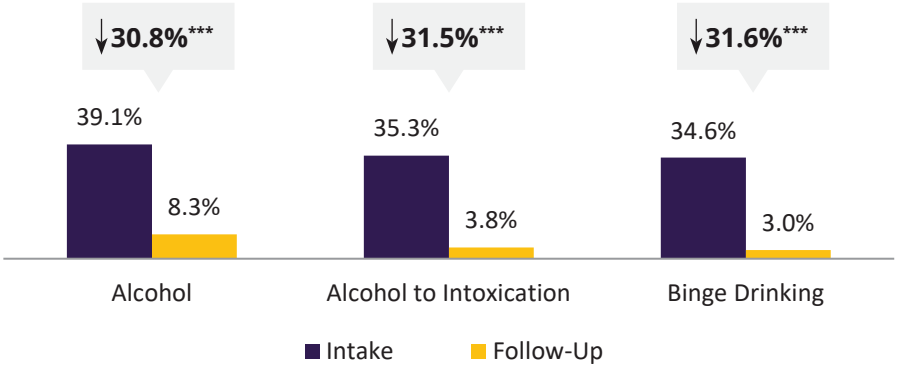
FIGURE 2A.6. AVERAGE NUMBER OF MONTHS OF ALCOHOL USE



Past-30-day Alcohol Use

There was a decrease of 30.8% in the number of individuals who reported using alcohol in the past 30 days from intake (39.1%) to follow-up (8.3%; see Figure 2A.7). Decreases in the number of individuals who reported using alcohol to intoxication (by 31.5%) and binge drinking (by 31.6%) were also significant for the follow-up sample.

FIGURE 2A.7. PAST-30-DAY ALCOHOL USE FROM INTAKE TO FOLLOW-UP (N = 133)



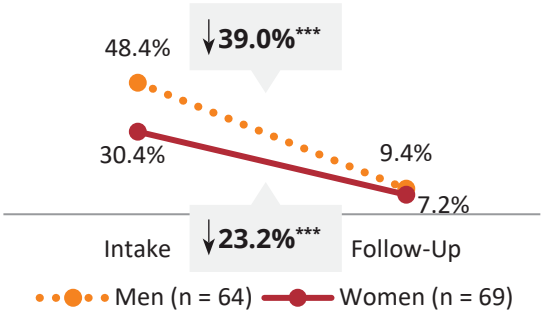
***p < .001.

Gender Differences in Past-30-day Alcohol Use

Significantly more men reported using alcohol in the 30 days before enter the program than women. At follow-up, there was no difference between men and women (see Figure 2A.8). The decreases in the percent of men and women reporting smoking tobacco from intake to follow-up were statistically significant.

> ***I'm in my second semester of college now, a peer mentor, and have a separate job after previously dying 12 times and overdosing over 40 times. This place gave me a life and hope. Behavioral modification was amazing. [The program] is different from anywhere I've ever been. Every staff is a recovered addict.***
>
> - RCOS FOLLOW-UP CLIENT

FIGURE 2A.8. GENDER DIFFERENCES IN PAST-30-DAY ALCOHOL USE AT INTAKE AND FOLLOW-UP

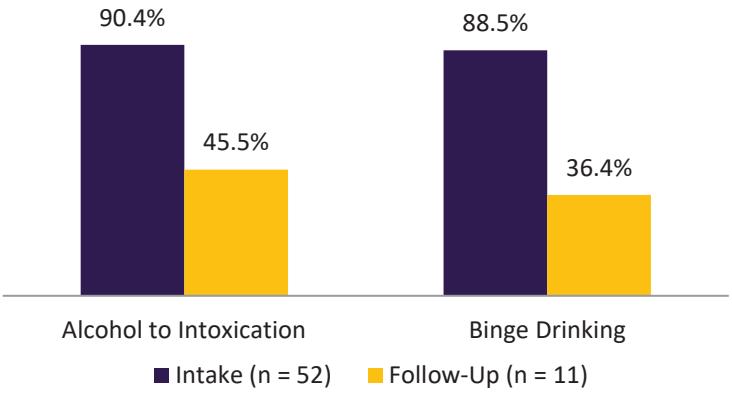


a – Significant difference by gender at intake; $p < .05$.
***$p < .001$.

Alcohol Intoxication and Binge Drinking Among Those Who Used Alcohol in the Past 30 Days

Among the 52 individuals who used alcohol in the 30 days before entering the recovery center, 90.4% used alcohol to intoxication and 88.5% binge drank alcohol in the 30 days before entering the program (see Figure 2A.9). Among the 11 individuals who reported using alcohol in the 30 days before follow-up, 45.5% reported alcohol use to intoxication and 36.4% reported binge drinking.[43]

FIGURE 2A.9. PAST-30-DAY ALCOHOL 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

DSM-5 Criteria for Substance Use Disorder, Past 6 Months

One way to examine the overall change in the degree of severity of substance use is to ask participants to self-report whether they meet any of the 11 symptoms included in the

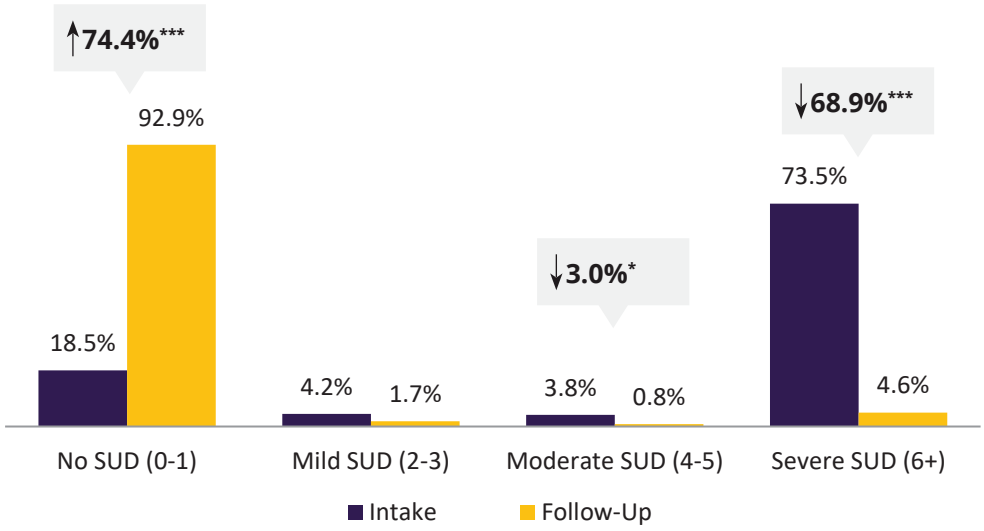
[43] It was not possible to conduct a chi square test to examine difference in the percent of men and women who used alcohol to intoxication and binge drank in the 30 days before follow-up among those who used alcohol because of the small number of individuals who reported using alcohol in the 30 days before follow-up (n = 6).

DSM-5 criteria for diagnosing substance use disorder (SUD) in the past 6 months.[44] The DSM-5 substance use disorder diagnosis has four levels of severity which were used to classify severity groups in this study: (1) no SUD (1 or no criteria met), (2) mild SUD (2 or 3 criteria met), (3) moderate SUD (4 or 5 criteria met), and (4) severe disorder (6 or more criteria met). Client self-reports of DSM-5 criteria suggest but do not diagnose a substance use disorder.

> The percent of individuals who met the criteria for severe SUD decreased significantly from intake to follow-up.

Change in the severity of SUD in the prior 6 months was examined for clients at intake and follow-up. Figure 2A.10 displays the change in the percent of individuals in each SUD severity classification, based on self-reported criteria in the preceding 6 months.[45] At intake, only 18.5% met the criteria for no substance use disorder (meaning they reported 0 or 1 DSM-5 criteria); in contrast, at follow-up, the vast majority (92.9%) met the criteria for no SUD, a significant increase of 74.4%. At the other extreme of the continuum, 73.5% of individuals met the criteria for severe SUD at intake. In contrast, at follow-up, only 4.6% met the criteria for severe SUD, a significant decrease of 68.9%. Also, the percentage of clients who met the criteria for moderate SUD decreased significantly.

FIGURE 2A.10. DSM-5 SUD SEVERITY AT INTAKE AND FOLLOW-UP (N = 238)[a]



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$).
***$p < .001$.

[44] The DSM-5 diagnostic criteria for substance use disorders included in the RCOS intake and follow-up interviews are similar to the criteria for DSM-IV, which has evidence of excellent test-retest reliability and validity. However, the DSM-5 eliminates the distinction between substance abuse and dependence, substituting severity ranking instead. In addition, the DSM-5 no longer includes the criterion about legal problems arising from substance use but adds a new criterion about craving and compulsion to use.

[45] Individuals who were in a controlled environment the entire 6-month period before intake or follow-up or had missing data for those variables (n = 44) were excluded from this analysis. Thus, this analysis includes data from 238 individuals.

Addiction Severity Index (ASI), Past 30 Days

Another way to examine overall change in degree of severity of substance use disorder is to use the Addiction Severity Index (ASI) composite scores 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:

- 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 troubled or bothered they are by their alcohol (or drug) use, and
- how important the recovery program is to them (see sidebar).

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

Figure 2A.11 displays the change in average scores.[46] Among individuals who reported using any alcohol, the average alcohol composite score decreased significantly from 0.63 at intake to 0.15 at follow-up. Among individuals who reported any illicit drug use in the 30-day periods, the average drug composite score significantly decreased from 0.31 at intake to 0.07 at follow-up.

> The average ASI alcohol and drug composite scores decreased significantly from intake to follow-up.

[46] In addition to the 149 individuals who were excluded because they were in a controlled environment all 30 days before intake or follow-up, the following numbers of cases were not included in the analysis of change in the composite score: 78 individuals reported abstaining from alcohol at intake and follow-up, 22 individuals reported abstaining from drugs at intake and follow-up, 1 individual who had missing data for the alcohol composite score, and 1 individual who had missing data for the drug composite score.

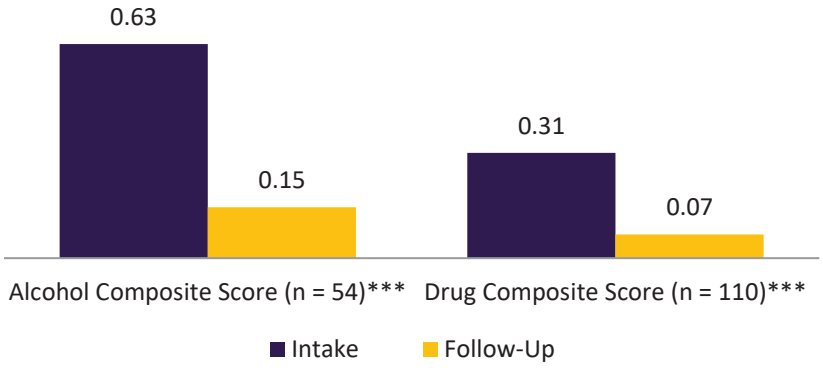
ASI Alcohol and Drug Composite Scores and Substance Use Disorders

Rikoon et al. (2006) conducted two studies to determine the relationship between the ASI composite scores for alcohol and drug use and DSM-IV substance dependence diagnoses. They identified alcohol and drug use composite score cutoffs that had 85% sensitivity and 80% specificity with regard to identifying DSM-IV substance dependence diagnoses: .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 percent 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. 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, where we would have previously referred to them as meeting the threshold for dependence. Change from intake to follow-up in the severity rating as the same clinical relevance as moving from dependence to abuse in the older criteria.

Rikoon, S., Cacciola, J., Carise, D., Alterman, A., McLellan, A. (2006). Predicting DSM-IV dependence diagnoses from Addiction Severity Index composite scores. *Journal of Substance Abuse Treatment, 3*1(1), 17–24.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

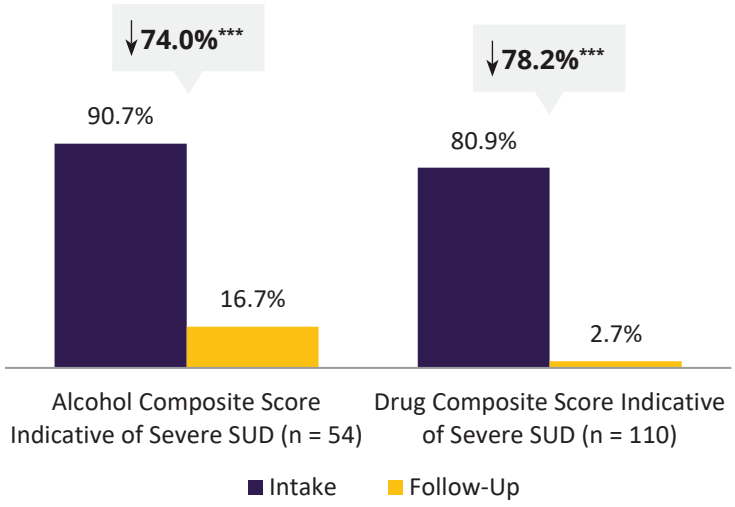
FIGURE 2A.11. AVERAGE ASI ALCOHOL AND DRUG COMPOSITE SCORES AT INTAKE AND FOLLOW-UP AMONG INDIVIDUALS WHO USED ALCOHOL AND DRUGS AT EITHER PERIOD



***p < .001

The percent 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 2A.12). At intake, the majority of individuals who used the substances had alcohol and drug composite scores that met the cutoff for severe SUD (90.7% and 80.9% respectively). At follow-up, the percentages of individuals with alcohol and drug composite scores that met the cutoff for severe SUD were significantly lower. Only 16.7% of individuals had an alcohol composite score that met the cutoff for severe SUD at follow-up and only 2.7% had a drug composite score that met the cutoff for severe SUD at follow-up.

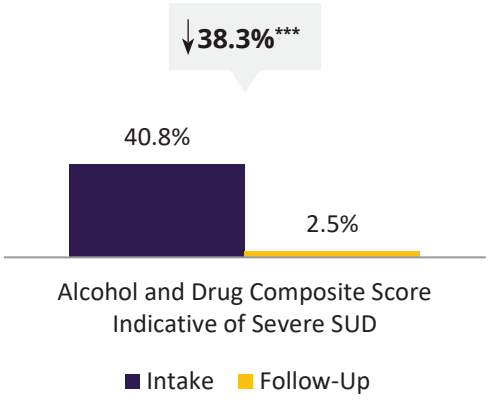
FIGURE 2A.12. INDIVIDUALS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR SEVERE SUBSTANCE USE DISORDER AT INTAKE AND FOLLOW-UP



***p < .001.

Among individuals who used alcohol and/or drugs in the 30 days before intake (n = 120), 40.8% had alcohol and drug composite scores that met the cutoff for both severe alcohol use disorder and drug use disorder (see Figure 2A.13). The percent of clients who had composite scores that met the cutoff for severe SUD for both alcohol and drugs decreased significantly to 2.5% at follow-up.

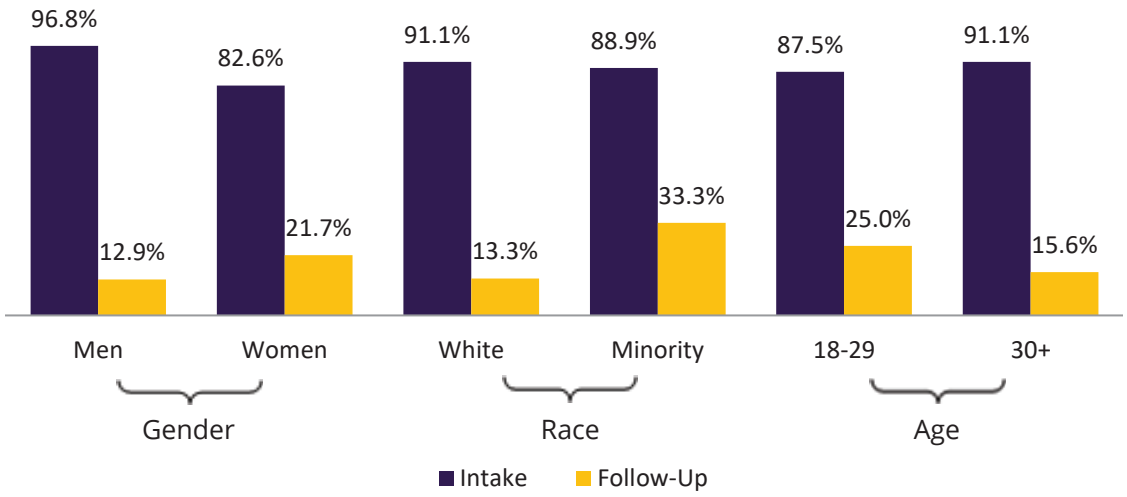
FIGURE 2A.13. INDIVIDUALS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR SEVERE ALCOHOL AND DRUG USE DISORDERS AT INTAKE AND FOLLOW-UP (n = 120)[47]



***p < .001.

Analysis was also conducted to examine differences between individuals who had an alcohol composite score meeting the cutoff for severe SUD at intake and follow-up by gender, race/ethnicity, or age (see Figure 2A.14). There were no significant differences by gender, race, or age group at intake or follow-up.

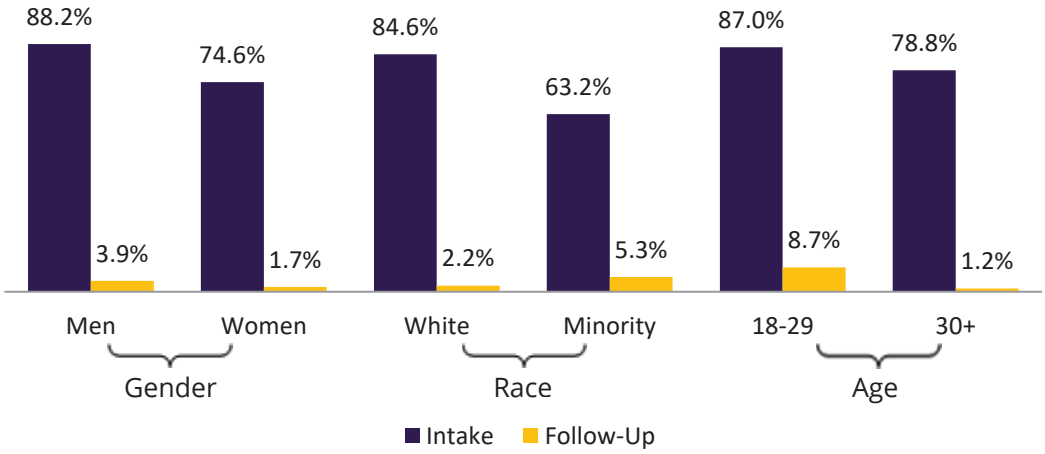
FIGURE 2A.14. ALCOHOL-USING INDIVIDUALS WITH AN ALCOHOL COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 54)



Analysis was also conducted to examine whether individuals who had a drug composite score indicative of severe SUD at intake and follow-up differed by gender, race/ethnicity, or age (see Figure 2A.15). There were no differences at intake or follow-up by gender or age group; however, significantly more white individuals had a drug composite score indicative of severe drug use disorder at intake compared to minority individuals (84.6% vs. 63.2%).

[47] Among the 133 individuals who were not in a controlled environment all 30 days before intake or follow-up, 13 were excluded from this analysis because they did not report using alcohol or drugs in the 30 days before intake or follow-up.

FIGURE 2A.15. DRUG-USING INDIVIDUALS WITH A DRUG COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 110)

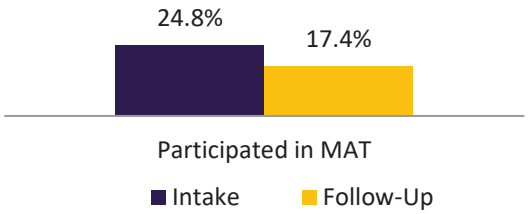


a—Statistically significant difference by race at intake ($p < .05$).

Medication-assisted Treatment

About two-fifths of clients reported that they had ever in their lifetime received medication-assisted treatment (MAT). About one-fourth of clients (24.8%) reported at intake that they had participated in medication-assisted treatment in the previous 6 months, with no significant change from intake to follow-up (see Figure 2A.16).

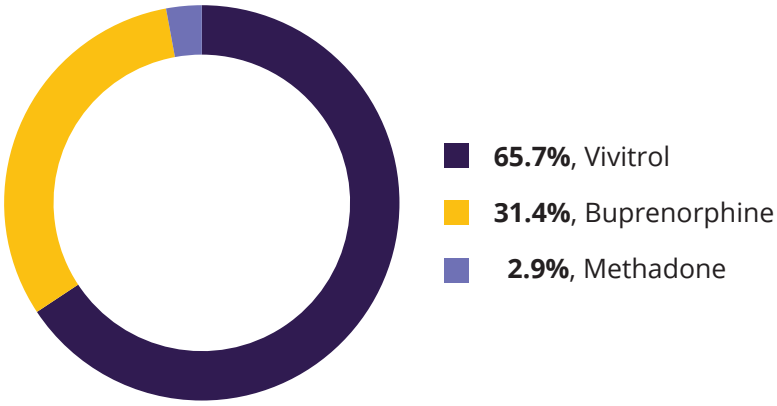
FIGURE 2A.16. PARTICIPATED IN ANY MEDICATION-ASSISTED TREATMENT IN THE 6 MONTHS BEFORE INTAKE AND FOLLOW-UP (n = 282)



Of the 70 clients who reported participating in any medication-assisted treatment in the 6 months before intake, they reported using the medication for an average of 3.0 months of the 6 months and 10.8 days in the past 30 days (not depicted in a figure).

Figure 2A.17 shows the percentage of clients who reported using the following medications as their most recent medication in the 6 months entering the recovery program: Vivitrol (65.7%), buprenorphine (31.4%), and methadone (2.9%).

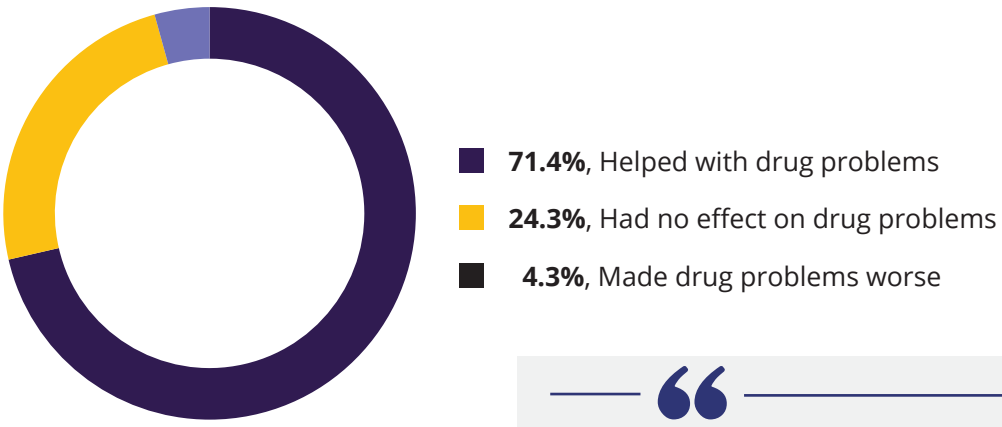
FIGURE 2A.17. MEDICATIONS TAKEN IN MEDICATION-ASSISTED TREATMENT IN THE 6 MONTHS BEFORE ENTERING THE RECOVERY CENTER (n = 70)



Among the 70 individuals who had participated in MAT in the 6 months before entering the recovery center, nearly half had obtained the medication from a doctor in a general medical practice. About one-third (34.3%) reported the medication was prescribed by a doctor in a specialty clinic, and one-fifth (20.0%) reported the medication was dispensed in a clinic (not depicted in a figure).

Among the 70 individuals who reported they had participated in MAT in the 6 months before entering the recovery center, the majority reported the prescribed medication helped them with their drug problems (71.4%), followed by 24.3% who reported the medication did not affect their drug problem, and 4.3% who reported the medication made their drug problems worse (see Figure 2A.18).

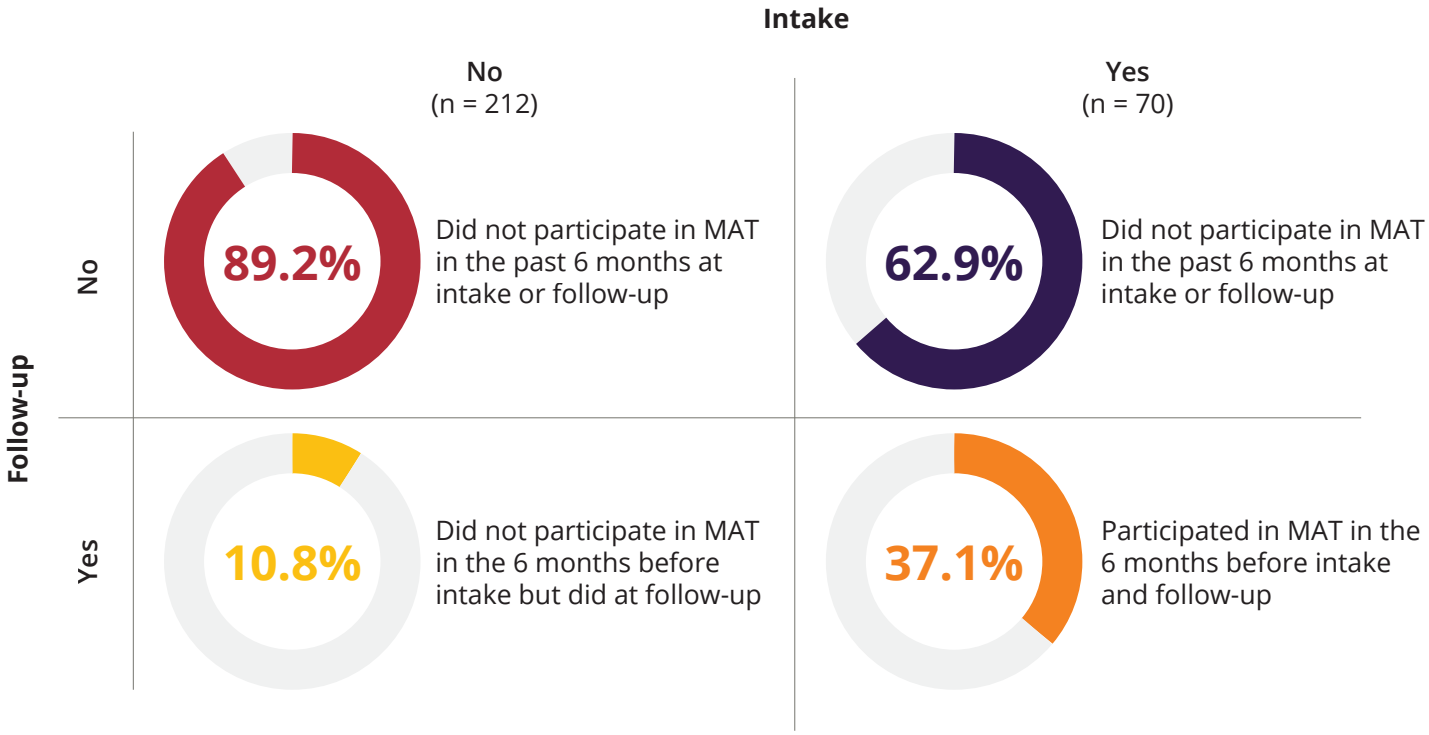
FIGURE 2A.18. CLIENTS' PERCEPTION OF HOW HELPFUL THE PRESCRIBED (n = 70)



> ***When I came in I was still drinking and lazy. The program has you work and be responsible for things. They told us about the symptoms of alcoholism and how to not fall back into drinking again.***
>
> - RCOS FOLLOW-UP CLIENT

Of the 70 clients who reported participating in MAT in the 6 months before intake, most of them (62.9%, n = 44) reported not having participated in MAT in the 6 months before follow-up (see Figure 2A.19).

FIGURE 2A.19. PARTICIPATION IN MEDICATION-ASSISTED TREATMENT AT FOLLOW-UP BY PARTICIPATION AT INTAKE



Tobacco Use

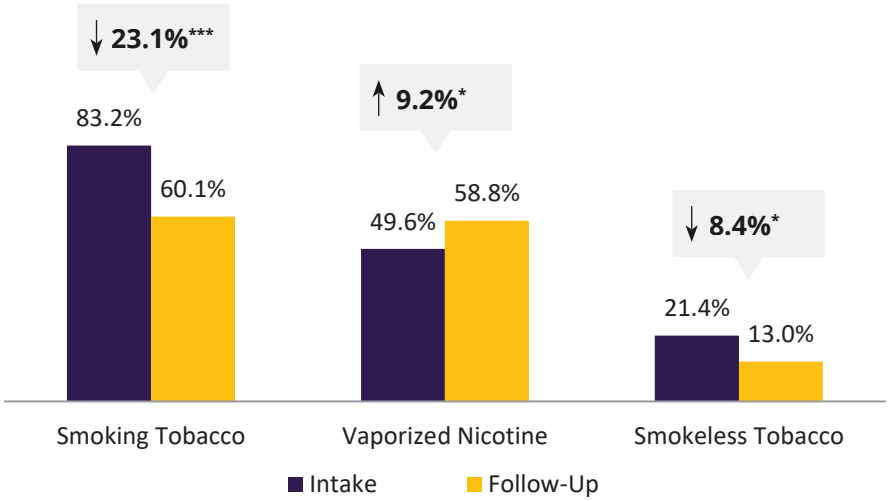
Past-6-month Smoking, Vaporized Nicotine, and Smokeless Tobacco Use

There were significant decreases in the percentage of individuals reporting smoking tobacco and using smokeless tobacco from intake to follow-up (see Figure 2A.20). Most individuals reported smoking tobacco in the 6 months before entering the recovery center (83.2%) and in the 6 months before follow-up (60.1%). The percent of individuals reporting the use of vaporized nicotine (e.g., battery-powered nicotine delivery devices that vaporize a liquid mixture consisting of propylene glycol, glycerin, flavorings, nicotine, and other chemicals) was nearly one-half at intake (49.6%) and more than half at follow-up (58.8%), with a significant increase. The percentage of individuals who reported using smokeless tobacco decreased significantly from intake (21.4%) to follow-up (13.0%).

At intake, clients were asked how old they were when they began smoking regularly (on a daily basis). RCOS follow-up clients reported, on average, that they began smoking regularly at 16.5 years old.[a]

a—Twenty-seven clients reported they had never smoked regularly

FIGURE 2A.20. PAST-6-MONTH SMOKING TOBACCO, VAPORIZED NICOTINE, AND SMOKELESS TOBACCO USE AT INTAKE AND FOLLOW-UP (N = 238)

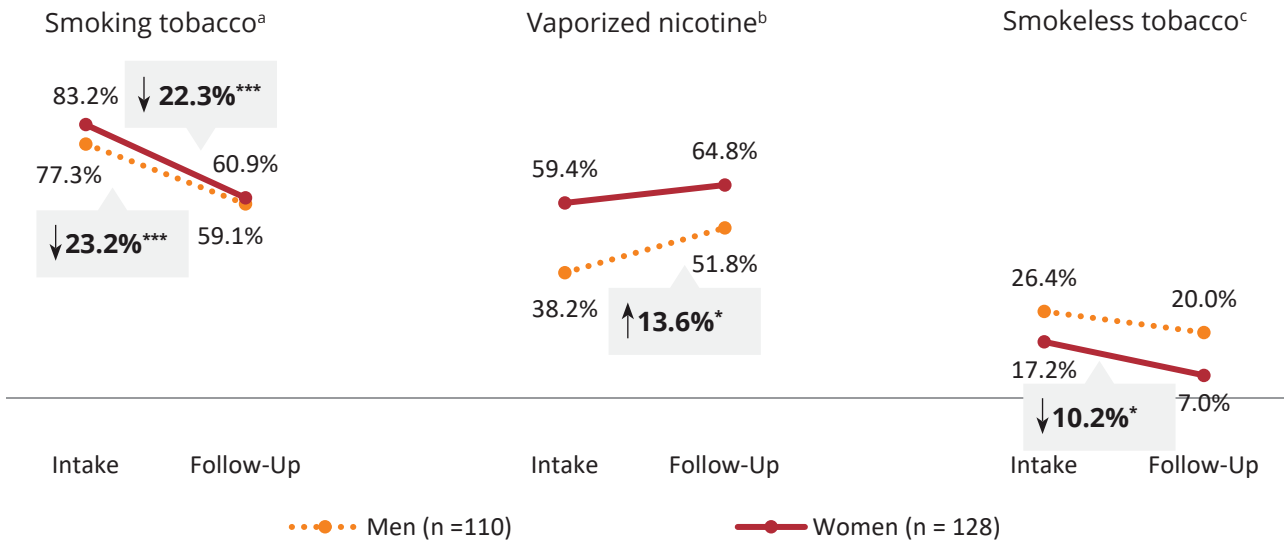


*p < .05, ***p<.001.

Gender Differences in Past-6-month Use of Vaporized Nicotine and Smokeless Tobacco

At intake, significantly more women reported smoking tobacco compared to men (see Figure 2A.21). Significantly fewer men and women reported smoking tobacco at follow-up compared to at intake. At intake and follow-up, significantly more women than men reported using vaporized nicotine products. The increase in the percentage of men reporting vaporized nicotine use was statistically significant. Significantly more men reported using smokeless tobacco at follow-up compared to women. The decrease from intake to follow-up in the percentage of women reporting using smokeless tobacco was statistically significant.

FIGURE 2A.21. GENDER DIFFERENCES IN PAST-6-MONTH USE OF VAPORIZED NICOTINE AND SMOKELESS TOBACCO USE AT INTAKE AND FOLLOW-UP

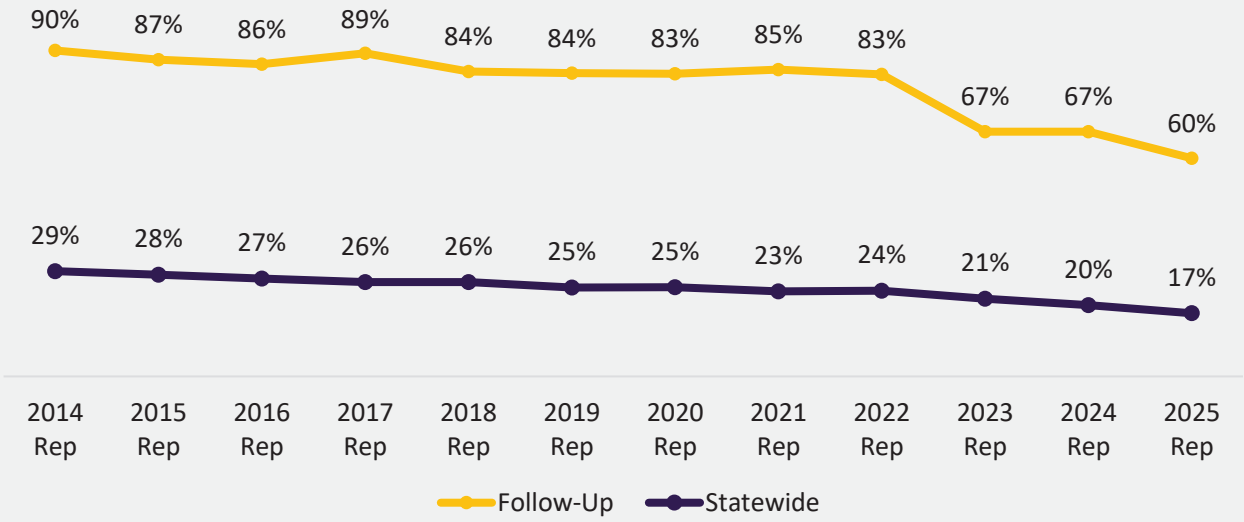


a—Significant difference by gender at intake (p < .05).
b—Significant difference by gender at intake (p < .001) and follow-up (p < .05).
c—Significant difference by gender at follow-up (p < .01).
*p < .05, ***p < .001

Trend Alert: Past-6-month Smoking Tobacco at Follow-up

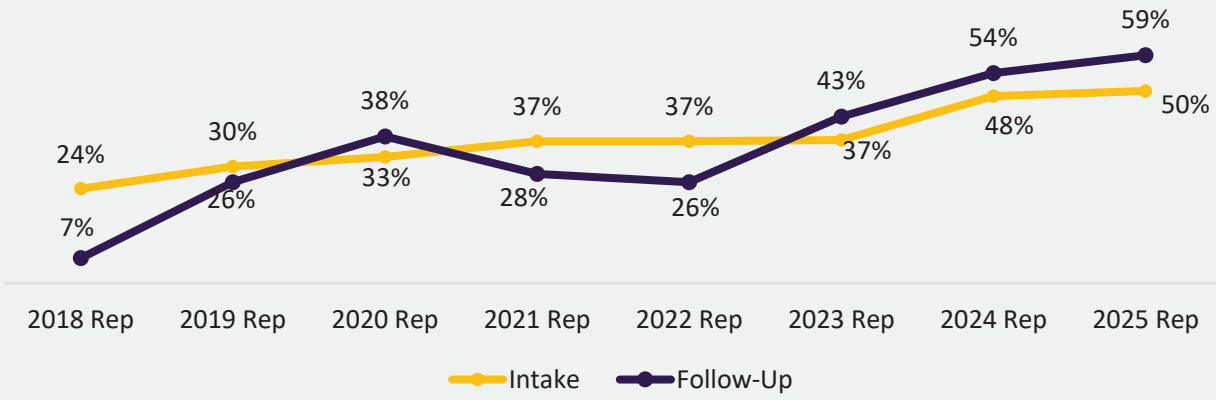
Smoking rates for RCOS clients consistently remain high in the 6 months before follow-up from the 2014 report to the 2022 report. In the 2014 report, 90% of clients reported smoking at follow-up. Beginning in the 2023 report, the percentage of RCOS participants who reported smoking tobacco fell to 67%, and then 60% in this year's report.

When compared to a statewide sample, over three times more RCOS clients report smoking at follow-up.[48]



Trend Alert: Past-6-month Vaporized Nicotine at Intake and Follow-up

Use of vaporized nicotine in the 6 months before entering the recovery center has increased from 24% in the 2018 report to 50% in the 2025 report, among individuals who were not in a controlled environment all 6 months. In the 2018 and 2022 reports, the decrease in vaporized nicotine use from intake to follow-up was statistically significant. However, in the 2019 through 2020 reports and in the 2023 and 2024 reports there was no significant change from intake to follow-up in the percent of individuals reporting use of vaporized nicotine products. In this year's report the increase in percentage of RCOS participants who reported using vaporized nicotine products at follow-up was statistically significant.

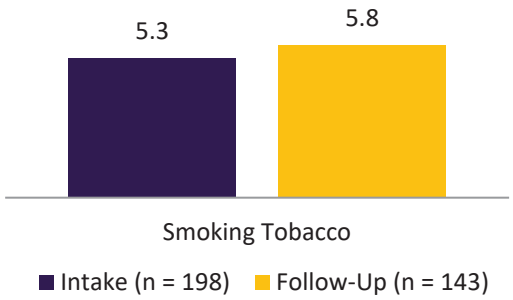


[48] https://www.americashealthrankings.org/learn/reports/2023-annual-report/state-summaries-kentucky

Average Number of Months Smoked Tobacco

Figure 2A.22 shows, among smokers, the average number of months clients reported smoking tobacco at intake and follow-up. Among the individuals who reported smoking tobacco in the 6 months before entering the program (n = 198), they reported smoking tobacco, on average, 5.3 months. Among individuals who reported smoking tobacco at follow-up (n = 143), they reported using, on average, 5.8 months of the 6-month period.

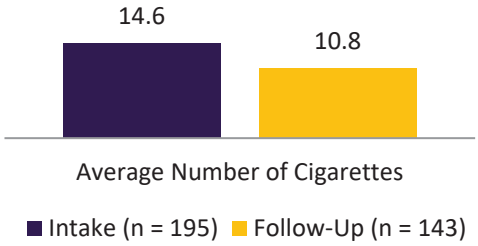
FIGURE 2A.22. AVERAGE NUMBER OF MONTHS TOBACCO USE



Average Number of Cigarettes Smoked Per Day

Figure 2A.23 shows, among individuals who smoked tobacco, the average number of cigarettes smoked per day: 14.6 cigarettes per day at intake (n = 195)[49] and 10.8 cigarettes per day at follow-up (n = 143).

FIGURE 2A.23. AVERAGE NUMBER OF CIGARETTES SMOKED PER DAY

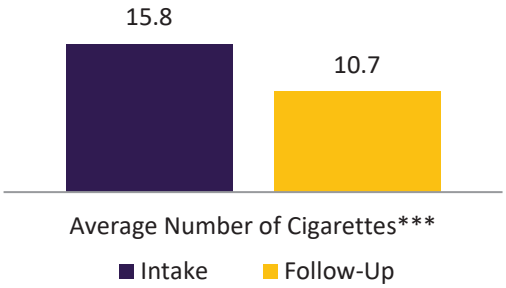


Among the individuals who reported smoking tobacco in the 6 months both before intake and the 6 months before follow-up (n = 133)[50], the average number of cigarettes they smoked per day decreased significantly from 15.8 at intake to 10.7 at follow-up (see Figure 2A.24).

[49] Two individuals smoked tobacco products other than cigarettes and one individual had missing data for the number of cigarettes smoked per day.

[50] 135 individuals reported smoking at both intake and follow-up; however, two had missing data for the number of cigarettes smoked per day at intake.

FIGURE 2A.24. AMONG INDIVIDUALS WHO SMOKED CIGARETTES AT INTAKE AND FOLLOW UP (N = 133),[51] THE AVERAGE NUMBER OF CIGARETTES SMOKED PER DAY[a]

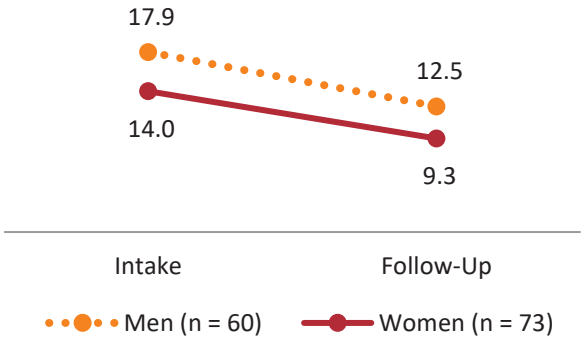


a--Paired sample t-test was conducted; the decrease in mean number of cigarettes smoked was statistically significant at $p < .001$.
***$p < .001$

Gender Differences in Average Number of Cigarettes Smoked Per Day

Among individuals who reported smoking cigarettes at intake and follow-up, men reported smoking a higher average number of cigarettes at intake and follow-up compared to women (see Figure 2A.25).

FIGURE 2A.25. GENDER DIFFERENCES IN THE AVERAGE NUMBER OF CIGARETTES SMOKED PER DAY AMONG INDIVIDUALS WHO SMOKED CIGARETTES AT INTAKE AND FOLLOW UP (N = 133)[52a]



a—Independent samples t-test was conducted; the mean number of cigarettes smoked per day was statistically significantly higher for men at intake and follow-up ($p < .05$).
b—The decreases in mean number of cigarettes smoked per day were statistically lower at follow-up for men and women.

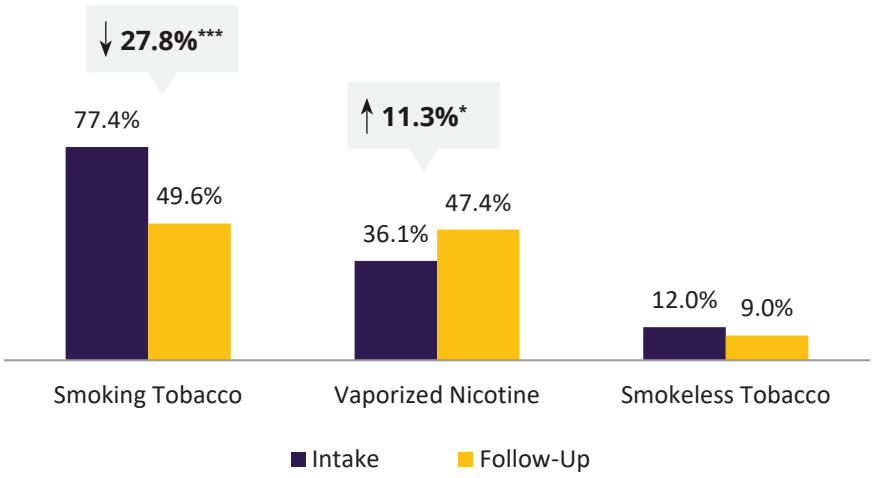
[51] 135 individuals reported smoking tobacco in the 6 months before intake and follow-up, however, two had a missing value for number of cigarettes smoked at intake.

[52] 135 individuals reported smoking tobacco in the 6 months before intake and follow-up, however, two had a missing value for number of cigarettes smoked at intake.

Past-30-day Use Smoking, Vaporized Nicotine, and Smokeless Tobacco Use

Among the individuals who were not in a controlled environment all 30 days before entering the program, the majority reported smoking tobacco in the 30 days before entering the recovery center (77.4%), with a significant decrease of 27.8% to half of participants reporting smoking tobacco in the 30 days before follow-up (49.6%; see Figure 2A.26). The number of individuals who reported using vaporized nicotine products in the 30 days before follow-up was significantly higher than the percent at intake. A smaller percentage of individuals reported smokeless tobacco use in the 30 days before entering the program, with no significant change at follow-up.

FIGURE 2A.26. PAST-30-DAY SMOKING, VAPORIZED NICOTINE, AND SMOKELESS TOBACCO USE AT INTAKE AND FOLLOW-UP (N = 133)

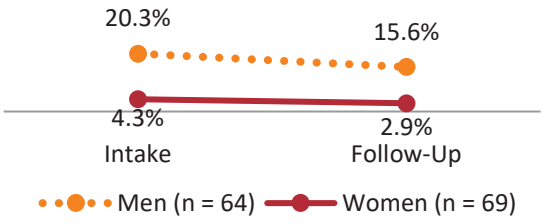


*p < .05, ***p < .001.

Gender Differences in Past-30-day Smokeless Tobacco Use

Significantly more men reported use of smokeless tobacco in the 30 days before entering the program and follow-up compared to women (see Figure 2A.27). There was no significant change in the percentage of men and women who reported smokeless tobacco use from intake to follow-up.

FIGURE 2A.27. GENDER DIFFERENCES IN PAST-30-DAY USE OF SMOKELESS TOBACCO AT INTAKE AND FOLLOW-UP



a – Significant difference by gender at intake (p < .01) and follow-up (p < .05).

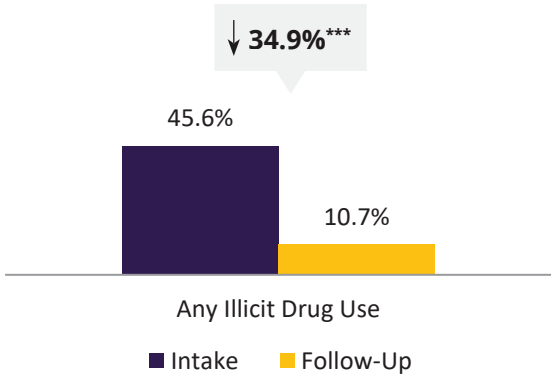
2b. Substance Use for Clients Who Were in a Controlled Environment

Changes in drug, alcohol, and tobacco use from intake to follow-up were analyzed separately for individuals who were in a controlled environment (e.g., prison, jail, other drug-free residential facility) all 30 days before entering the recovery center (n = 147) or all 30 days before the follow-up survey (n = 2) because being in a controlled environment reduces opportunities for alcohol and drug use.

Past-30 Day-use of Any Illicit Drugs

Of the individuals who were in a controlled environment all 30 days before intake or follow-up (n = 149), 45.6% reported they used illicit drugs (including cannabis, cocaine, heroin, methadone, hallucinogens, barbiturates, inhalants, synthetic marijuana, and non-prescribed use of prescription opiates, sedatives, and amphetamines) in the 30 days before they entered the recovery center (see Figure 2B.1). In the 30 days before follow-up, 10.7% of clients reported illicit drug use, which is a significant decrease of 34.9%.

FIGURE 2B.1. PAST-30-DAY ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP FOR CLIENTS IN A CONTROLLED ENVIRONMENT (n = 149)



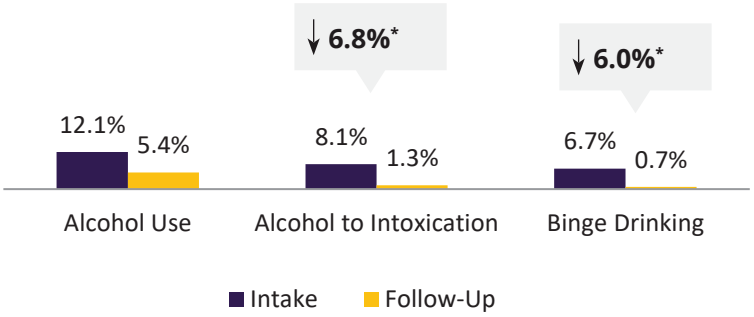
***p < .001.

Past-30-day Alcohol Use

As expected, given their confinement to a controlled environment in the 30 days before entering the recovery center, only a minority (12.1%) of individuals reported they had used alcohol in those 30 days (see Figure 2B.2). There was a significant decrease from intake to follow-up in the percent of individuals who reported using alcohol to intoxication and binge drinking.

> *I have been in and out of treatment centers for a couple years, but the [this program] was different and gave me tools to work against my addiction and other areas of my life.*
>
> - RCOS FOLLOW-UP CLIENT

FIGURE 2B.2. PAST-30-DAY ALCOHOL USE AT INTAKE AND FOLLOW-UP FOR CLIENTS IN A CONTROLLED ENVIRONMENT (N = 149)

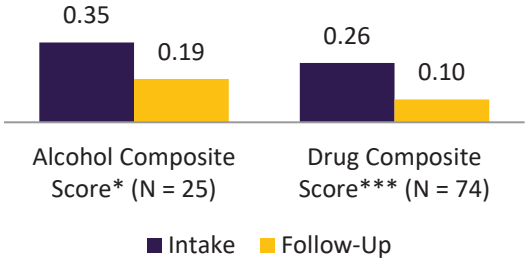


*p < .05.

Self-reported Severity of Alcohol and Drug Use Among Clients Who Were in a Controlled Environment

Among the individuals who were in a controlled environment all 30 days before entering the program and who did not report abstaining from the substance (alcohol, drugs) at intake and follow-up, the average composite scores for alcohol use and drug use decreased significantly from intake to follow-up (see Figure 2B.3).

FIGURE 2B.3. AVERAGE ALCOHOL ASI ALCOHOL AND DRUG COMPOSITE SCORES AT INTAKE AND FOLLOW-UP[53]



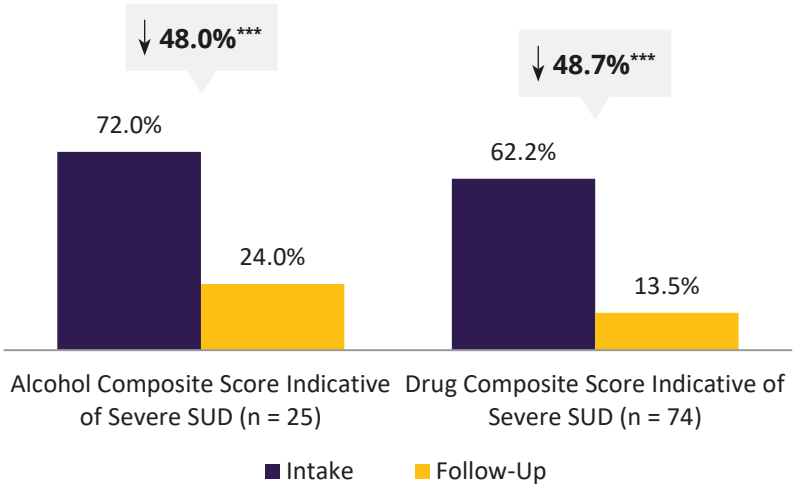
*p < .05, ***p < .001.

Among the individuals who were in a controlled environment all 30 days before entering the program and who did not report abstaining from the substance, the majority (72.0%) had an alcohol composite score that met the cutoff for severe SUD at intake. At follow-up, 24.0% of these individuals had an alcohol composite score that met the cutoff for severe SUD, which was a statistically significant decrease from intake (see Figure 2B.4). The majority of individuals (62.2%) had a drug composite score that met the cutoff for severe

[53] Twenty-five individuals reported using alcohol at intake or follow-up and 75 individuals reported using illicit drugs at intake or follow-up. One individual had missing data on at least one of the variables used to compute the ASI drug composite score at follow-up.

SUD, with a significant decrease of 48.7% to only 13.5% at follow-up.[54]

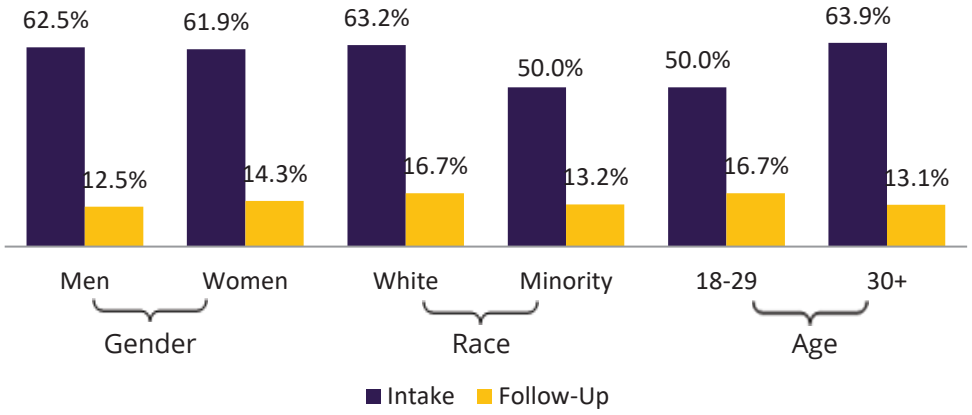
FIGURE 2B.4. ASI COMPOSITE SCORES MEETING THE CUTOFF FOR SEVERE SUBSTANCE USE DISORDER AT INTAKE AND FOLLOW-UP



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

Analysis was also conducted to examine whether individuals who had a drug composite score indicative of severe drug use disorder at intake and follow-up differed by gender, race/ethnicity, or age (see Figure 2B.5). At intake and follow-up, there were no significant differences by demographics in the percent of individuals having ASI drug composite scores indicative of severe drug use disorder.

FIGURE 2B.5. DRUG-USING INDIVIDUALS WITH A DRUG COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 74)

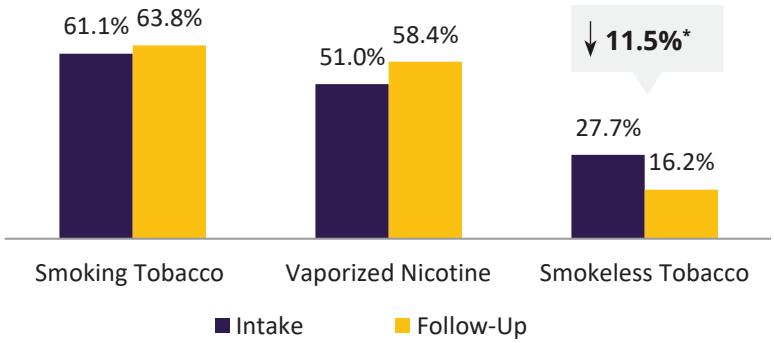


[54] It was not possible to examine demographic differences between individuals who had alcohol composite scores indicative of severe alcohol use disorder with those who did not at intake or follow-up because the number of individuals in several of the cells of the cross tabulations.

Past-30-day Smoking, Vaporized Nicotine, and Smokeless Tobacco Use

Among individuals who were in a controlled environment all 30 days before they entered the recovery center, 61.1% reported they had smoked tobacco in those 30 days (see Figure 2B.6). Unlike alcohol and illicit drug use that decreased from intake to follow-up, there was no significant change in the percentage of participants reporting use of smoking tobacco and vaporized nicotine. There was a significant decrease of 11.5% in the percent of individuals who reported using smokeless tobacco in the past 30 days at follow-up.

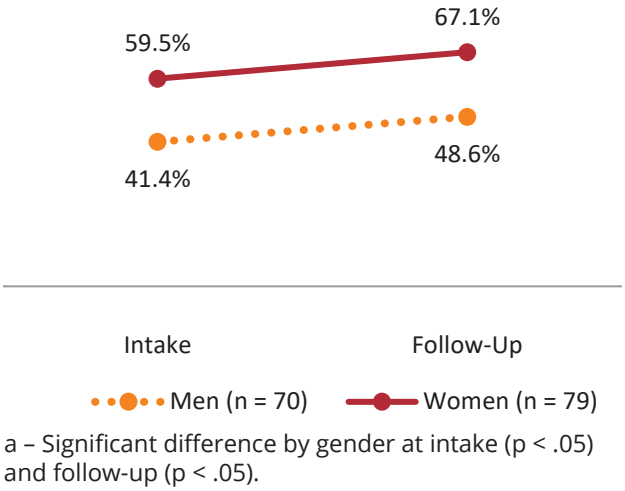
FIGURE 2B.6. PAST-30-DAY SMOKING, E-CIGARETTE, AND SMOKELESS TOBACCO AT INTAKE AND FOLLOW-UP FOR CLIENTS IN A CONTROLLED ENVIRONMENT (n = 149)



Gender Difference in Past-30-day Vaporized Nicotine

Among the individuals in a controlled environment, significantly more women than men reported using vaporized nicotine at intake and follow-up (see Figure 2B.7). There was no significant change from intake to follow-up in the percent of men and women who reported vaporized nicotine use in the past 30 days.

FIGURE 2B.7. GENDER DIFFERENCES IN PAST-30-DAY VAPORIZED NICOTINE USE AT INTAKE AND FOLLOW-UP[a]



a – Significant difference by gender at intake ($p < .05$) and follow-up ($p < .05$).

Section 3. Mental Health and Physical Health

This section describes changes in mental health and physical health status at intake compared to follow-up including for: (1) depression, (2) generalized anxiety, (3) comorbid depression and generalized anxiety, (4) depression or anxiety, (5) suicidal thoughts or attempts, (6) posttraumatic stress disorder, (7) victimization, (8) general health status, and (9) chronic pain.

Depression

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

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

"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?"

Study Criteria for Depression

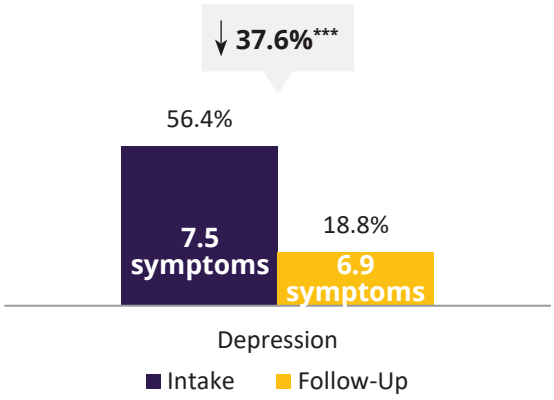
To meet study criteria for depression, clients had to say "yes" to at least one of the two screening questions and at least 4 of the 7 symptoms. Thus, the minimum score to meet study criteria: 5 out of 9.

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).

The majority of clients (56.4%) met study criteria for depression in the 6 months before they entered the recovery center (see Figure 3.1). By follow-up, only 18.8% met criteria for depression, representing a 37.6% significant decrease.

Of those who met criteria for depression at intake (n = 159), clients reported an average of 7.5 symptoms out of 9. Of those who met criteria for depression at follow-up (n = 53), they reported an average of 6.9 symptoms out of 9.

FIGURE 3.1. CLIENTS MEETING STUDY CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP (N = 282)

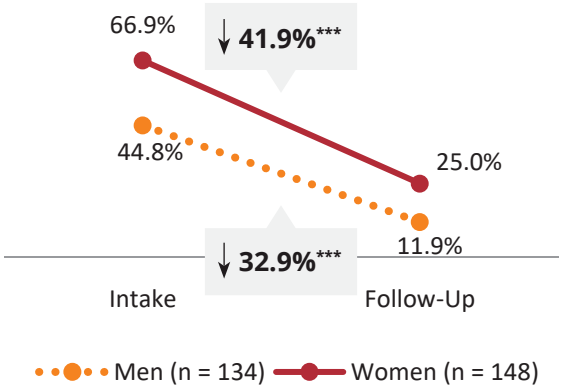


***p < .001.

Gender Difference in Meeting Study Criteria for Depression

At intake, significantly more women than men met criteria for depression (66.9% vs. 44.8%; see Figure 3.2). The percentages of women and men who met criteria for depression at follow-up were significantly lower than at intake. At follow-up, there was still a gender difference in the percentage of individuals meeting criteria for depression.

FIGURE 3.2. GENDER DIFFERENCE IN MEETING CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP[a]



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

Generalized Anxiety

To assess for generalized anxiety, participants were first asked:

"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).

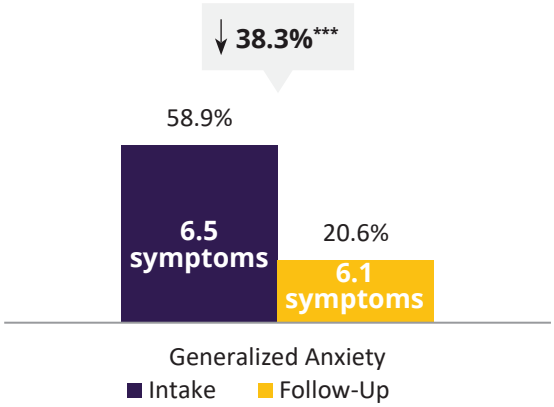
Study Criteria for General Anxiety Disorder

To meet study criteria for general anxiety disorder, clients had to say "yes" to the one screening question and at least 3 of the other 6 symptoms. Thus, minimum score to meet study criteria: 4 out of 7.

In the 6 months before entering the recovery center, 58.9% of clients reported symptoms that met the study criteria for generalized anxiety and one-fifth (20.6%) reported symptoms at follow-up (see Figure 3.3). There was a 38.3% significant decrease in the number of clients meeting the study criteria for generalized anxiety.

Of those who met study criteria for generalized anxiety at intake (n = 166), clients reported an average of 6.5 symptoms out of 7. At follow-up, those who met criteria for generalized anxiety (n = 58) reported an average of 6.1 symptoms out of 7.

FIGURE 3.3. CLIENTS MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 282)

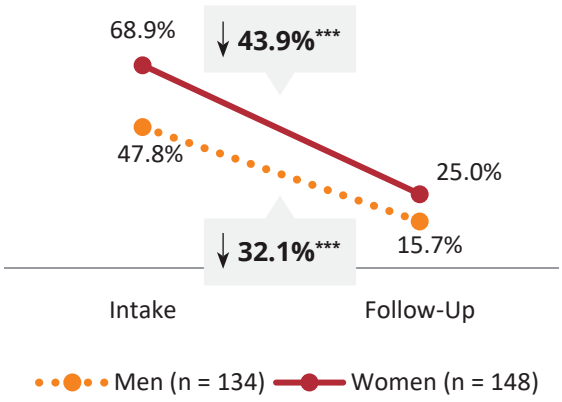


***p < .001.

Gender Difference in Meeting Study Criteria for Generalized Anxiety

At intake, significantly more women than men met criteria for depression (68.9% vs. 47.8%; see Figure 3.4). The percentages of women and men who met criteria for generalized anxiety at follow-up were significantly lower than at intake. At follow-up, there was not a statistically significant difference between the percentages of women and men who met criteria for generalized anxiety.

FIGURE 3.4. GENDER DIFFERENCE IN MEETING CRITERIA FOR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]

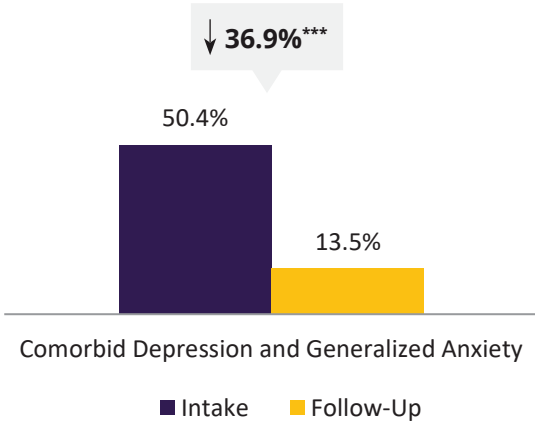


a—Statistical difference by gender at intake (p < .001).
***p < .001.

Comorbid Depression and Generalized Anxiety

At intake, about half of clients (50.4%) met criteria for both depression and generalized anxiety, and at follow-up, only 13.5% met criteria for both (see Figure 3.5). There was a 36.9% significant reduction in the number of individuals who reported symptoms that met the criteria for both depression and generalized anxiety at follow-up.

FIGURE 3.5. CLIENTS MEETING CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 282)

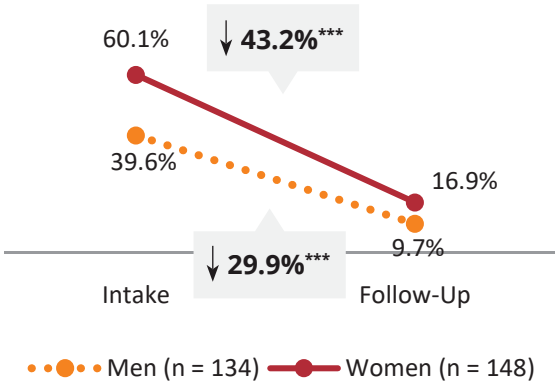


***p < .001.

Gender Difference in Meeting Study Criteria for Comorbid Depression and Generalized Anxiety

At intake, significantly more women than men met criteria for comorbid depression and generalized anxiety (60.1% vs. 39.6%; see Figure 3.6). There were significant decreases in the number of women and men who met criteria for comorbid depression and generalized anxiety, and no gender difference at follow-up.

FIGURE 3.6. GENDER DIFFERENCE IN MEETING CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]

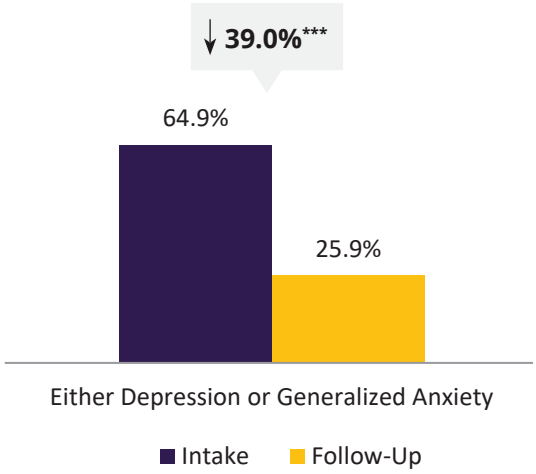


a—Statistical difference by gender at intake (p < .001).
***p < .001.

Either Depression or Generalized Anxiety

At intake, 64.9% of clients met criteria for either depression or generalized anxiety, and at follow-up, the percentage was significantly lower (25.9%; see Figure 3.7).

FIGURE 3.7. CLIENTS MEETING CRITERIA FOR EITHER DEPRESSION OR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 282)

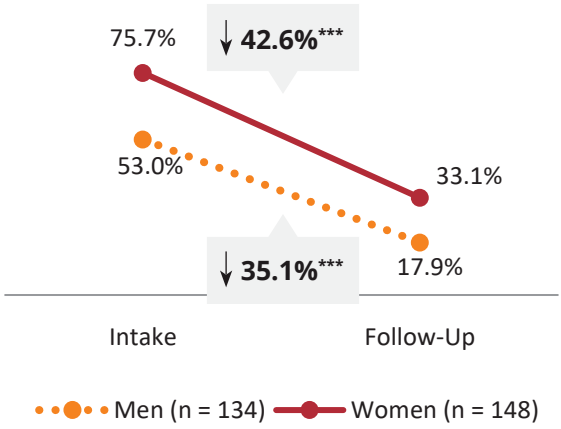


***p < .001.

Gender Difference in Meeting Study Criteria for Either Depression or Generalized Anxiety

At intake, three-fourths of women (75.7%) and around one-half of men (53.0%) met criteria for either depression or generalized anxiety (see Figure 3.8). There were significant decreases in the number of women and men who met criteria for either depression or generalized anxiety. At follow-up, there was still a gender difference.

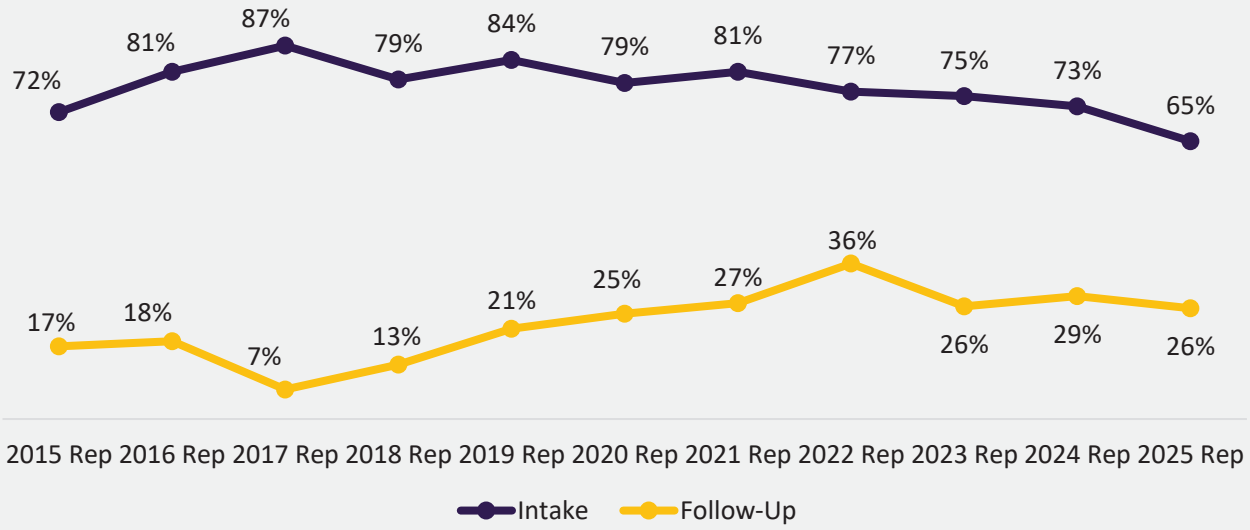
FIGURE 3.8. GENDER DIFFERENCE IN MEETING CRITERIA FOR EITHER DEPRESSION OR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]



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

Trend Alert: Depression or Generalized Anxiety

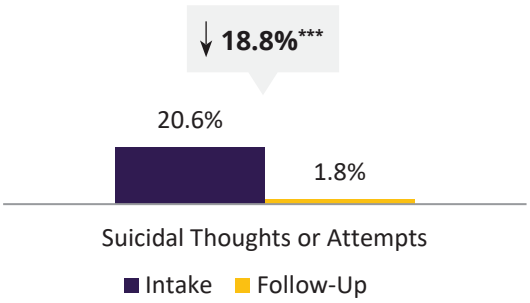
The percentage of clients meeting criteria for depression or generalized anxiety in the 6 months before entering the recovery center has fluctuated from a low of a little less than two-thirds (65%) to a high of 87% over the past eleven fiscal years. Each year there has been a significant decrease from intake to follow-up in the number of clients reporting either depression or generalized anxiety – with the lowest percentage at follow-up in the 2017 report (7%) and the highest in the 2022 report (36%).



Suicide Ideation And/or Attempts

Suicide ideation and attempts were measured with questions about thoughts of suicide and attempts to commit suicide. About one-fifth of individuals (20.6%) reported thoughts of suicide or attempted suicide in the 6 months before entering the program. At follow-up, only 1.8% of individuals reported thoughts of suicide or attempted suicide, which was a significant decrease of 18.8% (see Figure 3.9).

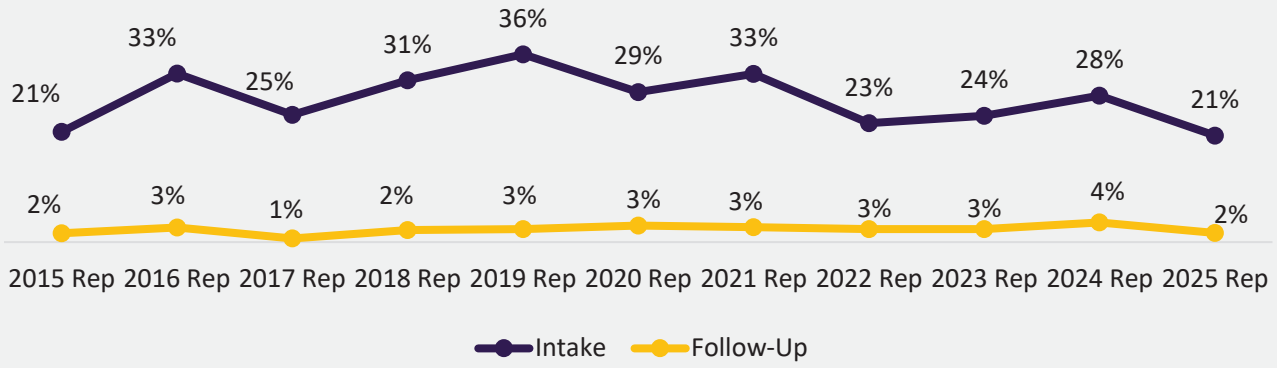
FIGURE 3.9. CLIENTS REPORTING SUICIDAL IDEATION AND/OR ATTEMPTS AT INTAKE AND FOLLOW-UP (N = 282)



***p < .001.

Trend Alert: Suicidal Thoughts And/or Attempts

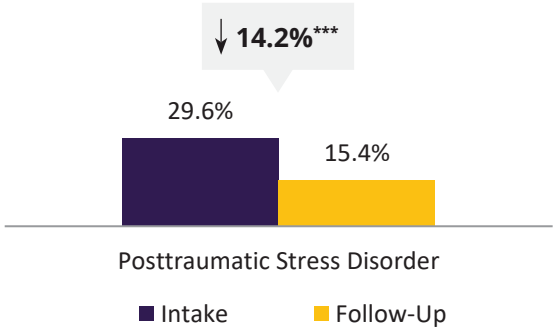
Over the past eleven annual reports, the percent of clients reporting suicidal thoughts and/or attempts in the 6 months before entering the recovery center has fluctuated between a low of one-fifth in the 2015 and the 2025 reports and a high of a little over one-third in the 2019 report. Each year there has been a significant decrease from intake to follow-up in the number of clients reporting suicidality – with only 1%-4% of clients reported suicidal thoughts or attempts at follow-up.



Post Traumatic Stress Disorder

All clients were asked to think about the worst stressful event in their lifetime when answering the four items from the PTSD checklist about how bothered they had been by the event in the prior 6 months at intake and follow-up.[55] At intake, 29.6% of clients met study criteria for PTSD. At follow-up, there was a significant decrease; 15.4% met criteria for PTSD (see Figure 3.10).

FIGURE 3.10. CLIENTS WHO MET STUDY CRITERIA FOR PTSD AT INTAKE AND PAST-6-MONTHS AT FOLLOW-UP (n = 280)[56]



***p < .001.

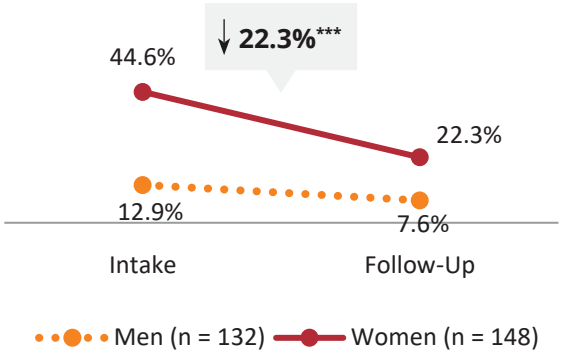
[55] Price, M., Szafranski, D., van Stolk-Cooke, K., & Gros, D. (2016). Investigation of an abbreviated 4 and 8-item version of the PTSD Checklist 5. Psychiatry Research, 239, 124-130.
In previous years' reports, the PTSD symptom questions had been anchored around lifetime victimization experiences; however, the decision was made to broaden the range of potentially traumatic events for these items and to ask clients to think of the worst event.

[56] Two individuals had missing data for PTSD symptoms at follow-up.

Gender Difference in Meeting Study Criteria for Posttraumatic Stress Disorder

At intake and follow-up, significantly more women met criteria for PTSD than men. The percent of women who met criteria for PTSD was about 3.5 times than the percent of men at intake (see Figure 3.11). The percent of women who met criteria for PTSD at follow-up was significantly lower than at intake. There was no significant change in the percent of men who met criteria for PTSD from intake to follow-up.

FIGURE 3.11 GENDER DIFFERENCES IN MEETING CRITERIA FOR PTSD AT INTAKE AND FOLLOW-UP[a]

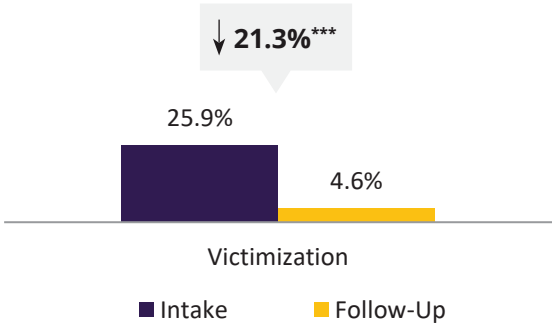


a—Statistical difference by gender at intake ($p < .001$) and follow-up ($p < .001$).
***$p < .001$.

Victimization

About one-fourth of clients (25.9%) reported any interpersonal victimization in the 6 months before they entered the recovery center (see Figure 3.12). At follow-up, only 4.6% had experienced any victimization in the past 6 months, representing a significant decrease by 21.3%.

FIGURE 3.12. VICTIMIZATION AT INTAKE AND PAST-6-MONTHS AT FOLLOW-UP (n = 282)

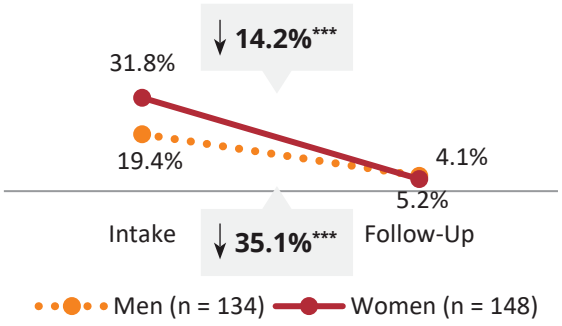


***$p < .001$.

Gender Difference in Experiencing Interpersonal Victimization

At intake significantly more women than men reported they had experienced interpersonal victimization in the past 6 months (see Figure 3.13). There were significant decreases in the percent of women and men reporting interpersonal victimization at follow-up.

FIGURE 3.13. GENDER DIFFERENCE IN EXPERIENCING INTERPERSONAL VICTIMIZATION AT INTAKE AND FOLLOW-UP[a]



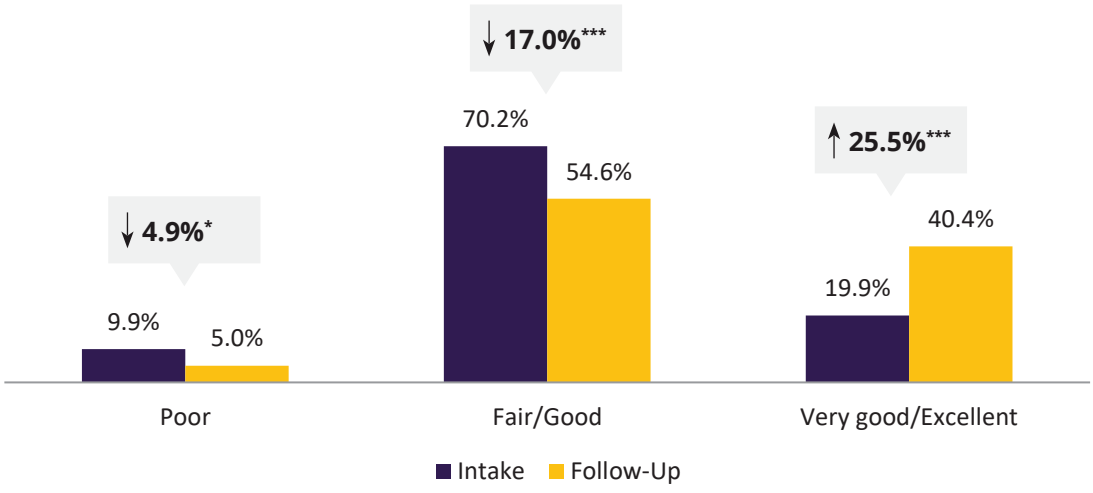
a—Statistical difference by gender at intake ($p < .05$).
***$p < .001$.

General Health Status

General Health

At both intake and follow-up, clients were asked to rate their general health in the past 6 months from 1 = poor to 5 = excellent. Clients rated their health, on average, as 2.8 at intake and this significantly increased to 3.4 at follow-up (not depicted in figure). Figure 3.14 shows that significantly more clients rated their general health as very good or excellent (40.4%) at follow-up when compared to intake (19.9%).

FIGURE 3.14. CLIENTS' SELF-REPORT OF GENERAL HEALTH STATUS AT INTAKE AND FOLLOW-UP (N = 282)

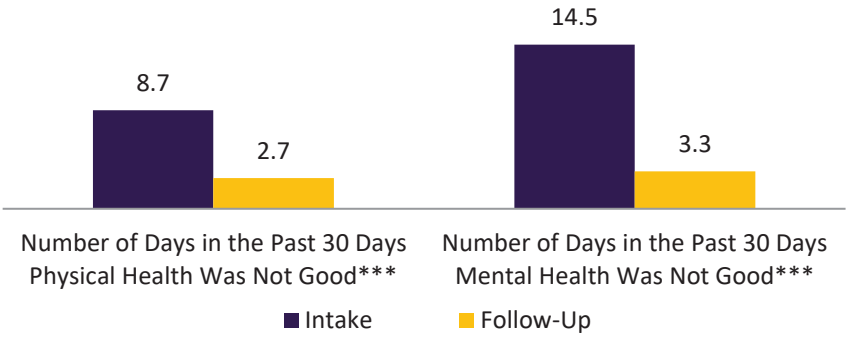


a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$).
*$p < .05$, ***$p < .001$.

Number of Days Physical and Mental Health Was Not Good

At intake and follow-up, individuals were asked how many days in the past 30 days their physical and mental health were not good. The average number of days individuals reported their physical health was not good decreased significantly from intake (8.7) to follow-up (2.7; see Figure 3.15). Individuals' self-reported number of days their mental health was not good decreased significantly from intake (14.5) to follow-up (3.3).

FIGURE 3.15. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 282)

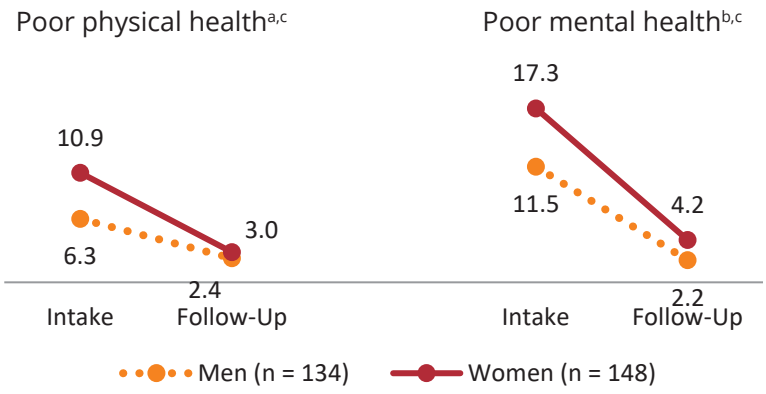


a—Statistical significance tested by paired t-test, ***p < .001.

Gender Differences in Average Number of Days of Poor Physical and Mental Health

At intake, compared to men, women reported a higher average number of days their physical and mental health were not good (see Figure 3.16). The average number of days of poor physical and mental health decreased significantly from intake to follow-up for women and men. At follow-up, women still had a significantly higher average number of days they reported their mental health was not good compared to men.

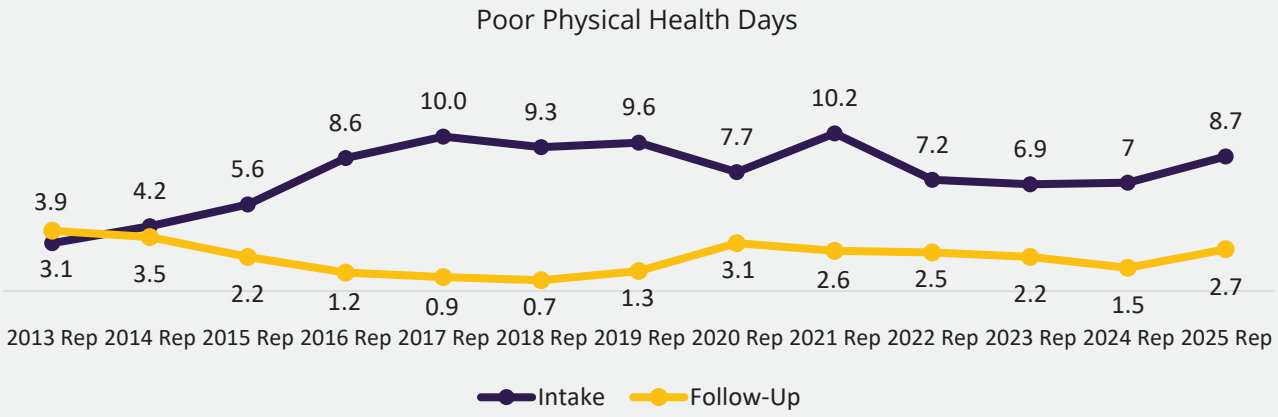
FIGURE 3.16. GENDER DIFFERENCES IN THE AVERAGE NUMBER OF DAYS OF POOR PHYSICAL AND MENTAL HEALTH AT INTAKE AND FOLLOW-UP



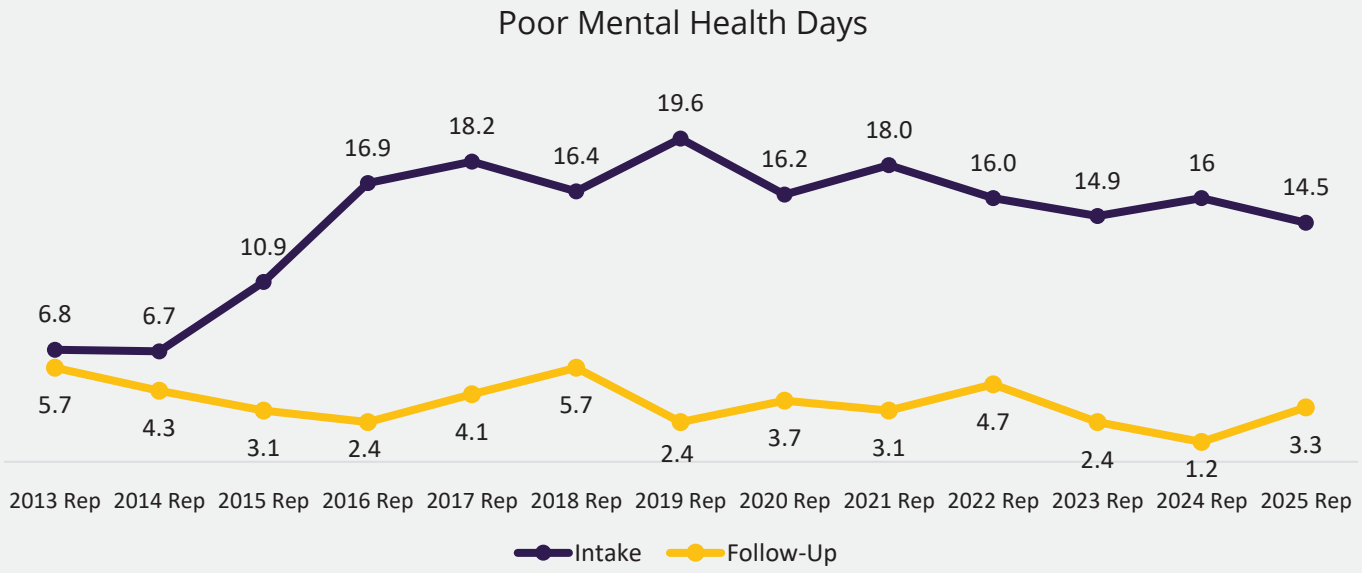
a—Significant difference by gender at intake (p < .001).
b—Significant difference by gender at intake (p < .001) and follow-up (p < .05).
c—There was a statistical decrease from intake to follow-up for men (p < .001) and women (p < .001).

Trend Alert: Poor Physical and Mental Health Days

At intake and follow-up, individuals are asked how many days in the past 30 days their physical health has been "not good". Since the 2013 report, the average number of poor physical health days at intake has increased from 3.1 days to a high of 10.2 days in the 2021 report. In the 2022 report, the average decreased to 7.2 days. The average number of poor physical health days has been significantly lower at follow-up than at intake, since the 2015 report.



At intake and follow-up, clients are also asked how many days in the past 30 days their mental health has been "not good." The average number of poor mental health days reported at intake has increased dramatically from the 2013 report (6.8) to the 2019 report (19.6). In the last three reports, the average number of days of poor mental health has fluctuated between 14.5 and 16.0. Since the 2015 report, the average number of days of poor mental health has decreased from intake to follow-up.

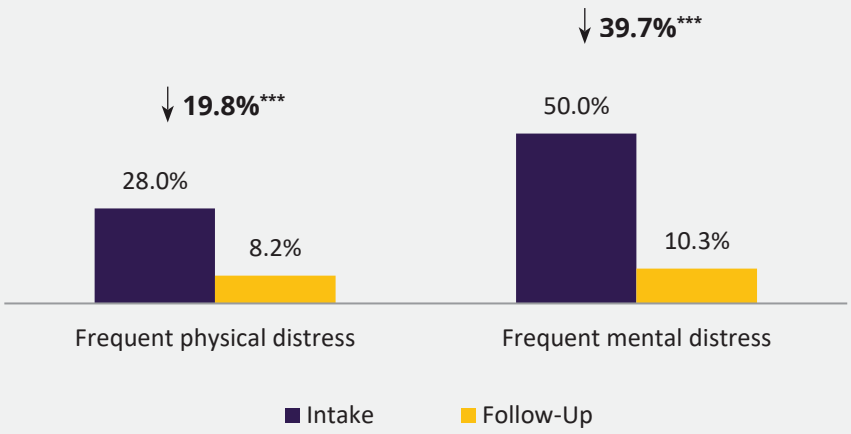


Frequent Physical and Mental Distress

Individuals who report 14 or more days (in the 30 day period) of their physical health not being good are classified as experiencing frequent physical distress.[57] The same is done for days their mental health is not good.

At intake, 28.0% of RCOS respondents experienced frequent physical distress, and at follow-up, a significantly lower percentage had frequent physical distress (8.2%). In comparison, 15.6% of the general population of adults in Kentucky reported frequent physical distress. Kentucky was ranked 48th in the U.S. for frequent mental distress.[58] At intake, half of RCOS respondents experienced frequent mental distress, and at follow-up, there was significantly lower percentage (10.3%). In comparison, 16.1% of the general population in Kentucky in 2022 experienced frequent mental distress. Kentucky was ranked 28th in the U.S. for frequent mental distress.[59]

FIGURE 3.17. PERCENT OF RESPONDENTS WITH FREQUENT PHYSICAL DISTRESS AND MENTAL DISTRESS AT INTAKE AND FOLLOW-UP (N = 282)



***p < .001.

Number of Days Poor Physical and Mental Health Limited Activities

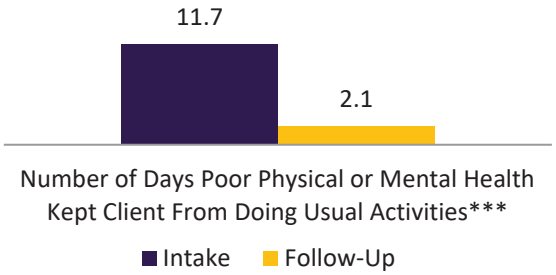
Individuals were also asked to report the number of days in the past 30 days poor physical or mental health had kept them from doing their usual activities (see Figure 3.18). The average number of days clients reported their physical or mental health kept them from doing their usual activities decreased significantly from intake to follow-up (11.7 to 2.1).

[57] Centers on Disease Control & Prevention, Behavioral Risk Factor Surveillance System, 2022.

[58] https://www.americashealthrankings.org/explore/measures/Physical_distress/KY

[59] https://www.americashealthrankings.org/explore/measures/mental_distress/KY

FIGURE 3.18. AVERAGE NUMBER OF DAYS POOR PHYSICAL OR MENTAL HEALTH LIMITED ACTIVITIES IN THE PAST 30 DAYS (N = 281)[60]

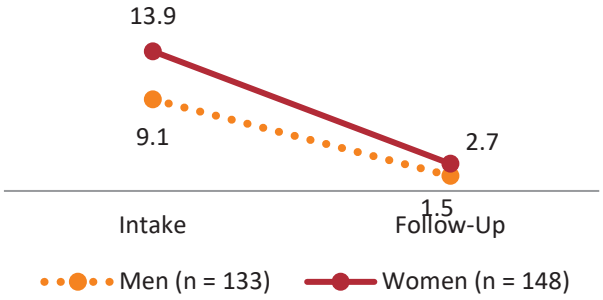


a—Statistical significance tested by paired t-test; ***p < .001

Gender Difference in Days Poor Health Limiting Activities

At intake, compared to men, women reported a higher average number of days poor physical or mental health limited their activities (see Figure 3.19). The number of days poor physical or mental health limited their activities decreased significantly from intake to follow-up for men and women.

FIGURE 3.19. GENDER DIFFERENCE IN AVERAGE NUMBER OF DAYS POOR PHYSICAL AND MENTAL HEALTH LIMITED ACTIVITIES AT INTAKE AND FOLLOW-UP[a,b]



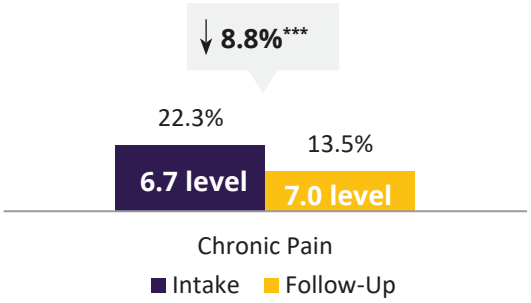
a—Significant different by gender at intake (p < .001).
b—There was a statistical decrease from intake to follow-up for men (p < .001) and women (p < .001).

Chronic Pain

The percentage of clients who reported chronic pain that was persistent and lasted at least 3 months decreased significantly 8.8% from intake to follow-up (see Figure 3.20). Among the followed-up individuals who reported chronic pain at intake (n = 63), they reported an average pain intensity level of 6.7 and experiencing pain 26.4 days out of the 30 days before entering the program. Among the followed-up individuals who reported chronic pain at follow-up (n = 38), they had an average pain intensity rating of 7.0 and experienced chronic pain an average of 26.9 days out of the past 30.

[60] One individual had a missing value for number of days mental health was not good and number of days poor physical and mental health limited activities at follow-up.

FIGURE 3.20. CLIENTS REPORTING CHRONIC PAIN AT INTAKE AND FOLLOW-UP (N = 282)

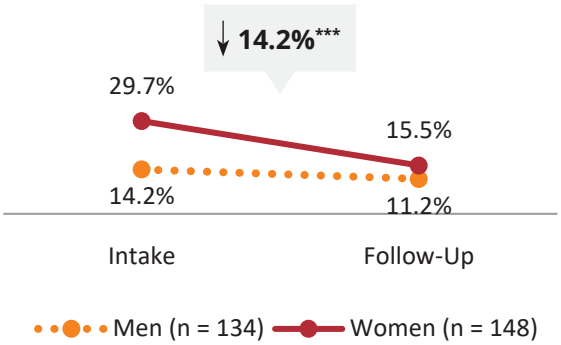


***p < .001.

Gender Difference in Chronic Pain

At intake, significantly more women than men reported they had experienced chronic pain in the 6 months before entering the program (29.7% vs. 14.2%; see Figure 3.21). The percent of women who reported chronic pain at follow-up was significantly lower than at intake. The percent of men with chronic pain did not change from intake to follow-up. There was no significant gender difference at follow-up.

FIGURE 3.21. GENDER DIFFERENCE IN CHRONIC PAIN AT INTAKE AND FOLLOW-UP[a]



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

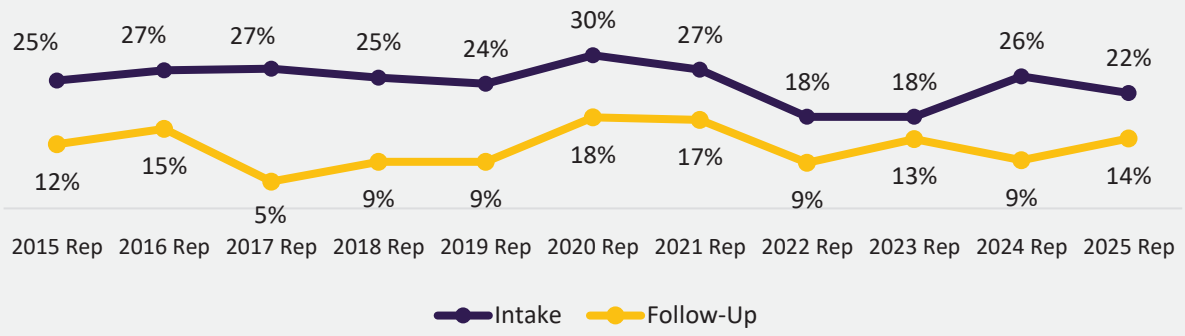
> *The program saved my life. I was in a very dark place before [the program]. It allowed me to find myself, find the path to sobriety, and helped me have a successful life in recovery.*
>
> - RCOS FOLLOW-UP CLIENT

Trend Alert: Chronic Pain

An important caveat is that a question asking respondents the number of months they experienced chronic pain was added to intake surveys in the last month for the 2021 report and for the follow-up surveys in the 2021 report. Before this, individuals were asked to report if they had experienced chronic pain that lasted at least 3 months in the 6-month period at intake and at follow-up. Once we added the question about number of months, we discovered that a small number of individuals reported they had experienced chronic pain but then reported they had it fewer than 3 months. For those individuals we computed a new variable for chronic pain. Respondents were classified as experiencing chronic pain if they reported "yes" to the question and reported 3 or more months in the 6-month period.

Over the past eleven report years, the percent of RCOS clients reporting chronic pain that persisted for at least 3 months in the 6 months before entering the recovery center has ranged from a high of 30% in the 2020 report to a low of 18% in the 2022 and 2023 reports.

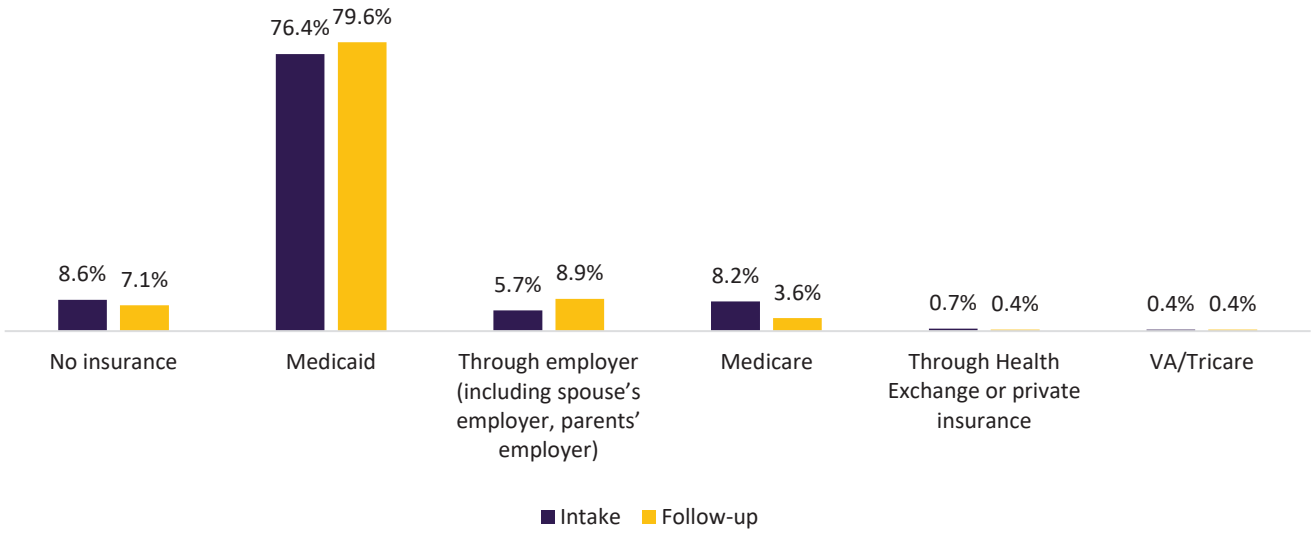
At follow-up, the percentage of clients reporting persistent chronic pain in the past 6 months ranged from a high of 18% in the 2020 report to a low of 5% in the 2017 report.



Health Insurance

At intake, about three-fourths of RCOS clients reported they had health insurance through Medicaid (76.4%; see Figure 3.22). A small percentage did not have any insurance (8.6%). Small numbers of clients had insurance through an employer, including through a spouse, parent (5.7%), through Medicare (8.2%), and very small percentages reported they had health insurance through Health Exchange or private insurance (0.7%), and VA/Tricare (0.4%). At follow-up, there was no significant change in the percent of respondents with each of the types of health insurance.

FIGURE 3.22. HEALTH INSURANCE FOR RCOS CLIENTS AT INTAKE AND FOLLOW-UP (N = 280)[61a]

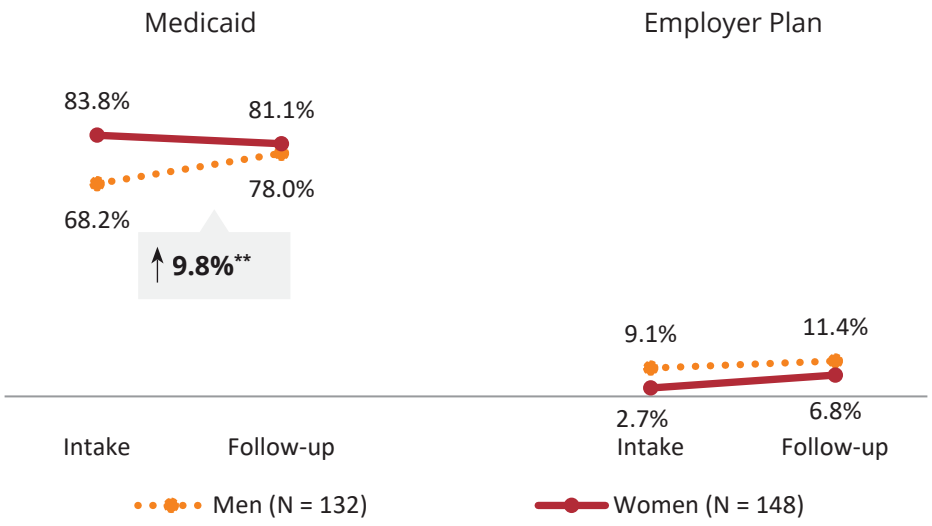


a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity; not statistically significant.

Gender Difference in Medical Insurance

Compared to men, significantly more women reported having Medicaid at intake (see Figure 3.23). Also at intake, significantly more men than women reported they had health insurance through an employer plan (their own, a spouse's, or their parent's employer). There was a significant increase in the percent of men who had Medicaid at follow-up relative to intake.

FIGURE 3.23. GENDER DIFFERENCE IN CLIENTS REPORTING HAVING MEDICAID AND INSURANCE THROUGH AN EMPLOYER PLAN AT INTAKE AND FOLLOW-UP[a]

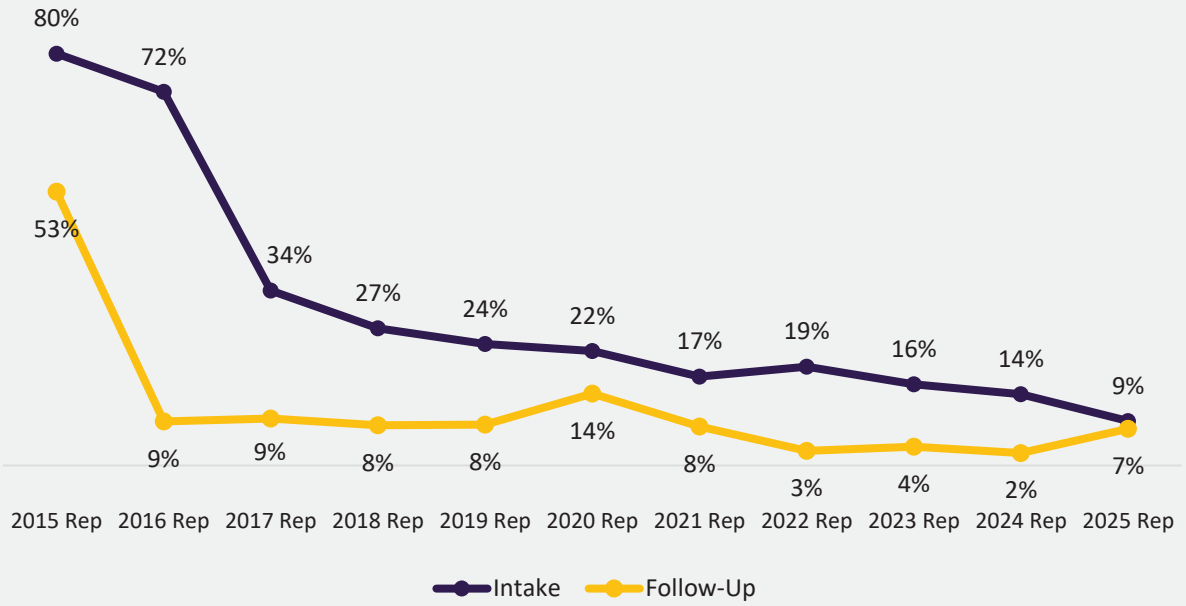


a—Statistical difference by gender at intake ($p < .05$).
**$p < .01$.

[61] At follow-up, 2 clients had missing data for insurance at follow-up.

Trend Alert: No Health Insurance

With the expansion of Medicaid starting in 2014 in Kentucky, the percent of RCOS clients reporting they did not have health insurance at intake decreased dramatically in the 2017 report (corresponding to intake surveys conducted in FY 2015) and at follow-up in the 2016 report (corresponding to follow-up surveys conducted in FY 2015).

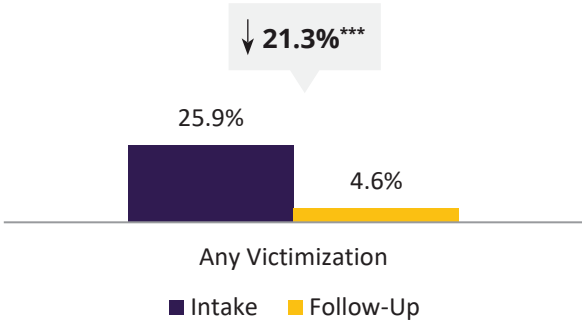


Experiences with Interpersonal Violence

In addition to items about adverse childhood experiences, clients were asked about several types of interpersonal violence they may have experienced in two periods: (1) lifetime, and (2) past 6 months. These items were included in the intake and follow-up surveys. Because relatively small percentages of clients reported each type of violence experience in the 6-month periods, several related items were collapsed into one category: (1) any violence (e.g., robbed or mugged by force, assaulted with or without a weapon, threatened with a gun, intimate partner violence, stalking).

About one-fourth of clients (25.9%) reported experiencing interpersonal violence in the 6 months before entering the recovery center. The percent of clients who reported experiencing any violence in the past 6 months decreased significantly from intake to follow-up (4.6%; see Figure 3.24).

FIGURE 3.24. EXPERIENCES WITH INTERPERSONAL VIOLENCE IN THE PAST 12 MONTHS AT INTAKE AND FOLLOW-UP (N = 282)

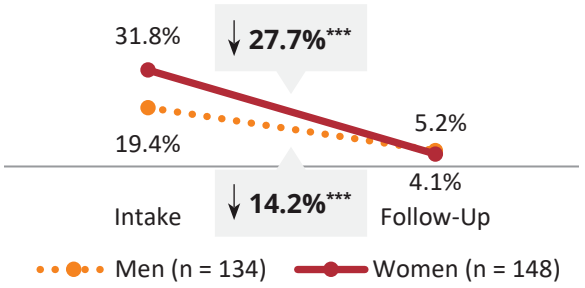


***p < .001.

Gender Difference in Experiences with Interpersonal Violence

Significantly more women reported experiencing any interpersonal violence in the 6 months before entering the program when compared to men (see Figure 3.25). The percent of women and men who reported experiencing interpersonal violence decreased significantly from intake to follow-up by 27.7% and 14.2% respectively. There was no gender difference at follow-up.

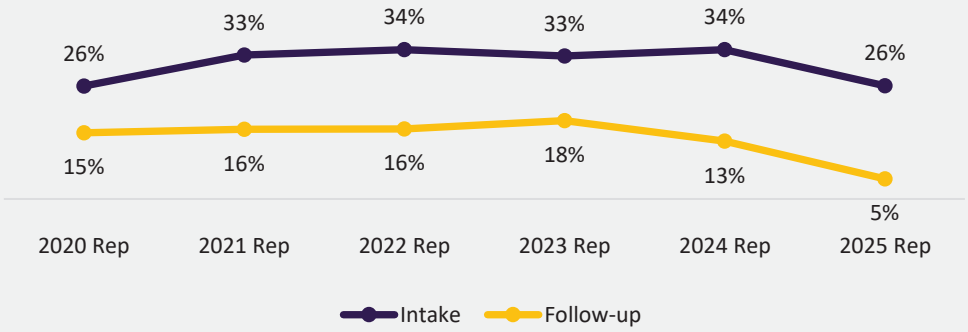
FIGURE 3.25. GENDER DIFFERENCE IN EXPERIENCES WITH INTERPERSONAL VIOLENCE IN THE PAST 6 MONTHS



a—Statistical difference by gender at intake (p < .05).
***p < .001.

Trends In Experiences with Interpersonal Violence

The percent of clients who reported experiencing interpersonal violence (e.g. assault, threats with a firearm, mugging/robbery, intimate partner violence, stalking, sexual assault, and harassment) in the 6 months before entering the program has ranged from about one-fourth to one-third. There have been significant decreases from intake to follow-up in the percentage of individuals who have reported interpersonal victimization in the past 6 months, with a steady percent each year (13% - 18%), until this year, when only 5% reported victimization in the 6 months before follow-up.[62]



[62] The survey items for assessing interpersonal victimization were not comparable in FY 2017 when victimization items were first added in September 2016.

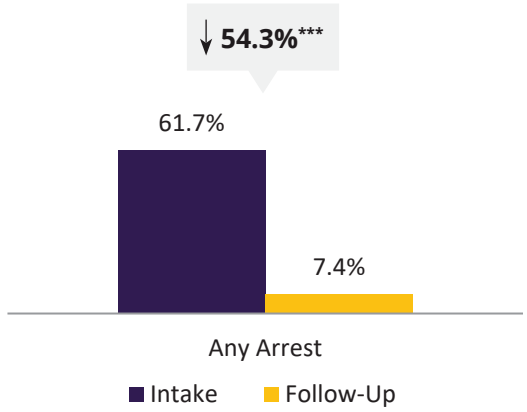
Section 4. Involvement in the Criminal Legal System

This section describes change in client involvement with the criminal legal system from intake to follow-up. Specifically, the following targeted factors are presented in this section: (1) arrests, (2) incarceration, (3) self-reported misdemeanor and felony convictions, and (4) self-reported supervision by the criminal legal system.

Arrests

At intake, individuals were asked about their arrests in the 6 months before they entered the recovery center and at follow-up individuals were asked about their arrests in the past 6 months. The majority of individuals (61.7%) reported an arrest in the 6 months before entering the recovery center (see Figure 4.1). At follow-up, this percent had decreased significantly by 54.3% to 7.4%.

FIGURE 4.1. CLIENTS REPORTING ANY ARRESTS AT INTAKE AND FOLLOW-UP (N = 282)



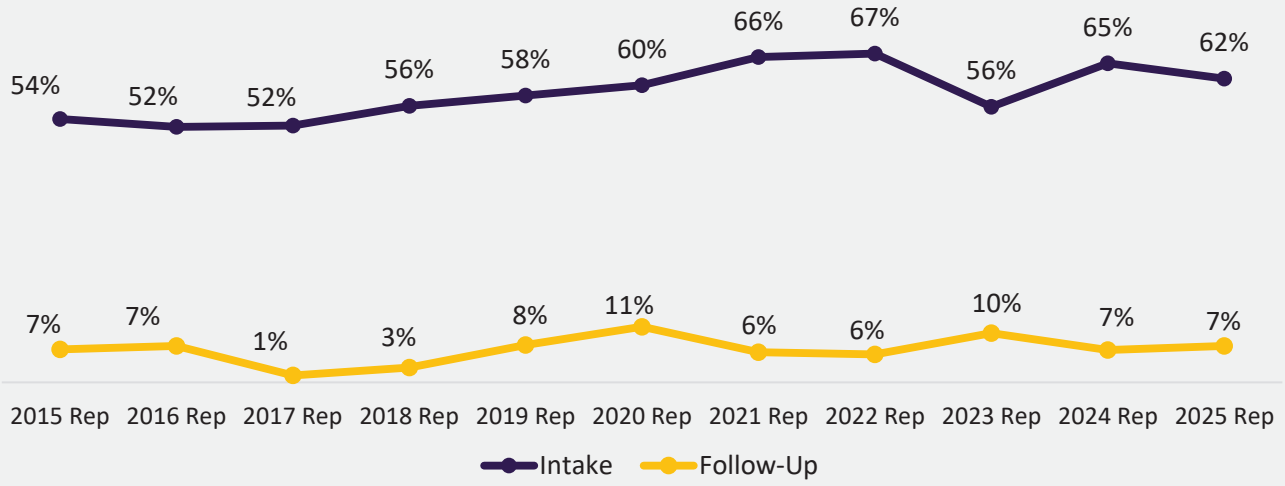
***p < .001.

> ***They've experienced the same things I have in life and they don't brush off my problems. Everyone cared there, and did the best they could to help me.***
>
> - RCOS FOLLOW-UP CLIENT

Trend Alert: Arrests

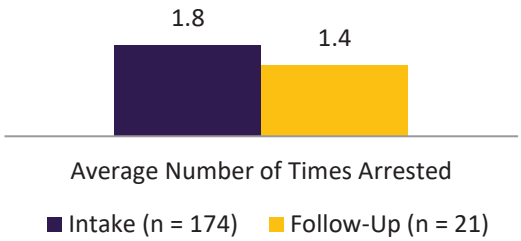
In the past eleven annual reports, at intake, over half of RCOS clients reported at least one arrest in the past 6 months. The percent has increased from a low of 52% in the 2017 report to 67% in the 2022 report.

Compared to intake, significantly fewer clients reported an arrest in the past 6 months at follow-up in each of the eleven annual reports. The percent of individuals reporting an arrest in the 6 months before follow-up has been a low of 1% in the 2017 report to a high of 11% in the 2020 report.



Among the individuals who reported being arrested in the 6 months before entering the recovery center (n = 174), they were arrested an average of 1.8 times (see Figure 4.2). Among the small number of individuals who reported an arrest in the 6 months before follow-up (n = 21), they reported being arrested an average of 1.4 times.

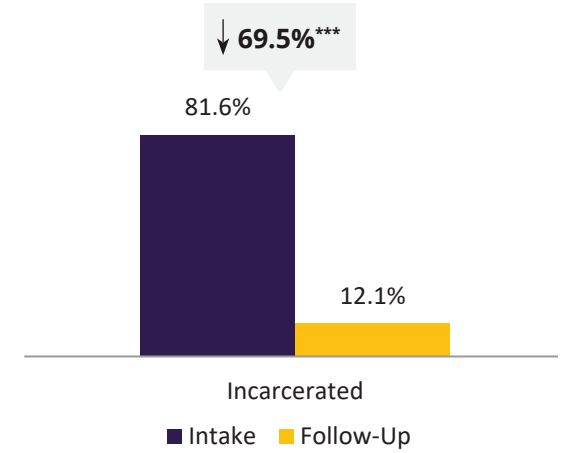
FIGURE 4.2. AMONG INDIVIDUALS WHO WERE ARRESTED, THE AVERAGE NUMBER OF TIMES ARRESTED AT INTAKE AND FOLLOW-UP



Incarceration

More than three-fourths of clients (81.6%) reported spending at least one day in jail or prison in the 6 months prior to entering the recovery center (see Figure 4.3). At follow-up, only 12.1% reported spending at least one day incarcerated in the past 6 months, which was a significant decrease of 69.5%.

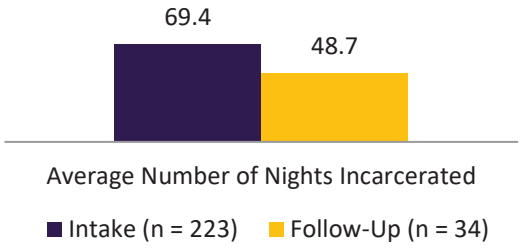
FIGURE 4.3. CLIENTS REPORTING INCARCERATION AT INTAKE AND FOLLOW-UP (N = 282)



***p < .001.

Among individuals who were incarcerated in the 6 months before entering the program (n = 223),[63] the average number of nights incarcerated was 69.4 (see Figure 4.4). Among the number of individuals who reported being incarcerated in the 6 months before follow-up (n = 34), the average number of nights incarcerated was 48.7.

FIGURE 4.4. AMONG INDIVIDUALS WHO WERE INCARCERATED, THE AVERAGE NUMBER OF NIGHTS INCARCERATED AT INTAKE AND FOLLOW-UP

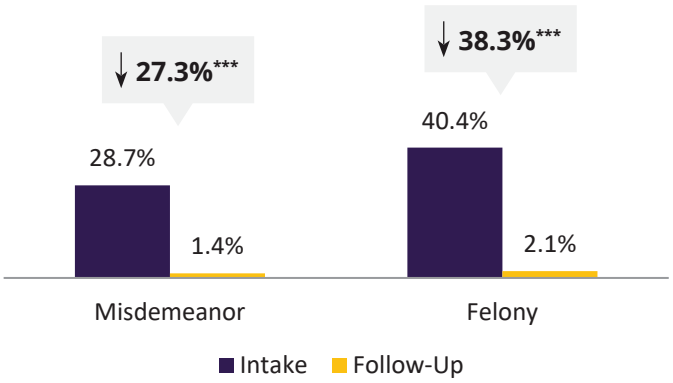


Self-Reported Misdemeanor and Felony Convictions

At intake 28.7% of individuals reported they had been convicted of a misdemeanor in the 6 months before entering the recovery center (see Figure 4.5). The percent decreased significantly to 1.4% at follow-up. The percent of individuals who reported being convicted of a felony also significantly decreased from intake (40.4%) to follow-up (2.1%).

[63] Seven individuals knew they had been incarcerated but had missing data for the number of days they were incarcerated at intake.

FIGURE 4.5. CLIENTS REPORTING CONVICTIONS AT INTAKE AND FOLLOW-UP (N = 282)

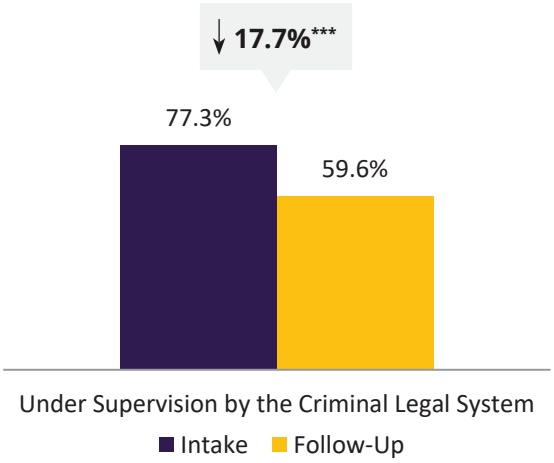


***p < .001.

Self-Reported Criminal Legal System Supervision

The majority of clients (77.3%) were under supervision by the criminal legal system (e.g., probation or parole) when they entered Phase I of the recovery center program, whereas a significantly smaller percent were under supervision by the criminal legal system at follow-up (59.6%)--a significant decrease of 17.7%; see Figure 4.6).

FIGURE 4.6. CLIENTS REPORTING SUPERVISION BY THE CRIMINAL LEGAL SYSTEM AT INTAKE AND FOLLOW-UP (N = 282)

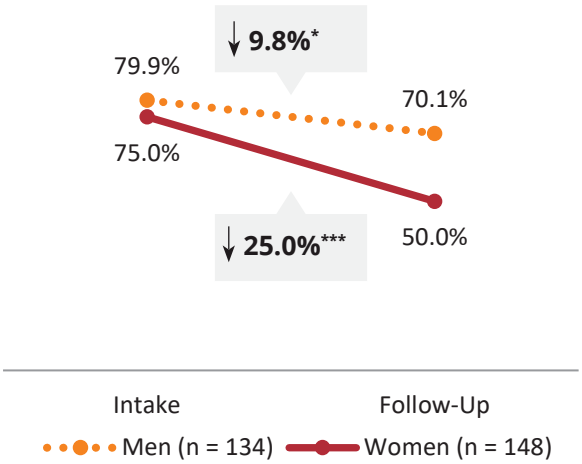


***p < .001.

Gender Difference in Supervision by the Criminal Legal System

Similar percentages of men and women reported at intake they were under supervision by the criminal legal system (see Figure 4.7). The percent of men and women under supervision by the criminal legal system decreased significantly from intake to follow-up. At follow-up, a significantly lower percentage of women reported supervision by the criminal legal system compared to men.

FIGURE 4.7. GENDER DIFFERENCE IN SUPERVISION BY THE CRIMINAL LEGAL SYSTEM



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

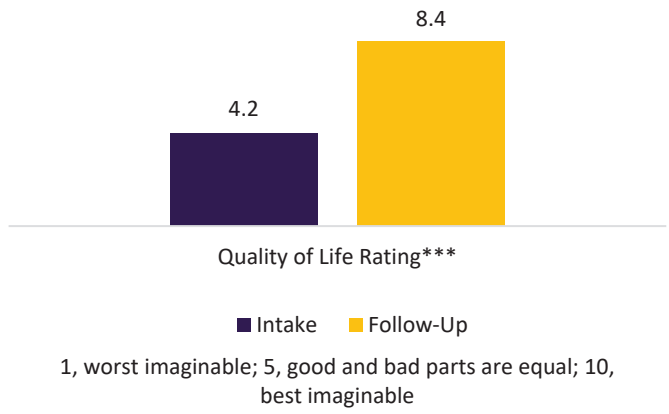
Section 5. Quality Of Life

Clients' perception of their overall quality of life was measured at intake and follow-up and are presented in this section.

Subjective Rating of Quality of Life

At intake, clients were asked to rate their quality of life before entering the recovery center. Ratings were from 1='Worst imaginable' to 5='Good and bad parts were about equal' to 10='Best imaginable'. RCOS clients rated their quality of life before entering the recovery center, on average, as 4.2 (see Figure 5.1). At follow-up, individuals were asked the same question about their current quality of life. The average rating of subjective quality of life at follow-up increased significantly to 8.4.

FIGURE 5.1. SUBJECTIVE QUALITY OF LIFE BEFORE AND AFTER THE PROGRAM (N = 282)

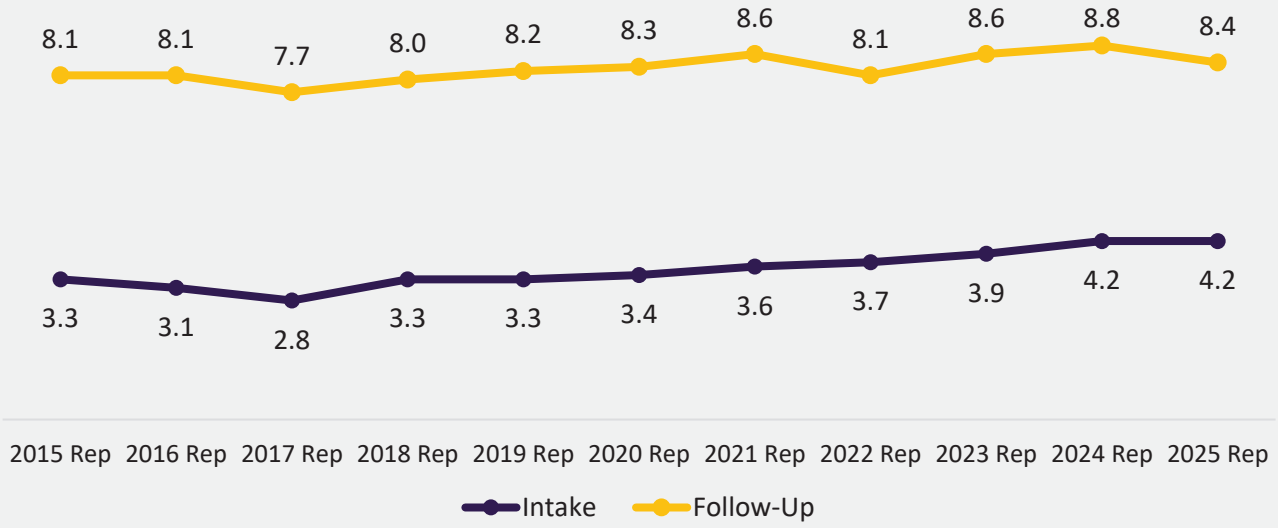


***p < .001.

> ***It saved my life and taught me about addiction better than other programs I have attended in the past. We went over the disease concept, mind vs body disease and went at a slow pace so everyone could understand.***
>
> - RCOS FOLLOW-UP CLIENT

Trend Alert: Overall Quality of Life Rating

Clients are asked to rank their overall quality of life on a scale from 1 (worst imaginable) to 10 (best imaginable) at both intake and follow-up. At intake until the 2023 report, RCOS clients have consistently rated their quality of life, on average, between 3 and 4. In the 2024 and 2025 reports, the average rating was 4.2. Compared to intake, that rating at follow-up significantly increased each year, to an average of about 8 in most years, but 8.6 in the 2021 and 2023 reports, and 8.8 in the 2024 report.



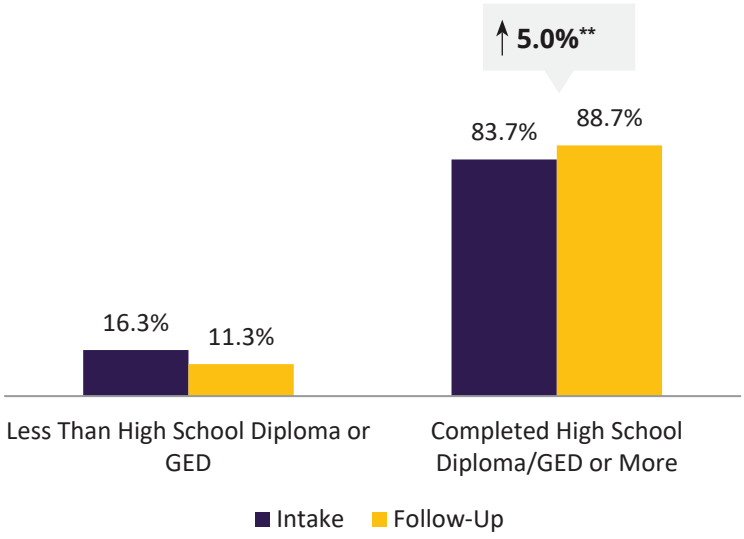
Section 6. Education and Employment

This section examines changes in education and employment from intake to follow-up including: (1) highest level of education completed, (2) the percent of clients who worked full-time or part-time, (3) the number of months clients were employed full-time or part-time, among those who were employed at any point in the 6-month period, (4) the median hourly wage, among those who were employed in the prior 30 days, and (5) expectations to be employed in the next 6 months.

Education

Based on respondents' highest level of education completed, they were categorized into one of two categories: (1) less than a high school diploma or GED, or (2) a high school diploma or GED or higher (see Figure 6.1). At intake, 83.7% of the follow-up sample had a high school diploma or GED or had attended school beyond a high school diploma or GED and at follow-up, the percent had increased significantly to 88.7%. At intake, 16.3% of the follow-up sample reported that they had less than a high school diploma or GED. At follow-up, 11.3% reported that they had completed less than a high school diploma or GED.

FIGURE 6.1. HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE AND FOLLOW-UP (N = 282)

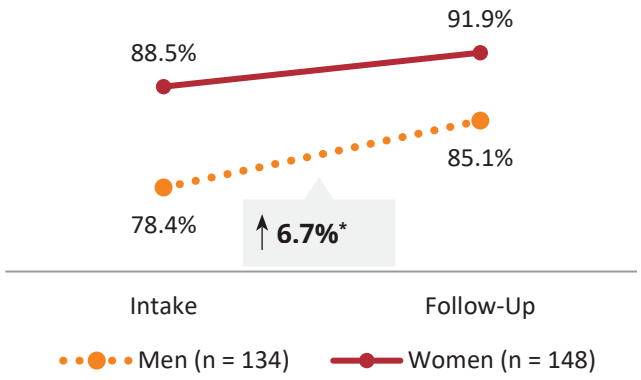


**p < .01.

Gender Difference in The Percent of Individuals With a High School Diploma/ GED

At intake, a significantly higher percent of women reported they had a high school diploma/GED relative to men (see Figure 6.2). For men, there was a significant increase in the percent reporting they had attained a high school diploma/GED at follow-up. At follow-up, there was no significant gender difference in attaining a high school diploma or GED.

FIGURE 6.2. GENDER DIFFERENCE IN EMPLOYED AT LEAST ONE MONTH AT INTAKE AND FOLLOW-UP (N = 282)[a]

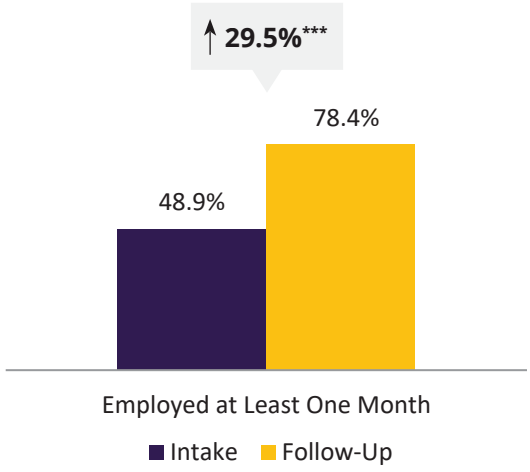


a—Significant difference by gender at intake ($p < .05$).
*p<.05.

Employment

Respondents were asked in the intake survey to report the number of months they were employed full-time or part-time in the 6 months before they entered the recovery center. 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. Nearly half of clients (48.9%) reported at intake they had worked full-time or part-time at least one month (see Figure 6.3). At follow-up, about three-fourths (78.4%) worked part-time or full-time at least one month in the past 6 months, which was a significant increase of 29.5%.

FIGURE 6.3. EMPLOYED FULL-TIME OR PART-TIME FOR AT LEAST ONE MONTH AT INTAKE AND FOLLOW-UP (N= 278)[64]



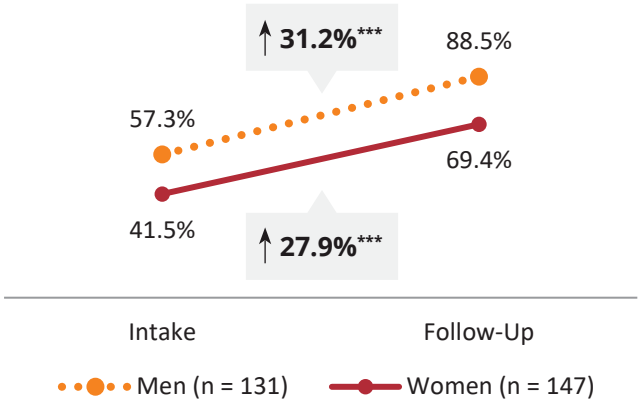
***p < .001.

[64] Four individuals had missing data for number of months employed at intake.

Gender Difference in the Percent of Individuals Employed

A significantly higher percentage of men relative to women reported they were employed part-time or full-time at least one month before intake and follow-up (see Figure 6.4). For both men and women, there was a significant increase in the percent reporting employment from intake to follow-up, 31.2% and 27.9% respectively.

FIGURE 6.4. GENDER DIFFERENCE IN EMPLOYED AT LEAST ONE MONTH AT INTAKE AND FOLLOW-UP (N = 282)[a]



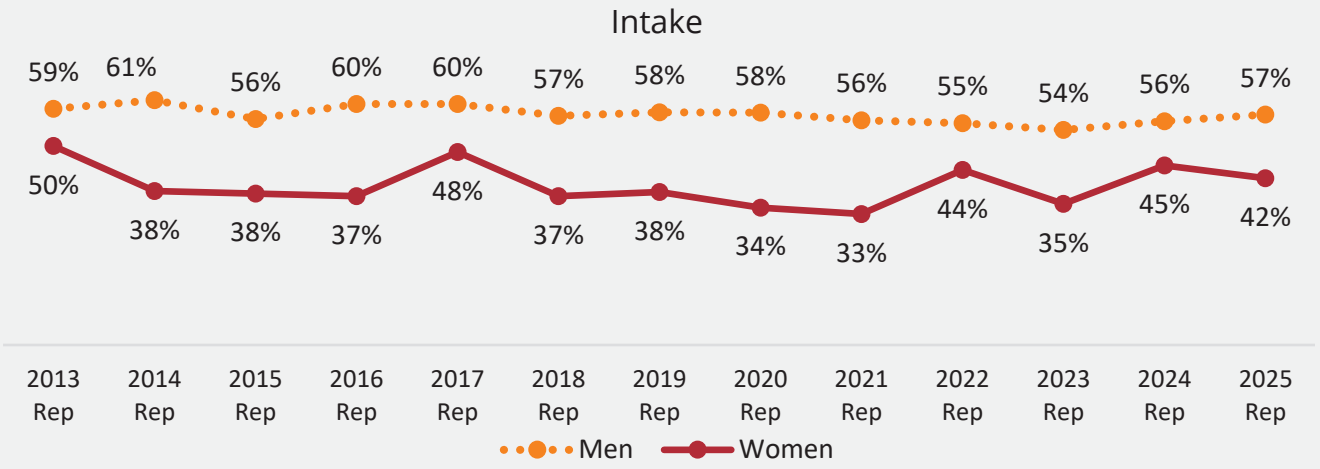
a—Significant difference by gender at intake ($p < .01$) and follow-up ($p < .001$).
***p<.001.

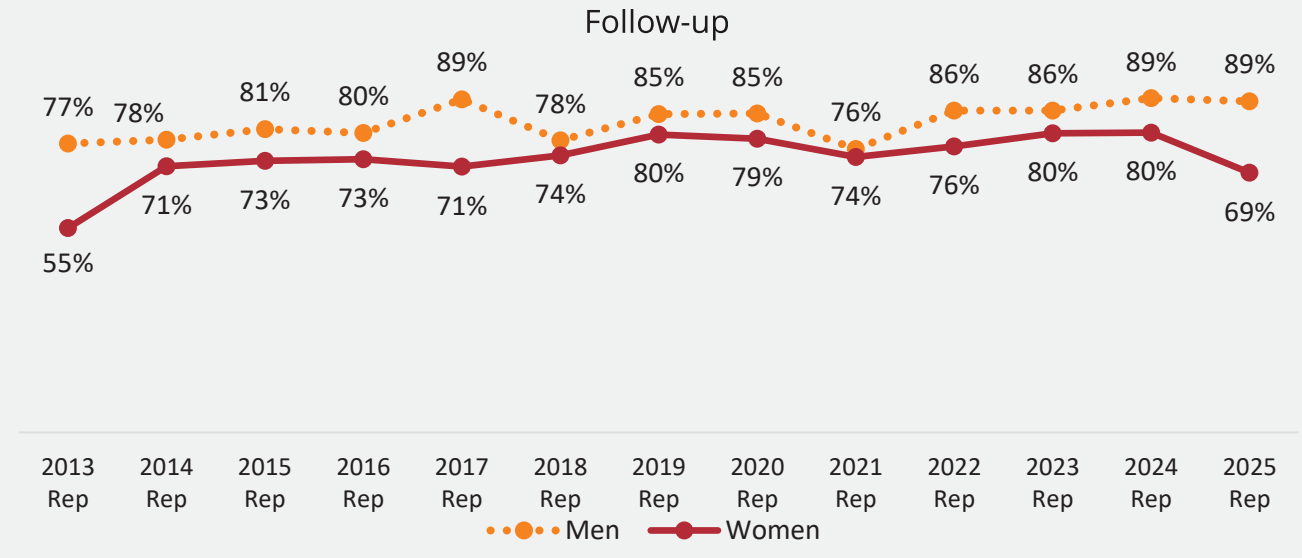
Trend Alert: Employment Trends by Gender

Since the 2013 report, the disparity in employment between men and women in the RCOS follow-up sample has been presented in every annual report.

From FY 2012 to FY 2014, significantly fewer women reported being employed at intake compared to men; however, in 2017, there was no significant difference in the percent of men and women reporting employment at intake. In the 2018 report, only 37% of women were employed at least one month at intake while 57% of men reported employment. A similar disparity in the percent of men vs. women who reported being employed at least one month before entering the program was found in the 2019 through 2021 reports, and again in the 2023 and 2025 reports. In the 2022 and 2024 reports, there was no gender difference at intake.

By follow-up, on average, a majority of women reported they were employed full-time or part-time at least one month in the past 6 months but significantly more men reported employment during that same time frame in several reports. However, in the 2018 through 2021 reports and again in the 2023 report, there was no significant difference in the number of men and women who reported employment at least one month in the past 6 months. In the past two annual reports, significantly more men reported they were employed full-time or part-time compared to women.

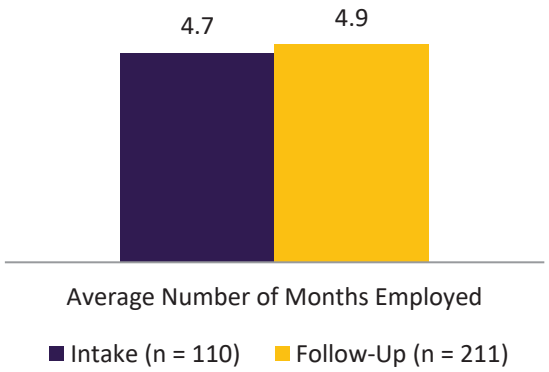




Average Number of Months Employed

As seen in Figure 6.5, among individuals who reported being employed part-time or full-time at all before entering the program (n = 110),[65] the average number of months worked was 4.7. Among the 211 individuals who worked at all in the 6-month follow-up period,[66] the average number of months they worked was 4.9.

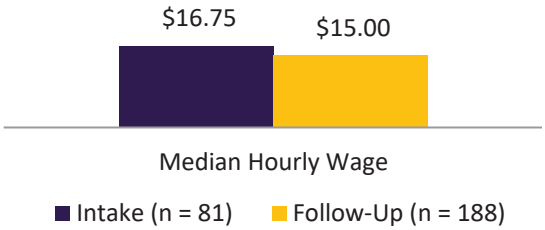
FIGURE 6.5. AVERAGE NUMBER MONTHS EMPLOYED AT INTAKE AND FOLLOW-UP, AMONG THOSE WHO REPORTED EMPLOYMENT



Median Hourly Wage

At each period, individuals who reported they were employed in the 30 days before entering the program (past 30 days, at follow-up) were asked their hourly wage. Only a small percent of clients reported they were currently employed at intake and reported an hourly wage (n = 81), and their median hourly wage was $16.75 (see Figure 6.6). At follow-up, the median hourly wage was $15.00 for the 188 individuals who were employed and reported an hourly wage.[67]

FIGURE 6.6. MEDIAN HOURLY WAGE AT INTAKE AND FOLLOW-UP, AMONG THOSE WHO REPORTED BEING CURRENTLY EMPLOYED



[65] Of the 144 individuals who reported they were employed at least one month before entering the program, 34 individuals had missing data for the number of months they were employed before entering the program because they reported being employed but there were data discrepancies with other variables for the number of months employed.

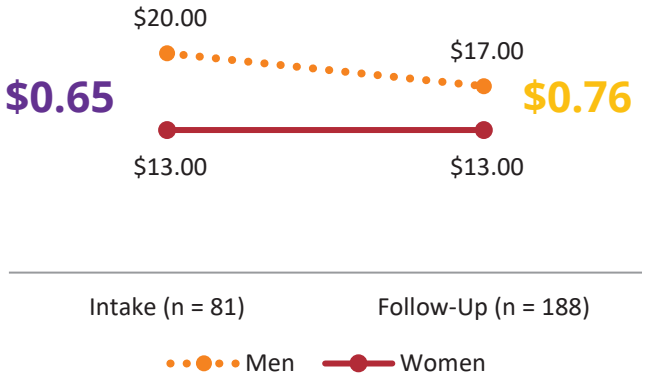
[66] At follow-up, of the 221 individuals who reported they were employed at least one month before follow-up, 10 had missing values for the number of months employed.

[67] Among the 198 individuals who reported they had been employed in the 30 days before follow-up, 10 had missing values for hourly wage.

Gender Difference in Median Hourly Wage

At intake, employed women reported a median hourly wage of $13.00, which was lower than the median hourly wage for employed men, $20.00 (see Figure 6.7). At intake, employed women earned $0.65 for every dollar employed earned. At follow-up, men reported significantly higher median hourly wages compared to women ($17.00 for men and $13.00 for women). At follow-up, employed women earned $0.76 for every dollar employed men earned.[68]

FIGURE 6.7. GENDER DIFFERENCE MEDIAN HOURLY WAGE AT INTAKE AND FOLLOW-UP[a]



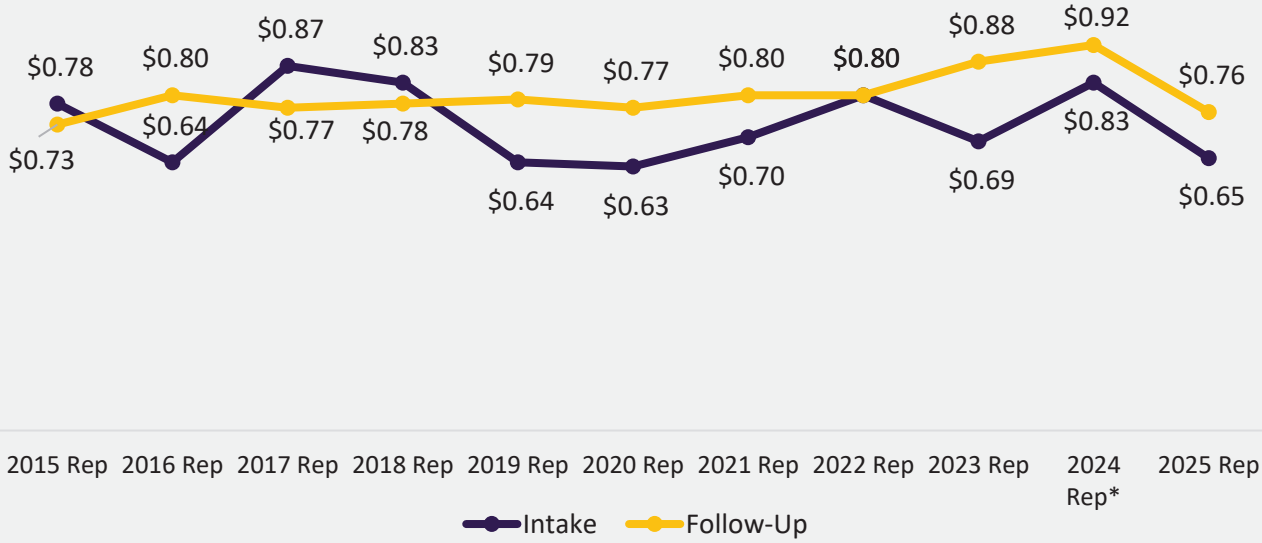
a—Significant difference at intake ($p < .001$) and follow-up ($p < .001$) by gender tested with independent-samples median test.

[68] We noted a discrepancy in classification of occupation at follow-up compared to past years' reports; therefore, occupation type by gender will not be presented in this year's report.

Trend Alert: Gender Wage Gap

For the first nine report years examined, among employed individuals there was a gender wage gap at intake and follow-up: men had higher median hourly wages compared to women, meaning that women made less than $1.00 for every $1.00 that men made. However, in the 2024 report, at intake there was no statistically significant difference in median hourly wage by gender.

In more than half of the report years, the wage gap was greater at intake than at follow-up. At follow-up, for the most extreme gap, employed women earned $0.73 for every $1.00 employed men earned in the 2015 report. The least extreme wage gap at follow-up was in the 2024 report; employed women earned $0.92 for every $1.00 employed men earned.

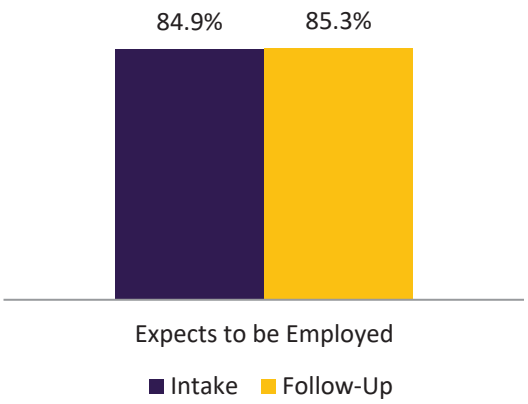


*The median hourly wage for men and women were not statistically different at intake in 2024.

Expect To Be Employed

The vast majority of clients reported they expected to be employed in the next 6 months at intake and follow-up, with no difference from intake to follow-up (see Figure 6.8).

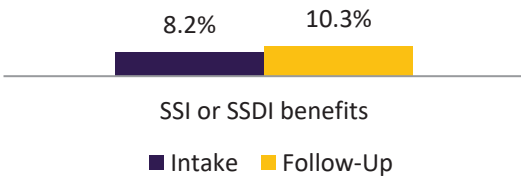
FIGURE 6.8. CLIENT EXPECTS TO BE EMPLOYED IN THE NEXT 6 MONTHS AT INTAKE AND FOLLOW-UP (N = 279)



SSI/SSDI Benefits

Similar small percentages of individuals reported at intake and follow-up that they were currently receiving SSI or SSDI benefits (see Figure 6.9).

FIGURE 6.9. CLIENT CURRENTLY RECEIVES SSI OR SSDI BENEFITS AT INTAKE AND FOLLOW-UP (N = 281)[69]



> ***I hated the program while I was in there because of all the rules, but I have my life back now that I have finished the program. I go back now to check on and sponsor guys, and I'm trying to get a job there now. I love the [program], and am eternally grateful for it.***
>
> - RCOS FOLLOW-UP CLIENT

[69] One individual had missing information for SSI or SSDI benefits at follow-up.

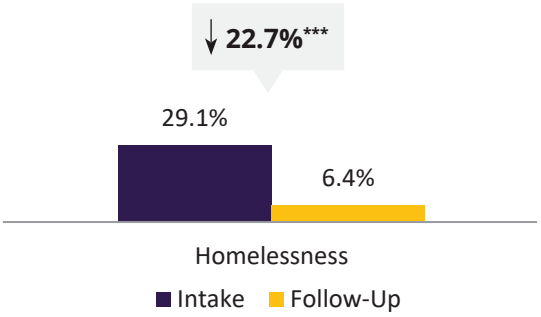
Section 7. Living Situation

This section of targeted factors examines the clients' living situation before they entered the program and at follow-up. Specifically, clients are asked in both surveys: (1) if they consider themselves currently homeless, (2) in what type of situation (i.e., own home or someone else's home, residential program, shelter) they have lived, and about (3) economic hardship.

Homelessness

More than one-fourth of clients (29.1%) reported being homeless when they entered the recovery center and 6.4% reported being homeless at follow-up. This is a significant decrease of 22.7% in the number of clients who reported they were homeless (see Figure 7.1).

FIGURE 7.1. HOMELESSNESS AT INTAKE AND FOLLOW-UP (N = 282)

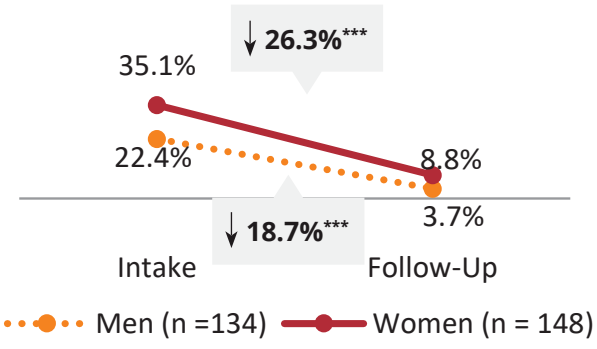


***p < .001.

Gender Difference in Homelessness at Intake and Follow-Up

At intake, significantly more women than men reported they had experienced homelessness in the 6 months before entering the recovery center (see Figure 7.2). By follow-up, there were significant decreases in the percent of women and men who had experienced homelessness in the past 6 months. At follow-up, there was no difference by gender.

FIGURE 7.2. GENDER DIFFERENCE IN HOMELESSNESS AT INTAKE AND FOLLOW-UP

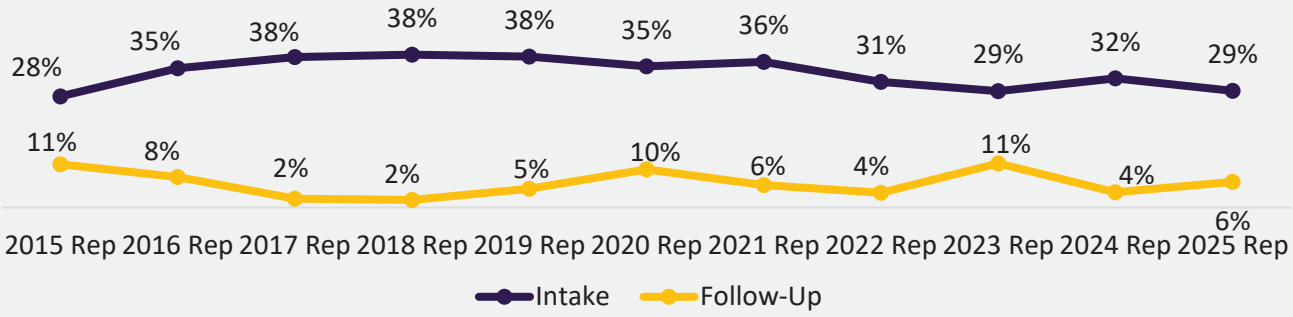


a – Significant difference by gender at intake (p < .05).
*** p < .001.

Trend Alert: Homelessness

From the 2015 to the 2017 report, the percent of people reporting homelessness at intake increased and then remained stable from 2017 through 2021. Since the 2022 report, the percent has been around 30% at intake.

The percent of people reporting homeless at follow-up has decreased from intake every report year. The percentages of individuals reporting a period homelessness at follow-up has been a low of 2% to a high of 11%.

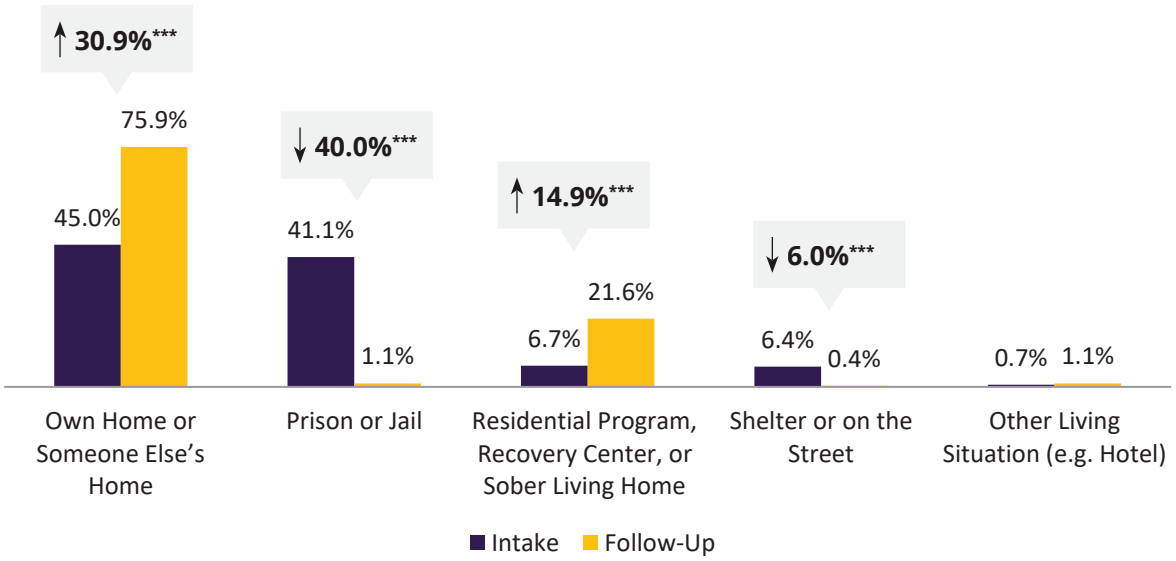


Living Situation

Change in living situation from intake to follow-up was examined for the RCOS follow-up sample (see Figure 7.3). At intake and follow-up, individuals were asked about where they lived in the past 30 days. At intake, less than half of individuals (45.0%) reported living in a private residence (i.e., their own home or someone else's home), whereas at follow-up, the majority (75.9%) reported living in their own home or someone else's home at follow-up—a significant increase. The number of clients who reported living in a jail or prison decreased significantly from 41.1% at intake to 1.1% at follow-up.

Even though the target date for the follow-up survey is 12 months after individuals completed their intake survey and entry into Phase 1, 21.6% reported at follow-up living in a recovery center, residential program, or sober living home in the past 30 days—a significant increase from intake (6.7%). Only a small number of individuals reported living in a shelter or on the street at intake (6.4%) and at follow-up (0.4%).

FIGURE 7.3. LIVING SITUATION AT INTAKE AND FOLLOW-UP (N=282)



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$).
***$p < .001$.

At the time of the follow-up survey, 25 individuals reported they were living in a recovery center facility. Of the 25 individuals who were living in a recovery center at follow-up, 52.0% said they were living in transitional housing connected to the program, 36.0% were a peer mentor or staff member, and 12.0% were in one of the phases of the program.

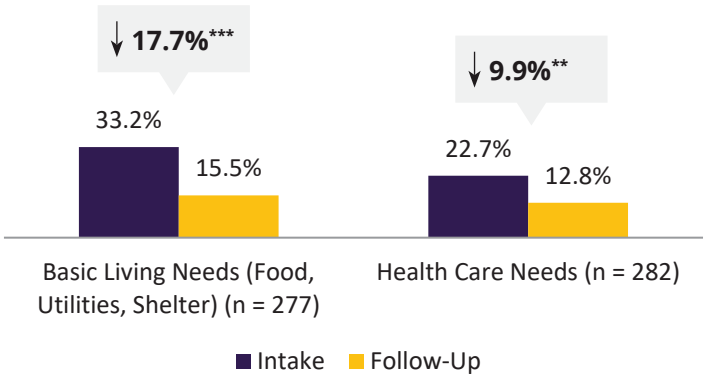
Economic Hardship

Economic hardship may be a better indicator of the actual day-to-day living situation clients face than a measure of income. Therefore, the intake and follow-up surveys included several questions about clients' difficulty meeting basic living needs and health care needs.[70] Clients were asked eight items, five of which asked about difficulty meeting basic living needs such as food, shelter, utilities, and telephone, and three items asked about difficulty for financial reasons in obtaining health care.

The percent of clients who reported having difficulty meeting basic living needs decreased significantly from intake (33.2%) to follow-up (15.5%; see Figure 7.4). More than one-fifth of clients (22.7%) reported having difficulty in obtaining health care needs (e.g., doctor visits, dental visits, and filling prescriptions) for financial reasons at intake, with a significant decrease to 12.8% at follow-up.

[70] She, P., & Livermore, G. (2007). Material hardship, poverty, and disability among working-age adults. Social Science Quarterly, 88(4), 970-989.

FIGURE 7.4. ECONOMIC HARDSHIP AT INTAKE AND FOLLOW-UP[71]



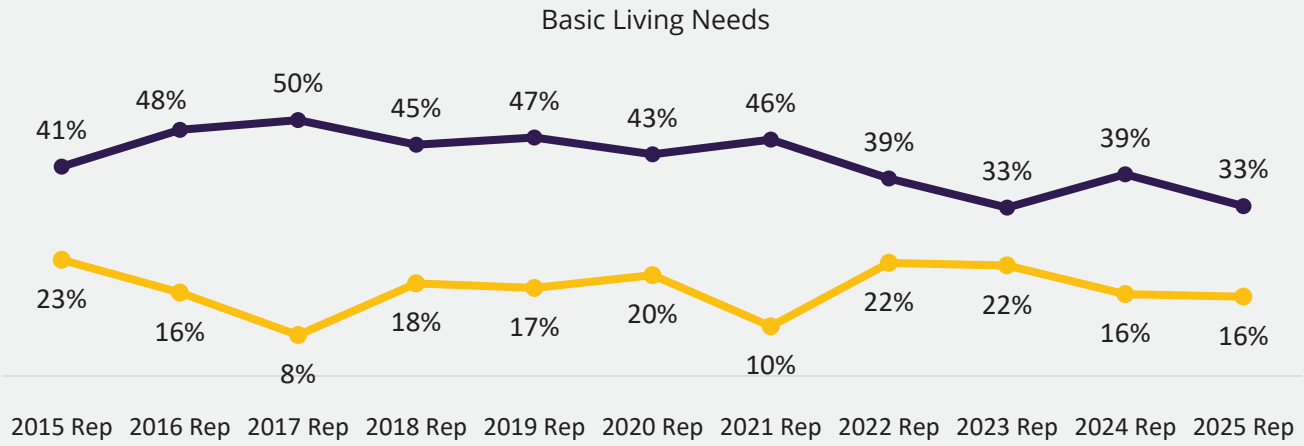
**p < .01, ***p < .001

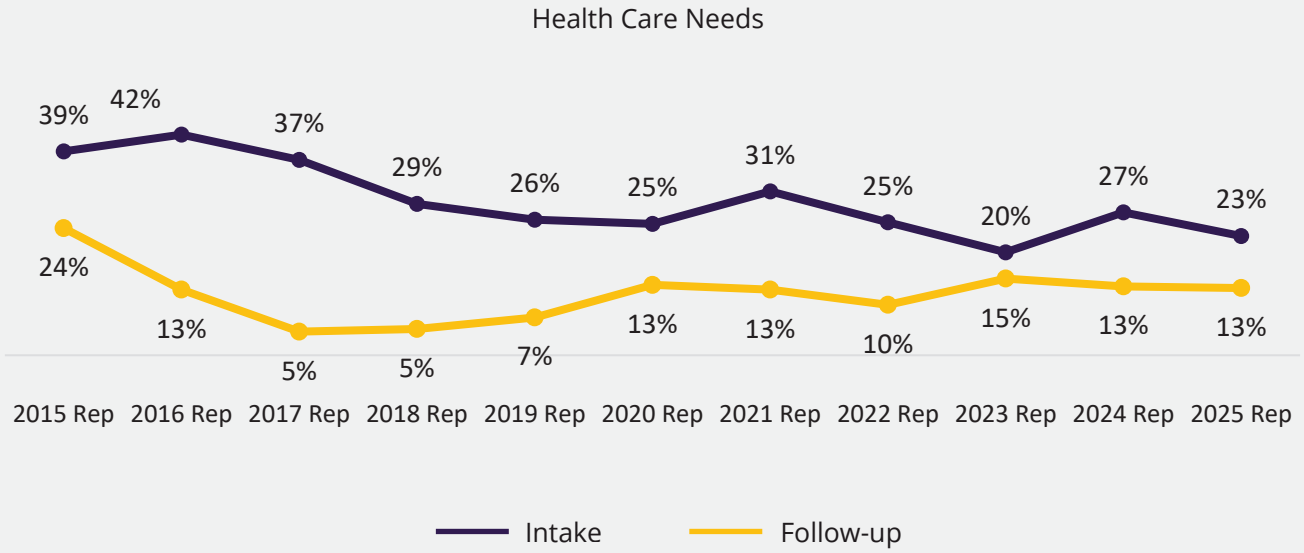
[71] Five individuals had missing values for the items at difficulty meeting basic living needs at follow-up.

Trend Alert: Economic Hardship

Since the 2015 report, there has been a significant decrease from intake to follow-up each year in the percent of clients who reported they had difficulty meeting basic living needs in the past 6 months. At intake, the percent of clients who had difficulty meeting basic living needs (e.g., housing, utilities, and food) has increased from 41% in 2025 to a high of 50% in 2017 before decreasing to 33% in the 2023 and 2025 reports. At follow-up, the percent of clients who had difficulty meeting basic living needs was fluctuated from a high of 23% in 2015 to a low of 8% in 2017.

The percentage of clients reporting difficulty meeting health care needs (e.g., unable to see a doctor, dentist, or pay for prescription medication) had more dramatic decreases from intake to follow-up in report years 2016 to 2017. The expansion of Medicaid in the state under the implementation of the Affordable Care Act corresponds to the follow-up period in the 2017 report. Nonetheless, the decrease from intake to follow-up was significant in all years except in the 2023 report.





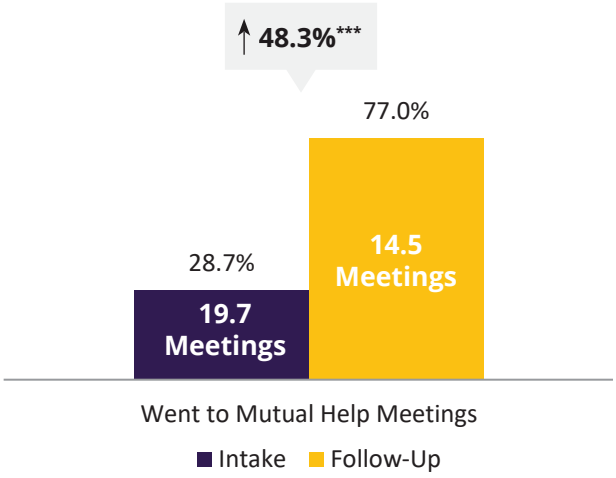
Section 8. Recovery Supports

This section focuses on five changes in recovery supports: (1) percent of clients attending mutual help recovery group meetings, (2) recovery supportive interactions in the past 30 days, (3) the number of people the individual said they could count on for recovery support, (4) what would be most useful to them in staying off drugs or alcohol, and (5) how good they felt their chances were of staying off drugs or alcohol in the future.

Attendance of Mutual Help Recovery Group Meetings

At intake, 28.7% of individuals reported going to mutual help recovery group meetings (e.g., AA, NA) in the 30 days before they entered the recovery center (see Figure 8.1). Among the 81 individuals who attended meetings in the 30 days before entering the program, they attended an average of 19.7 meetings. At follow-up, there was a significant increase of 48.3%, with 77.0% of individuals reporting they had gone to mutual help recovery group meetings in the past 30 days. Among the 217 individuals who attended meetings in the 30 days before follow-up, they attended an average of 14.5 meetings.

FIGURE 8.1. RECOVERY SUPPORTS AT INTAKE AND FOLLOW-UP (N=282)

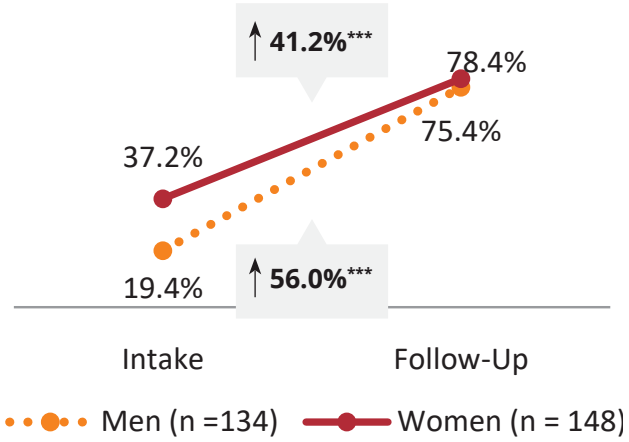


***p < .001.

Gender Difference In Attending Mutual Help Recovery Meetings At Intake And Follow-Up

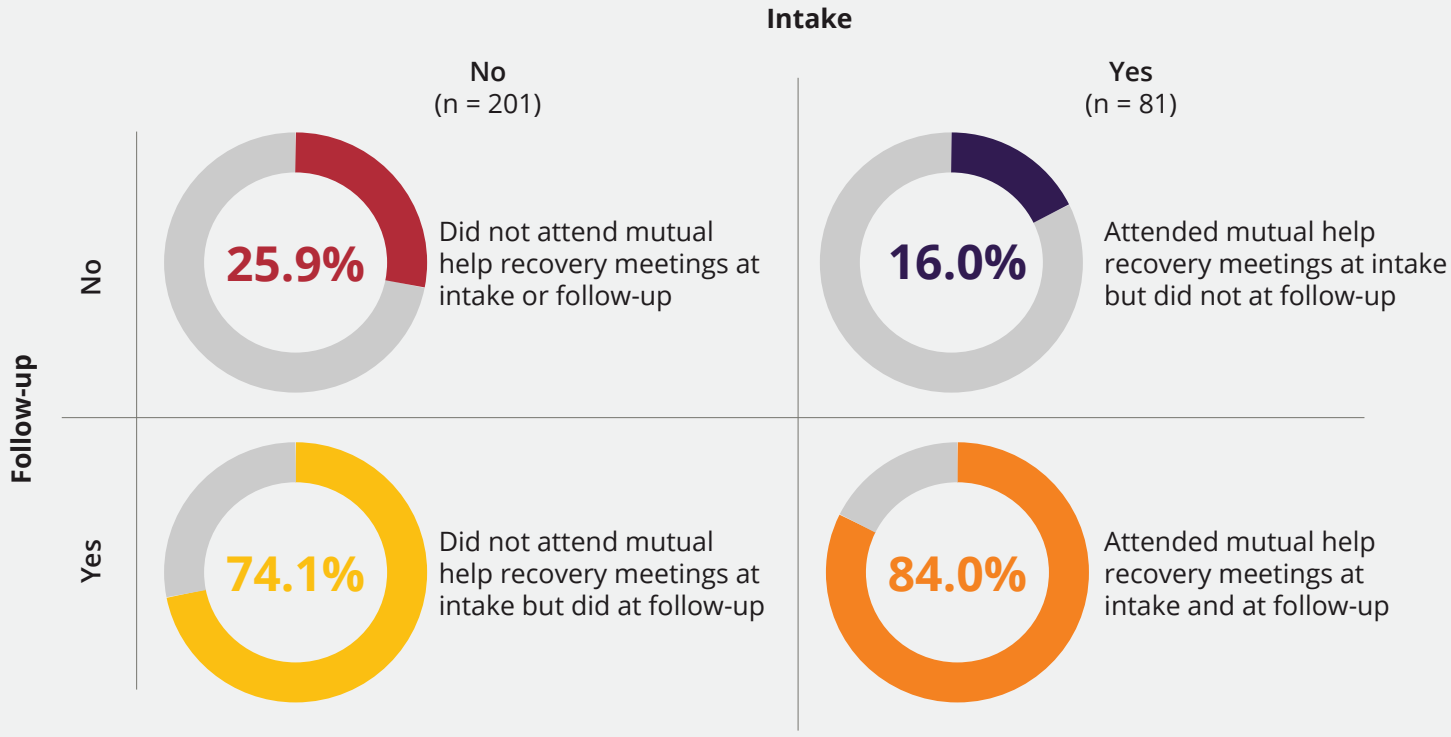
At intake, significantly more women than men reported they had attended mutual help recovery meetings (see Figure 8.2). By follow-up, there were significant increases in the percent of women and men who reported they had attended meetings in the past 30 days. At follow-up, there was no difference by gender.

FIGURE 8.2. GENDER DIFFERENCE IN ATTENDING MUTUAL HELP RECOVERY MEETINGS AT INTAKE AND FOLLOW-UP



a – Significant difference by gender at intake ($p < .001$).
*** $p < .001$.

More than one-fourth of clients reported attending mutual help recovery group meetings in the 30 days before entering the recovery center (28.7%; n = 81). Of the clients who attended meetings at intake, 84.0% also attended meetings in the 30 days before follow-up. Of the individuals who did not attend recovery self-help meetings at intake (n = 210), 74.1% attended at least one meeting in the past 30 days at follow-up.

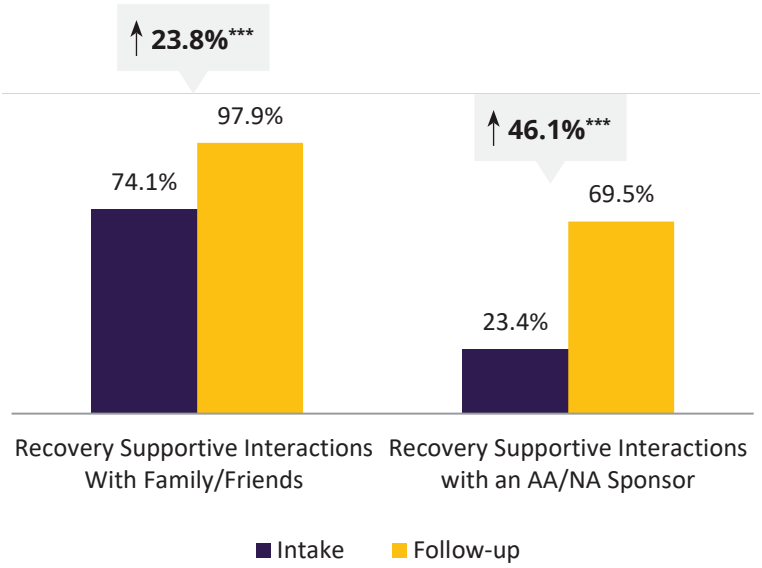


Recovery Supportive Interactions

As seen in Figure 8.3, at follow-up, significantly more individuals (97.9%) reported that they had interactions with family and friends who were supportive of their recovery in the past 30 days compared to intake (74.1%).

The percent of individuals who reported having contact with an AA, NA, or other self-help group sponsor in the past 30 days also significantly increased by 46.1% from intake (23.4%) to follow-up (69.5%).

FIGURE 8.3. RECOVERY SUPPORTIVE INTERACTIONS IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 282)

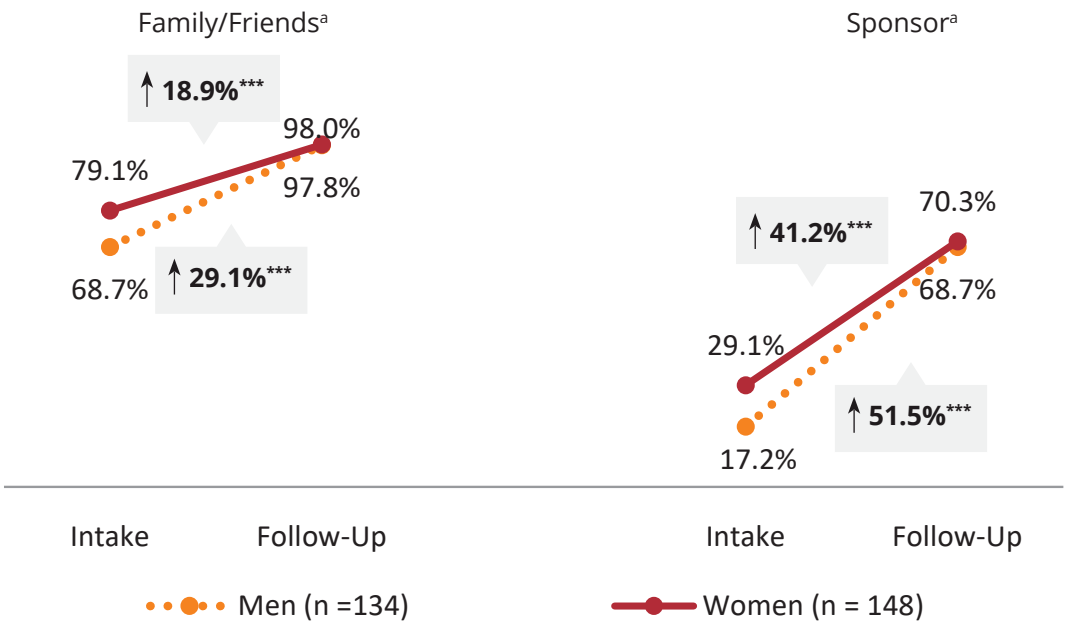


***p < .001.

Gender Differences in Recovery Supportive Interactions at Intake and Follow-Up

At intake, significantly more women than men reported they had interacted with family/friends who were supportive of their recovery in the past 30 days (see Figure 8.4). By follow-up, there were significant increases in the percent of women and men who reported interactions with family/friends who were supportive of their recovery. At follow-up, there was no difference by gender. Also, there was a gender difference in the percent of men and women who reported they had had contact with a sponsor in the 30 days before intake. Significantly more men and women reported they had had contact with a sponsor at follow-up than at intake. By follow-up, similar percentages of men and women had had contact with a sponsor.

FIGURE 8.4. GENDER DIFFERENCES RECOVERY SUPPORTIVE INTERACTIONS AT INTAKE AND FOLLOW-UP



a – Significant difference by gender at intake ($p < .05$).
***$p < .001$.

Average Number Of People The Client Could Count On For Recovery Support

The average number of people individuals reported that they could count on for recovery support increased significantly from 5.6 people at intake to 21.4 people at follow-up (see Figure 8.5).

FIGURE 8.5. AVERAGE NUMBER OF PEOPLE CLIENTS SAID THEY COULD COUNT ON FOR RECOVERY SUPPORT AT INTAKE AND FOLLOW-UP (N = 281)[a72]

a – Significant increase from intake to follow-up as measured by a paired t-test ($p < .001$).

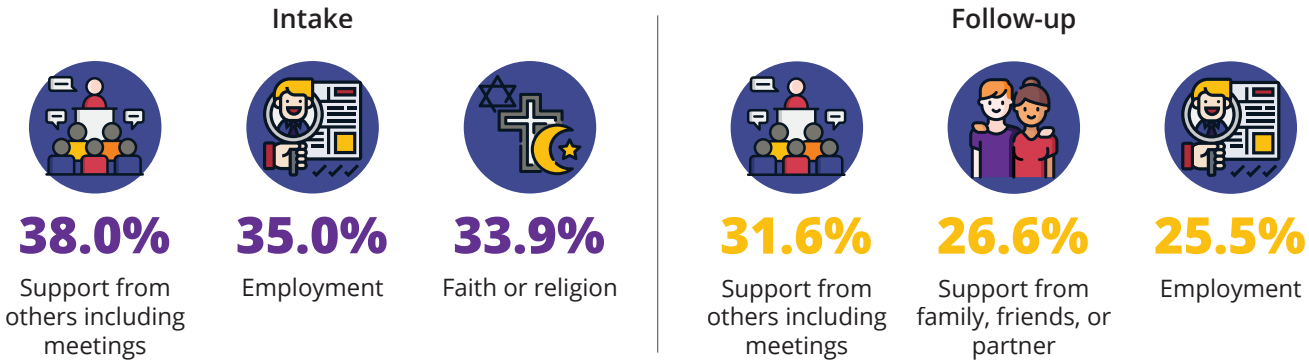
What Will Be Most Useful in Staying Off Drugs/Alcohol

At intake and follow-up, clients were asked what, other than being at the recovery center, they believed would be most useful in helping them quit or stay off drugs/alcohol. Rather than conduct analysis on change in responses from intake to follow-up, responses that were reported by 15% of clients or more are presented for descriptive purposes in Figure

[72] One individual had missing values for the number of people they could count on for recovery support at follow-up.

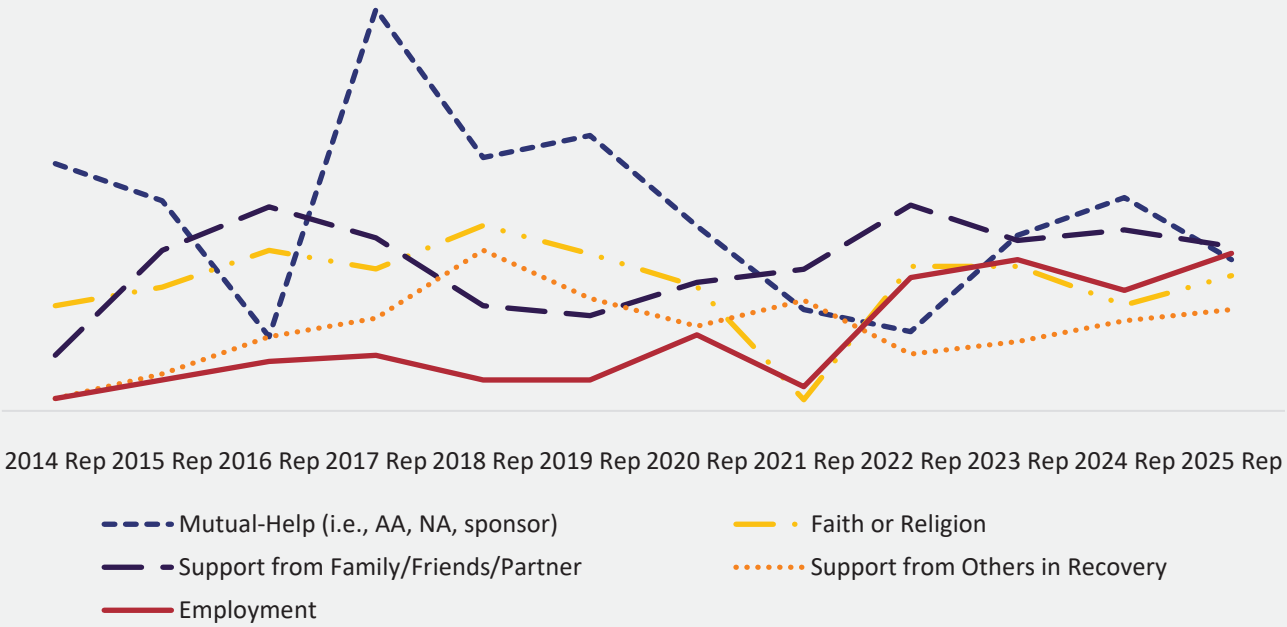
8.6. At intake, the most common responses were support from other people in recovery, faith or religion, employment, and support from family/friends/partners. At follow-up, the most common responses were support from others in recovery, support from family/friends/partner, employment, children, faith or religion, and self-talk/will power/wanting it for self.

FIGURE 8.6. CLIENTS REPORTING WHAT WILL BE MOST USEFUL IN STAYING OFF DRUGS AND/OR ALCOHOL (N = 274)[73]



Trend Alert: What Will Be Most Useful in Staying Off Drugs/alcohol at Follow-up

At follow-up, clients were asked what, other than being at the recovery center, would be most useful in helping them quit or stay off drugs or alcohol. Examining the trends in five of the most common responses shows quite a bit of variability in the responses that were most frequently mentioned.



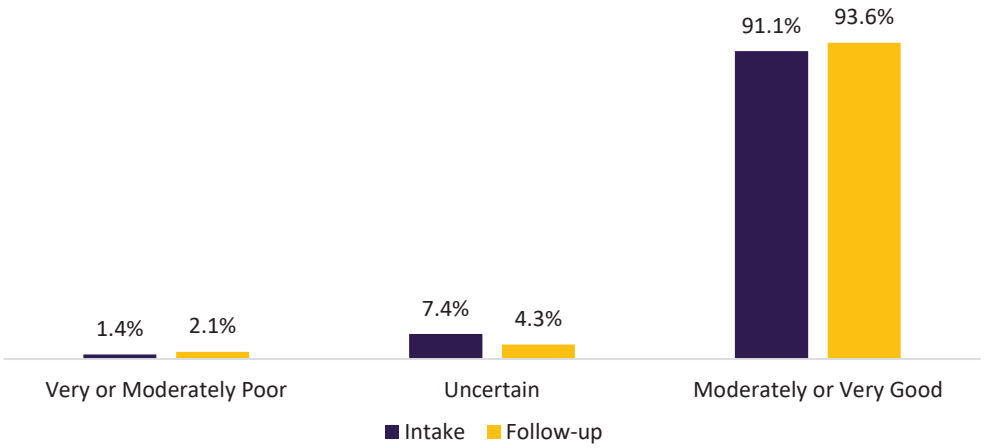
[73] Eight individuals had missing data for what would be most useful for them in staying off/getting off substances at follow-up.

Chances of Staying Off Drugs/alcohol

Clients were asked, based upon their situation, how good they believed their chances were of getting off and staying off drugs/alcohol using a scale from 1 (Very poor) to 5 (Very good). Clients rated their chances of getting off and staying off drugs/alcohol as a 4.5 at intake and 4.7 at follow-up, which was a significant increase (not depicted in figure).

The majority of respondents believed they had moderately or very good chances of staying off drugs/alcohol at intake (91.1%) and at follow-up (93.6%; see Figure 8.7). There was not a significant change in the percent of individuals who rated their chances for staying off/getting off drugs or alcohol.

FIGURE 8.7 CLIENTS REPORTING THEIR CHANCES OF GETTING OFF AND STAYING OFF DRUGS/ALCOHOL AT INTAKE AND FOLLOW-UP (N = 282)[a]



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity; not statistically significant.

Section 9. Multidimensional Recovery

This section examines multidimensional recovery at follow up as well as change in multidimensional recovery before entering the program and at follow-up.

Recovery goes beyond return to occasional drug or alcohol use. Recovery from substance use disorders can be defined as "a process of change through which an individual achieves abstinence and improved health, wellness and quality of life: (p. 5).[74] The SAMHSA definition of recovery is similarly worded and encompasses health (including but not limited to abstinence from alcohol and drugs), having a stable and safe home, a sense of purpose through meaningful daily activities, and a sense of community.[75] In other words, recovery encompasses multiple dimensions of individuals' lives and functioning. The multidimensional recovery measure uses items from the intake and follow-up surveys to classify individuals who have all positive dimensions of recovery.

TABLE 9.1. COMPONENTS OF MULTIDIMENSIONAL RECOVERY STATUS

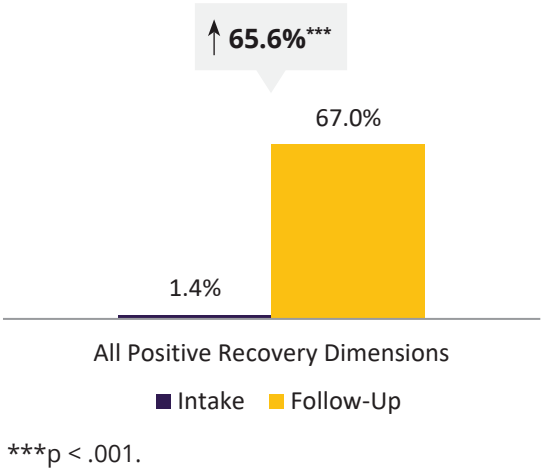
Indicator	Positive Recovery Dimensions	Negative Recovery Dimensions
Substance use disorder (SUD) symptoms	No or mild substance use disorder (SUD)	Moderate or severe substance use disorder (SUD)
Employment	Employed at least part-time or in school	Unemployed (not on disability, not going to school, not a caregiver)
Homelessness	No reported homelessness	Reported homelessness
Criminal legal system involvement	No arrest or incarceration	Any arrest or incarceration
Suicide ideation	No suicide ideation (thoughts or attempts)	Any suicide ideation (thoughts or attempts)
Overall health	Fair to excellent overall health	Poor overall health
Recovery support	Had at least one person he/she could count on for recovery support	Had no one he/she could count on for recovery support
Quality of life	Mid to high-level of quality of life	Low-level quality of life

At intake, only four individuals (1.4%) were classified as having all positive dimensions of recovery when entering the program, whereas at follow-up, two-thirds of participants (67.0%) were classified as having all positive dimensions of recovery at follow-up, which was a significant increase of 65.6% (see Figure 9.1).

[74] Center on Substance Abuse Treatment. (2007). National summit on recovery: conference report (DHHS Publication No. SMA 07-4276). Rockville, MD: Substance Abuse and Mental Health Services Administration.

[75] Laudet, A. (2016). Measuring recovery from substance use disorders. Workshop presentation at National Academies of Sciences, Engineering, and Medicine (February 24, 2016). Retrieved from https://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_171025.pdf

FIGURE 9.1. MULTIDIMENSIONAL RECOVERY AT INTAKE AND FOLLOW-UP (N = 282)



***p < .001.

Table 9.2 presents the frequency of clients who reported each of the specific components of the multidimensional recovery measure at intake and follow-up. At intake, the factors with the lowest percent of individuals indicated were no arrests or incarceration, no substance use disorder, and a higher quality of life. At follow-up, the factors with the lowest percent of individuals reporting the positive dimensions of recovery were having employment full-time and part-time, and not being arrested or incarcerated in the past 6 months.

TABLE 9.2. PERCENT OF CLIENTS WITH SPECIFIC POSITIVE DIMENSIONS OF RECOVERY AT INTAKE AND FOLLOW-UP (n = 282)[76]

	Intake *(% Yes)*	**Follow-Up** *(% Yes)*
Met DSM-5 criteria for no SUD in the past 6 months	24.1%	92.6%
Usual employment was employed full-time or part-time in the past 6 months (or unemployed because a student, home caregiver, on disability)	61.1%	85.1%
Reported no homelessness (or living in recovery center at follow-up)	70.9%	93.6%
Reported not being arrested and/or incarcerated in the past 6 months	16.7%	87.6%
Reported no thoughts of suicide or attempted suicide in the past 6 months	79.4%	98.2%
Self-rating of overall health at follow-up was fair, good, very good, or excellent	90.1%	95.0%
Reported having someone they could count on for recovery support	79.8%	99.6%
Reported a quality-of-life rating in the mid or higher range (rating of 5 or higher)	45.0%	98.9%

To better understand which factors at entry to the program are associated with having all positive dimensions of recovery at follow-up, each element that defined the multidimensional recovery measure at intake as well as the number of months the client self-reported they spent in the recovery center program and their completion of the program (Yes/No) were entered as predictor variables in a logistic regression model. The continuous variable for the following factors were included as predictor variables instead

[76] Two individuals had missing data for usual employment status at intake.

of the binary variables that are presented in Table 9.2: the number of criteria for DSM-5 substance use disorder met, number of months employed, overall health rating, quality of life rating, and the number of people the individual could count on for recovery support at intake. Having all the positive dimensions of recovery at follow-up was the criterion (i.e., dependent) variable. Only one predictor variable was statistically significantly associated with having all positive dimensions of recovery at follow-up: having completed phase I of the recovery program.

TABLE 9.3. MULTIVARIATE ASSOCIATIONS WITH HAVING ALL POSITIVE DIMENSIONS OF RECOVERY AT FOLLOW-UP (n = 282)

Factor	B	Wald	Odds Ratio	95% CI	
				Lower	Upper
Self-reported number of months in the recovery center program	.045	.466	1.046	.920	1.188
Completed phase I of the recovery center program [0 = No, 1 = Yes]	.934	8.210	2.544**	1.343	4.818
Number of DSM-5 criteria for SUD in the 6 months before entering the program	-.040	1.473	.960	.900	1.025
Number of months employed full-time or part-time in the 6 months before entering the program	.021	.138	1.021	.916	1.138
Homelessness in the 6 months before entering the program [0 = No, 1 = Yes]	-.565	3.502	.569	.315	1.027
Arrested or incarcerated in the 6months before entering the program [0 = No, 1 = Yes]	-.504	1.732	.604	.285	1.279
Reported thoughts of suicide or attempted suicide in the 6 months before entering the program [0 = No, 1 = Yes]	-.242	.499	.785	.402	1.536
Self-rating of overall health at intake [1 – 5]	.163	1.392	.985	.898	1.542
Number of people client could count on for recovery support before entering the program	-.005	.056	.995	.957	1.035
Rating of quality of life before entering the program [1 – 10]	-.015	.048	.985	.859	1.129

Note: Categorical variables were coded in the following ways: Completed phase I (0 = No, 1 = Yes), homeless (0 = No, 1 = Yes), arrested or incarcerated (0 = No, 1 = Yes), had thoughts of suicide or attempts (0 = No, 1 = Yes).
**p < .01.

> ***I went in with an open mind and was ready to try treatment. They opened my eyes and changed my perspective, and completely changed my life.***
>
> - RCOS FOLLOW-UP CLIENT

Section 10. Clients' Perceptions of Care in the Recovery Center Programs

One of the important outcomes assessed during the follow-up interview is the clients' perception of the Recovery Center program experience. This section describes three aspects of clients' satisfaction with the program: (1) overall rating of the program, (2) clients' ratings of program experiences, and (3) positive outcomes of program participation.

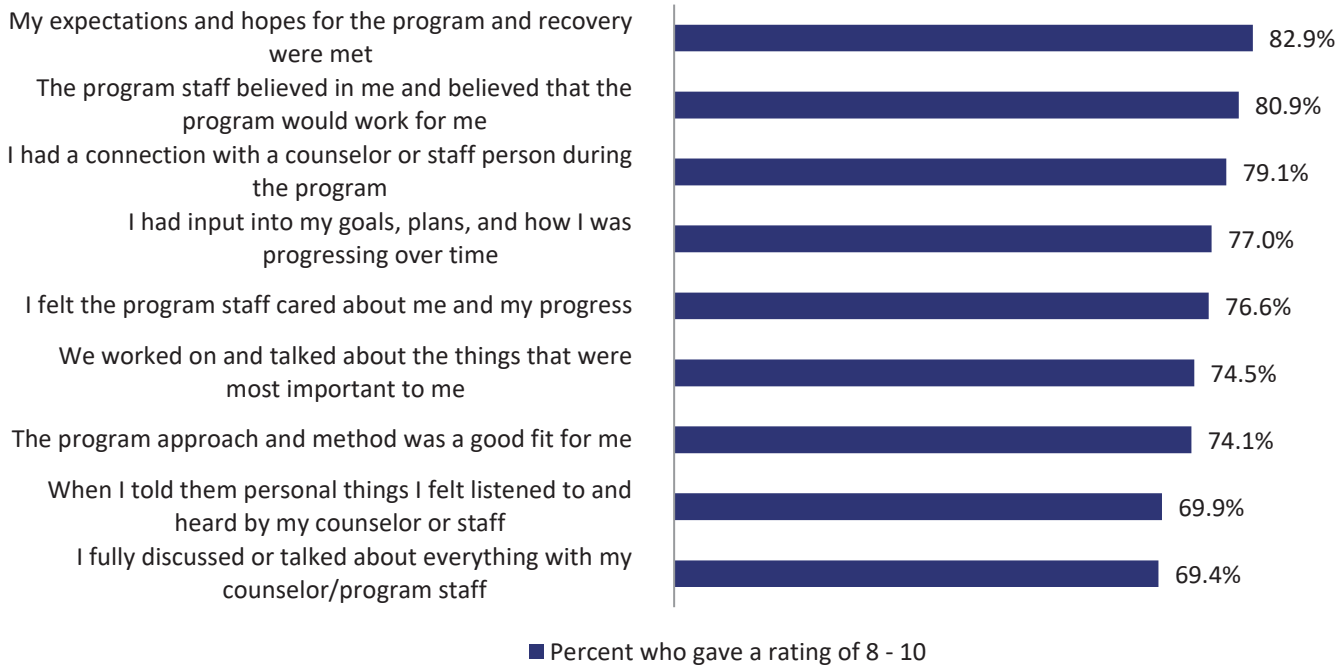
Overall Rating of the Program

The majority of individuals (75.5%) rated their experience in the Recovery Kentucky program between an 8 and a 10, where 0 represented "not at all right for the client" and 10 represented "exactly right for the client (a perfect fit)" (not in a table). The average rating was 8.4.

The majority of clients (77.7%) reported at follow-up that they had completed Phase I of the recovery program. Significantly more men reported they had completed Phase I compared to women (86.6% vs. 69.6%, $\chi 2$ (1, 282) = 11.677, $p < .001$).

Clients were asked to report their perceptions of how the recovery center programs worked for them. The statements presented in Figure 10.1 had separate response options, with ratings ranging from 0 to 10. The higher values corresponded to the more positive responses and the lower values corresponded to the negative responses. For example, for the statement, "My expectations and hopes for recovery were met" the anchors were 0 "Not at all met" and 10 "Perfectly met." Even the negatively worded items had anchors in which the higher values represented the more positive side of the continuum. For example, for the statement, "There were things I did not talk about or that I did not fully discuss with my counselor/program staff" the response option 0 corresponds to "I did not discuss lots of things, I held things back," and 10 corresponds to "I discussed everything, I held back nothing." The majority of followed-up clients gave high positive ratings about all the aspects of the program we asked about in the follow-up survey.

FIGURE 10.1. PERCENT OF INDIVIDUALS WHO GAVE A RATING OF 8 – 10 AT FOLLOW-UP TO THE FOLLOWING STATEMENTS ABOUT THE RECOVERY KENTUCKY PROGRAM (N = 282)



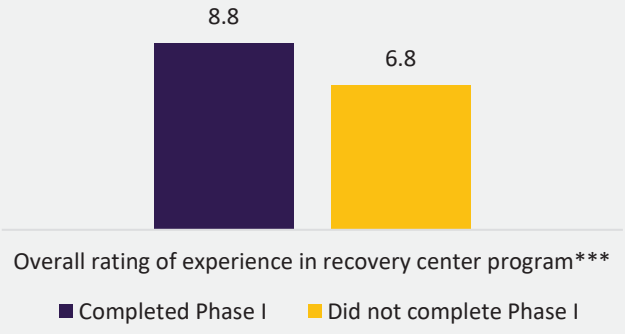
Two-thirds of participants (66.7%) reported that the program length was just right as opposed to too short (1.8%) or too long (31.5%; not depicted in a figure).

Association of Perceptions of Care and Completion of Phase I

Respondents' perceptions of care in the recovery center program were examined by Phase I completion status to better understand if there are aspects of the program that individuals who did not complete perceived of differently from individuals who had completed Phase I.

As expected, individuals who completed Phase I gave a significantly higher rating of the program relative to individuals who did not complete Phase I (8.8 vs. 6.8, $t(75.1) = -4.906$, $p < .001$; see Figure 10.2).

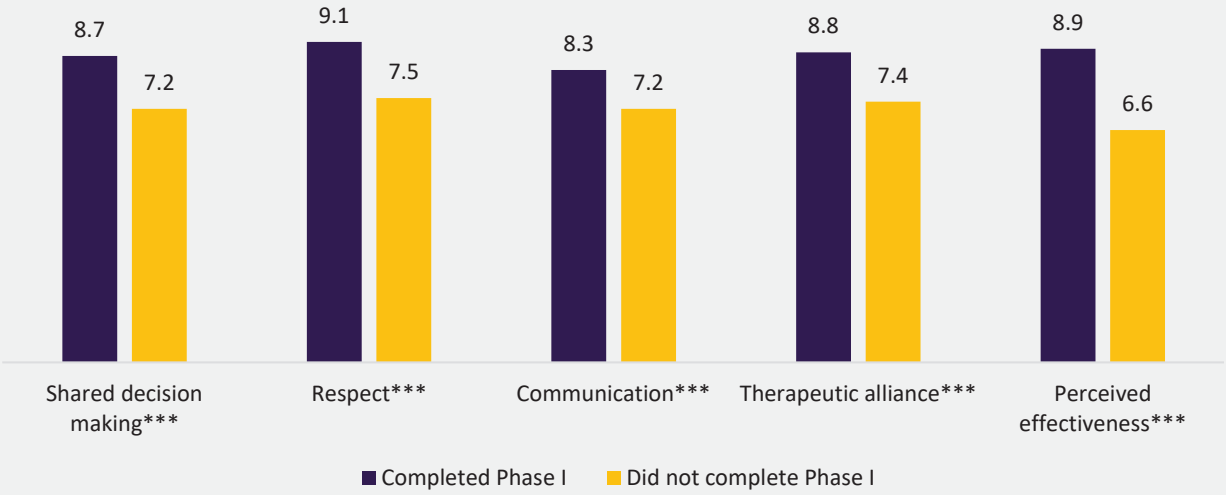
FIGURE 10.2. AVERAGE RATING OF OVERALL EXPERIENCE IN THE PROGRAM AT FOLLOW-UP BY PHASE I COMPLETION STATUS



***p < .001.

Respondents' perceptions of care includes their assessment of the overall quality of the program as well as specific aspects of care they received, such as access to care, shared decision making, communication, respect, willingness to recommend the program to others and overall satisfaction with services (IOM, 2015). Various items were included in the follow-up surveys asking respondents about their perceptions of the programs in which they participated. Using the dimensions of clients'/patients' perceptions of care identified by the IOM (2015), specific items included in the follow-up surveys, as seen in Figure 10.1, were mapped onto the domains with face validity, but no other psychometrics were assessed (see Figure 10.3). For each of the domains, the group of individuals who had not completed Phase I gave significantly lower ratings than individuals who had completed Phase I.

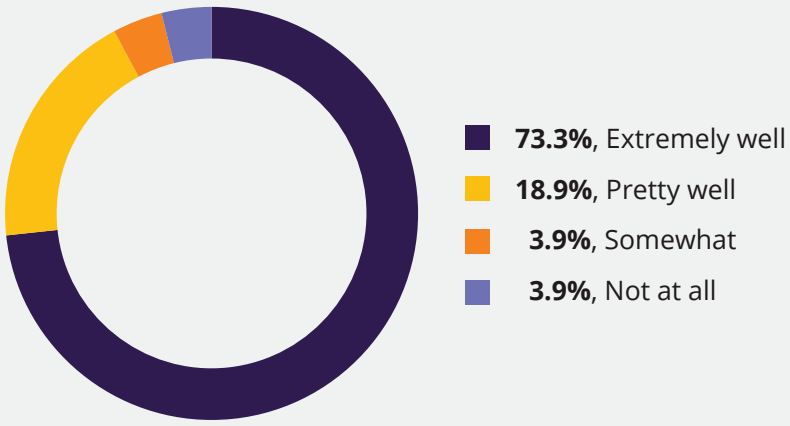
FIGURE 10.3. AVERAGE RATINGS OF CARE IN THE PROGRAM AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



***p < .001.

Thinking about their experience with the recovery center program most individuals stated the program worked extremely well (73.3%) or pretty well (18.9%) for them (see Figure 10.4). A small percent (3.9%) reported the program worked somewhat for them and 3.9% said the program worked not at all for them.

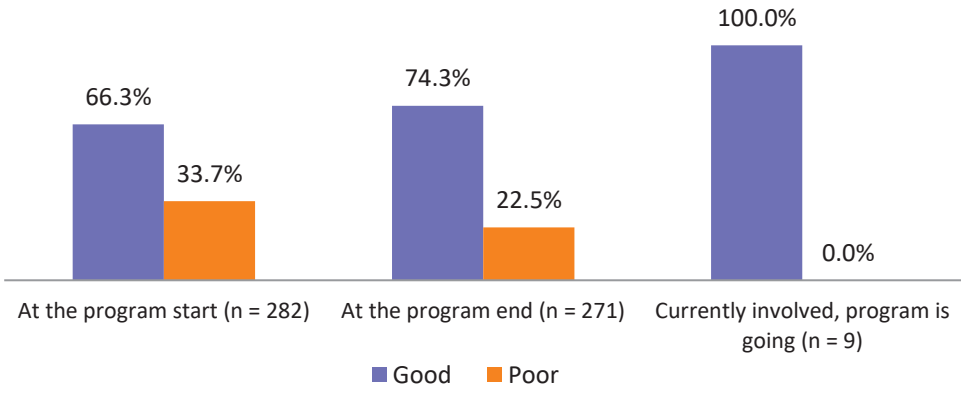
FIGURE 10.4. RESPONDENTS' PERCEPTION OF HOW WELL THE PROGRAM WORKED FOR THEM (N = 282)



The majority (89.3%) stated they would refer a close friend or family member to the recovery center program, with 10.7% stating they would not refer a close friend or family member. Among the individuals who would refer a friend or family member to the program, 44.2% said they would warn the friend/relative about certain things or tell them who to work with or who to avoid in the program.

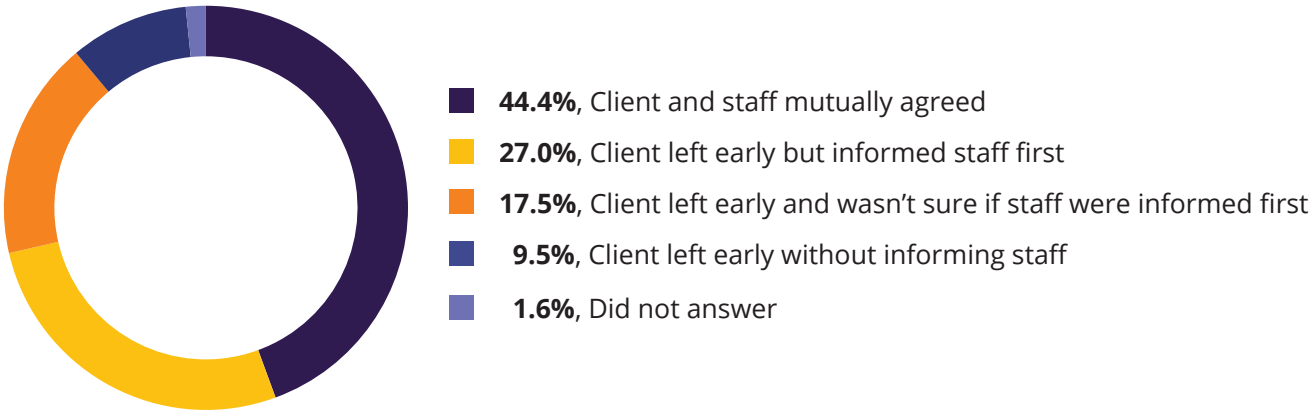
Figure 10.5 shows the percent of individuals who reported the program started poor or good and ended poor or good. About one-third of participants (33.7%) reported the start of the program was poor for them, and 22.5% reported the end of the program was poor for them for individuals who were no longer involved with the program. The majority of clients who were not still involved in the program (74.3%) reported the end of the program was good for them. All nine individuals who were still involved in the program reported that it was currently good.

FIGURE 10.5. PERCENT OF INDIVIDUALS WHO REPORTED AT FOLLOW-UP THE RECOVERY CENTER PROGRAM STARTED AND ENDED POOR OR GOOD[77]



Among the individuals who stated the program ended poorly for them (n = 63), 46.0% reported they had completed Phase I of the program. Figure 10.6 presents the ways that participants reported their involvement with the program ended.

FIGURE 10.6. AMONG INDIVIDUALS WHO RATED THE END OF THEIR PARTICIPATION IN THE PROGRAM AS POOR (N = 63), HOW THEIR INVOLVEMENT WITH THE PROGRAM ENDED

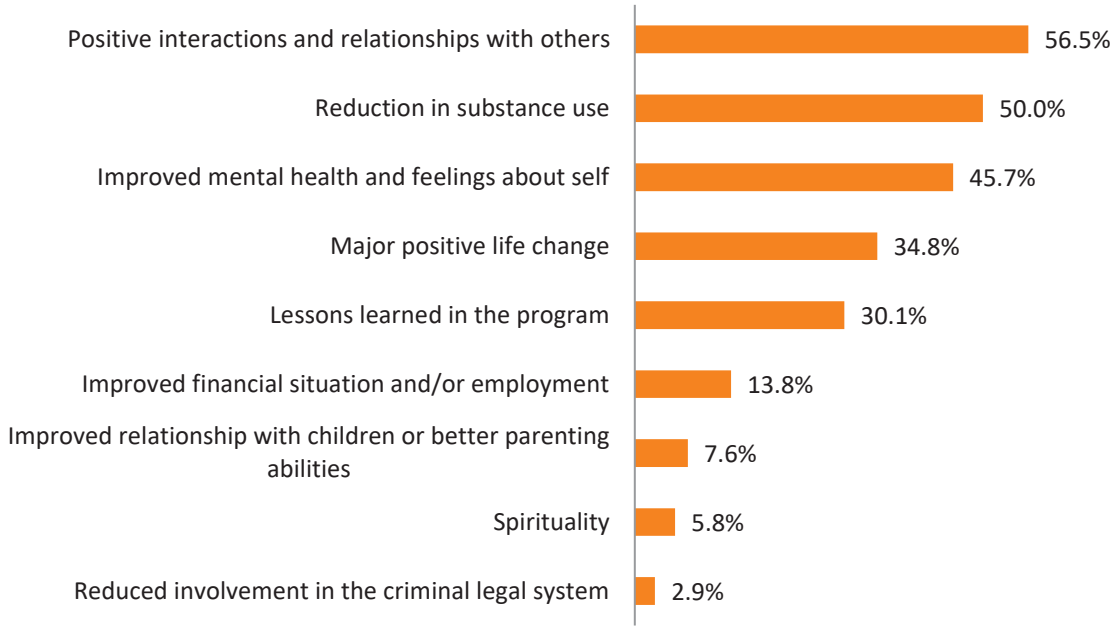


[77] Two individuals declined to answer how the treatment program ended for them.

Positive Outcomes of Program Participation

At the beginning of the follow-up survey, individuals were also asked about the three most positive outcomes of their Recovery Kentucky program experience (see Figure 10.7). The most commonly self-reported positive outcomes of the program included increased positive interactions and relationships with other people, reduction in substance use, improved mental health and feelings about themselves, major positive life change (e.g., better quality of life, better able to function, having a "normal" life, having greater control over life), and lessons learned in the program. Smaller percentages reported the following positive outcomes: improved financial situation, better relationship with and ability to parent children, spirituality (religious faith), and reduced involvement with the criminal legal system.

FIGURE 10.7. PERCENT OF INDIVIDUALS REPORTING THE MOST POSITIVE OUTCOMES THEY EXPERIENCED FROM THEIR RECOVERY KENTUCKY PROGRAM EXPERIENCE AT FOLLOW-UP (n = 276)[78]



[78] Six individuals had missing values for the item about positive aspects of their participation in the program.

Section 11. Association of Program Completion and Outcomes

We examined the association of completion of Phase I (as reported by respondents at follow-up) with characteristics at program entry and outcomes during the follow-up period.

Characteristics of Individuals at Intake by Program Completion Status

The majority of followed up individuals reported that they had completed Phase I of the recovery center program (77.7%, n = 219). Respondents' demographics and targeted factors at program entry were examined by Phase I completion status. The only demographic differences between the two groups were gender and having children under the age of 18 years old. A significantly higher percentage of women did not complete the program than completed Phase I. A significantly higher percentage of individuals who did not complete Phase I had children under the age of 18 relative to individuals who completed Phase I.

Regarding targeted risk factors other than substance use, a few statistically significant differences by Phase I completion status were found. Specifically, a significantly higher percentage of individuals who did not complete Phase I reported that they had difficulty meeting their basic living needs for financial reasons in the 6 months before entering the program (see Table 11.1). Individuals who ended up completing Phase I of the program reported having significantly more people they could count on for recovery support at intake. Individuals who did not complete Phase I reported a higher average number of types of adverse childhood experiences in their lifetime.

> ***The environment was awesome from the day I went in to the day I completed. I felt welcomed and wasn't treated different from the people who had been there longer.***
>
> - RCOS FOLLOW-UP CLIENT

TABLE 11.1. DEMOGRAPHICS AND TARGETED FACTORS OTHER THAN SUBSTANCE USE FOR RCOS RESPONDENTS BY PHASE I COMPLETION

	Completed Phase I	
	Yes (n = 219)	No (n = 63)
Age	39.0	38.0
Gender***		
Male	53.0%	28.6%
Female	47.0%	71.4%
Race		
White/Caucasian	87.2%	92.1%
Black/African American	8.2%	7.9%
Other or multiracial	4.6%	0.0%
Current marital/relationship status		
Never married	42.9%	39.7%
Married or cohabiting	26.0%	17.5%
Separated or divorced	29.7%	41.3%
Widowed	1.4%	1.6%
Highest level of education		
Less than a high school diploma/GED	16.4%	15.9%
High school diploma/GED	46.6%	44.4%
Some vocational school to graduate degree	37.0%	39.7%
In the 6 months before entering the program:		
had children under the age of 18* [Yes/No]	50.9%	65.1%
had children under the age of 18 living with them [Yes/No]	17.5%	22.6%
considered self to be homeless at any point [Yes/No]	26.9%	36.5%
had difficulty paying for basic living needs* [Yes/No]	30.1%	46.0%
had difficulty getting health care needs for financial reasons [Yes/No]	25.4%	21.9%
arrested and charged with a criminal offense [Yes/No]	61.2%	63.5%
incarcerated at least one night [Yes/No]	80.8%	84.1%
met study criteria for depression and/or generalized anxiety [Yes/No]	63.0%	71.4%
had suicidal thoughts or attempted suicide [Yes/No]	21.0%	19.0%
Referred to the program by the criminal legal system [Yes/No]	82.2%	84.1%
Average number of people individual could count on for recovery support**	6.0	4.1
Average number of types of adverse childhood experiences in lifetime*	3.4	4.4

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

Substance use and related factors in the 6 months before entering the program and lifetime were examined by Phase I completion status. There were no statistically significant differences between the two groups (see Table 11.2)

TABLE 11.2. AMONG INDIVIDUALS WHO WERE NOT INCARCERATED THE ENTIRE 6-MONTH PERIOD, SUBSTANCE USE REPORTED IN THE 6 MONTHS BEFORE ENTERING THE PROGRAM BY PHASE I COMPLETION STATUS

	Completed Phase I	
	Yes	No
In the 6 months before entering the program	(n = 184)	(n = 55)
Problem alcohol use (i.e., used to intoxication, binge drank)	36.4%	40.0%
Illicit drugs	86.4%	90.9%
Cannabis	54.3%	56.4%
Stimulants and/or cocaine	63.6%	76.4%
Opioids (including heroin)	50.0%	49.1%
CNS depressants (e.g., sedatives, tranquilizers, benzodiazepines)	21.2%	14.5%
Polydrug use (based on broad categories of drug classes)		
No illicit drug use	13.6%	9.1%
Used one drug class	26.6%	23.6%
Used more than one drug class	59.8%	67.3%
Severity of SUD (per DSM-5 criteria)		
No SUD	20.1%	12.7%
Mild SUD	4.3%	3.6%
Moderate SUD	3.8%	3.6%
Severe SUD	71.7%	80.0%
Had an overdose	15.2%	25.5%
In lifetime	(n = 219)	(n = 63)
Had an overdose	41.1%	42.9%
Injected drugs	50.2%	54.0%
Ever attended SUD treatment	74.0%	79.4%
Ever participated in MOUD	38.8%	52.4%
Average number of times attended SUD treatment	4.5	3.3

Outcomes at Follow-up by Phase I Completion Status

Substance use at follow-up was examined by Phase I completion status. Even though there were significant reductions from intake to follow-up in substance use in the sample overall, a significantly lower percentage of individuals who completed Phase I reported they had used illicit drugs in the follow-up period relative to individuals who did not complete Phase I. Significant differences by Phase I completion status were found for use two substance classes: of cannabis and stimulants/cocaine during the follow-up period.

Specifically, higher percentages of individuals who did not complete Phase I reported use of these drug classes compared to individuals who completed Phase I. Also, a significantly higher percentage of individuals who did not complete Phase I reported polydrug use in the 6 months before the follow-up survey. There was no difference by Phase I completion status in problem alcohol use, opioid use, CNS depressant use, severity of SUD per the DSM-5 criteria, having experienced an overdose, and participating in MOUD during the follow-up period.

TABLE 11.3. AMONG INDIVIDUALS WHO WERE NOT INCARCERATED THE ENTIRE 6-MONTH PERIOD, SUBSTANCE USE REPORTED IN THE 6 MONTHS BEFORE FOLLOW-UP BY PHASE I COMPLETION STATUS

In the 6 months before follow-up	Completed Phase I	
	Yes (n = 219)	No (n = 62)
Problem alcohol use (i.e., used to intoxication, binge drank)	3.2%	9.7%
Illicit drugs*	11.0%	22.6%
Cannabis**	6.8%	19.4%
Stimulants and/or cocaine*	6.4%	14.5%
Opioids (including heroin)	1.8%	4.8%
CNS depressants (e.g., sedatives, tranquilizers, benzodiazepines)	0.5%	3.2%
Polydrug use (based on broad categories of drug classes)*		
No illicit drug use	89.0%$_a$	77.4%$_b$
Used one drug class	6.8%$_a$	6.8%$_a$
Used more than one drug class	4.1%$_a$	12.9%$_b$
Severity of SUD (per DSM-5 criteria)		
No SUD	93.6%	88.7%
Mild SUD	1.8%	1.6%
Moderate SUD	0.9%	0.0%
Severe SUD	3.7%	9.7%
Had an overdose	0.5%	3.2%
Participated in medication-assisted treatment	16.9%	19.4%

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

The association of Phase I completion with targeted factors at follow-up were examined. Mental health disorders, recovery support, and perception of chances for sobriety were not associated completion of Phase I (see Table 11.4). Usual employment status was associated with Phase I completion. Significantly more individuals who completed Phase I reported they were employed full-time and significantly more individuals who did not complete Phase I reported they were unemployed, out of the labor force. Significantly more respondents who did not complete Phase I reported homelessness during the follow-up period compared to respondents who completed Phase I. Finally, significantly higher percentages of individuals who did not complete Phase I had involvement with the criminal legal system compared to individuals who completed Phase I--specifically arrests and incarceration.

TABLE 11.4. TARGETED RISK FACTORS (NON-SUBSTANCE USE-RELATED) IN THE 6 MONTHS BEFORE FOLLOW-UP BY PHASE I COMPLETION STATUS

In the 6 months before follow-up	Completed Phase I	
	Yes (n = 219)	No (n = 62)
Met study criteria for depression and/or anxiety	23.7%	33.3%
Had suicidal thoughts/attempts	1.8%	1.6%
Met criteria for PTSD	14.2%	19.4%
Usual employment status*		
Employed full-time	64.8%$_a$	50.8%$_b$
Employed part-time including seasonal work	12.8%$_a$	6.3%$_a$
Unemployed, out of the labor force (student, caregiver, disabled, retired, in a controlled environment)	13.7%$_a$	27.0%$_b$
Unemployed	8.7%$_a$	15.9%$_a$
Experienced homelessness***	3.2%	17.5%
Had difficulty meeting basic living needs	15.8%	14.5%
Had difficulty meeting health care needs	12.3%	14.3%
Had an arrest**	5.0%	15.9%
Incarcerated at least one night**	9.1%	22.1%
Attended mutual help recovery meetings in the past 30 days	79.5%	68.3%
Average number of people respondent can count on for recovery support	23.1	15.5
Perception of chances getting off/staying off substance use		
Very to moderately poor	0.9%	6.3%
Uncertain	4.1%	4.8%
Moderately to very good	95.0%	88.9%
Mean rating for subjective quality of life	8.4	8.4

a,b—Values with different subscripts differ from each other at $p < .05$.
*$p < .05$, **$p < .01$, ***$p < .001$.

Section 12. Bivariate and Multivariate Analysis of Factors Associated with Return to Use

This section focuses on a multivariate analysis examining factors related to return to substance use in the 2025 RCOS follow-up sample.

RCOS respondents who reported using any illicit drugs and/or alcohol in the 6 months before follow-up (n = 48, 17.0%) were compared to clients who did not report use of drugs or alcohol in the 6 months before follow-up (n = 234, 83.0%).

In comparing the two groups on the targeted factors, only one statistically significant difference was found in bivariate statistical tests: individuals who had return to substance use were significantly older than individuals who did not report return to substance use (see Table 12.1).

TABLE 12.1. BIVARIATE ASSOCIATION OF TARGETED FACTORS FOR RETURN TO USE VS. NO SUBSTANCE USE FOR THE FOLLOW-UP SAMPLE

Intake variables	Used illicit drugs and/or alcohol in past 6 months at follow-up (n = 48)	Did not use illicit drugs or alcohol in the past 6 months at follow-up (n =234)
Average age at intake*	41.5	38.2
Male	58.3%	45.3%
Number of months in the program (self-reported)[79]	4.4	4.7
Completed Phase I [Yes]	68.8%	79.5%
Met criteria for moderate or severe SUD per DSM-5 criteria	83.3%	70.1%
Number of nights incarcerated in the 6 months before intake[80]	55.4	56.5
Employed full- or part-time in the 6 months before intake [Yes][81]	47.9%	52.6%
Average number of mental health symptoms (depression and anxiety) reported at intake	9.1	8.3
Experienced homelessness [Yes]	33.3%	28.2%
Number of people client could count on for recovery support at intake	5.9	5.5
Average quality of life rating at intake	4.2	4.2
Number of adverse childhood experiences	3.7	3.6

*$p < .05$.

[79] Six respondents had missing data for number of months they were in the program before completing Phase I or leaving.

[80] Seven respondents had missing data for the number nights they were incarcerated in the 6 months before entering the program.

[81] Four respondents had missing data for employment in the 6 months before entering the program.

A logistic regression was used to examine the association between selected targeted factors and use of drugs or alcohol during the follow-up period (i.e., return to use). Intake factors including the demographic variables of gender and age and variables related to criminal legal involvement, mental health symptoms, recovery support, and experiences with violence were included as predictor variables in a logistic regression model. Self-reported drug or alcohol use in the past 6 months at follow-up (No/Yes) was entered as the dependent variable. Results of the analysis show that men, older individuals, and individuals who did not complete Phase I in the program had greater odds of return to substance use during the 6-month follow-up period, when controlling for the other predictor variables.

TABLE 12.2. ASSOCIATION OF TARGETED FACTORS AT INTAKE AND RETURN TO USE DURING THE FOLLOW-UP PERIOD

Factor	B	Wald	Odds Ratio	95% CI	
				Lower	Upper
Gender	-.861	5.942	.423*	.211	.845
Age (Years)	.032	4.249	1.032*	1.002	1.064
Completed Phase I	-.858	5.120	.424*	.202	.892
Number of nights incarcerated	.000	.025	1.000	.995	1.006
Had a period of homelessness	.185	.244	1.203	.577	2.508
Total number of depression and generalized anxiety symptoms	.039	1.818	1.039	.983	1.100
Number of people respondent could count on for recovery support	.023	1.101	1.023	.980	1.067

Note: Categorical variables were coded in the following ways: gender (1=male, 2= female), completed Phase I (0 = no, 1 = yes), had a period of homelessness (0 = no, 1 = yes).
*p < .05.

> ***At first, I didn't know what to expect, but once I started learning more about myself and seeing that my manipulation didn't work there, I knew it was the right place for me..***
>
> - RCOS FOLLOW-UP CLIENT

Section 13. Cost and Implications for Kentucky

This section examines cost reductions or avoided costs to society after Recovery Kentucky Program participation. Using the number of individuals who reported drug and/or alcohol use at intake and follow-up, a national per person cost was applied to this study's follow-up sample to estimate the cost to society for the year before individuals were in recovery and then for the same individuals during the period after leaving Phase I. The difference in the estimate of cost before and after entering recovery services was then divided by the cost of providing Recovery Kentucky Program services, yielding a return of $2.86 for every dollar spent on recovery programs.

Return on Investment in Recovery Kentucky Programs

Examining cost reductions or avoided costs to society after Recovery Kentucky participation is of high interest to policymakers, providers, and consumers. Thorough analysis of cost savings, while increasingly popular in policy-making settings, is extremely difficult and complex. Immediate proximate costs can be examined relatively easily; however, a thorough assessment requires a great number of econometrics. In order to accommodate these complexities at an aggregate level, data were extrapolated from a large federal study that estimated annual costs drug abuse in the United States[82] and a separate study of the societal costs of excessive alcohol consumption in the U.S. in 2006.[83] In 2010 the estimated costs of excessive alcohol consumption in the United States was updated and in 2011 the National Drug Intelligence Center updated the estimates of drug abuse in the United States for 2007.[84, 85] These updated costs were used in the calculations for the cost savings analysis in this RCOS follow-up report.

Most studies on the estimates of cost offsets from interventions with substance use disorder focus on savings in various forms after participation in substance use disorder treatment. Recovery services are not treatment and thus call for separate analysis. Among the recovery centers sponsored by Recovery Kentucky and the Kentucky Housing Corporation, daily cost of care is very low. Recovery centers use considerable volunteer effort from residents and peer mentors who assist in running day-to-day activities such as housekeeping, kitchen work, and other duties. However, individuals stay in residential care for extended periods and these two factors mark the Recovery Kentucky Program as very different from treatment programs where residential stays average less than 20 days statewide.

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[82] Harwood, H., Fountain, D., & Livermore, G. (1998). The Economic Costs of Alcohol and Drug Abuse in the United States, 1992. Report prepared for the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Department of Health and Human Services. NIH Publication No. 98-4327. Rockville, MD: National Institutes of Health.

[83] Bouchery, E.E., Harwood, H.J., Sacks, J.J., Simon, C.J., & Brewer, R.D. (2011). Economic costs of excessive alcohol consumption in the U.S., 2006. American Journal of Preventive Medicine, 41(5), 516–524.

[84] Sacks, J.J., Gonzales, K.R., Bouchery, E.E., Tomedi, L.E., & Brewer, R.D. (2015). 2010 national and state costs of excessive alcohol consumption. American Journal of Preventive Medicine, 49(5), e73-e79.

[85] National Drug Intelligence Center. (2011). The Economic Impact of Illicit Drug Use on American Society. Washington, DC: United States Department of Justice.

Method

The national cost reports factored in many explicit and implicit costs of alcohol and drug use disorders to the nation, such as the costs of lost labor due to illness, accidents, the costs of crime to victims, costs of incarceration, hospital and other medical treatment, social services, motor accidents, and other costs. Thus, these reports consider both the hidden and obvious costs of substance use disorder.

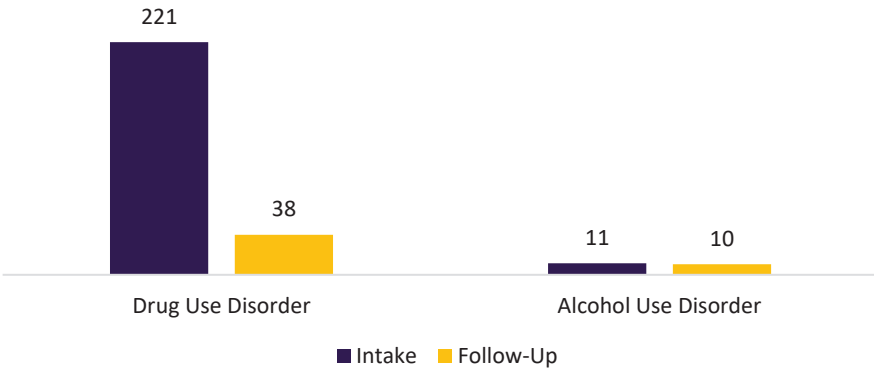
To calculate the estimate of the cost per alcohol user or drug user, the national cost estimates were divided by the estimate of the number of individuals with alcohol or drug use disorder in the corresponding years (2010 for alcohol use and 2007 for drug use).[86, 87] The estimate of the cost to society of excessive alcohol consumption was $249,026,400,000 in 2010. This amount was then divided by the 17,900,000 individuals estimated in the NSDUH in 2010 to have an alcohol use disorder, yielding a cost per person of alcohol abuse of $13,912 (after rounding to a whole dollar) in 2010 dollars. The estimate of the cost to society of drug use was $193,096,930,000 in 2007. This amount was then divided by the 6,900,000 individuals estimated in the NSDUH in 2007 to have an illicit drug abuse or dependence disorder, yielding a cost per person of drug abuse of $27,985 (after rounding to a whole dollar) in 2007 dollars. The costs per person were then converted to 2023 dollars using a CPI indexing from https://www.bls.gov/data/inflation_calculator.htm. Thus, the estimate of cost per person of alcohol abuse is $19,208 in 2023 dollars and the estimate of the cost per person of drug abuse is $41,362 in 2023 dollars. Given the high prevalence of severe SUD among the individuals entering recovery centers, analyses hinged on estimating the differences in cost to society between individuals who are engaging in substance use compared to those who are abstinent from drug and/or alcohol use. Thus, the role that abstinence plays in reducing costs to society was examined because abstinent individuals are far less likely to be arrested, more likely to be employed or spending time volunteering, less likely to be drawing down social services supports, and less likely to be dependent on other family members. These per-person costs were then applied to the follow-up sample used in this study to estimate the cost to society for the year before individuals were in Recovery Kentucky programs and then for the same individuals during the period after leaving Phase I.

Individuals who reported any illicit drug use in the corresponding period were classified in the drug use disorder category. Individuals who reported using alcohol but not using illicit drugs were classified in the alcohol use disorder category. The change from intake to follow-up was substantial (see Figure 13.1). At intake, 221 of the 282 RCOS clients included in the follow-up sample were classified in the drug use category and 11 in the alcohol use category. At follow-up, only 38 individuals were classified in the drug use category and 10 individuals in the alcohol use category.

[86] Substance Abuse and Mental Health Services Administration. (2008). Results from the 2007 National Survey on Drug Use and Health: National findings. (DHHS Publication No. SMA 08-4343, NSDUH Series H-34). Rockville, MD: Office of Applied Studies. Retrieved from https://oas.samhsa.gov

[87] Substance Abuse and Mental Health Services Administration. (2011). Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings. (HHS Publication No. SMA 11-4658, NSDUH Series, H-41. Rockville, MD: Substance Abuse and Mental Health Services.

FIGURE 13.1 CHANGE IN THE NUMBER OF INDIVIDUALS WHO WERE ACTIVE DRUG ABUSERS OR ALCOHOL ABUSERS FROM INTAKE TO FOLLOW-UP (N = 282)



When the estimated cost per individual drug user was applied to the 221 individuals who reported use of illicit drugs at intake, the annual estimated cost to society for the RCOS individuals who used illicit drugs before entry into the recovery center was $9,141,002. When the average annual cost of excessive alcohol consumption was applied to the 11 individuals who reported alcohol use (but no illicit drug use) at intake, the estimated cost to society was $211,288. The total estimated cost of drug and alcohol use applied to the sample of individuals in RCOS was $9,352,290. By follow-up, the estimated cost of the 38 individuals who reported drug use during the follow-up period was $1,571,756 and the estimated cost of the 10 individuals who used alcohol (but no illicit drugs) was $192,080, for a total of $1,763,836. Thus, as shown in Figure 13.2, after participation in a Recovery Kentucky program, the aggregate cost to society for the RCOS follow-up sample was reduced by $7,588,454.

FIGURE 13.2. CHANGE IN COST TO SOCIETY AT INTAKE AND FOLLOW-UP (AMOUNTS IN MILLIONS OF DOLLARS) (N = 282)

$9.3 million COST TO SOCIETY AT INTAKE

\-

$1.7 million COST TO SOCIETY AT FOLLOW-UP

=

$7.6 million GROSS DIFFERENCE IN COST TO SOCIETY

The daily cost of participation in a Recovery Kentucky program in FY 2023 was $40.80 per person (Kentucky Housing Corporation communication). Funding sources for the per diem cost includes the Kentucky Department of Corrections, Supplemental Nutrition Assistance Program (SNAP), Section 8 Housing Assistance, and the Community Development Block Grant (CDBG). The total number of days clients in the follow-up sample participated in Recovery Kentucky programs was obtained for each participant. The number of days of participation for each client was multiplied by the daily cost of $40.80, for a total cost of $2,649,756 for the 282 individuals in the RCOS follow-up sample. When the cost of Recovery Kentucky programs was subtracted from the cost savings from increased alcohol and drug abstinence, there is an estimated net savings to society of $7,588,454 for serving this sample of 282 individuals. Examining the total avoided costs in relation to expenditures on recovery services, these figures suggest that for every dollar invested in recovery, there was a $2.86 return in avoided costs.

Section 14. Conclusion

This section summarizes the report findings and discusses some major implications within the context of the limitations of the outcome evaluation study.

This report describes outcomes for 282 men and women who participated in a Recovery Kentucky program and completed an intake interview at Phase 1 entry in FY 2023 and a follow-up telephone interview about 12 months after the intake survey.

Areas of Success

The 2025 evaluation results indicate that Recovery Kentucky programs have been successful in facilitating substantial positive changes in clients' lives. The majority of respondents (77.7%) reported at follow-up that they had completed Phase I of the recovery program. Respondents' level of satisfaction with the programs was high. Specifically, the majority indicated that the program worked extremely well for them and the average rating of the program was 8.4 on a scale from 1 to 10, with 10 representing the best possible program. The majority of respondents reported that: their expectations and hopes for the program and recovery were met, they had a connection with a staff person during the program, program staff believed in them and that the program would work for them, they felt the program staff cared about them and their progress, the program approach and method was a good fit for them, they had input into their goals and how they were progressing over time, they worked on and talked about the things that were most important to them, and when clients spoke about personal things they felt listened to by their counselors and staff. Respondents reported the biggest benefits of the program were positive interactions and relationships with other people, reduced substance use, improved mental health and feelings about self, major positive life changes, and lessons learned in the program.

The report's findings also show that self-reported completion of Phase I of the program was associated with lower illicit drug use and polydrug use, lower homelessness, lower involvement with the criminal legal system in terms of arrests and incarceration, and greater full-time employment during the 6 months before follow-up.

Significant improvements in respondents' lives and functioning from intake to follow-up were made in the following areas:

Substance Use

Importantly, there was a 69% reduction in the percent of individuals meeting DSM-5 symptom criteria for severe substance use disorder from intake to follow-up. One the end of the continuum, there was a significant increase of 74% from intake to follow-up in the percent of respondents who met criteria for no SUD. At follow-up, 93% of followed-up respondents met criteria for no SUD. The number of respondents with an ASI alcohol or drug composite score that met or exceeded the cutoff for severe substance use disorder also decreased significantly in the past 30 days. There was a significant decrease in past-6-month use of illicit drugs as well as a decrease in past-6-month use of alcohol from intake

to follow-up among respondents who were not in a controlled environment for the entire period at intake. About 86% of RCOS respondents reported abstinence from illicit drugs and 90% reported abstinence from alcohol in the past 6 months at follow-up. Abstinence is linked to a decrease in drug-related consequences[88] as well as improvements in health and a decrease in mortality, reductions in crime, increases in employment, and an improved quality of life.[89]

Mental Health

Compared to the general population, individuals who have a substance use disorder are more likely to have a co-occurring mental health disorder.[90] At intake, the majority of respondents met study criteria depression, generalized anxiety, comorbid depression and generalized anxiety. At follow-up, significantly lower percentages of respondents met criteria for these mental health disorders.

Even though a little less than one-fourth of respondents met study criteria for PTSD at intake, there was a significant decrease in the percent at follow-up—a decrease of 14.2%. About one-fifth of respondents had experienced suicidal thoughts and/or attempted suicide in the 6 months before intake. There was a significant decrease in suicidality at follow-up, such that only 2% had experienced suicidality in the 6 months before follow-up. Also, at intake, RCOS followed-up respondents reported an average of 14.5 days in the past 30 days their mental health was not good. At follow-up, the average number of days was 3.3. Based on this measure of number of days mental health was not good, individuals with 14 or more days are considered to experience frequent mental distress.[91] At follow-up, 10.3% of the RCOS follow-up sample met the criteria for frequent mental distress. For comparison, in 2022, 16.1% of the general population in Kentucky experienced frequent mental distress.[92]

Experiences with Violence

Many studies have examined the association of lifetime and recent victimization with severity of substance use disorder and treatment, finding that victimization is higher among individuals with SUD and some studies have found that victimization is associated with post-treatment outcomes. However, few studies have examined how victimization experiences post-treatment or during recovery may impact the likelihood of return to use. A study from 2002 found that individuals who were victimized in the two years following SUD treatment had greater risk of return to use, and most individuals reported they were under the influence of substances when the victimization occurred.[93] In this year's

[88] Park, T., Cheng, D., Lloyd-Travaglini, C., Bernstein, J., Palfai, T., & Saitz, R. (2015). Changes in health outcomes as a function of abstinence and reduction in illicit psychoactive drug use: A prospective study in primary care. Addiction, 110, 1476-1483.

[89] Vederhus, J., Birkeland, B., & Clausen, T. (2016). Perceived quality of life, 6 months after detoxification: Is abstinence a modifying factor? Quality of Life Research, 25, 2315-2322.

[90] https://www.samhsa.gov/treatment#co-occurring

[91] Centers on Disease Control & Prevention, Behavioral Risk Factor Surveillance System, 2022.

[92] https://www.americashealthrankings.org/explore/measures/mental_distress/KY.

[93] Walton, M.A., Chermack, S.T., Blow, F.C. (2002). Correlates of received and expressed violence persistence following substance abuse treatment. Drug and Alcohol Dependence, 67, 1-12.

RCOS follow-up sample, at intake, 26% of respondents reported they had experienced interpersonal victimization in the 6 months before entering the program. At follow-up, there was a significant decrease, with only 5% of the follow-up sample reporting experiences with violence in the past 6 months.

Physical Health

Because of the negative effects of substance use on physical health, changes in physical health were examined in RCOS. Respondents' self-reported overall health improved from intake to follow-up. Only 20% of respondents rated their general health as "very good" or "excellent" at intake, which increased significantly to 40% rating their general health as "very good" or "excellent" at follow-up. The number of days individuals reported their physical health was not good in the past 30 days decreased significantly from intake (8.7) to follow-up (2.7). Another way to examine the data about poor physical health is to classify individuals as experiencing frequent physical distress if they report 14 or more days that their physical health was not good. At intake, 28% of RCOS respondents experienced frequent physical distress. The percent of RCOS respondents experiencing frequent physical distress at follow-up was significantly lower (8%). Comparing RCOS respondents to a statewide sample, the percent of the general population in Kentucky reporting frequent physical distress was 15.6% in 2022. Kentucky's population has a high rate of residents with frequent physical distress, ranked 48th in the U.S.[94] Additionally, there was a significant reduction in the number of respondents reporting chronic pain in the past 6 months from intake to follow-up.

Criminal Legal Involvement

Research has shown that criminal legal involvement, specifically post-treatment arrests, may increase the likelihood of return to substance use.[95] A review of studies on the economic benefits of SUD treatment found that reductions in criminal justice costs accounted for the largest or second largest component of the economic benefits of SUD treatment in the studies.[96] The number of RCOS respondents reporting arrests and incarceration in the past 6 months at follow-up was significantly less than the number at intake. Only around 7% of respondents reported an arrest and 12% reported spending any time incarcerated at follow-up. The percent of respondents who self-reported at least one conviction for a misdemeanor or felony also decreased significantly from intake to follow-up.

[94] https://www.americashealthrankings.org/explore/measures/Physical_distress/KY.

[95] Kopak, A., Haugh, S., Hoffmann, N. (2016). The entanglement between relapse and posttreatment criminal justice involvement. The American Journal of Drug and Alcohol Abuse, 42(5), 606-613.

[96] Fardone E, Montoya ID, Schackman BR, McCollister KE. (2023). Economic benefits of substance use disorder treatment: A systematic literature review of economic evaluation studies from 2003 to 2021. Journal of Substance Use & Addiction Treatment, 152:209084. doi: 10.1016/j.josat.2023.209084. Epub 2023 Jun 9. PMID: 37302488; PMCID: PMC10530001.

Quality of Life

A key component of recovery is quality of life.[97] Including a quality of life rating or measure in SUD treatment and recovery program outcomes may be important because it is the individual's subjective appraisal of their life, allowing individuals to synthesize information from multiple domains of their lives. For this reason, clients' subjective quality of life ratings may be a useful indicator of recovery.[98], [99] In this report's data, respondents' subjective quality of life improved from intake to follow-up (4.2 vs. 8.4) on a scale from 1, worst imaginable to 10 best imaginable.

Education

Lower levels of educational attainment are an obstacle to obtaining employment during recovery or following SUD treatment.[100] Even though most respondents (84%) reported they had a high school diploma or GED at intake, there was a significant increase in the percent reporting a high school diploma or GED at follow-up (89%).

Employment

Unemployment has been linked to higher rates of smoking, alcohol consumption, and illicit drug use and an increased risk of return to use.[101, 102, 103] Further, a primary barrier to employment among individuals in SUD treatment is having a felony conviction or any drug or theft conviction in one's background.[104] There was a significant increase in employment for RCOS respondents from intake (49%) to follow-up (78%). The percent of men who were employed at least one month out of the past 6 months increased by 31% and the number of women employed increased by 28%.

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[97] Laudet, A. B., Becker, J. B., & White, W. L. (2009). "Don't wanna go through that madness no more": Quality of life satisfaction as predictor of sustained remission from Illicit drug misuse. Substance Use & Misuse, 44(2), 227–252. https://doi.org/10.1080/10826080802714462

[98] Laudet, A. B. (2011). The case for considering quality of life in addiction research and clinical practice. Addiction Science & Clinical Practice, 6(1), 44–55.

[99] Muller, A. E., Skurtveit, S., & Clausen, T. (2016a). Many correlates of poor quality of life among substance users entering treatment are not addiction-specific. Health and Quality of Life Outcomes, 14(1). https://doi.org/10.1186/s12955-016-0439-1

[100] Martinson, Karin, Doug McDonald, Amy Berninger, and Kyla Wasserman. 2021. Building Evidence-Based Strategies to Improve Employment Outcomes for Individuals with Substance Use Disorders. OPRE Report 2020-171. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

[101] Henkel, D. (2011). Unemployment and substance use: A review of the literature (1990-2010). Current Drug Abuse Reviews, 4, 4-27.

[102] Nordfjærn, T. (2010). Relapse patterns among patients with substance use disorders. Journal of Substance Use, 16(4), 313–329. https://doi.org/10.3109/14659890903580482

[103] Kopak, A.M., Hoffmann, N.G. & Proctor, S.L. Key Risk Factors for Relapse and Rearrest Among Substance Use Treatment Patients Involved in the Criminal Justice System. American Journal of Criminal Justice, 41, 14–30 (2016). https://doi.org/10.1007/s12103-015-9330-6

[104] Sherba, R.T., Coxe, K.A., Gersper, B.E., & Linley, J.V. (2018). Employment services and substance abuse treatment. Journal of Substance Abuse Treatment, 87, 70-78.

Homelessness

Research has shown that homelessness and substance use often go together and one recent study found that among individuals with any SUD diagnosis in their lifetime, three-fourths had also experienced an episode of homelessness.[105] Evidence indicates that having a safe place to live provides stability that allows individuals focus on higher order aspects of their health and well-being. Having a safe, stable housing situation is one of the four major dimensions of recovery as laid out in SAMHSA's working definition of recovery.[106] Overall, there was a significant decrease in the number of RCOS respondents reporting homelessness in the last 6 months, from 29% at intake to 6% at follow-up.

Economic Hardship

Economic hardship may be a better indicator of the actual day-to-day living situation individuals face than a measure of income. The percent of respondents reporting they had difficulty meeting basic living needs and health care needs decreased significantly from intake to follow-up. For example, 33% of the respondents had difficulty meeting basic living needs at intake, whereas the percent had decreased to 16% at follow-up. More than one-fifth of respondents (23%) reported they had difficulty meeting health care needs in the 6 months before entering the program, whereas in the 6 months before follow-up, only 13% reported difficulty meeting health care needs for financial reasons.

Recovery Support

Research has shown that positive social and recovery supports, like AA, NA, and other 12-step programs, are linked to a lower risk of return to use.[107] For RCOS respondents, there was a significant increase in attendance of mutual-help recovery meetings in the past 30 days from 29% at intake to 77% at follow-up. Among individuals who did not attend mutual-help group meetings at intake, 74% did attend at least one meeting in the past 30 days at follow-up. At follow-up, significantly more RCOS respondents reported having contact with family, friends, and sponsors who were supportive of their recovery. Additionally, the average number of people respondents could count on for support was significantly higher at follow-up (21.4) compared to intake (5.6).

Multidimensional Recovery

Consistent with the framework that recovery is a multidimensional construct, encompassing multiple dimensions of individuals' lives and functioning, items from the intake and follow-up surveys were combined to measure change in dimensions of individuals' lives that are key to recovery. The multidimensional recovery measure

[105] Greenberg, G. & Rosenheck, R. (2010). Correlates of past homelessness in the National Epidemiological Survey of Alcohol and Related Conditions. Administration and Policy in Mental Health and Mental Health Services Research, 37, 357-366.

[106] Substance Abuse & Mental Health Services Administration. (2012). Working definition of recovery. https://store.samhsa.gov/sites/default/files/d7/priv/pep12-recdef.pdf

[107] Havassy, B., Hall, S. & Wasserman, D. (1991). Social support and relapse: Commonalities among alcoholics, opiate users, and cigarette smokers. Addictive Behaviors, 16, 235-246.

combines items from the intake and follow-up surveys to create one measure of recovery. At intake, 1% of the individuals had all eight positive dimensions of recovery, whereas at follow-up, two-thirds (67%) had all positive dimensions, which is a significant and meaningful improvement. In a multivariate model, the only predictor variable that was associated with having all 8 positive dimensions of recovery at follow-up was completing Phase I of the program (as reported by respondents at follow-up).

Avoided Costs

A cost-benefit analysis was beyond the scope of this outcome evaluation. Nonetheless, an estimate of the avoided costs to society in the follow-up period based on national estimates of the cost of alcohol and drug abuse and taking into account the cost of recovery Kentucky services suggests that recovery Kentucky has a positive return on investment. The estimate of avoided costs to society of $7,588,454 divided by the cost of recovery Kentucky services to the individuals in the follow-up sample suggest that for every dollar spent there was an estimated $2.86 of avoided costs to society.

Areas of Concern

As with all outcome evaluations, there were a few areas where the data results suggest additional attention is warranted:

High Rates of Methamphetamine Use

The percentage of respondents reporting methamphetamine use at intake began increasing in the 2017 report (36%), with the highest percentage in the 2022 report (60%). For the fourth consecutive annual report, in this year's report, a higher percentage of RCOS respondents reported they had used methamphetamine in the 6 months before entering the recovery center program (53%) than had used prescription opioids (33%). In the follow-up sample, there was a significant 49% reduction in the percent of individuals who reported using methamphetamine in the past 6 months from intake (56%) to follow-up (7%).

Smoking Tobacco and Vaporized Nicotine Use

Even though the percent of RCOS respondents not in a controlled environment who reported past-6-month smoking tobacco was high at follow-up (60%), the percent was significantly lower than at intake (83%). Nonetheless, compared to a statewide sample (17%), 2.9 times more RCOS respondents report smoking at follow-up (50%, for past 30 days).[108] Kentucky has the highest rate of vaporized nicotine use among adults (10.5%), tied with Oklahoma. Among RCOS respondents who completed a follow-up, 47% reported they had used vaporized nicotine in the past 30 days. Past-30-day use of vaporized nicotine slightly increased from intake to follow-up while smoking tobacco use decreased. This relationship may be explained by the research indicating an association between e-cigarette use and quitting tobacco cigarettes. The study found that individuals who

[108] America's Health Rankings https://www.americashealthrankings.org/explore/annual/measure/Smoking/state/KY

started using e-cigarettes were more likely to stop smoking cigarettes.[109]

Economic Hardship

Meeting basic needs including healthcare, stable living arrangements, having a purpose with daily meaningful activities, and recovery community are the four key dimensions for recovery.[110] Even though there was a significant decrease in the percent of clients who had difficulty meeting their basic living and healthcare needs from intake to follow-up, 16% of respondents reported they had difficulty meeting basic living needs and 13% had difficult meeting healthcare needs at follow-up. Also, despite significant increases in the percent of men and women employed, significantly fewer women reported working in the past 6 months at follow-up relative to men, and women earned a lower median hourly wage at follow-up compared to men. Chronic stressors like sustained economic hardship and unemployment are associated with return to substance use.[111] Additionally, increased substance use may occur in those with financial strain to help alleviate the stress.[112]

Program Concerns

Most RCOS respondents rated their time at the recovery center as positive and helpful in multiple aspects of their lives. Nonetheless, there were some aspects of the program that a minority of respondents found problematic. For example, 34% of individuals stated the start of the program was poor for them and about 23% of respondents who were not still involved in the program at follow-up reported that the program ended poorly for them. Among the minority of individuals who stated the program ended poorly for them, 56% left the program on terms other than completing Phase I. Also, 33% of individuals believed the length of the program was either too short or too long. As expected, individuals who gave lower rating of the program were less likely to complete Phase I. Importantly, not completing Phase I was associated with illicit drug use, homelessness, unemployment, and criminal legal involvement during the follow-up period. Thus, a better understanding of factors that may be associated with lower perceptions of care and possible modifications or accommodations to the program that could increase client engagement may lead to better program outcomes.

Adverse Childhood Experiences and Experiences with Violence in Adulthood

Adverse childhood experiences were reported by the majority of respondents who completed intake surveys: 80% of men and 89% of women. The average number of ACE reported by men was 3.4 and by women, 4.3. Of the maltreatment and abuse experiences, the most reported experiences for the total sample were emotional maltreatment, emotional neglect, and physical maltreatment. Of the household risks experiences, the

[109] Kasza K., Edwards K., Kimmel H., et al. (2021). Association of e-Cigarette Use With Discontinuation of Cigarette Smoking Among Adult Smokers Who Were Initially Never Planning to Quit. JAMA Netw Open, 4(12):e2140880. doi:10.1001/jamanetworkopen.2021.40880

[110] https://www.samhsa.gov/find-help-recovery.

[111] Tate, S., Brown, S., Glasner, S., Unrod, M., & McQuaid, J. (2006). Chronic life stress, acute stress events, and substance availability in relapse. Addiction Research and Theory, 14(3), 303-322.

[112] Shaw, B. A., Agahi, N., & Krause, N. (2011). Are Changes in Financial Strain Associated with Changes in Alcohol Use and Smoking Among Older Adults? Journal of Studies on Alcohol and Drugs, 72(6), 917-925.

most frequently reported experiences were parents being separated/divorced, problem substance use by a household member, and mental illness of a household member. Women reported significantly more adverse childhood experiences relative to men. More than one-fourth of women (28%) reported 7 or more types of ACE compared to one-fifth of men (20%). Significantly more women than men reported they had experienced emotional maltreatment, emotional neglect, physical neglect, sexual abuse, and all but one of the five types of household risks.

The RCOS sample reported high rates of physical assault, almost half had been threatened with a gun, and almost one-third had been mugged or robbed in their lifetime. There was a significant gender difference for all but one of the types of lifetime violence. Significantly higher percentages of women than men reported ever being physically assaulted or attacked, intimate partner violence (including controlling behavior), stalked by someone who scared them, sexually assaulted or raped, mugged or robbed, and verbally, sexually, or otherwise harassed in a way that made them afraid. The high number of clients who experience adverse childhood events and interpersonal victimization in adulthood suggest a need to address interpersonal victimization and traumatic events in programs. Moreover, discussion of safety measures and safety planning that address the challenges individuals face may be beneficial.

Study Limitations

The study findings must be considered within the context of the project's limitations. First, the data included in this write-up was self-reported by Recovery Kentucky respondents. There is reason to question the validity and reliability of self-reported data, particularly about sensitive topics, such as illegal behavior and stigmatizing issues such as mental health and substance use. However, some research has supported findings about the reliability and accuracy of individuals' reports of their substance use.[113, 114, 115] For example, in many studies that have compared agreement between self-report and urinalysis the concordance or agreement is acceptable to high.[116, 117, 118] In fact, in some studies, when there were discrepant results between self-report and urinalysis of drugs and alcohol, the majority were self-reported substance use that was not detected with the biochemical

[113] Del Boca, F.K., & Noll, J.A. (2000). Truth or consequences: The validity of self-report data in health services research on addictions. Addiction, 95, 347-360.

[114] Harrison, L. D., Martin, S. 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.

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

[116] Rowe, C., Vittinghoff, E., Colfax, G., Coffin, P. O., & Santos, G. M. (2018). Correlates of validity of self-reported methamphetamine use among a sample of dependent adults. Substance Use & Misuse, 53 (10), 1742-1755.

[117] Rygaard Hjorthoj, C., Rygaard Hjorthoj, A., & Nordentoft, M. (2012). Validity of Timeline Follow-Back for self-reported use of cannabis and other illicit substances—Systematic review and meta-analysis. Addictive Behaviors, 37, 225-233.

[118] Wilcox, C. E., Bogenschutz, M. P., Nakazawa, M., & Woody, G. (2013). Concordance between self-report and urine drug screen data in adolescent opioid dependent clinical trial participants. Addictive Behaviors, 38, 2568-2574.

measures.[119, 120, 121] In other studies, higher percentages of underreporting have been found.[122] Prevalence of underreporting of substance use is quite varied in studies. Nonetheless, research has found that certain conditions facilitate the accuracy of self-report data such as assurances of confidentiality and memory prompts.[123] Moreover, the "gold standard" of biochemical measures of substance use have many limitations: short windows of detection that vary by substance; detection varies on many factors such as the amount of the substance consumed, chronicity of use, sensitivity of the analytic method used.[124] Therefore, the study method includes several key strategies to facilitate accurate reporting of sensitive behaviors at follow-up including: (a) the follow-up interviews are conducted by telephone with a University of Kentucky Center on Drug and Alcohol Research (UK CDAR) staff person who is not associated with any Recovery Kentucky program; (b) the follow-up responses are confidential and are reported at a group level, meaning no individual responses are linked to participants' identity; (c) the study procedures, including data protections, are consistent with federal regulations and approved by the University of Kentucky Human Subjects Institutional Review Board; (d) confidentiality is protected under Federal law through a Federal Certificate of Confidentiality; (e) participants can skip any question they do not want to answer; and (f) UK CDAR staff are trained to facilitate accurate reporting of behaviors and are regularly supervised for quality data collection and adherence to confidentiality.

Even though the project sample was limited to 282 follow-up surveys this fiscal year because of budget constraints, there are several ways the study method helps to minimize the impact of this limitation including: (a) the follow-up sample is randomly selected from individuals who agree to participate and who provide minimal locator information in the study and is stratified to ensure there are similar numbers of males and females; and (b) individuals who did and individuals who did not complete a follow-up interview are compared to see how different the follow-up sample is from those not followed up on sociodemographic factors and targeted factors at Phase 1 intake. Results show there was only two significant difference in this year's report data and one was a result of the stratification by gender when selecting the follow-up sample: significantly more individuals who completed a follow-up interview were female compared to clients who did not complete a follow-up interview. Second, a significantly lower percentage of followed-up individuals met criteria for PTSD compared to individuals who did not complete a follow-up interview.

Finally, a longer-term follow-up would provide more information about the impact of the Recovery Kentucky Program on longer time life changes and events.

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[119] Denis, C., Fatséas, M., Beltran, V., Bonnet, C., Picard, S., Combourieu, I., Daulouède, J., & Auriacombe, M. (2012). Validity of the self-reported drug use section of the Addiction Severity and associated factors used under naturalistic conditions. Substance Use & Misuse, 47, 356-363.

[120] Hilario, E. Y., Griffin, M. L., McHugh, R. K., McDermott, K. A., Connery, H. S., Fitzmaurice, G. M., & Weiss, R. D. (2015). Denial of urinalysis-confirmed opioid use in prescription opioid dependence. Journal of Substance Abuse Treatment, 48, 85-90.

[121] Williams, R. J., & Nowatzki, N. (2005). Validity of self-report of substance use. Substance Use & Misuse, 40, 299-313.

[122] Chermack, S. T., Roll, J., Reilly, M., Davis, L., Kilaru, U., Grabowski, J. (2000). Comparison of patient self-reports and urianalysis results obtained under naturalistic methadone treatment conditions. Drug and Alcohol Dependence, 59, 43-49.

[123] Del Boca, F. K., & Noll, J. A. (2000). Truth or consequences: the validity of self-report data in health services research on addictions. Addiction, 95 (Suppl. 3), S347—S360.

[124] Williams, R. J., & Nowatzki, N. (2005). Validity of self-report of substance use. Substance Use & Misuse, 40, 299-313.

Conclusion

This RCOS 2025 report findings are encouraging and continue the first multi-year systematic evaluation of long-term residential recovery supports in the United States. Further study will lead to more research to validate the continuing value of recovery services as a key part of state commitment to intervening with the growing problem of substance use disorder in Kentucky.

Overall, Recovery Kentucky respondents made significant strides in all the targeted areas, respondents were largely satisfied and appreciative of the services they received through the recovery centers, and Recovery Kentucky saved taxpayer dollars through avoided costs to society or costs that would have been expected based on the rates of drug and alcohol use prior to entry into the recovery center. The improvements in global functioning and overall quality of life ratings suggest that respondent's lives have improved meaningfully and significantly. The finding of reductions in costs related to increased abstinence suggests that commitment of public funds to recovery centers is a solid investment in the futures of many Kentucky citizens. While this study was not resourced to examine net effects of human capital investment, the past research suggests that individuals who commit themselves to recovery and abstinence go on to have gainful employment and reduced involvement with public sector services in their future years.

Appendix A. Methods

A total of 1,696 unduplicated individuals had an intake survey completed between July 1, 2022, and June 30, 2023. The target month for the follow-up survey was 12 months after the intake survey was conducted. Cases were randomly selected into the follow-up sample by gender [male, female] so that equal numbers of men and women were selected for the follow-up sample. The window for completing a follow-up survey with an individual selected into the follow-up sample began one month before the target month and spanned until two months after the target month. For example, if an individual was eligible for the follow-up survey in May (i.e., target month was May), then the interviewers would attempt to complete the follow-up survey beginning in April and ending in July.

A total of 528 individuals were selected into the sample of individuals to be followed up from July 2023 to June 2024. At the time of follow-up, 49 individuals were ineligible to complete the follow-up; these cases are not included in the calculation of the follow-up rate (see Table AA.1). Of the remaining 479 individuals, interviewers completed follow-up surveys with 282 individuals, representing a follow-up rate of 58.9%. Of the eligible individuals, 197 (41.1%) were never successfully contacted or if they were contacted, interviewers were not able to complete a follow-up survey with them during the follow-up period: these cases are classified as expired. No individuals declined to complete the follow-up survey when the interviewer contacted them. The project interviewers' efforts accounted for 62.7% of the cases (n = 331) included in the follow-up sample. The only cases not considered accounted for are those individuals who are classified as expired.

TABLE AA.1. FINAL CASE OUTCOMES FOR FOLLOW-UP EFFORTS

	Number of Records (N = 528)	Percent
Ineligible for follow-up survey	49	9.2%
	Number of cases eligible for follow-up (N = 479)	
Completed follow-up surveys	282	
Follow-up rate is calculated by dividing the number of completed surveys by the number of eligible cases and multiplying by 100		58.9%
Expired cases (i.e., never contacted, did not complete the survey during the follow-up period)	197	
Expired rate ((the number of expired cases/eligible cases)*100)		41.1%
Refusal	0	
Refusal rate ((the number of refusal cases/eligible cases)*100)		0.0%
Cases accounted for (i.e., records ineligible for follow-up + completed surveys + refusals)	331	
Percent of cases accounted for ((# of cases accounted for/total number of records in the follow-up sample)*100)		62.7%

A total of 49 individuals selected into the follow-up sample were ineligible for participating in the follow-up study at the target period for follow-up (see Table AA.2). Of the 49 cases that were ineligible for follow-up, the majority (83.7%) was ineligible because they were incarcerated during the follow-up period. Five individuals were ineligible because they were in residential treatment, 2 were deceased, and one had invalid data.

TABLE AA.2. REASONS CLIENTS WERE INELIGIBLE FOR FOLLOW-UP (N = 49)

	Number	Percent
Incarcerated.....	41	83.7%
Residential treatment.....	5	10.2%
Deceased	2	4.1%
Invalid data	1	2.0%

Appendix B. Client Characteristics at Intake for Those with Completed Follow-up Interviews and Those Without Completed Follow-up Interviews

Individuals who completed a follow-up interview are compared in this section with individuals who did not complete a follow-up interview for any reason (e.g., not selected into the follow-up sample, ineligible for follow-up, and interviewers were unable to locate the client for the follow-up survey).[125]

Demographic Characteristics

The average age of clients was 38.0 for clients who did not complete a follow-up and 38.8 for clients who completed a follow-up (see Table AB.1). Because of the stratification of sampling for the follow-up sample (half men, half women), significantly more women completed the follow-up than did not, and more than half of the follow-up sample was women. The majority of the sample for this annual report was White/Caucasian. The highest percentage of clients in both groups reported at intake that they had never been married and the next highest percentage reported they were separated or divorced. Age, race, and marital status did not differ significantly 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 = 1,412[126]	YES n = 282
Age	38.0 years	38.8 years
Gender**		
Male	66.1%	47.5%
Female	33.9%	52.5%
Race		
White	89.3%	88.3%
African American	6.3%	8.2%
Other or multiracial	4.4%	3.5%
Marital status		
Never married	39.3%	42.2%
Married or cohabiting	24.8%	24.1%
Separated or divorced	33.3%	32.3%
Widowed	2.6%	1.4%

**p < .001.

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

[126] Nine individuals had missing data for DOB, so age could not be calculated.

Substance Use at Intake

Use of illicit drugs, alcohol, and tobacco in the 6 months before entering the recovery center is presented by follow-up status in Table AB.2 for those clients who were not incarcerated the entire period.[127] There were no statistically significant differences by follow-up status.

The majority of the clients reported using any illicit drug in the 6 months before entering the program. The drug class used by the greatest percent of clients was stimulants (methamphetamine, non-prescribed Adderall, Ecstasy), followed by cannabis, and then opioids (other than heroin). Use of heroin was reported by 24.2% of clients who did not complete a follow-up and by 21.3% of clients who completed a follow-up survey. Nearly one-fourth of follow-up clients vs. 20.9% of individuals who did not complete a follow-up reported cocaine/crack use. Less than one-fifth of clients used CNS depressants. A minority of clients in both groups used other illicit drugs (e.g., synthetic drugs, hallucinogens, inhalants).

About two-fifths of clients reported using any alcohol at intake. The majority of clients reported smoking tobacco products in the 6 months before entering the program. About half of clients reported using vaporized nicotine products (e.g., e-cigarettes). Smaller minorities reported using smokeless tobacco.

TABLE AB.2. PERCENT OF INDIVIDUALS REPORTING ILLICIT DRUG USE, ALCOHOL, AND TOBACCO IN THE 6 MONTHS BEFORE ENTERING THE RECOVERY CENTER

Substances	FOLLOWED UP	
	NO n = 1,155	YES n = 239
Any illicit drug	86.4%	87.4%
Stimulants (methamphetamine, Adderall, Ecstasy)	54.3%	58.2%
Cannabis	56.3%	54.8%
Opioids (including methadone and buprenorphine-naloxone)	41.2%	45.2%
Heroin	24.2%	21.3%
Cocaine	20.9%	24.7%
CNS depressants	17.2%	19.7%
Other illicit drugs (e.g., synthetic drugs, hallucinogens, inhalants)	15.6%	18.0%
Alcohol	38.4%	40.6%
Smoked tobacco	81.1%	83.3%
Vaporized nicotine	46.6%	49.8%
Smokeless tobacco	28.1%	21.3%

[127] Of those who did not complete a follow-up, 222 were incarcerated all 6 months before entering the program and 37 had missing data for how many days they were incarcerated in the 6-month period. Of those who completed a follow-up, 36 were incarcerated all 6 months before entering the program, and 7 had missing data for how many days they were incarcerated in the 6-month period.

Analysis of past-30-day substance use of clients who were followed up compared to clients who were not followed up showed similar patterns to the 6-month substance use, with the exception of smokeless tobacco use. Significantly more individuals who were not followed up reported they had used smokeless tobacco in the 30 days before entering the program when compared to follow-up individuals (23.8% vs. 12.6%; $\chi 2(1, n = 825) = 8.234$, $p < .01$).

Table AB.3 shows the percent of followed-up and non-followed-up individuals in each DSM-5 severity classification based on self-reported criteria of the 6 months before entering the recovery center, among clients who were not in a controlled environment the entire 6-month period before entering the program. The majority of both groups reported six or more DSM-5 symptoms at intake, with no difference by follow-up status.

TABLE AB.3. SELF-REPORTED DSM-5 SYMPTOMS OF SUBSTANCE USE DISORDER[128]

	FOLLOWED UP	
	NO n = 1,155	YES n = 239
No SUD (0-1 symptom).....	21.7%	18.4%
Mild SUD (2-3 symptoms)	4.4%	4.2%
Moderate SUD (4-5 symptoms).....	5.3%	3.8%
Severe SUD (6+ symptoms)	68.6%	73.6%

Alcohol and drug composite severity scores were calculated from items included in the intake survey. Because the ASI composite severity scores are based on past-30-day measures, it is important to take into account clients being in a controlled environment all 30 days when examining composite severity scores. Thus, alcohol and drug severity composite scores are presented in Table AB.4 separately for those individuals who were not in a controlled environment all 30 days before entering the recovery center and individuals who were in a controlled environment all 30 days before entering the recovery center. The highest composite score is 1.0 for each of the two substance categories.

Of the individuals who were not in a controlled environment all 30 days, the majority met or surpassed the Addiction Severity Index (ASI) composite score (CS) cutoff for alcohol and/or drug use disorder, with no difference by follow-up status (70.0% for not followed up and 78.5% for followed up individuals; see Table AB.4). Among individuals who were not in a controlled environment all 30 days before entering the program, the average score on the alcohol severity composite score was .23 for individuals who were not followed up and .30 for individuals who were followed up. Among clients who were not in a controlled environment all 30 days before entering the program, the average score for the drug severity composite score was .23 for those not followed up and .27 for those who were followed up. These average cutoff scores include individuals with scores of 0 on the composites.

[128] Of those who did not complete a follow-up, 222 were incarcerated all 6 months before entering the program and 37 had missing data for how many days they were incarcerated in the 6 month period. Of those who completed a follow-up, 36 were incarcerated all 6 months before entering the program, and 7 had missing data for how many days they were incarcerated in the 6-month period.

Of the individuals who were in a controlled environment all 30 days before entering the recovery center, less than half met or surpassed the cutoff for the ASI CS for alcohol and/or drug use disorder, with no difference by follow-up status (see Table AB.4). Among individuals who were in a controlled environment all 30 days before entering the program, the average score for the alcohol severity composite score was .12 for the not followed-up group and .11 for the followed-up group. Of clients who were in a controlled environment all 30 days, the mean for the drug severity composite scores was .16 for the not follow-up group and .17 for the followed-up group. The percent of individuals who met or surpassed the cutoff for the ASI CS for severe SUD did not differ significantly by follow-up status.

TABLE AB.4. SELF-REPORTED ALCOHOL AND DRUG USE SEVERITY AT INTAKE

Recent substance use problems among individuals who were....	Not in a controlled environment all 30 days before entering the recovery center		In a controlled environment all 30 days before entering the recovery center	
	FOLLOWED UP		FOLLOWED UP	
	NO n = 690	YES n = 135	NO n = 724	YES n = 147
Percent of Individuals with ASI composite score equal to or greater than cutoff score for...				
alcohol or drug use disorder.....	70.0%	78.5%	45.0%	49.0%
alcohol use disorder.....	37.0%	45.2%	19.9%	21.1%
drug use disorder.....	57.8%	69.6%	36.9%	40.1%
Average ASI composite score for alcohol use[a].....	.23	.30	.12	.11
Average ASI composite score for drug use[b].....	.23	.27	.16	.17

[a] Score equal to or greater than .17 is indicative of alcohol dependence.
[b] Score equal to or greater than .16 is indicative of drug dependence.

Substance Use Disorder Treatment

A majority of RCOS clients reported ever having been in SUD treatment in their lifetime, with no difference by follow-up status (see Table AB.5). Among clients who reported a history of substance abuse treatment, the average number of lifetime treatment episodes was 3.6 for individuals who did not complete a follow-up interview and 3.5 for individuals who did complete a follow-up interview. A minority of clients reported they had participated in any medication-assisted treatment within the past 6 months, with no difference by follow-up status.

TABLE AB.5. HISTORY OF SUBSTANCE ABUSE TREATMENT IN LIFETIME

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Ever been in SUD treatment in lifetime	70.5%	75.2%
Among those who had ever been in SUD treatment in lifetime,	(n = 997)	(n = 212)
Average number of times in treatment.....	3.6	3.5
Participated in any MAT in the 6 months before entering the recovery center.....	23.1%	24.8%

Mental Health at Intake

The mental health questions included in the RCOS 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 study criteria for depression, including the 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?" The majority of clients reported symptoms that met study criteria for depression, with no significant difference by follow-up status (see Table AB.6).

A total of 7 questions were asked to determine if individuals met criteria for Generalized Anxiety, including the screening question: "In the 6 months before you entered this recovery center, did you worry excessively or were you anxious about multiple things on more days than not (like family, health, finances, school, or work difficulties) all 6 months?" The majority of clients reported symptoms that met the criteria for Generalized Anxiety, with no significant difference by follow-up status.

Two questions were included in the intake survey that asked about thoughts of suicide and attempted suicide in the 6 months before clients entered recovery centers. About 1 in 5 participants in both groups reported suicide ideation and/or attempts at intake (see Table AB.6).

The abbreviated version of the PTSD Checklist-5 (PCL-5), comprised of 4 items, was added to intake and follow-up interviews.[129] A score of 10 or higher is indicative of clinically significant PTSD symptomatology. A significantly higher percent of individuals in the followed-up group had scores of 10 or higher on the PCL-5, indicating PTSD symptoms, compared to individuals who did not complete a follow-up survey.

[129] Price, M., Szafrankski, D. D., van Stolk-Cooke, K., & Gros, D. F. (2016). Investigation of abbreviated 4 and 8 item versions of the PTSD Checklist 5. Psychiatry Research, 239, 124-130.

TABLE AB.6. PERCENT OF INDIVIDUALS REPORTING MENTAL HEALTH PROBLEMS IN THE 6 MONTHS BEFORE ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Depression	53.0%	56.4%
Generalized Anxiety	62.6%	58.9%
Suicidality (e.g., thoughts of suicide or suicide attempts)	20.0%	20.6%
PTSD*	21.7%	29.8%

*p < .01.

Criminal Legal System Involvement at Intake

There was no significant difference by follow-up status in the percent of clients who were referred to the recovery center by the criminal legal system (e.g., judge, drug court, probation, Department of Corrections): 81.8% of those who did not complete a follow-up vs. 82.6% of those who did complete a follow-up (not depicted in a Table or Figure).

The majority of individuals (60.7% of those not followed up and 61.7% of those followed up) reported they had been arrested in the 6 months before entering the recovery center (see Table AB.7). The majority of clients were under supervision by the criminal legal system (e.g., on probation or parole) when they entered the recovery center, with no significant difference by follow-up status.

TABLE AB.7. CRIMINAL LEGAL SYSTEM INVOLVEMENT WHEN ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Arrested for any charge in the 6 months before entering the Recovery Center	60.7%	61.7%
Currently under supervision by the criminal legal system	77.7%	77.3%
On probation	64.0%	65.6%
On parole	17.6%	14.5%

The majority of clients in each group reported they were incarcerated for at least one day in the past 6 months before entering the program, with no difference by follow-up status (See Table AB.8). Among those who reported they were incarcerated at least one day in the 6 months before entering the program, the average number of days they were incarcerated did not differ by follow-up status.

TABLE AB.8. INCARCERATION HISTORY IN THE 6 MONTHS BEFORE ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Incarcerated at least one day	80.0% (n = 1,094)[130]	81.6% (n = 223)
Among those incarcerated at least one day, the average number of days incarcerated	77.2	69.4

Physical Health at Intake

Table AB.9 presents comparison of physical health status of clients who were not followed up with clients who were followed up. There were no significant differences by follow-up status. The majority of clients reported they had ever been told by a doctor they had a chronic health problem, such as hepatitis C, cardiovascular disease, arthritis, asthma, severe dental problems, and sexually transmitted illnesses. Similar percentages of clients in both groups reported they had experienced chronic pain in the 6 months before entering the program. There was no statistically significant difference in the average number of days clients' physical health and mental health was not good in the 30 days before entering the recovery center.

TABLE AB.9. CLIENT'S PHYSICAL HEALTH STATUS AT INTAKE

	FOLLOWED UP	
	NO n = 1,412	YES n = 282
Client was ever told by a doctor that client had a chronic health problem	63.6%	66.3%
Experienced chronic pain (pain lasting 3 months or more)	23.8%	22.3%
In the 30 days before entering the program:		
Average number of days physical health was not good	7.3	8.7
Average number of days mental health was not good	14.4	14.5

Economic and Living Circumstances at Intake

Table AB.10 describes clients' level of education when entering the recovery center. A minority of individuals had less than a high school diploma or GED, with no significant difference by follow-up status.

[130] Thirty-seven individuals in the not followed-up and 7 individuals in the follow-up group had missing values for the number of days they were incarcerated in the 6 months before entering the program.

TABLE AB.10. CLIENTS' HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Highest level of education completed		
Less than GED or high school diploma	23.3%	16.3%
GED/high school diploma	46.2%	46.1%
Vocational to graduate school	30.5%	37.6%

There were no differences in usual employment status at intake by follow-up status (see Table AB.11). More than half of followed up and not followed up clients were unemployed, either because they were out of the labor force because they were a student, homemaker, retired, disabled, or in a controlled environment, or unemployed and they were looking for work. Of the individuals who reported working at least part-time in the 6 months before entering the recovery center, the average number of months worked was 4.6 for clients who were not followed up and 4.8 for followed-up clients. A minority of clients reported they currently received SSI or SSDI benefits.

TABLE AB.11. EMPLOYMENT IN THE 6 MONTHS BEFORE ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Usual employment status		
Employed full-time	35.1%	40.1%
Employed part-time (including seasonal, occasional work)	9.4%	10.3%
Unemployed and not looking for work due to being a student, homemaker, retired, disabled, or in a controlled environment	28.1%	25.9%
Unemployed	27.4%	23.8%
	(n = 453)[131]	(n = 105)
Among those who were employed, average number of months client was employed	4.6 months	4.8 months
Currently receives SSI or SSDI benefits	9.1%	8.2%

There were no significant differences in living situation at intake between individuals who completed a follow-up interview and individuals who did not. Similar percentages in each group reported their usual living situation to be in a private residence and in jail/prison (see Table AB.12). Small percentages of individuals reported their usual living arrangement had been in a shelter or on the street, or in a controlled environment that was not a jail or prison, such as a recovery center, residential treatment, sober living home, or hospital.

[131] 176 individuals who did not complete a follow-up survey and 37 individuals who completed a follow-up survey had missing values for the number of months they were employed in the 6 months before entering the program.

At the time individuals entered recovery centers, 32.6% of clients who were not followed up and 29.1% of clients who were followed up considered themselves to be homeless, with many of those individuals stating that they were temporarily living with family or friends, staying on the street or living in a car, or in jail or prison (see Table AB.12).

TABLE AB.12 LIVING SITUATION OF CLIENTS BEFORE ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Usual living arrangement in the 6 months before entering the program		
Own or someone else's home or apartment	48.7%	45.0%
Jail or prison	37.4%	41.1%
Shelter or on the street	6.9%	6.4%
Residential program, hospital, recovery center, or sober living home	5.7%	6.7%
Other living situation	1.3%	0.7%
Considers self to be currently homeless	32.6%	29.1%
Why the individual considers himself/herself to be homeless	(n = 461)[132]	(n = 80)
Staying temporarily with friends or family	45.1%	40.0%
Staying on the street or living in a car	30.9%	35.0%
In jail or prison	13.8%	17.5%
Staying in a shelter	5.9%	2.5%
Staying in a hotel or motel	0.9%	0.0%
In residential treatment, or other recovery center	1.5%	1.3%
Other reason	0.4%	1.3%
Multiple Situations	1.5%	2.5%

A sizeable minority of clients reported they had difficulty meeting any needs for financial reasons in the 6 months before entering the program, with no significant difference by follow-up status (see Table AB.13). Similar percentages of clients who were followed up and clients who were not followed up reported they had difficulty meeting basic living needs or health care needs.

TABLE AB.13. CLIENTS WHO HAD DIFFICULTY MEETING BASIC NEEDS BEFORE ENTERING THE RECOVERY CENTER

	FOLLOWED UP	
	NO n = 1,414	YES n = 282
Client's household had difficulty meeting any needs in the 6 months before entering the program	44.8%	40.4%
Basic living needs (e.g., housing, utilities, telephone service, food)	39.5%	33.7%
Health care needs	27.6%	22.7%

[132] Six clients had a missing value for the item about reason for homelessness: 4 clients who did not complete a follow-up survey and 2 clients who did complete a follow-up survey.

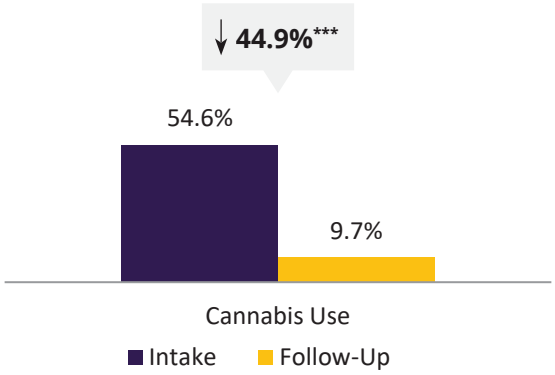
Appendix C. Change in Use of Specific Classes of Drugs from Intake to Follow-up

Change in 6-month Drug Use from Intake to Follow-up for Individuals Not in a Controlled Environment the Entire Period Before Entering the Recovery Center

Past-6-month Cannabis Use

Clients' self-reported cannabis use decreased significantly by 44.9% from the 6 months before entering the program to the 6 months before follow-up (see Table AC.1). There was no gender difference in the percent of respondents reporting use of cannabis at intake or follow-up.

FIGURE AC.1. CANNABIS USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

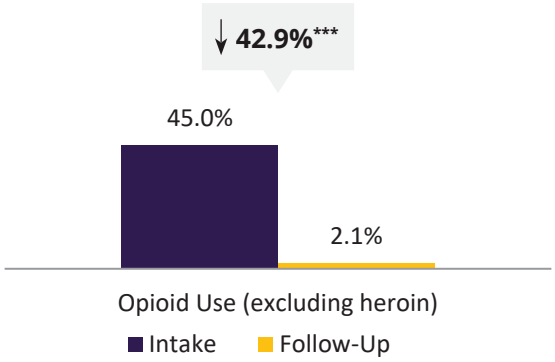


***p<.001.

Past-6-month Opioid (excluding Heroin) Use

Individuals' self-reported use of opioids including prescription opiates, methadone, and buprenorphine-naloxone (bup-nx) decreased significantly by 42.9% from the 6 months before entering the recovery center to the 6 months before follow-up (see Table AC.2). There was no gender difference in the percent of respondents reporting use of opioids at intake or follow-up.

FIGURE AC.2. OPIOID USE (EXCLUDING HEROIN) FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

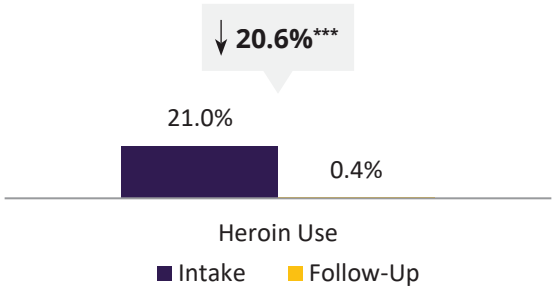


***p<.001.

Past-6-month Heroin Use

The number of individuals who reported using heroin decreased significantly by 20.6% in the period before entering the recovery center to the 6 months before follow-up (see Figure AC.3). There was no significant difference in use of heroin at intake by gender. Too few individuals reported using heroin in the 6 months before follow-up to examine statistically significant differences by gender.

FIGURE AC.3. HEROIN USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

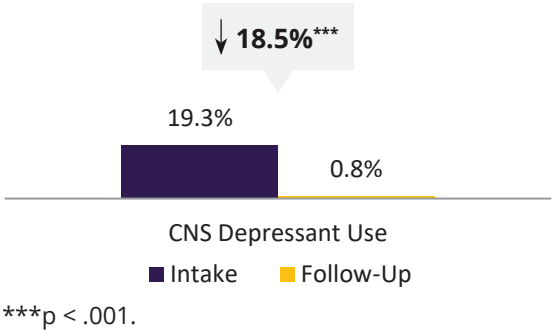


***p<.001.

Past-6-month Central Nervous System (CNS) Depressant Use

The number of individuals who reported using CNS depressants (e.g., tranquilizers, barbiturates, benzodiazepines, sedatives) decreased significantly by 18.5% in the 6 months before entering the recovery center to the 6 months before follow-up (see Figure AC.4). There was no gender difference in the percent of respondents reporting use of CNS depressants at intake or follow-up.

FIGURE AC.4. CNS DEPRESSANT USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

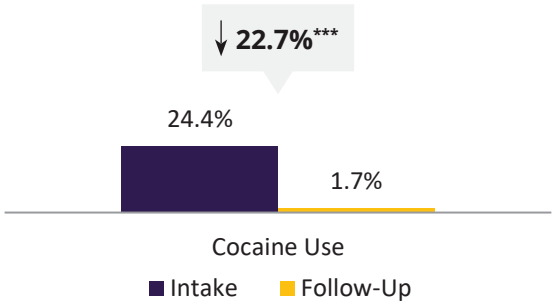


***p < .001.

Past-6-month Cocaine Use

The number of individuals who reported using cocaine decreased significantly by 22.7% in the period before entering the recovery center to the 6 months before follow-up (see Figure AC.5). There were no gender differences at intake and there were too few individuals who reported using cocaine at follow-up to examine for a gender difference.

FIGURE AC.5. COCAINE USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

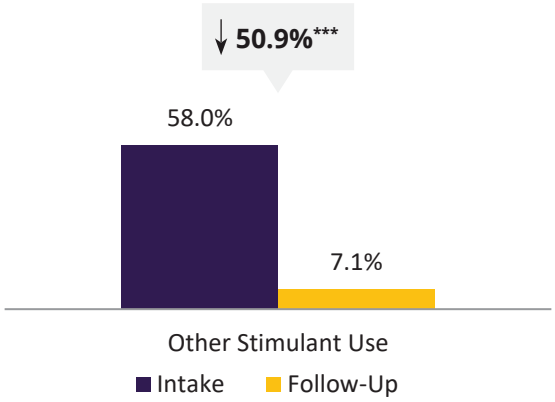


***p < .001.

Past-6-month Stimulant Use (Other Than Cocaine)

The number of individuals who reported using stimulants other than cocaine (e.g., amphetamine, methamphetamine, ecstasy, Ritalin) decreased significantly by 50.9% in the period before entering the recovery center to the 6 months before follow-up (see Figure AC.6). There were no gender differences in the percent of clients who reported using stimulants at intake and follow-up.

FIGURE AC.6. OTHER STIMULANT USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)

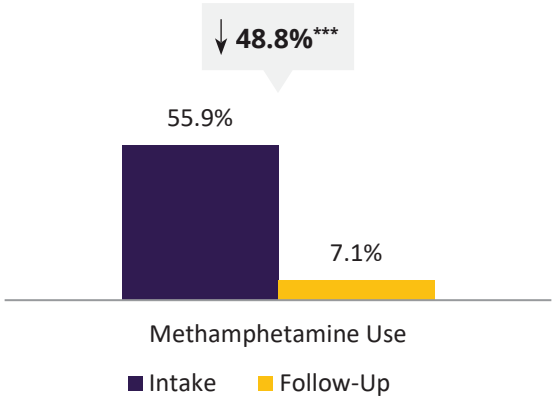


***p < .001.

Past-6-month Methamphetamine Use

Within the class of stimulant use, methamphetamine use was noted. The number of individuals who reported using methamphetamine decreased significantly by 48.8% in the period before entering the recovery center to the 6 months before follow-up (see Figure AC.7). There were no gender differences in the percent of clients who reported using methamphetamine at intake and follow-up.

FIGURE AC.7. METHAMPHETAMINE USE FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)



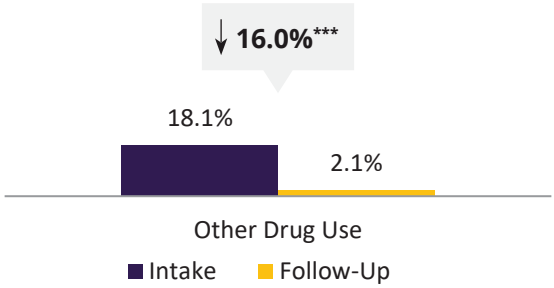
***p < .001.

Past-6-month Use of Other Drugs

The number of individuals who reported using other illicit drugs (e.g., inhalants, hallucinogens, synthetic drugs) decreased significantly by 16.0% (see Figure AC.8). There were no gender differences in the percent of clients who reported using other illicit drugs at intake or at follow-up.

FIGURE AC.8. USE OF OTHER DRUGS FOR INDIVIDUALS WHO WERE NOT IN A CONTROLLED ENVIRONMENT

THE ENTIRE PERIOD BEFORE ENTERING THE RECOVERY CENTER (N = 238)



***p < .001.

Appendix D. Length of Service, Doc-referral Status, and Targeted Outcomes

This section describes the relationship between the length of service (i.e., number of days between entry into the program and discharge), DOC referral status, and targeted outcomes at follow-up: (1) illicit drug or alcohol use (yes/no) and average ASI alcohol and drug composite scores, (2) mental health (e.g., meeting criteria for depression or anxiety), (3) employment status (e.g., employed or unemployed), and (4) criminal legal system involvement (e.g., arrested at least once, spent at least one night incarcerated).

Overall, the clients who were followed up received, on average, about 7.6 months of services from the recovery centers. Clients who were referred to the program by DOC and clients who were not referred by DOC did not have significantly different length of stays in the recovery centers (225.2 days vs. 240.8 days, $t(280) = 1.250$, $p > .05$).

Multivariate analysis examining the relationship between length of service, DOC referral status, and several targeted outcomes showed no significant associations between DOC referral status and the outcomes, but significant associations were found between length of service and three outcomes at follow-up. Specifically, lower length of service was associated with greater odds of:

- using drugs or alcohol in the preceding 6 months
- meeting criteria for depression or anxiety in the preceding 6 months, and
- being employed full- or part-time in the preceding 6 months.