KENTUCKY TREATMENT OUTCOME STUDY

2025 ANNUAL REPORT

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EXECUTIVE SUMMARY

This report summarizes client-level outcomes from a statewide evaluation of Community Mental Health Center (CMHC) substance use disorder (SUD) programs administered through the CMHCs for adults (i.e., 18 years and older). The goal of the Kentucky Treatment Outcome Study (KTOS) is to examine respondent perceptions of care and outcomes for several targeted factors including: (1) substance use and severity of substance use, (2) mental health, physical health, and victimization, (3) economic and living circumstances, (4) criminal legal involvement, (5) subjective quality of life, and (6) recovery supports. Report findings support continued funding of SUD treatment programs, which improve the lives of clients and greatly reduce the cost of untreated SUD to society.

CMHC SUD treatment programs in Kentucky are required by Kentucky Revised Statute (222.465) to collect data on SUD clients in a client-level outcome study. KTOS is an important part of the Division of Substance Use Disorder's performance-based measurement of treatment outcomes in Kentucky's communities. The study includes an evidence-based assessment administered by treatment staff at the time of intake (n = 3,343), which took place in FY 2023. Twelve months later, a follow-up interview was administered by University of Kentucky, Center on Drug & Alcohol Research (UK CDAR) staff with 475 adults. In reports before the 2024 report, the follow-up sample was randomly selected by month in which individuals completed the intake survey—170 cases per month. However, the number of individuals eligible for follow-up in this year's and the 2024 report was lower than in previous years, because of the lower number of intake surveys completed in FY 2023—a pattern that began during the COVID-19 pandemic and has continued. Thus, all eligible cases were included in the sample of individuals to be contacted to complete a follow-up survey (n = 720). The follow-up rate for this year's report was 75.4%. Furthermore, trend analyses across multiple report years are presented in this report.

Substance Use

Results show that there were significant reductions in drug and alcohol use as well as self-reported severity of substance use disorder. The percentage of individuals who reported using illicit drugs decreased from 87% at intake to 30% at follow-up. A trend report of illicit drug use at intake and follow-up over the past 17 reports shows that around three-quarters of KTOS respondents reported any illicit drug use in the 12 months before treatment each year, except for the past seven years (87%-91%) because the selection criteria for including individuals in the follow-up sample was changed to include alcohol and/or illicit drug use in the 12 months before intake. In this year's report data, the percentage of individuals who reported using alcohol in the

past 12 months decreased from 52% at intake to 29% at follow-up.

Overall, the percentage of respondents who met DSM-5 study criteria suggesting no substance use (alcohol and/or drug use) disorder increased from 26% at intake to 78% at follow-up. Along the same lines, the percentage of individuals who met DSM-5 study criteria for severe substance use disorder decreased from 59% to 14%. Additionally, among individuals who reported using any illicit drugs in the 30 days before intake or follow-up, the percentage who had Addiction Severity Index (ASI) drug composite scores that met the cutoff for severe drug use disorder decreased from 57% at intake to 10% at follow-up. Among individuals who reported using alcohol in the 30 days before intake or follow-up, the percent who had Addiction Severity Index (ASI) alcohol composite scores that met the cutoff for severe alcohol use disorder did not change significantly from intake (55%) to follow-up (44%).

The percentage of respondents who reported they had experienced an overdose in the past 12 months decreased significantly from 17% at intake to 4% at follow-up. A little less than one-third of respondents reported they had received MOUD in the 12 months before follow-up. Among these respondents, 87% reported the medication had help their drug use problems, 9% said the medication had no effect, and 4% reported the medication made their drug use problems worse. Past-12-month (81%) and past-30-day (75%) rates of smoking tobacco use were very high at intake, and even though there was a significant decrease at follow-up, the percent of individuals smoking tobacco was still high (65% and 61%, respectively). The percentage of respondents who reported using vaporized nicotine products (e.g., e-cigarettes) at intake and follow-up was higher this year than in previous years. Vaporized nicotine use did not change significantly from intake to follow-up (for 12-month use or for 30-day use).

For the sixth consecutive year, among individuals who completed an intake survey, a higher percentage of respondents reported using methamphetamine (49%) in the 12 months before entering treatment than reported illicit use of prescription opioids (22%), buprenorphine-naloxone (14%), heroin (14%), and methadone (2%).

Mental Health, Physical Health, and Victimization

The mental health of KTOS respondents also significantly improved from treatment intake to 12-month follow-up. The percentage of respondents meeting criteria for depression, generalized anxiety, comorbid depression and generalized anxiety, and suicidality decreased significantly from intake to follow-up. First, the majority of respondents (59%) met study criteria for depression at intake compared to 33% of respondents at follow-up. Over half of respondents (58%) met study criteria for generalized anxiety at intake compared to 33% at follow-up. A sizeable minority of respondents (48%) met study criteria for both depression and generalized anxiety compared to 23% at follow-

up. In addition, 19% of respondents reported suicidal ideation or attempts at intake compared to 6% at follow-up. There was no significant change in the percent of individuals who screened positive for PTSD: at intake, 31% screened positive for PTSD, while at follow-up, 26% screened positive for PTSD.

Additionally, the average number of days individuals reported their mental health was not good out of the past 30 decreased significantly from 14.3 at intake to 4.1 at follow-up. Trends for the past 13 years show that the average number of days respondents reported poor mental health in the past 30 days has increased from 9.7 in the 2016 report to 14.3 in the 2025 report. Nonetheless, the average number of days respondents reported their mental health was not good decreased significantly from intake to follow-up in each report since the 2015 report. Finally, a significantly smaller percentage of individuals reported they had used substances to cope with negative affect at follow-up (32%) relative to intake (46%).

Physical health was also improved at follow-up. Specifically, respondents reported a significantly higher rating of health at follow-up than at intake. At intake, less than one-fourth of respondents rated their general health as very good or excellent, while at follow-up, 40% rated their health as very good or excellent. Also, respondents reported fewer average days their physical health was poor in the past 30 days at follow-up compared to intake (3.3 vs. 6.7). Trends for the past 13 years show that while the average number of days respondents reported poor physical health in the past 30 days increased at intake from 5.5 in the 2014 report to a high of 7.3 in the 2018 report, respondents have reported significantly fewer days of poor physical health at follow-up when compared to intake since the 2015 report. A significantly smaller percentage of individuals (21%) reported they had experienced chronic pain at follow-up relative to intake (31%). Additionally, interpersonal victimization experiences in the past 12 months decreased significantly from 36% of respondents at intake to 15% at follow-up.

Economic and Living Circumstances

KTOS respondents showed improvements from intake to follow-up in economic and living circumstances. First, significantly fewer respondents reported they were homeless at follow-up (8%) than at intake (34%). Trend data shows that the percentage of respondents reporting homelessness at treatment intake increased from the 2016 report (8%) to the 2025 report (34%), while at follow-up, the percent of

> “Being able to go in and open up about my feelings with others and have support—it helped me and gave me relief. It helped me continue on with my path.”
>
> — KTOS RESPONDENT

respondents reported homelessness has been 3% to 9% in the same timeframe.

Significantly fewer individuals reported their usual living situation was in a jail or prison in the 12 months before follow-up compared to the 12 months before intake. Also, at follow-up, significantly more respondents reported their usual living situation and in a residential program, recovery center, or sober living home at follow-up (11%) when compared to intake (6%).

Furthermore, about 42% of respondents reported being currently employed full time at follow-up compared to only 28% at intake. The average number of months respondents reported working in the past 12 months increased significantly from 5.4 months at intake to 6.2 months at follow-up. Additionally, at intake, 45% of respondents reported having difficulty meeting basic living needs (e.g., food, shelter, utilities, and telephone) for financial reasons in the past 12 months. At follow-up, this number decreased to 27%. The percent of respondents who reported they had difficulty obtaining health care (e.g., doctor visits, dental visits, and prescription medications) for financial reasons did not change significantly from intake (25%) to follow-up (26%).

Criminal Legal Involvement

Involvement in the criminal legal system, in terms of being arrested and incarcerated, decreased significantly from intake to follow-up. The percentage of individuals who reported they had been

Overall, KTOS respondents made significant improvements in all targeted areas

REPORTED ANY ILLICIT DRUG USE***

87% at intake | **30%** at follow-up

MET STUDY CRITERIA FOR DEPRESSION AND GENERALIZED ANXIETY***

48% at intake | **23%** at follow-up

REPORTED INTERPERSONAL VICTIMIZATION***

36% at intake | **15%** at follow-up

CURRENTLY EMPLOYED FULL-TIME***

28% at intake | **42%** at follow-up

REPORTED AT LEAST ONE ARREST***

60% at intake | **21%** at follow-up

REPORTED SPENDING AT LEAST ONE NIGHT INCARCERATED ***

62% at intake | **28%** at follow-up

arrested in the past 12 months decreased from 60% to 21%. The percentage of individuals who reported they had been incarcerated in the past 12 months decreased from 62% to 28%. Trend analyses show that, overall, the percentage of respondents who reported an arrest was fluctuated over the past 17 years at intake (minimum of 51% in the 2023 report, maximum of 62% in the 2021 report) with greater fluctuation at follow-up (minimum of 20% in the 2017 report, maximum of 33% in the 2012 report). Trend analysis for percentage of individuals who were incarcerated in the past 12 months showed a similar pattern of greater stability at intake and greater fluctuation at follow-up. Finally, at follow-up significantly fewer individuals reported they had been convicted of misdemeanor offenses (8% vs. 39%) and felony offenses (5% vs. 27%) than at intake. A sizeable minority of respondents reported they were under supervision by the criminal legal system at intake (42%) and follow-up (40%), with no significant change.

Subjective Quality of Life

Compared to intake (7.0), individuals rated their quality of life as significantly higher at follow-up (8.4) on a scale from 1 to 10, with 10 representing “best imaginable.”

Recovery Supports

Compared to intake (37%), significantly more individuals reported they had attended mutual help recovery group meetings in the past 30 days at follow-up (55%). Compared to intake, significantly more individuals reported they had recovery supportive interactions with a sponsor at follow-up (21% vs. 36%). The majority of respondents reported they had recovery contact with family/friends who were supportive of their recovery at intake and follow-up, with no change. Also, individuals reported having more people they could count on for recovery support at follow-up (12.5) than at intake (6.3). The majority of respondents said they had a moderately or very good chance of getting and/or staying off of drugs or alcohol at intake (87%) and follow-up (91%).

Multidimensional Recovery Status

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 multiple key dimensions of individuals’ lives. The multidimensional recovery measure uses items from the intake and follow-up surveys to classify individuals who have all positive dimensions of recovery. At intake, as expected, a small percentage of the followed-up sample (4%) was classified as having all eight dimensions of recovery. At follow-up, there was a significant increase of 42%, which means that 47% had all eight dimensions of recovery.

Return to Substance Use

A little more than one-third of respondents reported return to substance use at follow-up (i.e., illicit

drug use and/or problem alcohol use in the 12 months before follow-up. Results of multivariate analysis show that when controlling for other variables in the model, being male, having more depression and anxiety symptoms, and a lower subjective quality of life at intake were significantly associated with greater odds of illicit drug use and/or problematic alcohol use (i.e., return to substance use) in the 12 months before follow-up.

Respondents' Perceptions of the SUD Treatment Programs

KTOS respondents were predominately satisfied with the treatment services they received at Kentucky's community mental health centers. Overall, respondents rated their treatment experience as an 8.6 out of 10, with 0 representing, "not at all right for me" and 10 representing, "exactly right fit for me." Overall, the majority of respondents (90%) reported that the treatment episode was working/worked pretty well or extremely well for them. Most respondents (92%) indicated they would refer a close friend or family member to their treatment provider. More than 4 in 5 respondents reported the program staff believed in them and believed that treatment would work for them, they worked on the things that were most important to them in treatment, they had input into their treatment goals, plans, and how they were progressing over time, the program staff cared about them and their treatment progress, and they felt listened to and heard by staff when they told them personal things. The majority reported the length of the program was just right (67%).

The majority of individuals who completed the follow-up survey self-reported that they had completed treatment/program (57%), while similarly smaller percentages reported they had not completed the program (20%), or were currently in the program (22%). Individuals who had not completed treatment gave lower overall ratings for their experiences in the program relative to individuals who had completed treatment and individuals who were currently in treatment.

Respondents' perceptions of care in SUD treatment were examined by program completion status to better understand if there were aspects of treatment that individuals who did not complete perceived of differently from individuals who had completed treatment or were currently in treatment at follow-up. For each of the domains, the group of individuals who had not completed treatment gave significantly lower ratings than individuals in the other two groups: completed treatment and currently in treatment. In addition, individuals who were still involved in treatment gave higher ratings than individuals who had completed treatment for communication.

Association of Program Completion and Treatment Outcomes

There were no significant differences in demographics or substance use in the 12 months before entering treatment between the three

groups (based on their self-reported completion of treatment status).

As for overall substance use at follow-up, a significantly higher percentage of individuals who had not completed the program (55%) reported problem alcohol use and/or illicit drug use in the 12 months before follow-up than individuals who had completed the program (31%) and individuals who were currently in the program (28%). A significantly higher percentage of individuals who had not completed the program (50%) reported they had used any illicit drug relative to individuals who had completed the program (27%) and individuals who were currently in the program (22%). Regarding specific classes of illicit drugs, significantly higher percentages of individuals who had not completed treatment reported they had used cannabis, stimulants/cocaine (including methamphetamine, and opioids (including heroin), in the 12 months before follow-up compared to individuals who had completed treatment and individuals who were currently in treatment. A significantly higher percentage of respondents who had not completed the program reported criteria that were consistent with severe SUD at follow-up (30%) compared to individuals who had completed the program (12%) and individuals who were involved in the program (6%).

A significantly smaller percentage of individuals who had completed the SUD program (36%) met criteria for depression and/or generalized anxiety during the follow-up period than individuals who had not completed the program (61%). A significantly higher percentage of individuals who had not completed the program (12%) reported suicidal ideation and/or suicide attempts in the follow-up period compared to individuals who had completed the program (3%). Individuals who had not completed the program reported a significantly greater number of days of poor mental health and a greater number of days poor health limited their usual activities compared to individuals who had completed the program.

A significantly higher percentage of individuals who had not completed the program reported they were homeless at follow-up compared to individuals who had completed the program. There was no association between program completion status and difficulty meeting basic needs and current employment at follow-up.

Two criminal legal outcomes were significantly different by program completion: arrests and being under supervision by the criminal legal system in the follow-up period. A significantly higher percentage of individuals who did not complete the program reported they had been arrested in the 12-month follow-up period compared to individuals who completed the program. A significantly higher percentage of individuals who were currently in the program were under supervision by the criminal legal system (56%) relative to individuals who had not completed the program (37%) and individuals who had completed the program (39%).

A significantly higher percentage of individuals who were currently in the program at follow-up (71%) reported they had participated in mutual help recovery meetings in the past 30 days compared to individuals who had not completed the program (53%) and individuals who had completed the program (49%). Most individuals in each group perceived their chances of abstaining from alcohol and drug use was moderately to very good, with a significantly percentage of individuals who had completed treatment reporting their chances were moderately to very good compared to individuals who had not completed treatment.

Respondents who had not completed treatment rated their quality of life at follow-up as significantly lower than the average quality of life rating for those who completed treatment and those who were still involved in treatment.

Significant Gender Differences

There were several important gender differences at treatment intake and follow-up. Most, but not all of these, indicate that more women mental health problems, worse physical health, more interpersonal victimization experiences, and greater economic hardship than their male counterparts. Vaporized nicotine was more frequent among women in the 12 months and 30 days before intake and follow-up when compared to men. Significantly more men reported using smokeless tobacco in the 12 months and 30 days before intake and follow-up.

Significantly more women than men reported mental health symptoms at intake including generalized anxiety, suicidality. At intake and follow-up, significantly more women met criteria for depression, comorbid depression and generalized anxiety, and post-traumatic stress disorder. Also, compared to men, women also reported their mental health was not good for significantly more days at intake and follow-up and that poor mental and/or physical health limited their activities in the 30 days before intake. Women rated their general health lower compared to men at intake. Significantly more women relative to men reported they had experienced interpersonal victimization in the 12 months before entering treatment and before follow-up.

Women's housing situation, employment, and economic hardship were all worse than men's situations. First, significantly more women reported homelessness at intake and follow-up when compared to men. Significantly more women were unemployed at intake and follow-up when compared to men. Likewise, significantly more men reported they had full-time employment at intake and follow-up when compared to women. Among individuals who were currently employed, employed men also had a significantly higher median hourly wage than employed women at both intake and follow-up. At intake, employed women made only $0.74 for every dollar employed men made, and at follow-up, employed women made $0.75 for every dollar employed men made.

More women also reported difficulty meeting basic living needs at intake and follow-up compared to men Thus, even though women made significant overall gains in their employment by follow-up, they were still behind men in their economic standing.

Relative to women, a significantly higher percentage of men reported they were arrested and being supervised by the criminal legal system in the 12 months before entering treatment. One recovery support outcome differed significantly by gender. At intake and follow-up, men had a significantly higher average number of people they could count on for recovery support relative to women. At intake, men had a significantly higher subjective quality of life compared to women.

Cost Savings

Estimates on the total costs of drug and alcohol use derived from national estimates applied to the follow-up sample of KTOS for this year's report suggest that for every dollar spent on CMHC SUD treatment programs there was an estimated $4.74 return in avoided costs (i.e., costs that would have been expected if alcohol and drug use continued at the same level as it was before treatment intake).

Conclusion

This KTOS 2025 report provides a valuable examination of client-level outcomes for adults in CMHC SUD treatment in Kentucky. Overall, clients of CMHC SUD treatment, including a variety of treatment modalities, made significant strides in all the targeted outcomes. Specifically, there were significant decreases in use of alcohol and all drugs, depression and anxiety symptoms, suicidality, homelessness, economic hardship, arrests, convictions, and incarceration, and a significant increase in full-time employment, subjective quality of life, and recovery supports. Moreover, applying estimates of the cost of alcohol and drug use disorders to KTOS respondents in the year before treatment compared to the cost to the state for alcohol and drug use in the year after treatment intake, while accounting for the cost of CMHC treatment, showed a significant estimated cost savings.

OVERVIEW OF REPORT

The goal of KTOS is to provide an annual outcome evaluation for Community Mental Health Centers' (CMHCs) substance use disorder treatment (SUD) programs for the Department for Behavioral Health, Developmental, and Intellectual Disabilities (DBHDID), Division of Substance Use Disorder in partnership with the Behavioral Health Outcome Studies team at the University of Kentucky Center on Drug and Alcohol Research (UK CDAR). Specifically, the outcome evaluation examines respondents' perceptions of care and several targeted outcomes: (1) substance use and severity of substance use, (2) mental health, physical health, and victimization, (3) economic and living circumstances, (4) criminal legal involvement, (5) respondents' quality of life, and (6) recovery support. In addition, the estimated avoided costs to society in relation to the cost of CMHC substance use disorder treatment is presented in this report.

Results are reported in the main sections and are presented for the overall sample and by gender when there were significant gender differences:

Section 1. Study Overview and Respondent Characteristics. This section briefly describes the KTOS method including how individuals are selected into the outcome evaluation. In addition, this section describes characteristics of KTOS respondents who entered substance use disorder treatment in one of Kentucky's Community Mental Health Centers between July 1, 2022, and June 30, 2023 (N = 3,343). This section also describes characteristics of 475 respondents who completed a 12-month follow-up interview between July 1, 2023, and June 30, 2024.

Section 2. Substance Use. This section examines changes in substance use, which include use of any illicit drugs or alcohol, and then separately for illicit drugs, alcohol, and nicotine/tobacco at intake and follow-up. Analysis is presented in detail for KTOS respondents who were not in a controlled environment for the entire period of 12 months and/or 30 days before entering treatment. In addition, self-reported severity of alcohol and drug use based on DSM-5 symptoms for substance use disorder and the Addiction Severity Index (ASI) alcohol and drug use composite scores are compared at intake and follow-up.

Section 3. Bivariate and Multivariate Analysis of Return to Use. This section focuses on a multivariate analysis examining factors related to return to substance use in the 2025 KTOS follow-up sample.

Section 4. Mental Health, Physical Health, and Victimization. This section examines changes in mental health symptoms, physical health, and interpersonal victimization from intake to follow-up. Specifically, this subsection examines: (1) depression, (2) generalized anxiety, (3) comorbid depression and generalized anxiety, (4) suicide ideation and attempts, (5) posttraumatic stress disorder, (6) perceptions of poor physical and mental health, (7) health status, (8) chronic pain, (9) health insurance, and (10) interpersonal victimization experiences. Mental health and physical health questions in the KTOS intake and follow-up surveys were self-report measures.

Section 5. Economic and Living Circumstances. This section examines changes from intake to follow-up for: (1) homelessness, (2) living situation, (3) education, (4) employment, and (5) economic hardship.

Section 6. Criminal Legal Involvement. This section describes changes in respondents' involvement with the criminal legal system during the 12 months before entering treatment and during the 12 months before the follow-up interview. Specifically, results include changes in: (1) arrests, (2) convictions for misdemeanors and felonies, (3) incarceration, and (4) supervision by the criminal legal system.

Section 7. Subjective Quality of Life. This section describes change in subjective quality of life during the 12 months before entering treatment and the 12 months before the follow-up interview.

Section 8. Recovery Supports. This section focuses on five main aspects of recovery support: (1) respondents attending mutual help recovery group meetings, (2) recovery supportive interactions with family/friends in the past 30 days, (3) the number of people the respondent said they could count on for recovery support, (4) what will be most useful to the respondent in staying off drugs/alcohol, and (5) respondents' perceptions of their chances of staying off drugs/alcohol.

Section 9. Multidimensional Recovery Status. This section examines changes in multidimensional recovery before entering the program and follow-up. 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 multiple key dimensions of individuals' lives.

Section 10. Respondents' Perceptions of the Substance Use Disorder Treatment Programs. This section describes three aspects of respondents' satisfaction and perceptions of care in treatment: (1) respondent involvement in the program and how their involvement ended, (2) whether they would recommend the program to others, and (3) respondents' overall satisfaction with the program and ratings of program experiences.

Section 11. Association of Program Completion and Treatment Outcomes. This section examines treatment outcomes by program completion status as reported by respondents at follow-up: (1) completed the program (or left in good standing), (2) did not complete the program, and (3) currently in the program.

Section 12. Cost Savings of Substance Use Disorder Treatment in Kentucky. This section examines estimated cost reductions or avoided costs to society after participation in substance use disorder treatment. Using the number of respondents who self-reported illicit drug use and alcohol use at intake and follow-up in the KTOS sample, a national per/person cost was applied to the sample to estimate the cost to society for the year before respondents were in treatment and then for the same respondents during the year after treatment had begun.

Section 13. Conclusion and Implications. This section summarizes the most important findings from the evaluation results and suggests implications from these findings for the state.

SECTION 1. STUDY OVERVIEW AND RESPONDENT CHARACTERISTICS

This section briefly describes the Kentucky Treatment Outcome Study (KTOS) including how clients are selected into the outcome evaluation. In addition, this section describes characteristics of clients who entered substance use disorder treatment in one of Kentucky's Community Mental Health Centers (CMHC) between July 1, 2022, and June 30, 2023 (n = 3,343). This section also describes characteristics of 475 clients who completed a 12-month follow-up interview between July 1, 2023, and June 30, 2024.

Study Overview

The Kentucky Treatment Outcome Study (KTOS) Annual Report is conducted by the Behavioral Health Outcome Study (BHOS) team at the University of Kentucky Center on Drug and Alcohol Research (UK CDAR). CMHC SUD programs in Kentucky are required by Kentucky Revised Statute (222.465) to collect data on SUD program clients for a client-level outcome study. KTOS is an important part of the Department for Behavioral Health, Developmental, and Intellectual Disabilities (DBHDID), Division of Substance Use Disorder's performance-based measurement of treatment outcomes in Kentucky's communities.

KTOS includes an evidence-based face-to-face interview with clients that is completed by program staff at treatment intake to assess targeted factors prior to entering treatment.[1] In FY 2023, 3,343 unduplicated adults completed an intake survey between July 1, 2022, and June 30, 2023.

At the completion of the intake interview, program staff talk to individuals about the KTOS follow-up and ask if they are interested in participating. The evidence-based follow-up interview is conducted about 12 months after the intake interview with a selected sample of respondents who agree to participate. The follow-up interviews are completed over the telephone by a member of the UK CDAR research team and ask questions like those in the intake interview along with program satisfaction questions. Respondent responses to follow-up interviews are collected independently from treatment programs and kept confidential to help facilitate the honest evaluation of client-level outcomes and satisfaction with program services.

The UK CDAR research team secured a good follow-up rate of 75.4% and a low refusal rate (1.1%) for participation in the interviews. Less than one-fourth of individuals in the follow-up sample (23.5%) were not successfully contacted to complete the follow-up telephone interviews (see Appendix A for detailed information on study methods). Having accurate locator information can help reduce the number of people we cannot locate to complete a follow-up interview.

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Self-report Data

The data (including drug and alcohol use) are self-reported by KTOS respondents. There is reason to question the validity and reliability of self-reported data, particularly about sensitive topics, such as illegal activity, 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.[2, 3, 4] For example, in many studies that have compared agreement between self-report and urinalysis the concordance or agreement is acceptable to high.[5, 6, 7] 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 measures.[8, 9, 10] In other studies, higher percentages of underreporting have been found.[11] The 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.[12] Moreover, the "gold standard" of biochemical measures of substance use has 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, and sensitivity of the analytic method used.[13]

The study method includes several key strategies to facilitate accurate reporting of sensitive behaviors at follow-up including: (a) the follow-up interviews are

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

[11] 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.

[12] 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.

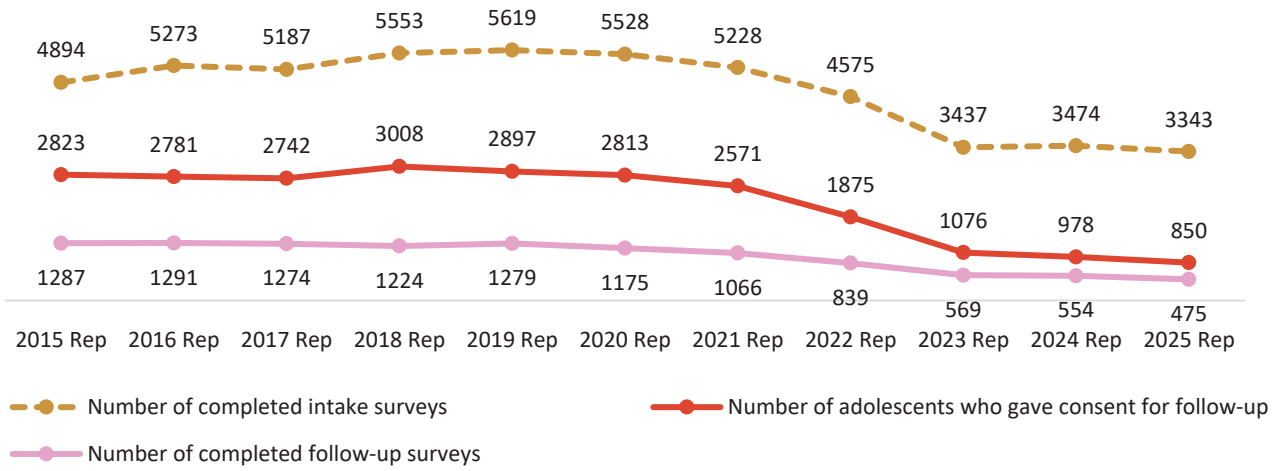
[13] Williams, R. J., & Nowatzki, N. (2005). Validity of self-report of substance use. *Substance Use & Misuse, 40*, 299-313.

conducted by telephone with a University of Kentucky Center on Drug and Alcohol Research (UK CDAR) staff person who is not associated with any treatment program; (b) the follow-up responses are confidential and are reported at a group level, meaning no individual responses are linked to respondents' identities; (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) respondents 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.

This report describes the sample of KTOS respondents in two main ways: (1) providing a description of characteristics for 3,343 adults who completed an intake interview in FY 2023 (July 1, 2022 – June 30, 2023), and (2) presentation of respondent characteristics for 475 adults who completed an intake interview in FY 2023 and a 12-month follow-up interview with a target date between July 1, 2023 and June 30, 2024.

Examining the past eleven KTOS annual reports, the number of completed intake surveys (for unduplicated respondents per report period) began a noticeable decline in the 2022 report, corresponding to intake surveys collected in FY 2020, which was during the beginning of the COVID-19 pandemic (see Figure 1). The number of individuals who gave consent to be contacted for the follow-up survey also began a decrease in FY 2020 and has continued to decline. With fewer intake surveys submitted, and a smaller proportion of individuals giving consent to be contacted for the follow-up survey, the number of follow-up surveys completed has significantly decreased.

FIGURE 1.1. NUMBER OF ADULTS WHO COMPLETED INTAKE SURVEYS, GAVE CONSENT TO BE CONTACTED FOR THE FOLLOW-UP SURVEY, AND COMPLETED THE FOLLOW-UP SURVEY BY REPORT YEAR[14]



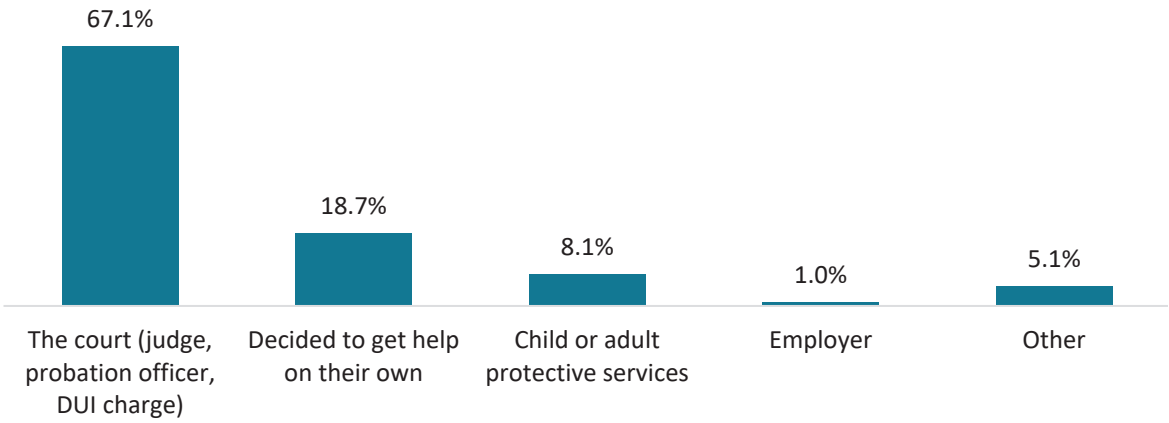
[14] Because the target dates for the follow-up surveys are 12 months after the intake surveys are completed, and data cleaning, data analysis, and report writing takes several months, report data sets include intake surveys conducted in the following fiscal years: 2015 Report (FY 2013), 2016 Report (FY 2014), 2017 Report (FY 2015), 2018 Report (FY 2016), 2019 Report (FY 2017), 2020 Report (FY 2018), 2021 Report (FY 2019), 2022 Report (FY 2020), 2023 Report (FY 2021), 2024 Report (FY 2022), and 2025 Report (FY 2023).

Description of All KTOS Respondents at Treatment Intake

Self-reported Referral Source

Figure 1.2 shows the self-reported treatment referral source for all KTOS respondents at intake. Around two-thirds of respondents (67.1%) reported they were referred to treatment by the court (e.g., judge, court designated worker, probation officer, for DUI offense). This is not necessarily a formal or mandated referral, instead, it is the respondent's perception of the referral source. A minority of respondents (18.7%) self-reported that they decided to get help on their own. A minority of respondents reported they were referred to treatment by Child or Adult Protective Services (8.1%) or other referral sources (5.1%; e.g., AA/NA sponsor or none of the above) and an even smaller percentage of respondents reported they were referred to treatment by an employer (1.0%).

FIGURE 1.2. SELF-REPORTED REFERRAL SOURCE FOR ALL KTOS RESPONDENTS AT INTAKE (N = 3,343)



Demographics

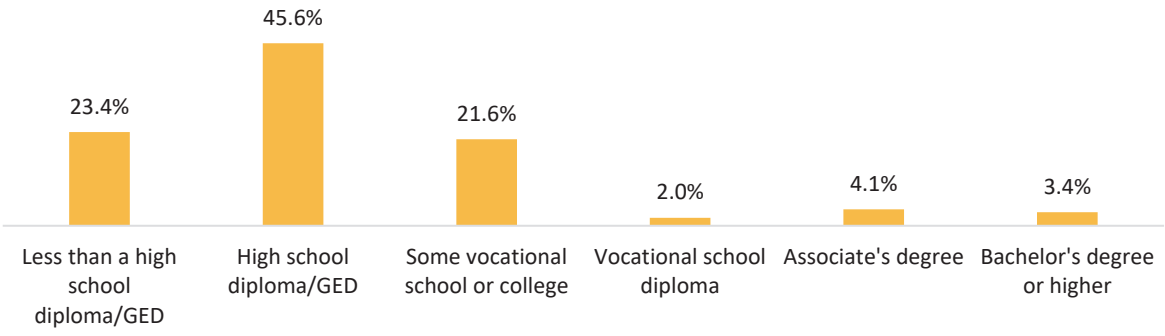
Table 1.1 shows that over half of respondents with an intake survey completed in FY 2023 were male (60.2%) and the vast majority self-reported they were White (91.8%). A minority of respondents reported their race as African American/Black (4.4%) and 3.7% reported they were American Indian, Asian, Hispanic, or multiracial. Respondents were, on average, 37.9 years old, ranging from 18 to 84 years old at intake. At intake, 37.5% were married or cohabiting with a partner, 30.5% had never been married (and were not cohabiting), 28.9% were separated or divorced, and 3.0% were widowed. Almost three-quarters of respondents reported they had at least one child, and 54.3% had children under 18 years old. A small number of KTOS respondents (3.2%) reported they were veterans or were currently serving in the military, Reserves, or National Guard.

TABLE 1.1. DEMOGRAPHICS FOR ALL KTOS RESPONDENTS AT INTAKE (N = 3,343)

Age	37.9 years *(Min. = 18, Max. = 84)*
Gender	
Male	60.2%
Female	39.5%
Transgender	0.3%
Race	
White	91.8%
African american	4.4%
Other or multiracial	3.7%
Marital status	
Married or cohabiting	37.5%
Never married	30.5%
Separated or divorced	28.9%
Widowed	3.0%
Have children	74.6%
Have children under the age of 18	54.3%
Veteran or currently serving in military	3.2%

Nearly one-fourth of respondents (23.4%) had less than a high school diploma or GED at intake (see Figure 1.3). The highest level of education of 45.6% of the sample was a high school diploma or GED. Around one-fifth of respondents (21.6%) had completed some vocational/technical school or college. Only a small minority of respondents had completed vocational/technical school (2.0%), an associate's degree (4.1%), or a bachelor's degree or higher (3.4%).

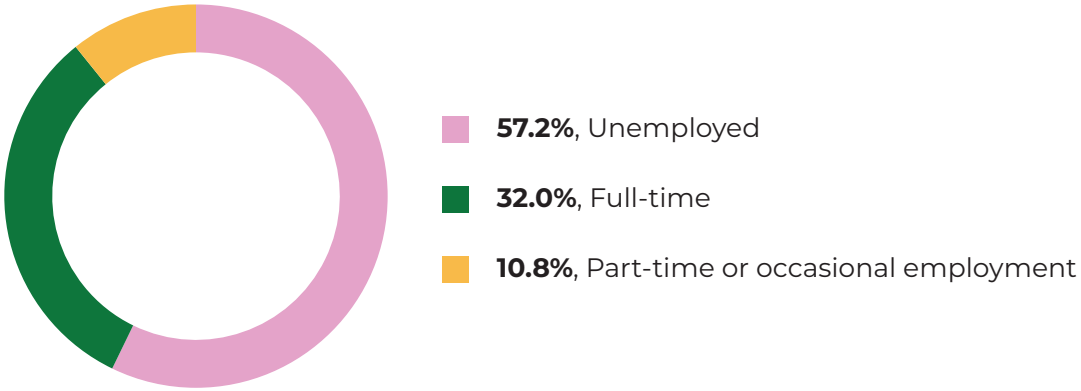
FIGURE 1.3. HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE (N = 3,343)



Employment

At intake, 46.0% of respondents reported they had worked 0 months in the past 12 months, 4.5% had worked 1 to 5 months, and 49.5% had worked 6 or more months (not depicted in a figure).[15] Also, the majority of individuals reported they were unemployed in the 30 days before entering treatment (57.2%), with 32.0% being employed full-time, and 10.8% employed part-time or having occasional or seasonal employment (see Figure 1.4). Among those who reported being employed full or part-time at intake (n = 1,393)[16], the median hourly wage was $15.00.

FIGURE 1.4. CURRENT EMPLOYMENT STATUS AT INTAKE (N = 3,340)[17]



Of the individuals who were currently unemployed at intake (n = 1,911)[18], 37.5% stated they were looking for work, 25.2% were on disability (or had applied for disability), 13.0% were in a controlled environment that prohibited them from working, 12.3% were unemployed and not looking for work, 7.0% were keeping the house or taking care of children full-time at home, 0.7% were on furlough or temporarily laid off, 2.2% were retired, and 1.2% were students or in training. The remaining 0.8% gave other reasons for not being employed (e.g., health problems prevented them from work but they were not on disability, were doing odds jobs on the side) (see Figure 1.5).

> "Program worked well, the staff was very caring, the staff wasn't there only for the money. Staff could relate to clients and very trustworthy."
>
> — KTOS RESPONDENT

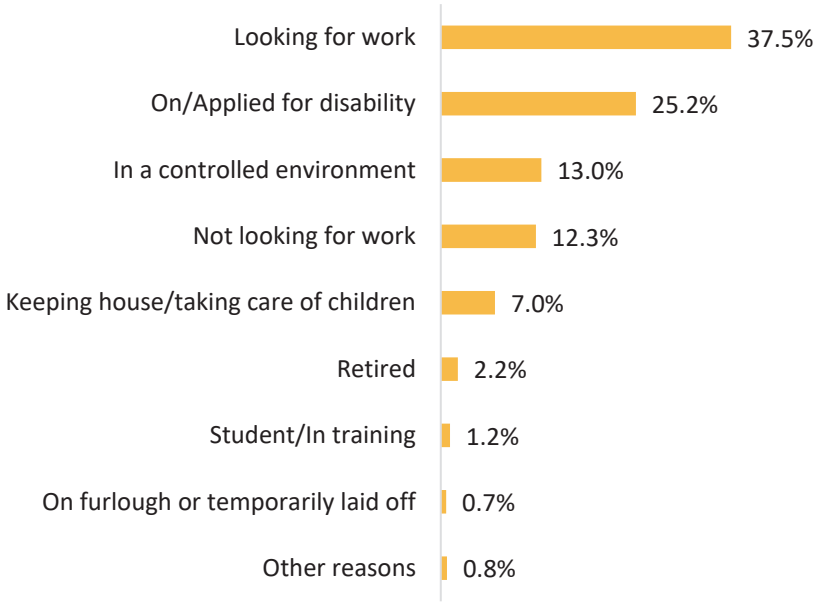
[15] The number of individuals who gave a valid response to this question was 2,737; 606 gave responses that were inconsistent to the question about their usual employment pattern in the 12 months before entering treatment.

[16] Thirty-six individuals had hourly wages that were assigned missing values because the value was less than $2.13 per hour. Also,

[17] Three individuals had missing values for current employment status at intake.

[18] Four individuals had missing values for the reason they were unemployed at intake.

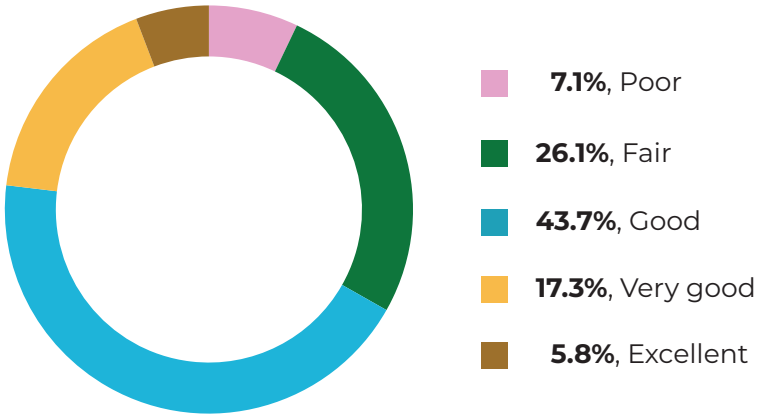
FIGURE 1.5. OF THOSE UNEMPLOYED, REASONS FOR BEING UNEMPLOYED (N = 1,907)



Physical Health

KTOS respondents rated their health, in general, at intake (see Figure 1.6). A small percentage (7.1%) of respondents reported their health was poor and 26.1% said their health was fair. Over two-fifths of respondents (43.7%) reported their health was good, 17.3% reported very good health, and 5.8% said their health was excellent.

FIGURE 1.6. HEALTH RATING AT INTAKE (N = 3,343)



More than one-fourth of KTOS respondents (28.6%) reported they experienced chronic pain that persisted for at least 3 months in the 12 months before entering treatment (see Table 1.2). More than half of respondents (56.9%) reported they had at least one chronic health problem. The most common medical problems respondents in the intake sample (n = 3,343) reported were cardiovascular/heart disease (17.9%), arthritis (17.7%), hepatitis C (14.9%), severe dental problems (13.6%),

asthma (13.2%), seizures (7.1%), chronic obstructive pulmonary disease (COPD; 6.6%), and diabetes (6.4%). Less than 5% of individuals reported having been diagnosed with each of the following chronic health problems: cancer, kidney disease, cirrhosis of the liver, pancreatitis, tuberculosis, hepatitis B, HIV/AIDS, and other sexually transmitted infections (not depicted in the table).

More than three-fourths of KTOS respondents (78.3%) reported they had insurance through Medicaid at intake. Less than one-tenth of respondents did not have any insurance (7.3%). Small numbers of respondents had insurance through an employer, including through their own employer, a spouse's, parent's, or self-employment (6.0%), through Medicare (7.6%), through the Health Exchange (0.2%), or through the VA/Champus/Tricare (0.5%). A small percentage of respondents (0.1%) gave the name of an insurer, but did not specify the source, such as through the Health Exchange, private insurance.

TABLE 1.2. HEALTH-RELATED CONCERNS FOR ALL KTOS RESPONDENTS AT INTAKE (N = 3,343)

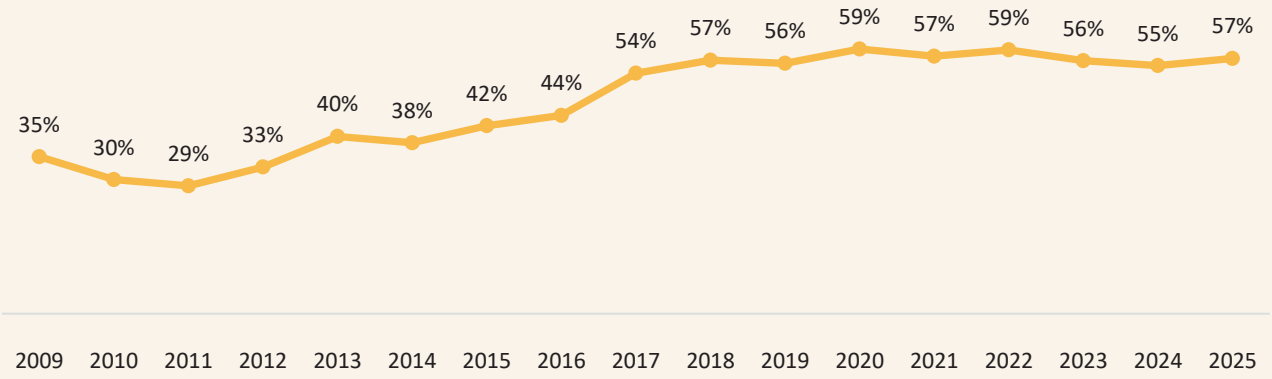
Chronic pain	28.6%
At least one chronic medical problem	56.9%
Cardiovascular/heart disease	17.9%
Arthritis	17.7%
Hepatitis C	14.9%
Severe dental problems	13.6%
Asthma	13.2%
Seizures	7.1%
Chronic obstructive pulmonary disease	6.6%
Diabetes	6.4%
Insurance	(n = 3,339)[19]
No insurance	7.3%
Medicaid	78.3%
Through employer (including client's employer, spouse's employer, parents' employer, and self-employed)	6.0%
Medicare	7.6%
Through health exchange	0.2%
Va/champus/tricare	0.5%
Insured, but source is not known	0.1%

[19] Four individuals did not know their health insurance status.

Trends in Chronic Medical Problems

Overall, the trend shows that the percentage of respondents reporting having at least one chronic medical problem at intake has increased over the past 14 years. In the 2011 report, over one-quarter of respondents (29%) reported having a chronic medical problem compared to 57% of respondents in this year's report.

FIGURE 1.7. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING A LIFETIME CHRONIC MEDICAL PROBLEM AT INTAKE, REPORTS 2009 - 2025



Chronic Medical Problems and Economic Hardship

Having two or more chronic medical problems was significantly associated with economic hardship (see Section 4 for details on economic hardship). Specifically, a significantly higher percentage of individuals who reported they:

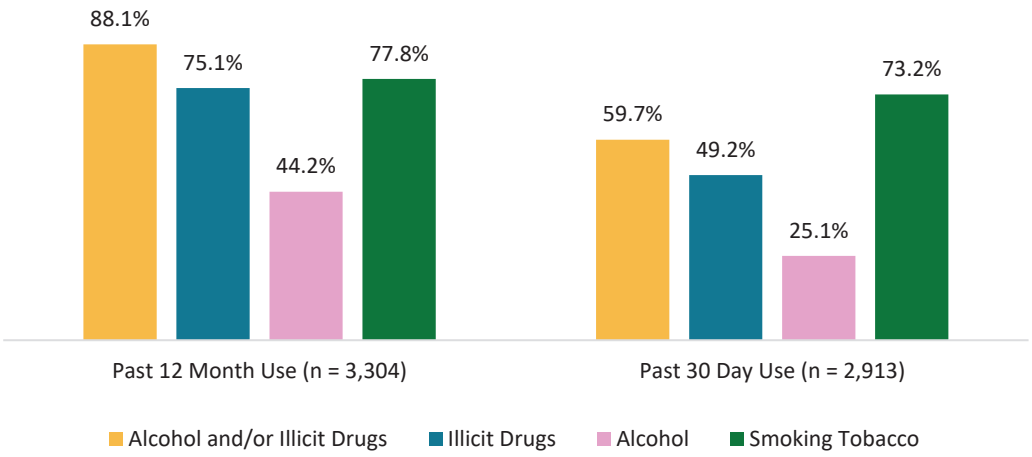
- had two or more chronic medical problems (compared to individuals with 0 or 1 chronic medical problems reported they were homeless (36.9% vs. 23.3%),
- had difficulty meeting basic living needs (52.7% vs. 33.6%), and
- had difficulty obtaining healthcare for financial reasons (32.6% vs. 18.8).

Substance Use

The majority of adults who completed an intake survey reported using alcohol and/or illicit drugs (88.1%) in the 12 months before entering treatment (see Figure 1.8).[20] A higher percentage of individuals reported using illicit drugs (75.1%) compared to the percentage of individuals who reported using alcohol (44.2%) in the 12 months before entering treatment. More than three-fourths of respondents reported smoking tobacco (77.8%) in the 12 months before intake. The drug classes reported by the greatest number of respondents were cannabis (49.0%) and non-prescribed stimulants (49.7%), followed by prescription opioids (21.9%), heroin (13.7%), non-prescribed buprenorphine-naloxone (14.3%), non-prescribed sedatives/tranquilizers/benzodiazepines (12.6%), and cocaine/crack cocaine (10.9%; not depicted in a figure).

Of the 2,913 individuals who were not in a controlled environment all 30 days,[21] over half (59.7%) reported using illicit drugs and/or alcohol in the past 30 days at intake. Specifically, 49.2% reported using illicit drugs and 25.1% reported using alcohol. Three-fourths of KTOS respondents (73.2%) reported smoking tobacco in the 30 days before entering treatment (see Figure 1.8).

FIGURE 1.8. USE OF ILLICIT DRUGS, ALCOHOL, AND SMOKING TOBACCO IN THE 12 MONTHS AND 30 DAYS BEFORE TREATMENT



At intake, about one-third of respondents (33.8%) reported that they had ever injected drugs in their lifetime (not depicted in a figure).

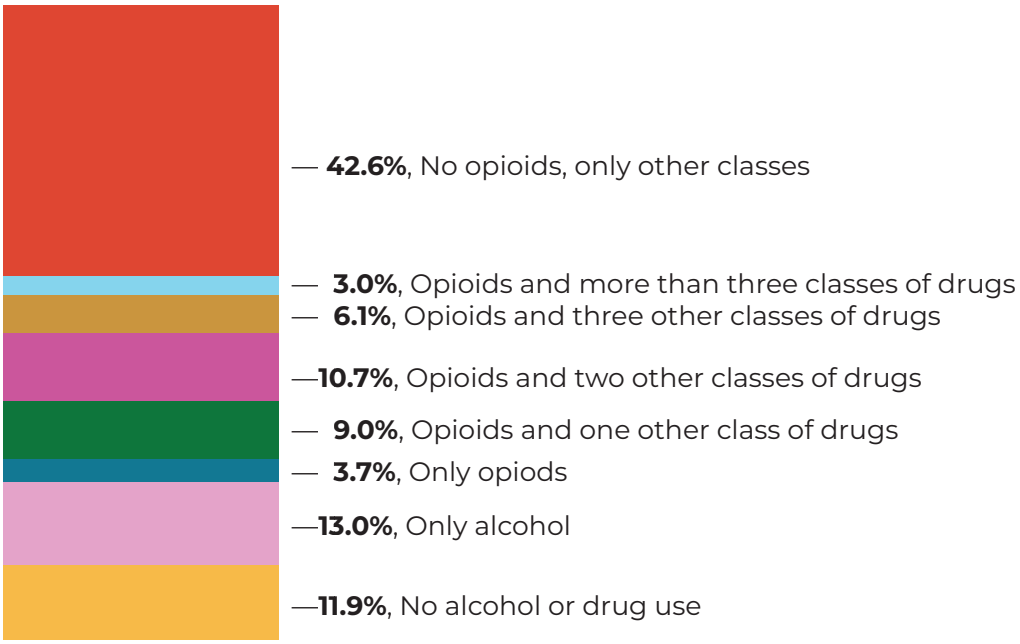
Three-fifths of respondents (60.1%) reported they had been in substance use disorder treatment in the past. Of the 2,009 respondents who reported they had previously been in treatment, they reported an average of 3.2 episodes before the current one (not depicted in a figure).

[20] Thirty-nine individuals reported being incarcerated all 365 days before intake. Because opportunities to use alcohol and drugs are reduced while incarcerated, these 39 individuals were not included in this analysis.

[21] Because being in a controlled environment decreases opportunities for substance use, individuals who were in a controlled environment all 30 days before entering treatment (n = 401) are not included in the analysis of substance use in the 30 days before entering treatment.

Among the individuals who were not in a controlled environment all 365 days before entering treatment, Figure 1.9 shows the percent of individuals who used no alcohol and or illicit drugs (11.9%), alcohol only (13.0%), no opioids and other drug classes only (42.6%), and opioids only (3.7%). Figure 1.9 shows the percentage of respondents who reported using opioids with one other drug class (9.0%), opioids with two other drug classes (10.7%), opioids with three other drug classes (6.1%), and opioids with more than three other drug classes (3.0%).

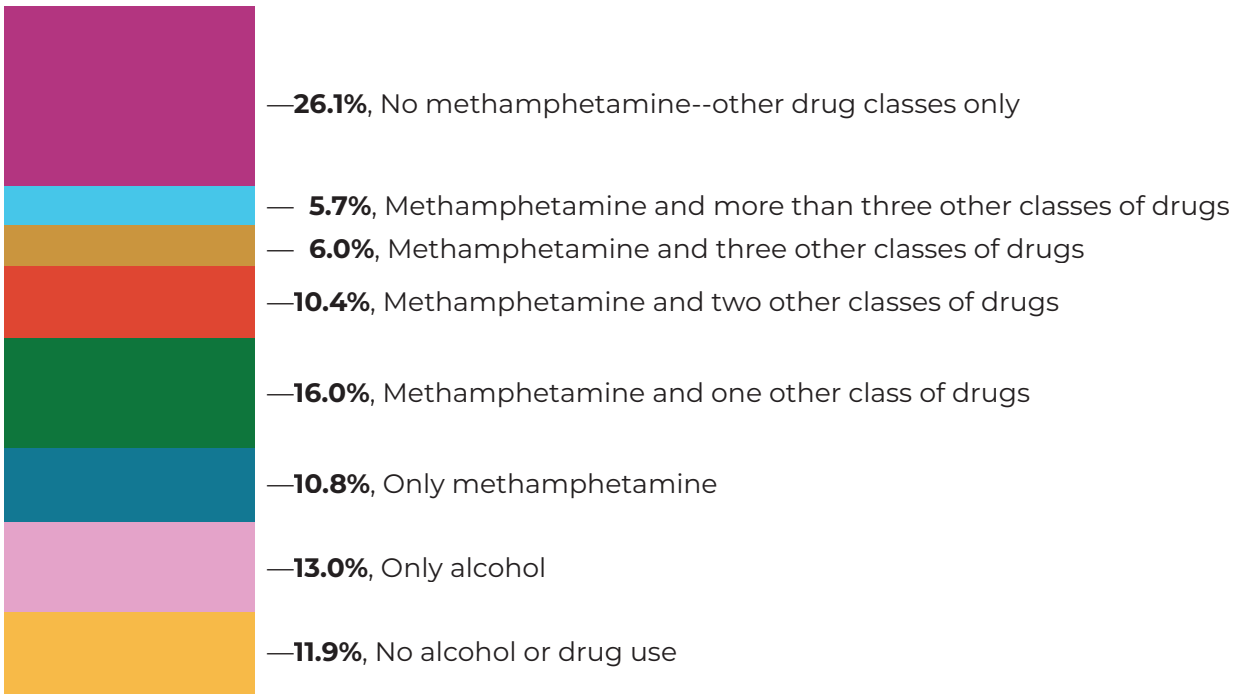
FIGURE 1.9. OPIOID AND OTHER DRUG CLASS USE IN THE 12 MONTHS BEFORE TREATMENT[22]



Like the analysis for opioid use with other classes of substances presented in Figure 1.9, the percentage of respondents who reported using methamphetamine with other substances in the 12 months before entering treatment is presented in Figure 1.10. Among the individuals who were not in a controlled environment all 365 days before entering treatment, Figure 1.10 shows the percent of individuals who used no alcohol and or illicit drugs (11.9%), alcohol only (13.0%), no methamphetamine and other drug classes only (26.1%), and methamphetamine only (10.8%). The following percentages of respondents reported using methamphetamine and other drug classes at intake: one other drug class (16.0%), two other drug classes (10.4%), three other classes (6.0%), and more than three classes (5.7%).

[22] The broad drug classes examined were (1) Cannabis/marijuana, (2) CNS depressants, (3) Cocaine and stimulants, and (4) Other drugs (hallucinogens, inhalants, synthetic drugs).

FIGURE 1.10. METHAMPHETAMINE AND OTHER DRUG CLASS USE IN THE 12 MONTHS BEFORE TREATMENT[23]



Methamphetamine use has increased among individuals who use opioids in the U.S. beginning around 2015,[24, 25, 26] which has implications for SUD treatment. In a peer-reviewed manuscript by the research team, opioid and methamphetamine co-use has significantly increased over time among adults at treatment intake in KTOS.[27] For example, in 2015, only 4.4% of KTOS respondents reported use of opioids and methamphetamine in the 30 days before entering treatment, and in 2020, this percent had more than doubled to 10.0%. Analysis of KTOS data from 2015 to 2021 in this peer-reviewed article found that individuals who engaged in co-use of opioids and methamphetamine were more likely to be female, younger, White, residing in a metropolitan community, had greater economic hardship, reported use of a greater number of other substances, and reported interpersonal victimization in the 12 months before entering treatment.

[23] The broad drug classes examined were (1) Cannabis/marijuana, (2) Opioids (including heroin), (3) CNS depressants, (4) Cocaine and stimulants (other than methamphetamine, and (5) Other drugs (hallucinogens, inhalants, synthetic drugs).

[24] Cicero, T. J., Ellis, M. S., & Kasper, Z. A. (2020). Polysubstance use: A broader understanding of substance use during the opioid crisis. American Journal of Public Health, 110(2), 244–250. https:// doi.org/10.2105/Ajph.2019.305412

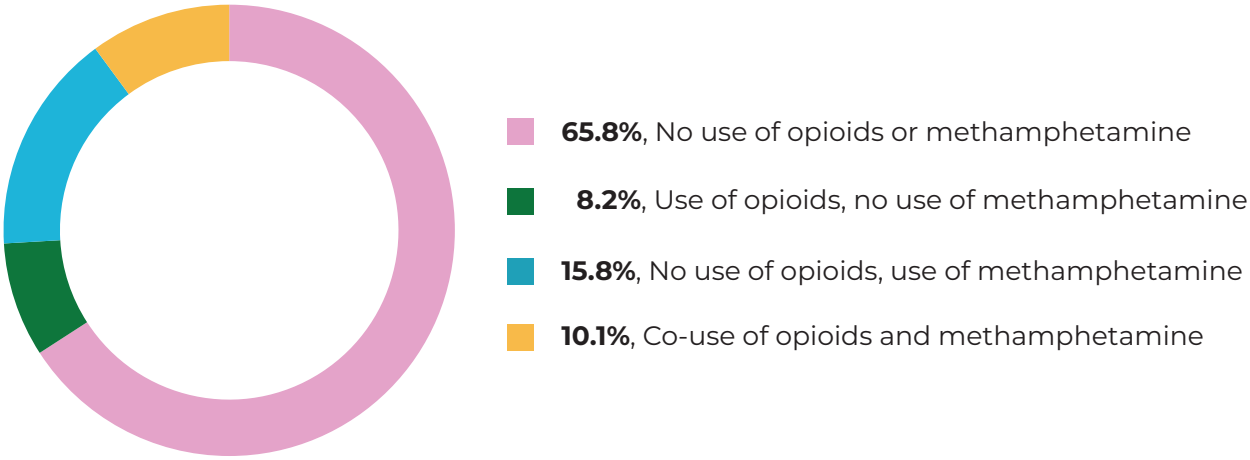
[25] Jones, C. M., Underwood, N., & Compton, W. M. (2020). Increases in methamphetamine use among heroin treatment admissions in the United States, 2008-17. Addiction, 115(2), 347–353. https://doi. org/10.1111/add.14812

[26] Strickland, J. C., Havens, J. R., & Stoops, W. W. (2019). A nationally representative analysis of "twin epidemics": Rising rates of methamphetamine use among persons who use opioids. Drug and Alcohol Dependence, 204, 107592. https://doi.org/10.1016/j.drugalcdep.2019.107592

[27] Cole, J., Logan, T., Melvin, C., & McLouth, C.J. (2023). Opioid and methamphetamine co-use: Associations with economic vulnerabilities and interpersonal victimization among SUD program clients. Journal of Social Work Practice in the Addictions, 1–17. https://doi.org/10.1080/1533256X.2023.2294287

Among the adults who completed a KTOS intake in FY 2023, Figure 1.11 presents the percentage of individuals with different patterns of opioid and methamphetamine use in the 30 days before entering treatment. Higher percentages of respondents reported the use of methamphetamine but no opioids, or opioids and methamphetamine compared to the percent of respondents who reported use of opioids without methamphetamine use in the same 30-day period.

FIGURE 1.11. CO-USE OF OPIOIDS AND METHAMPHETAMINE IN THE 30 DAYS BEFORE TREATMENT (N = 2,913)

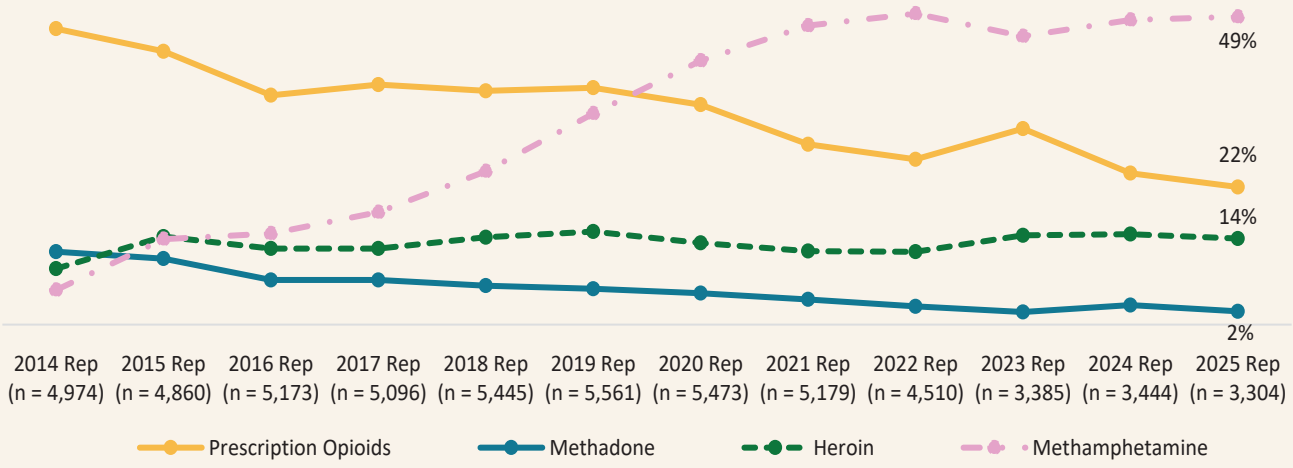


> "It was great, I really and truly believe its been a God send to help me in my recovery. Also helped me with family deaths, I also started to go to more meetings and get back into church. I also attend other meetings in my community, I love it"
>
> — KTOS RESPONDENT

Trends in Specific Drug Use

Looking at trends over time for all KTOS respondents with completed intake surveys, the percentage of respondents reporting prescription opioid misuse was highest in the 2014 report (47%) and in the past two reports it has been lower than 25%. The percentage of respondents who reported using non-prescribed methadone in the 12 months before entering treatment has declined from the 2014 report (12%) to the 2025 report (2%). TThe percentage of KTOS respondents who reported using heroin increased in the 2015 report and has remained between 12% and 15% since then. In the 2014 report, the percentage of respondents reporting methamphetamine use was relatively low (6%) but steadily increased from the 2017 report until the 2022 report, when a high of 50% reported methamphetamine use, surpassing the number of respondents reporting illegal use of prescribed opioids.

FIGURE 1.12. PERCENT OF ALL RESPONDENTS WITH A COMPLETED INTAKE SURVEY REPORTING NON-PRESCRIBED USE OF PRESCRIPTION OPIOIDS, METHADONE, HEROIN, AND METHAMPHETAMINE IN THE 12 MONTHS BEFORE ENTERING TREATMENT AT THE CMHC (N = 56,404)[28]

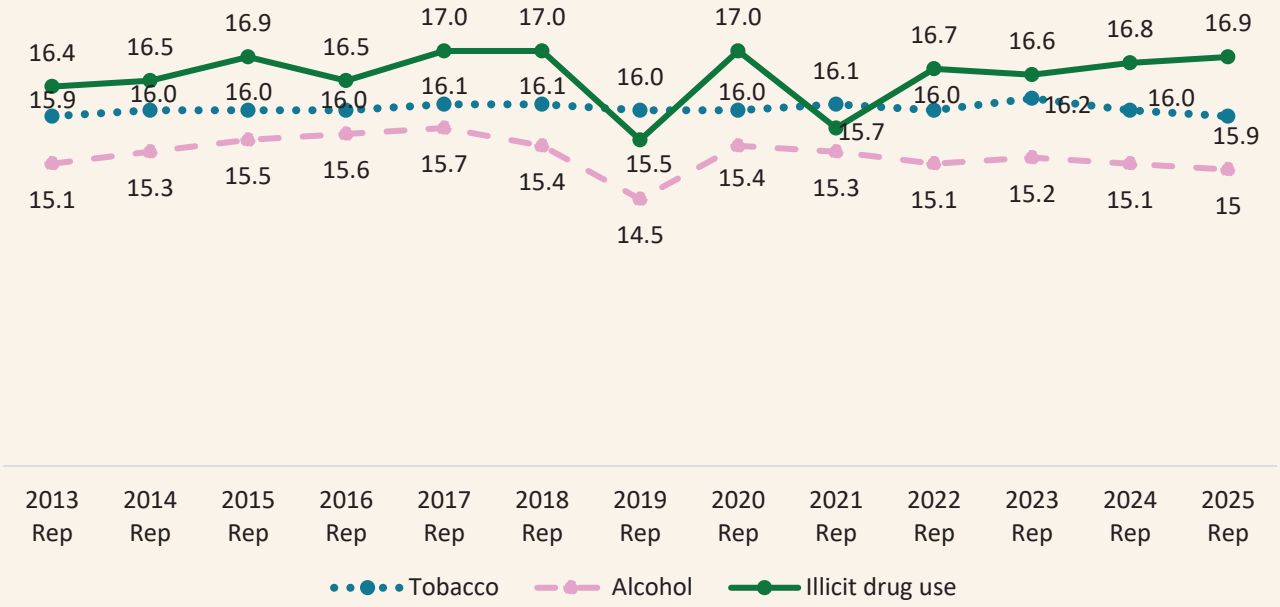


[28] Respondents who reported being in a controlled environment all 365 days before entering treatment are not included in this analysis.

Trends in Age of First Use

Respondents 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 just a sip), and when they began smoking cigarettes regularly (see Figure 1.13). The average age at which KTOS respondents reported drug use has been relatively stable (between 16.4 and 17.0), with exceptions in the 2019 and 2021 reports. Respondents generally reported having their first alcoholic drink around 15 years old, on average, with a decrease in the 2019 report. The average age of first smoking tobacco regularly was slightly older than the age of first alcoholic drink and has remained between 15.9 and 16.2.

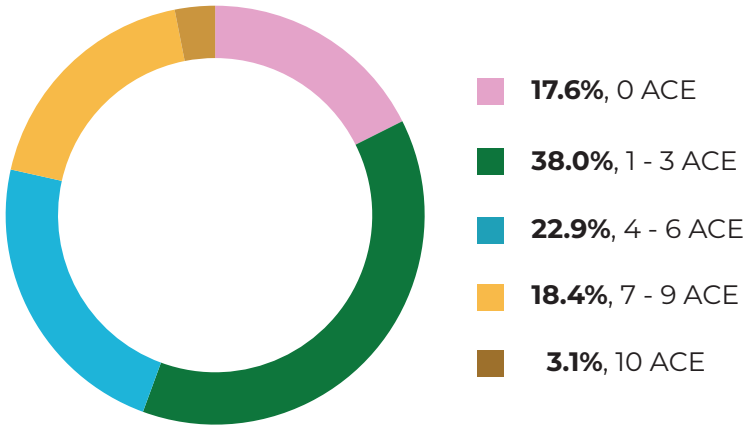
FIGURE 1.13. TRENDS IN AGE OF FIRST USE REPORTED AT INTAKE, 2013 – 2025 REPORTS



Adverse Childhood Experiences

Items about ten adverse childhood experiences from the Adverse Childhood Experiences Study (ACE) were included in the intake interviews.[29, 30, 31] In addition to providing the percent of men and women who reported each of the 10 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 respondent 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 respondent 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 respondents reported was 3.6 (not depicted in figure). Figure 1.14 shows that 17.6% reported experiencing none of the ACE included in the interview. Under two-fifths (38.0%) reported experiencing 1 to 3 ACE, 22.9% reported experiencing 4 – 6 ACE, and 18.4% reported experiencing 7 – 9 ACE. A very small percentage (3.1%) reported experiencing all 10 types of adverse childhood experiences.

FIGURE 1.14. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES (N = 3,343)



There was a significant difference in the proportion of men and women classified by number of types of ACE (see Figure 1.15). Significantly more men than women reported experiencing 0 ACE as well as 1 to 3 types of ACE, whereas significantly

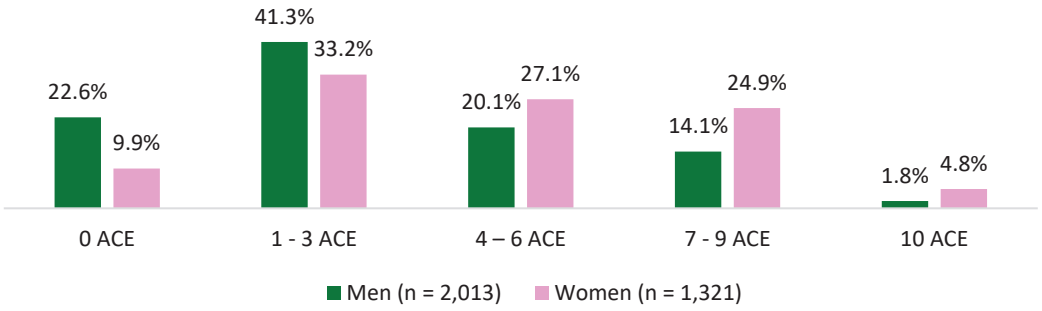
[29] Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. American Journal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

[30] 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.

[31] 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 had an alcohol use disorder or used illicit drugs, 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).

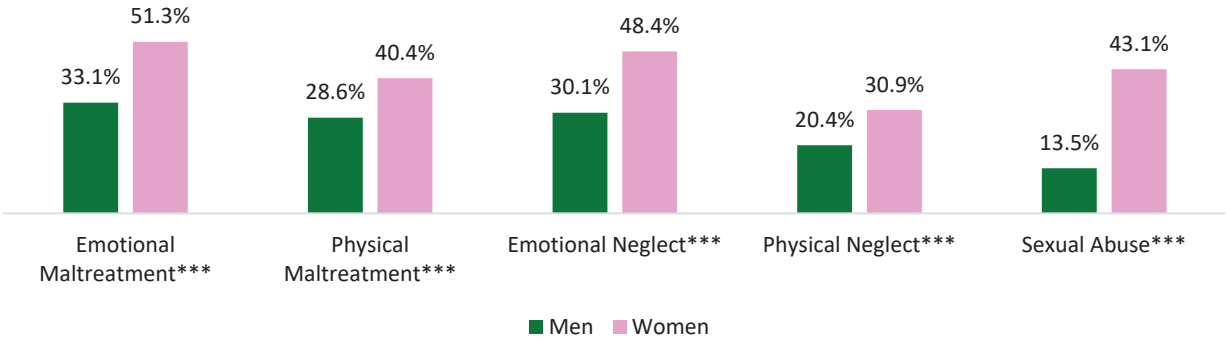
more women than men reported experiencing 4 – 6 types of ACE, 7 – 9 types of ACE, and 10 ACE. Women had a higher average number of ACE compared to men (4.4 vs. 3.0, t(3332) = -13.587, p < .001).

FIGURE 1.15. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES BY GENDER[32]



Significantly more women than men reported experiencing all five types of measured childhood maltreatment. Emotional maltreatment and emotional neglect were reported by the highest percentage of women and men (see Figure 1.16). More than one-fourth of men (28.6%) and more than two-fifths of women (40.4%) reported physical maltreatment. More than one-fourth of women (30.9%) and about one-fifth of men (20.4%) reported experiencing physical neglect in their childhood. About 3 times as many women reported sexual abuse before the age of 18 compared to men (43.1% vs. 13.5%).

FIGURE 1.16. MALTREATMENT AND ABUSE EXPERIENCES IN CHILDHOOD BY GENDER (N = 3,334)[33]



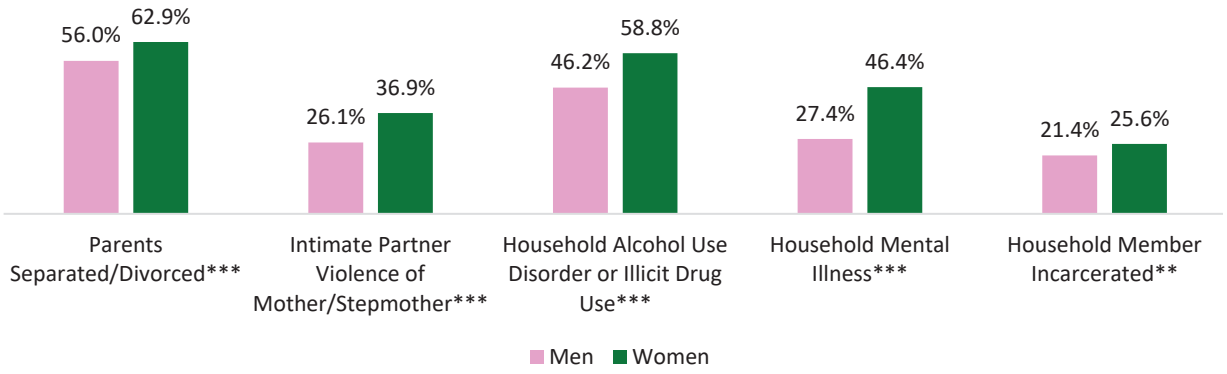
***p < .001.

[32] Nine transgender individuals were not included in the analysis examining gender differences because 9 is too small of a group to examine for statistical differences by group.

[33] Nine transgender individuals were not included in the analysis examining gender differences because 9 is too small of a group to examine for statistical differences by group.

Significantly more women than men reported all five types of household risks (see Figure 1.17). The majority of individuals reported their parents were divorced or lived separately. The majority of women (58.8%) and less than one-half of men (46.2%) reported someone in their household was a problem drinker and/or used illicit drugs. More than one-fourth of men (26.1%) and more than one-third of women (36.9%) reported witnessing partner violence perpetrated against their mother/stepmother in their childhood home. About 46% of women reported that someone in their household was depressed, mentally ill, or had attempted suicide compared to 27.4% of men. About 1 in 5 men and about 1 in 4 women reported a household member had been incarcerated.

FIGURE 1.17. HOUSEHOLD RISKS IN CHILDHOOD BY GENDER (N = 3,334)[34]

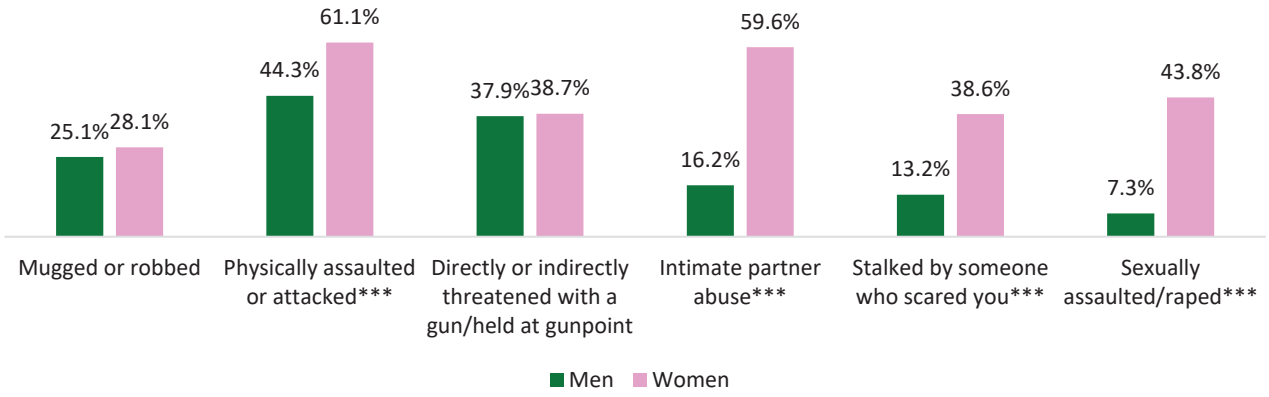


**p < .01, ***p < .001.

Individuals were also asked about experiences of victimization (including when they may have been the victim of a crime, harmed by someone else, or felt unsafe) they had experienced in their lifetime and in the 12 months before entering treatment. More than three-fourths of women (78.3%) and 58.8% of men reported experiencing at least one type of victimization not classified as an ACE that are presented in Figure 1.18. Similar percentages of men and women reported ever being mugged or robbed by someone threatening to use force or using force and being directly or indirectly threatened with a gun. Compared to men, significantly higher percentages of women reported ever being physically assaulted or attacked, abused by an intimate partner, stalked by someone who scared them, and sexually assaulted or raped in their lifetime.

[34] Eight transgender individuals were not included in the analysis examining gender differences because 8 is too small of a group to examine for statistical differences by group.

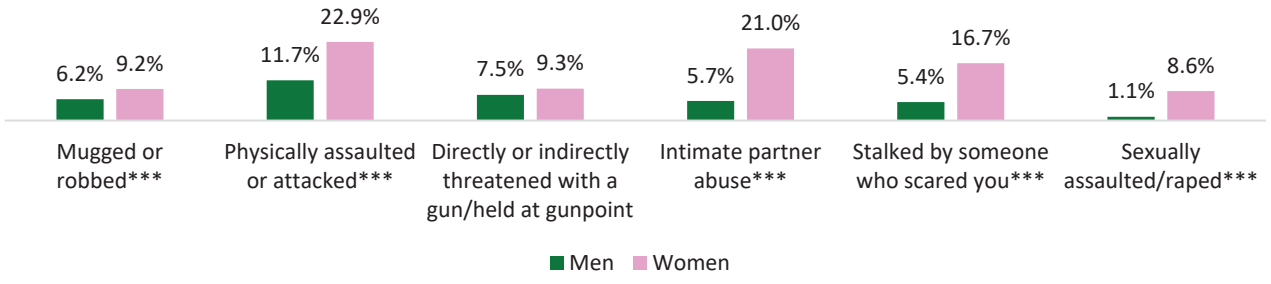
FIGURE 1.18. LIFETIME CRIME AND INTERPERSONAL VICTIMIZATION BY GENDER (N = 3,334)[35]



***p < .001.

Smaller percentages of respondents reported experiencing crime and interpersonal victimization in the 12 months before entering programs (see Figure 1.19). Nonetheless, 21.8% of men and 37.5% of women reported experiencing at least one of the victimization experiences depicted in Figure 1.16. Significantly higher percentages of women than men reported being mugged/robbed, assaulted or attacked by someone, intimate partner violence, stalked by someone who scared them, and sexually assaulted or raped in the 12 months before entering treatment.

FIGURE 1.19. PAST-12-MONTH CRIME AND INTERPERSONAL VICTIMIZATION BY GENDER (n = 3,334)[36]



***p < .001.

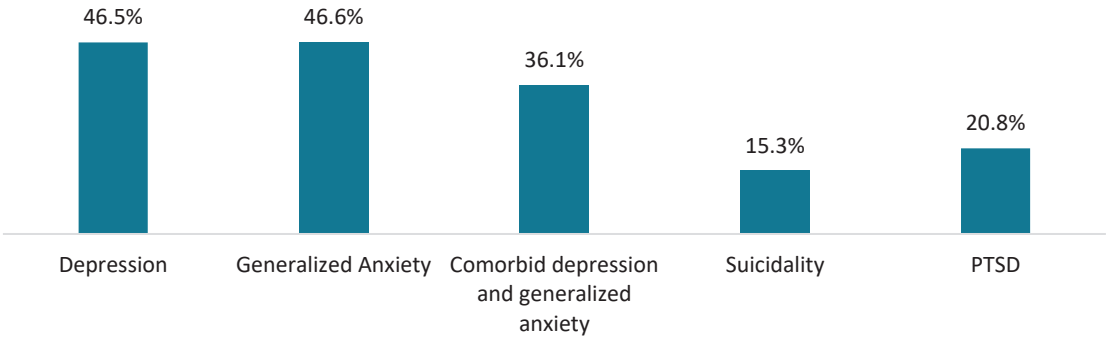
[35] Nine transgender individuals were not included in the analysis examining gender differences because 9 is too small of a group to examine for statistical differences by group.

[36] Nine transgender individuals were not included in the analysis examining gender differences because 9 is too small of a group to examine for statistical differences by group.

Mental Health

At intake, 46.5% of individuals met study criteria for depression in the 12 months before they entered treatment (see Figure 1.20). A similar percentage of respondents met study criteria for generalized anxiety (46.6%). More than one-third of individuals (36.1%) met study criteria for comorbid depression and generalized anxiety. About 15% of individuals reported suicidal thoughts or attempts and 20.8% of respondents had PTSD scores that indicated a risk of PTSD.

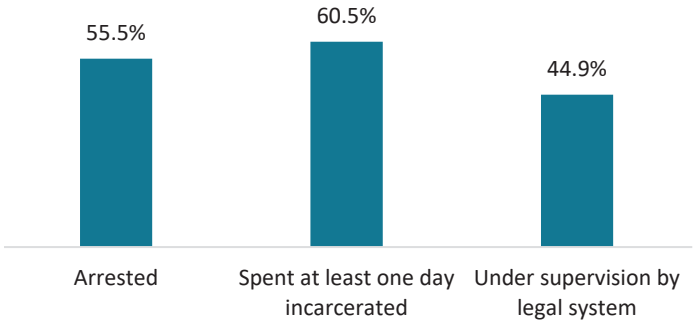
FIGURE 1.20. DEPRESSION, GENERALIZED ANXIETY, SUICIDALITY, AND POST TRAUMATIC STRESS DISORDER IN THE PAST 12 MONTHS AT INTAKE (N = 3,343)



Criminal Legal Involvement

Over half of individuals reported being arrested at least once (55.5%) and 60.5% of respondents reported being incarcerated at least one night in the 12 months before treatment (see Figure 1.21). Less than one half of respondents (44.9%) were currently under supervision by the criminal legal system (e.g., probation, parole) at intake. Among those who were arrested in the past 12 months (n = 1,855), they were arrested an average of 1.9 times. Among those who were incarcerated in the past 12 months (n = 2,022), they were incarcerated an average of 69.2 nights (not depicted in a figure).

FIGURE 1.21. CRIMINAL JUSTICE INVOLVEMENT 12 MONTHS BEFORE TREATMENT AT INTAKE (N = 3,343)



Description of KTOS Follow-up Sample at Intake

This report describes the outcomes for 475 adults who participated in CMHC substance use disorder treatment and who completed an intake interview and a follow-up telephone interview about 12 months (average of 378.9 days) after the intake survey was completed. Detailed information about the methods is presented in Appendix A.

Follow-up interviews are conducted with a selected sample of individuals about 12 months after the intake survey is completed. All individuals who agree to be contacted by UK CDAR for the follow-up interview[37] and have given at least one mailing address and one phone number, or two phone numbers if they do not have a mailing address in their locator information, are eligible for the follow-up component of the study. For reports before the 2023 report, the follow-up sample was randomly selected by month in which individuals completed the intake survey—170 cases per month. However, the number of individuals eligible for follow-up has been lower the past couple years than in previous years, because of the lower number of intake surveys completed in 2021 (i.e., the first 15 months of the COVID-19 pandemic) and in 2022. Thus, all eligible cases were included in the sample of individuals to be contacted to complete a follow-up survey (n = 720). The follow-up interviews are conducted independently from the treatment program and are completed over the telephone by an interviewer at UK CDAR. Respondent responses to the follow-up interviews are kept confidential to help facilitate the honest evaluation of respondent outcomes and satisfaction with program services.

The professionalism of the outcome study is reflected in a low refusal rate for follow-up participation (1.1%) and in a good follow-up rate (75.4%). This means that 23.5% of individuals included in the sample to be followed up were not successfully contacted.[38] These elements indicate KTOS is a solid, dependable research study for CMHC substance use disorder treatment programs with adults in Kentucky. For a summary of the UK CDAR staff's efforts to locate KTOS respondents, see Appendix A.

> "I have been sober for almost two years and the program has helped me learn how to cope."
>
> — KTOS RESPONDENT

[37] Because a minority of individuals who included the KTOS intake survey reported no alcohol or illicit drug use in the 12 months before entering treatment, individuals had to report alcohol or illicit drug use, unless they were incarcerated all 365 days before entering treatment, to be eligible for the follow-up study.

[38] Respondents 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 respondent.

About KTOS Locating Efforts

In 2014, 523 randomly selected 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 the intake interviews have changed over time.

Locator Efforts

	2014[39] (n = 523) *(n=1,269 completed files)*	2019[40] (n = 2,026) *(n=1,175 completed files)*	2020[41] (n = 1588) *(n = 838 completed files)*	2021 (n = 880) *(n = 569 completed files)*
Follow Up Rate	76.3%	69.4%	60.6%	71.9%
Phone Calls				
Average number of outgoing calls to reach client	4.3 (0-39 calls)	8.7 (0-62 calls)	12.5 (0-75 calls)	14.5 (0-139 calls)
Average number of outgoing calls to reach any contact	1.8 (0-23 calls)	3.2 (0-57 calls)	3.0 (0-48 calls)	4.8 (0-70 calls)
Total number of outgoing calls to reach client or any contact[42]	12,438 calls	24,105 calls	25,150 calls	12,782 calls
Average outgoing calls for each completed follow-up	10 calls	21 calls	30 calls	23 calls
Mail				
Average number of mailings sent (to client/ contact/other)	2.3 *(0-7 mailings)*	2.8 *(0-6 mailings)*	2.9 *(0-6 mailings)*	2.7 *(1-9 mailings)*
Total number of mailings sent (to client/ contact/other)[43]	4,690 mailings	5,563 mailings	4,562 mailings	2,332 mailings
Average outgoing mail for each completed follow-up	3.7 mailings	4.7 mailings	5.4 mailings	4.1 mailings
% of mail returned	17.8%	21.8%	20.2%	24.0%

[39] 20% random sample of completed, ineligible, expired, and refused files across all 12 months.

[40] There were 8 missing files when the extraction project was completed.

[41] There were 4 total missing files including 1 expired, 1 completed, 1 refusal and 1 expired.

[42] For 2014, since the sample is only 20% of the total, the averages were applied to the total number of files in the follow-up sample, n = 2,039.

[43] For 2014, since the sample is only 20% of the total, the averages were applied to the total number of files in the follow-up sample, n = 2,039.

Quality of Contact Information

	2014 (n = 523)	2019 (n = 2,026)	2020 (n = 1,588)	2021 (n = 880)
Client Locator Number				
None listed	0.0%	1.4%	.9%	.8%
Number worked	40.2%	48.4%	52.2%	55.0%
Number worked but not successful	28.5%	27.6%	32.8%	32.0%
Number was disconnected	15.3%	18.6%	11.9%	11.5%
Number listed but never called	16.1%	3.9%	2.2%	.7%
First Contact Locator Number				
None listed	25.4%	58.9%	25.8%	25.3%
Number worked	21.8%	15.2%	16.1%	20.8%
Number worked but not successful	14.3%	8.9%	13.8%	14.7%
Number was disconnected	4.6%	3.9%	3.9%	4.0%
Number listed but never called	33.8%	13.1%	19.4%	18.9%
Phone number listed but was not unique	Not in data	Not in data	21.0%	16.4%
Second Contact Locator Number				
None listed	69.6%	85.9%	56.2%	58.2%
Number worked	6.7%	4.2%	10.0%	8.6%
Number worked but not successful	5.5%	3.1%	7.7%	8.0%
Number was disconnected	1.9%	1.1%	2.1%	1.6%
Number listed but never called	16.3%	5.7%	17.8%	16.4%
Phone number listed but was not unique	Not in data	Not in data	6.2%	7.3%

Efforts to locate and contact potential follow-up respondents 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 respondents. Comparison of the interviewers' efforts into conducting the follow-up interviews from 2014 to 2020 shows that the average number of calls increased by 46%, and the average number of mailings increased by 26%.

Demographics

Of the 475 adults who completed a 12-month follow-up interview, 52.0% were male and 48.0% were female (see Table 1.3). The majority of follow-up respondents were White (89.7%). A minority were African American/Black (4.4%) and 5.9% were Hispanic, American Indian, or multiracial. Respondents in the follow-up sample were an average of 37.8 years old at the time of the intake interview. A minority of respondents (35.6%) reported they were married or cohabiting at intake, 31.2% were never married (and not cohabiting), 29.5% were separated or divorced, and 3.8% were widowed. A little more than three-fourths (76.2%) of followed-up respondents had at least one child, with 55.4% having at least one child under the age of 18. A small percentage of the follow-up sample (3.2%) reported they were a veteran or currently serving in the military, Reserves, or National Guard.

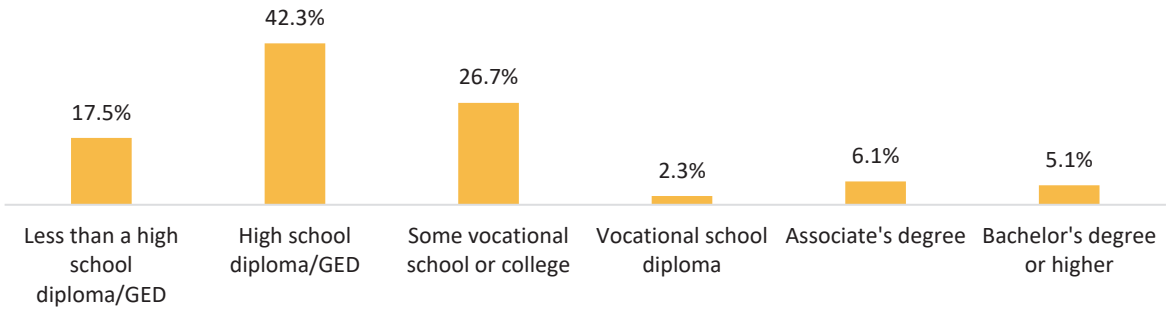
TABLE 1.3. DEMOGRAPHICS FOR KTOS RESPONDENTS WHO WERE FOLLOWED-UP (N = 475)

Age	37.8 years *(Min. = 18, Max. = 69)*
Gender	
Male	52.0%
Female	48.0%
Transgender	0.0%
Race	
White	89.7%
African american	4.4%
Other or multiracial	5.9%
Marital status	
Married or cohabiting	35.6%
Never married	31.2%
Separated or divorced	29.5%
Widowed	3.8%
Have children	76.2%
Have children under the age of 18	55.4%
Veteran or currently serving in military	3.2%

A minority of follow-up respondents (21.1%) had less than a high school diploma or GED at intake (see Figure 1.22). The highest level of education of 42.3% of the follow-up sample was a high school diploma or GED. A little more than one-fourth

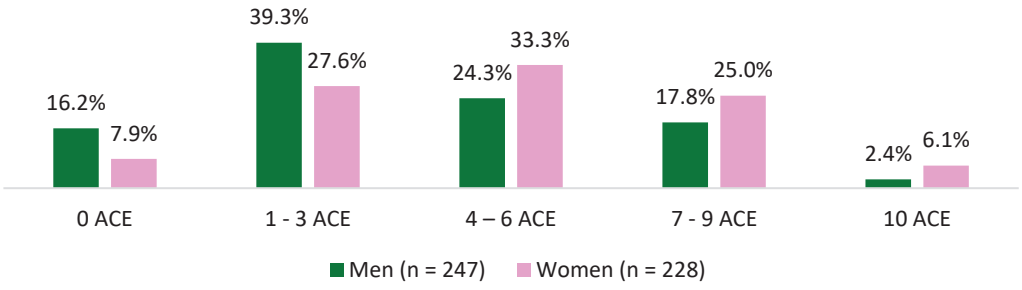
of respondents (26.7%) had completed some vocational/technical school or college. Only a small minority of respondents had completed vocational/technical school (2.3%), an associate's degree (6.1%), and a bachelor's degree or higher (5.1%).

FIGURE 1.22. HIGHEST LEVEL OF EDUCATION COMPLETED BY FOLLOW-UP RESPONDENTS AT INTAKE (N = 475)



There was a significant difference in the proportion of men and women classified by number of types of ACE (see Figure 1.23). Significantly more men than women reported experiencing 0 ACE and 1-3 ACE. Significantly more women reported 4 – 6 and 10 ACE compared to men. Women in the follow-up sample had a higher average number of ACE compared to men (4.8 vs. 3.6, t(473) = -4.268, p < .001).

FIGURE 1.23. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES FOR FOLLOW-UP SAMPLE BY GENDER***

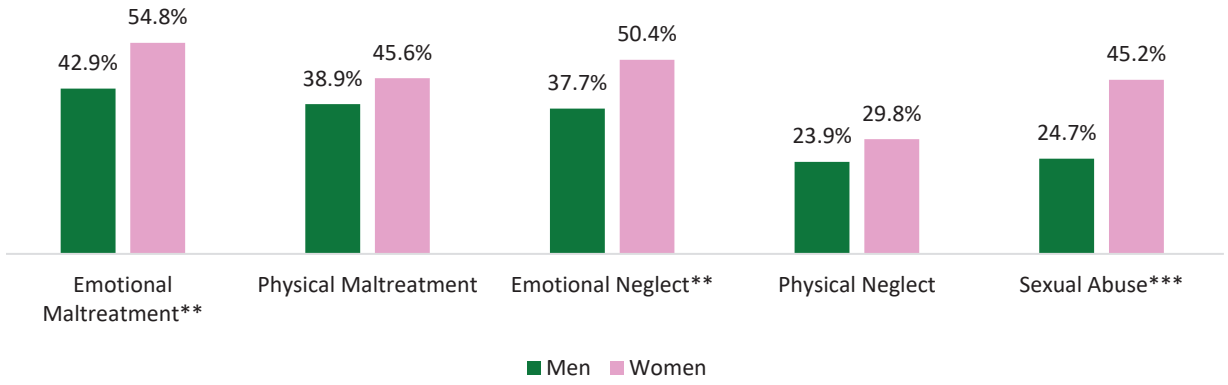


***p < .001.

A significantly higher percent of women reported experiencing emotional maltreatment, emotional neglect, and sexual abuse in their childhood compared to men. More than half of women (54.8%) and 42.9% of men reported they had experienced emotional maltreatment in their childhood (see Figure 1.24). A similar pattern was found for emotional neglect, with slightly lower percentages for women and men. Sizeable minorities of men and women reported physical

maltreatment, with no statistically significant difference by gender. More than one-fourth of women (27.5%) reported they experienced physical neglect in their childhood homes compared to 23.9% of men, with no statistically significant difference. Nearly one-fourth of men and less than one half of women in the follow-up sample reported sexual abuse before the age of 18.

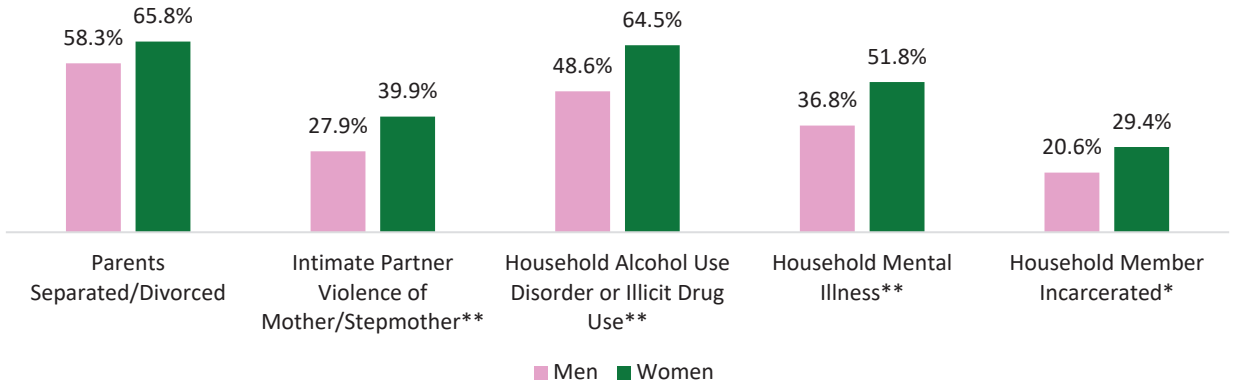
FIGURE 1.24. MALTREATMENT AND ABUSE EXPERIENCES IN CHILDHOOD FOR FOLLOW-UP SAMPLE BY GENDER (n = 475)



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

Compared to men significantly more women reported four of five types of household risks: witnessing IPV of their mother/stepmother, a household member being a problem drinker or using illicit drugs, a household member being depressed, mentally ill or attempted suicide, and a household member was incarcerated (see Figure 1.25). The majority of individuals reported their parents were divorced or lived separately, with no difference by gender.

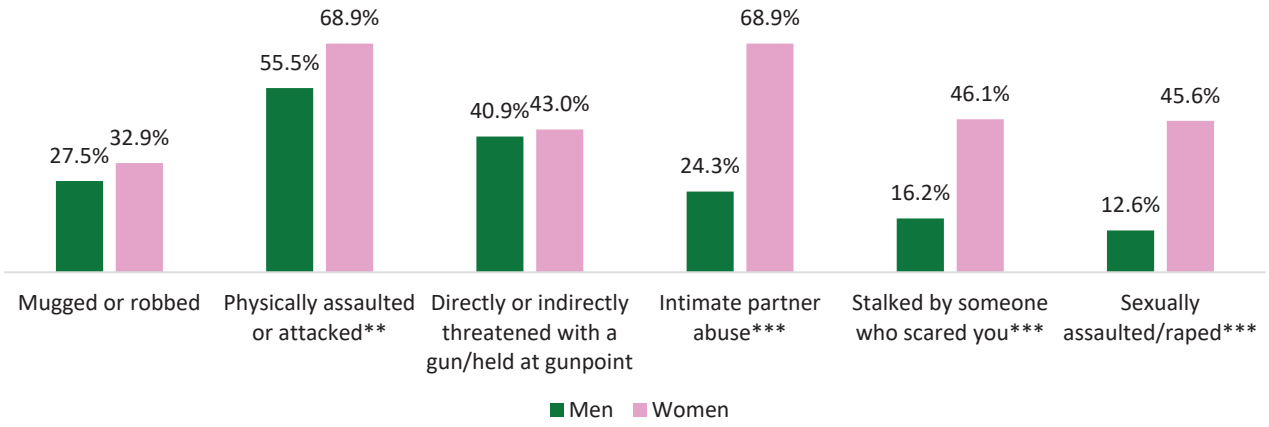
FIGURE 1.25. HOUSEHOLD RISKS IN CHILDHOOD FOR FOLLOW-UP SAMPLE BY GENDER (n = 475)



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

Individuals were also asked about experiences of victimization (including when they may have been the victim of a crime, harmed by someone else, or felt unsafe) they had experienced in their lifetime and in the 12 months before entering treatment. The majority of women (85.1%) and men (69.2%) reported experiencing at least one type of victimization not classified as an ACE that are presented in Figure 1.26. Similar percentages of men and women reported ever being mugged or robbed by someone threatening to use force or using force and being directly or indirectly threatened with a gun. Compared to men, significantly higher percentages of women reported ever being physically assaulted or attacked, abused by an intimate partner, stalked by someone who scared them, and sexually assaulted or raped.

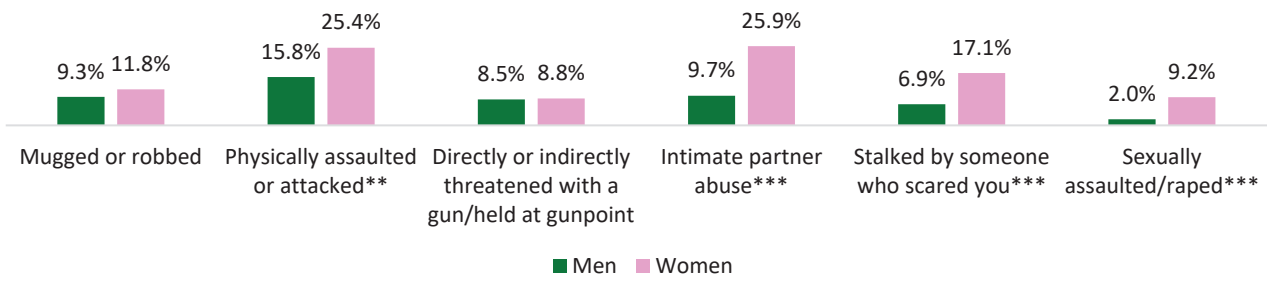
FIGURE 1.26. LIFETIME CRIME AND INTERPERSONAL VICTIMIZATION FOR FOLLOW-UP SAMPLE BY GENDER (n = 475)



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

Smaller percentages of respondents reported experiencing crime and interpersonal victimization in the 12 months before entering programs than in their lifetime (see Figure 1.27). Similar percentages of men and women reported they had been mugged/robbed in the 12 months before entering treatment. Significantly higher percentages of women than men reported being physically assaulted/attacked, abused by an intimate partner, stalked, and sexually assaulted or raped in the 12 months before entering treatment.

FIGURE 1.27. PAST-12-MONTH CRIME AND INTERPERSONAL VICTIMIZATION FOR FOLLOW-UP SAMPLE BY GENDER (n = 475)



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

When individuals with a follow-up interview were compared with those who did not have a follow-up interview on a variety of intake variables, there were some significant differences for demographics, economic hardship, education, employment, physical health, mental health, substance use, and severity of substance use. These differences indicate that followed-up individuals were worse off in several key domains compared to those who were not followed up (see Table 1.4). See Appendix B for detailed comparisons of respondents who completed a follow-up interview (n = 475) and respondents who did not complete a follow-up interview (n = 2,920).

Analysis comparing those individuals who completed a follow-up survey with those who did not complete a follow-up survey (for any reason, for example, they did not agree to be in the follow-up study, they were not selected into the follow-up sample, or they were not successfully contacted for the follow-up survey) found some significant differences between the two groups. Most importantly, significantly more women were followed up than were not followed up. Other significant differences at treatment intake between individuals who completed the follow-up survey and individuals who did not complete the follow-up survey were: homelessness, highest level of education, difficulty meeting basic needs, chronic medical problems, depression, generalized anxiety, PTSD, use of illicit drugs, cannabis, opioids, and stimulants/cocaine, alcohol, alcohol to intoxication, binge drinking, and substance use disorder severity based on the ASI severity composite scores). For the most part, the significant differences suggest that individuals who were followed up were worse off in terms of physical health, mental health, and substance use severity when compared to individuals who were not followed up. However, in terms of education, more individuals who completed a follow-up survey had completed education beyond a high school diploma/GED relative to individuals who did not complete a follow-up survey. Nonetheless, most of the examined factors were not significantly different between the two groups, suggesting that the findings may generalize well to the entire population of individuals who completed a KTOS intake interview.

TABLE 1.4. FOLLOWED-UP VERSUS NOT FOLLOWED-UP

	Followed up	
	No (n = 2,868)	Yes (n = 475)
Demographic	Fewer female	More female
Socio-economic status indicators *(e.g., education, employment, living situation, difficulty meeting basic needs)*	More reported their highest level of education was less than a high school diploma/GED	More reported a period of homelessness More had difficulty meeting basic living needs More had education beyond high school diploma/GED
Substance use, severity of alcohol and drug use	Lower average severity composite scores for alcohol and drug use	More reported use of illicit drugs, cannabis, stimulants/cocaine, and opioids in the 12 months before entering treatment More reported alcohol use, alcohol to intoxication use, and binge drinking in the 12 months before treatment More reported use of vaporized nicotine products More met or surpassed the cutoff score for severe substance use disorder and severe drug use disorder based on ASI severity composite scores More reported prior SUD treatment in lifetime
Physical health *(e.g., chronic pain, chronic medical problems)*		More had chronic medical problems
Mental health (e.g., depression, generalized anxiety, suicidality)		More met study criteria for depression, generalized anxiety, and PTSD Reported more days their mental health was not good
Criminal justice involvement	No differences	

SECTION 2. SUBSTANCE USE

This section examines changes in substance use, which include the use of any illicit drugs or alcohol, and then separately for illicit drugs, alcohol, and tobacco at intake and follow-up. The analysis is presented in detail for KTOS respondents who were not in a controlled environment for the entire period of 12 months and/or 30 days before entering treatment. In addition, self-reported severity of alcohol and drug use based on the DSM-5 and the Addiction Severity Index (ASI) alcohol and drug use composite scores are compared at intake and follow-up. Results for each targeted factor are presented for the overall sample and by gender when there were significant gender differences.

In addition to examining the overall use of illicit drugs, several specific categories of illicit drugs were analyzed: (a) cannabis; (b) opioids [i.e., prescription opioids, methadone, buprenorphine-naloxone (bup-nx), and heroin]; (c) Central Nervous System (CNS) depressants [including tranquilizers, benzodiazepines, sedatives, and barbiturates]; (d) cocaine; (e) other stimulants [i.e., methamphetamine, Ecstasy, MDMA, Adderall, and Ritalin]; and (f) other illicit drugs not mentioned above [i.e., hallucinogens, inhalants, and synthetic drugs]. In addition, polydrug use was also examined. Changes in substance use from intake to follow-up are presented in 4 main groups and organized by type of substance use:

1. **Change in 12-month Substance Use from Intake to Follow-up.** Comparisons of the use of substances including ANY illicit drug use and specifically for cannabis, opioids, CNS depressants, cocaine, other stimulants, and other illicit drug use, alcohol use, and tobacco use 12 months before the respondent entered the program and any use of these substances during the 12-month follow-up period (n = 470)[44] are presented.

2. **Average Number of Months Respondents Used Substances at Intake and Follow-up.** For those who used any of the substances, the average number of months used in the 12 months before treatment intake and during the 12-month follow-up period are reported.

3. **Change in 30-day Substance Use from Intake to Follow-up.** In addition to looking at past-12-month substance use, change in substance use in the 30 days before program entry and the 30 days before the follow-up interview for any illicit drug use (including cannabis, opioids, CNS depressants, cocaine, other stimulants, and other illicit drugs), alcohol use, and tobacco use (n = 400)[45] is also examined.

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44 Cases were excluded from this analysis for the following reasons: they were incarcerated all 365 days before entering treatment (n = 4), they had missing values for the number of days incarcerated in the 12 months before follow-up (n = 1).

45 Because some respondents enter treatment after leaving jail or prison, substance use in the 30 days before entering the program was examined for respondents who were not in a controlled environment all 30 days at either period. The assumption for excluding respondents who were in a controlled environment all 30 days before entering treatment (n = 61) or all 30 days before the follow-up (n = 13) is that being in a controlled environment inhibits opportunities for substance use. Moreover, an additional case had a missing value for the number of days in a controlled environment before follow-up (n = 1).

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 change in the degree of severity of substance use is to ask respondents to self-report whether they met any of the 11 DSM-5 symptoms for substance use disorder (SUD) in the past 12 months. For this report, the severity of the substance use disorder (i.e., none, mild, moderate, or severe) is based on the number of self-reported symptoms. The percentage of individuals in each of the four categories at intake and follow-up is presented.

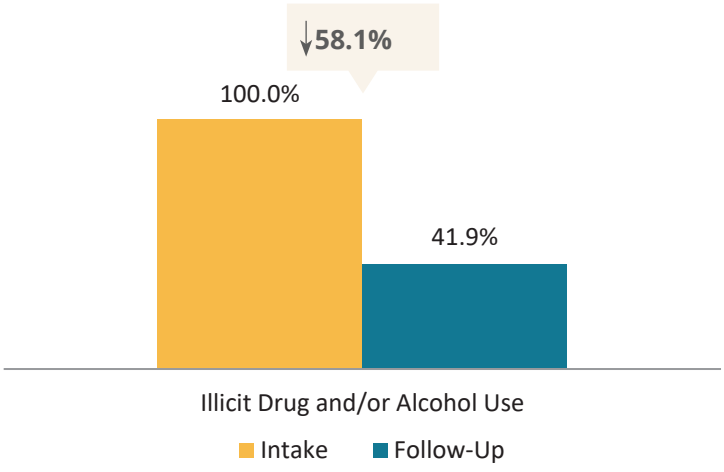
   The Addiction Severity Index (ASI) composite scores are examined for change over time for illicit drugs (n = 245), alcohol (n = 135) and those with alcohol and/or illicit drug use (n = 295) among individuals who reported use of the substance at either intake or follow-up. The ASI composite score assesses 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 past-30-days alcohol (or drug) use and the number of days individuals used multiple drugs in a day, as well as the impact of substance use on the individual's life, such as money spent on alcohol, number of days individuals had alcohol (or drug) problems, how troubled or bothered individuals were by their alcohol (or drug) problems, and how important treatment was to them.

Alcohol and/or Illicit Drug Use

Past-12-month Alcohol And/or Illicit Drug Use

Because individuals were excluded from the follow-up sample if they reported no substance use in the 12 months before intake and were out on the street at least one day in that period, all respondents (100%) reported using alcohol and/or illicit drugs in the 12 months before entering substance use disorder treatment, which decreased to 41.9% at follow-up (see Figure 2.1).[46]

FIGURE 2.1. PAST-12-MONTH ALCOHOL AND/OR DRUG USE AT INTAKE AND FOLLOW-UP (N = 468)



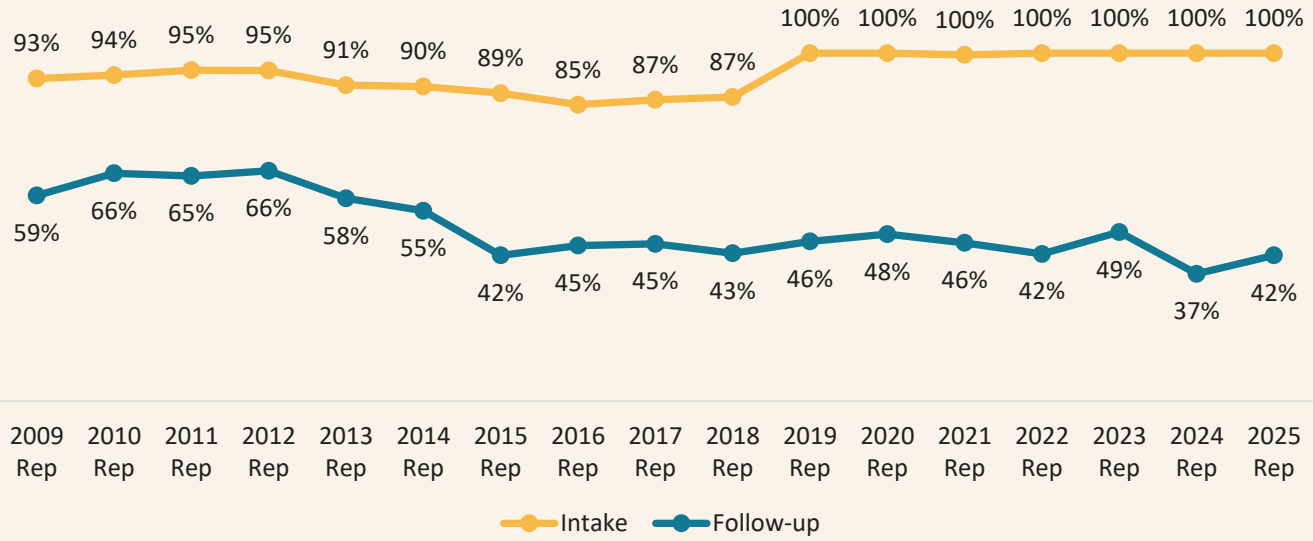
a–No test of statistical association could be computed for illicit drug/alcohol use in the 12 months before entering treatment because one of the cell values was 0.

[46] Two respondents had missing values for alcohol/illicit drug use in the 12 months before follow-up.

Trends in Any Alcohol and/or Drug Use

The percentage of KTOS respondents reporting alcohol and/or illicit drug use in the 12 months before treatment has been consistently high.[47] At follow-up, the number of respondents reporting alcohol and/or illicit drug use has decreased over the years.

FIGURE 2.2. TRENDS IN ANY ALCOHOL AND/OR ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP, REP 2009-2025[48]



Past 30-day Alcohol and/or Illicit Drug Use

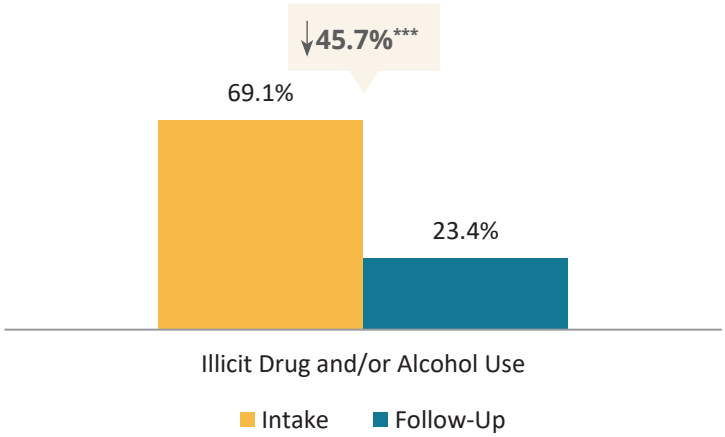
More than two-thirds of respondents (69.1%) reported using alcohol and/or illicit drugs in the 30 days before entering SUD treatment, which decreased to 23.4% at follow-up. There was a 45.7% significant decrease in the number of respondents reporting past-30-day use of alcohol and/or illicit drugs (see Figure 2.3).

> "Excellent program! They just showed they cared for me and I wasn't just a number to them. It had a family setting and they were always there to help, respectful."
>
> — KTOS RESPONDENT

[47] In the several years preceding Rep 2019, the research team noticed that an increasing proportion of respondents with completed KTOS intake surveys reported no substance use. Because the focus of this report is on SUD treatment outcomes, to be included in the follow-up study individuals had to report past-12-month alcohol and/or drug use, if they were not incarcerated the entire 12 months before entering the program.

[48] The percent of individuals who reported alcohol and/or drug use in the 12 months before intake in Rep 2021 was 99.5%. Because the percentages presented in trend analysis are rounded to the nearest integer, 99.5% rounds up to 100%.

FIGURE 2.3. PAST-30-DAY ALCOHOL AND/OR DRUG USE AT INTAKE AND FOLLOW-UP (N = 398)[49]



***p < .001.

Illicit Drugs

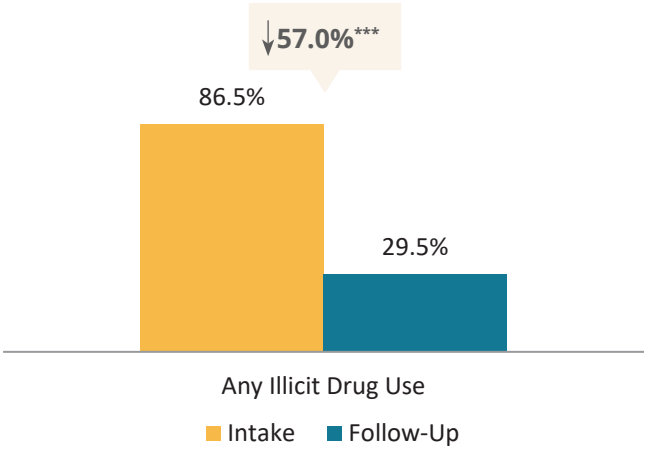
Past-12-month Illicit Drug Use

At intake, respondents were asked how old they were when they first began to use illicit drugs. On average, KTOS respondents reported they were 16.4 years old when they first used illicit drugs (not depicted in a figure).

The majority of respondents (86.5%) reported using illicit drugs in the 12 months before entering SUD treatment, which decreased to 29.5% at follow-up. Overall, for the KTOS follow-up sample, there was a 57.0% decrease in the number of respondents reporting the use of any illicit drug in the past 12 months (see Figure 2.4).

The number of respondents reporting illicit drug use in the past 12 months decreased by 57%

FIGURE 2.4. PAST-12-MONTH ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP (N = 468)[50]



***p < .001.

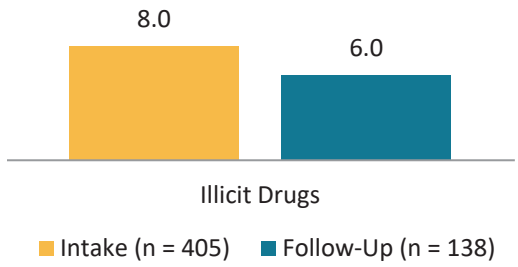
[49] Two respondents had missing values for alcohol and/or illicit drug use in the 30 days before follow-up.

[50] Two respondents had missing values for illicit drug use at follow-up.

Average Maximum Number of Months Used Any Illicit Drugs

Among the individuals who reported using illicit drugs in the 12 months before entering treatment (n = 405)[51], they reported using illicit drugs for an average maximum of 8.0 months (see Figure 2.5).[52] Respondents who reported using illicit drugs at follow-up (n = 138) reported using an average maximum of 6.0 months.

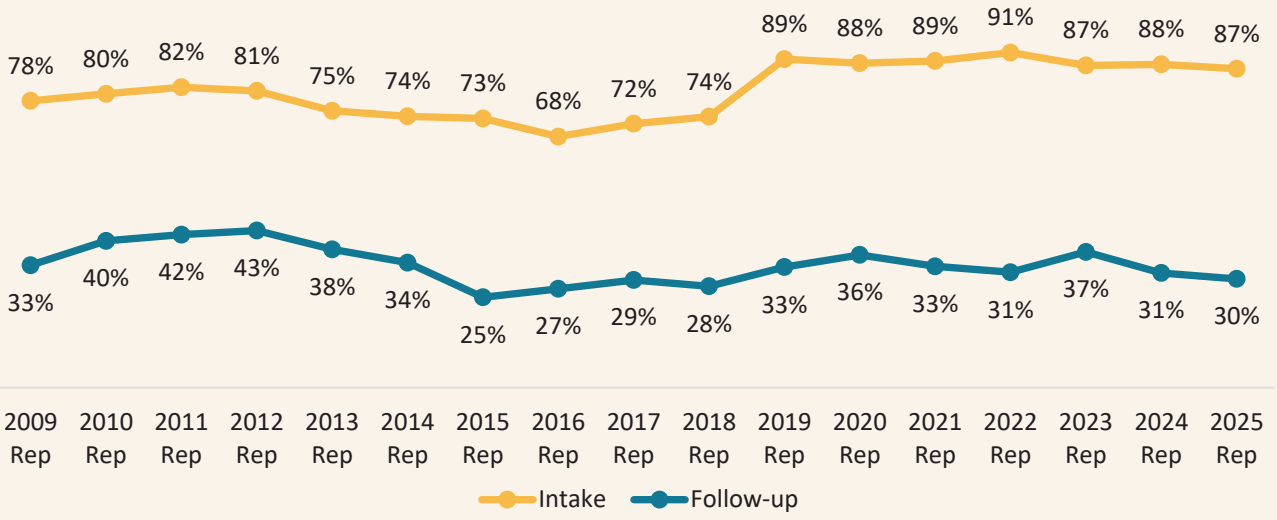
FIGURE 2.5. AVERAGE MAXIMUM NUMBER OF MONTHS RESPONDENTS USED ILLICIT DRUGS



Trends in Past-12-Month Illicit Drug Use

Around three-quarters of KTOS respondents reported any illicit drug use in the 12 months before treatment from Rep 2009 to Rep 2018. In Rep 2019, that percentage increased to almost 90% and remained through Rep 2024.[53] Overall, at follow-up, the percentage of respondents reporting any illicit drug use decreased from Rep 2012 to Rep 2015 but slowly increased until Rep 2020.

FIGURE 2.6. TRENDS IN ANY PAST-12-MONTH ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP, REP 2009 - 2025



[51] Two cases had a missing value for the number of months they used any of the illicit drug classes in the 12 months follow-up.

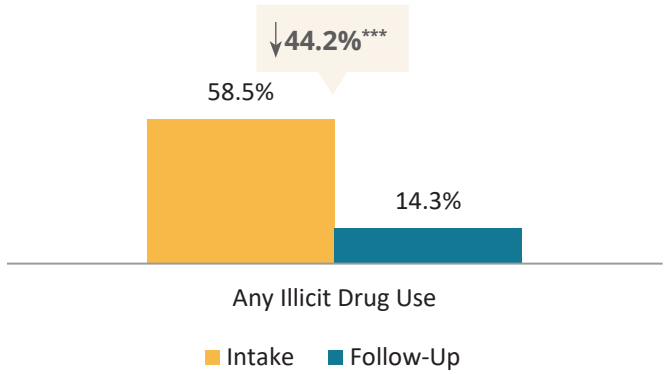
[52] Because number of months of illegal drugs was measured separately for each class of substance, the value is a calculation of the maximum number of months respondents used any class of substance.

[53] In the several years preceding Rep 2019, the research team noticed that an increasing proportion of respondents with completed KTOS intake surveys reported no substance use. Because the focus of this report is on SUD treatment outcomes, to be included in the follow-up study individuals had to report past-12-month alcohol and/or drug use, if they were not incarcerated the entire 12 months before entering the program.

Past-30-day Illicit Drug Use

More than half of respondents (58.5%) who were not in a controlled environment all 30 days reported they had used illicit drugs in the 30 days before entering treatment (see Figure 2.7). At follow-up, only 14.3% of respondents reported they had used illicit drugs in the past 30 days—a significant decrease of 44.2%.

FIGURE 2.7. PAST-30-DAY USE OF ANY ILLICIT DRUG AT INTAKE AND FOLLOW-UP (N = 398)[54]

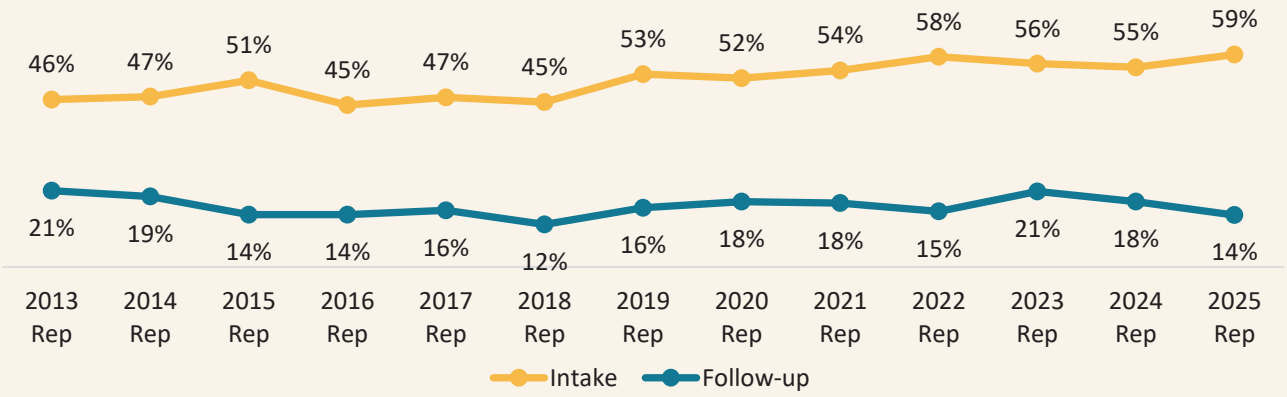


***p < .001.

Trends in Past-30-Day Illicit Drug Use

From the 2013 report through the 2021 report, among respondents who were not in a controlled environment in the 30 days before program entry and the 30 days before the follow-up interview, around half (45% - 54%) reported using any illicit drugs in the past 30 days at intake. In the 2022 report, the percentage had increased to 58% for the 30 days before intake and has been between 55% - 59% since the 2022 report. At follow-up, the percentage of respondents reporting any illicit drug use decreased for 6 years, from 21% in the 2013 report to 12% in the 2018 report but then increased in the 2019 report (16%) and was a high of 23% in the 2023 report. Nonetheless, each report year, the percentage of individuals reporting illicit drug use in the past 30 days has decreased significantly from intake to follow-up.

FIGURE 2.8. TRENDS IN PAST-30-DAY ILLICIT DRUG USE AT INTAKE AND FOLLOW-UP, REP 2013-2025

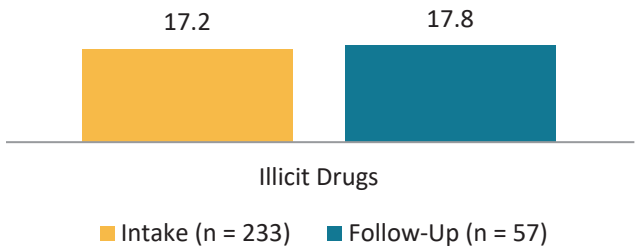


[54] Two individuals had missing data for illicit drug use in the 30 days before follow-up.

Average Maximum Number of Days Used Any Illicit Drugs

Among the respondents who reported using illicit drugs in the 30 days before entering treatment (n = 233), they reported using illicit drugs an average maximum of 17.2 days (see Figure 2.9). Respondents who reported using illicit drugs at follow-up (n = 57) reported using an average maximum of 17.8 days.[55]

FIGURE 2.9. AVERAGE MAXIMUM NUMBER OF DAYS RESPONDENTS USED ILLICIT DRUGS IN PAST 30 DAYS



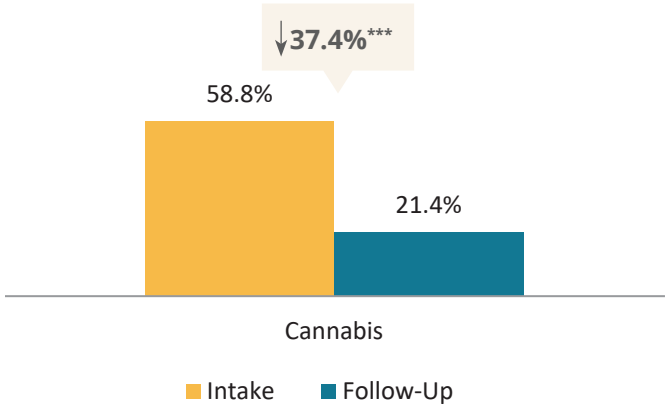
Cannabis

Past-12-month Cannabis

More than half (58.8%) of respondents reported using cannabis in the 12 months before entering treatment, which decreased to 21.4% at follow-up. Overall, for the KTOS follow-up sample, there was a 37.4% significant decrease in the number of respondents reporting cannabis use (see Figure 2.10).

The number of respondents reporting past-12-month cannabis use decreased by 37%

FIGURE 2.10. PAST-12-MONTH CANNABIS USE AT INTAKE AND FOLLOW-UP (N = 468)



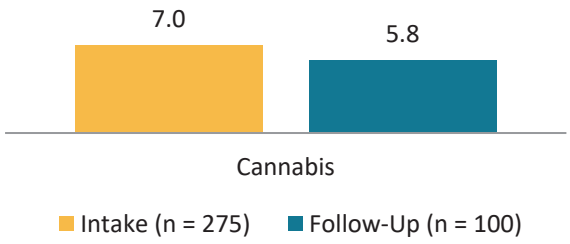
***p < .001.

[55] Because number of days of illegal drugs was measured separately for each class of substance, the value is a calculation of the maximum number of days respondents used any class of illegal drug.

Average Number of Months Used Cannabis

Among the respondents who reported using cannabis in the 12 months before entering treatment (n = 275), they reported using illicit drugs an average maximum of 7.0 months (see Figure 2.11). Respondents who reported using cannabis at follow-up (n = 100) reported using an average maximum of 5.8 days.

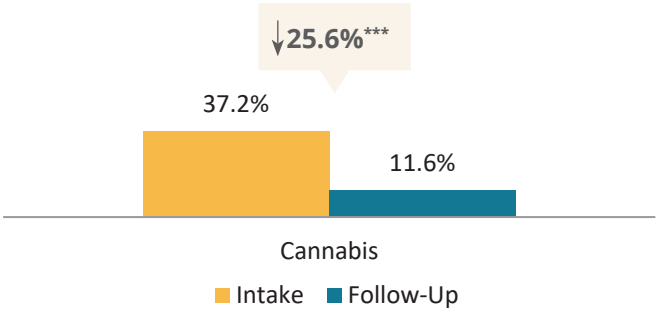
FIGURE 2.11. AVERAGE MAXIMUM NUMBER OF DAYS CLIENTS USED CANNABIS IN PAST 12 MONTHS



Past-30-day Cannabis Use

The number of respondents who reported using cannabis in the past 30 days decreased significantly by 25.6%, from 37.2% at intake to 11.6% at follow-up (see Figure 2.12).

FIGURE 2.12. PAST-30-DAY CANNABIS USE AT INTAKE AND FOLLOW-UP (N = 398)[56]



***p < .001.

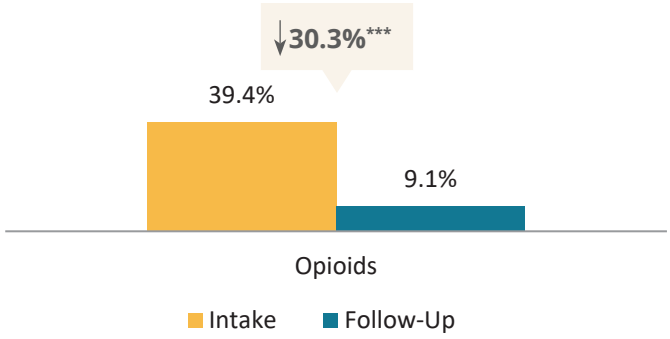
Opioids (including Heroin)

Past-12-month Illicit Opioid Use

Almost two-fifths of respondents (39.4%) reported using opioids/opioid agonists illicitly including heroin, prescription opioids, methadone, and buprenorphine-naloxone (bup-nx) in the 12 months before entering treatment. The percentage of respondents who reported illicit use of opioids decreased significantly by 30.3% to 9.1% at follow-up (see Figure 2.13).

[56] Two individuals had missing values for cannabis use in the 30 days before follow-up.

FIGURE 2.13. PAST-12-MONTH ILLICIT OPIOID USE AT INTAKE AND FOLLOW-UP (N = 470)

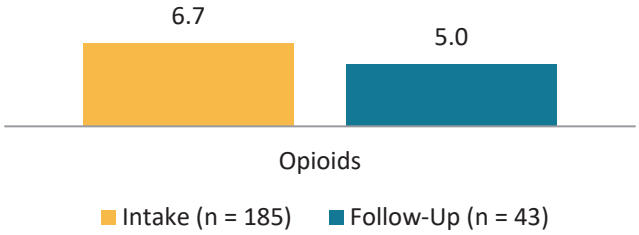


***p < .001.

Average Number of Months Used Opioids

Among the respondents who reported using opioids illicitly in the 12 months before entering treatment (n = 185), they reported using opioids, on average, 6.7 months (see Figure 2.14).[57] Among respondents who reported using opioids illicitly at follow-up (n = 43), they reported using 5.0 months, on average.

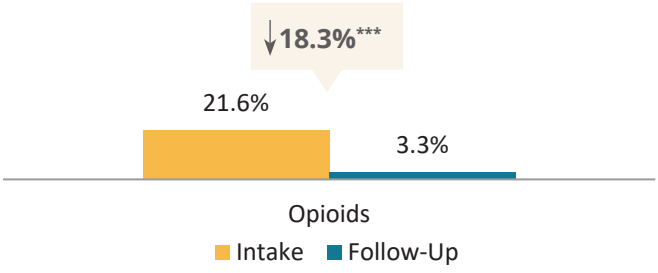
FIGURE 2.14. AVERAGE MAXIMUM NUMBER OF MONTHS RESPONDENTS USED ILLICIT OPIOIDS



Past-30-day Opioid Use

The percentage of respondents who reported opioids illicitly (including heroin) in the past 30 days decreased significantly by 18.3%, from 21.6% at intake to 3.3% at follow-up (see Figure 2.15).

FIGURE 2.15. PAST-30-DAY ILLICIT OPIOID USE AT INTAKE AND FOLLOW-UP (N = 399)[58]



***p < .001.

[57] Because number of months of prescription opioids, methadone, bup-nx , and heroin were measured separately, the value is a calculation of the maximum number of months respondents used any of these specific types of opioids.

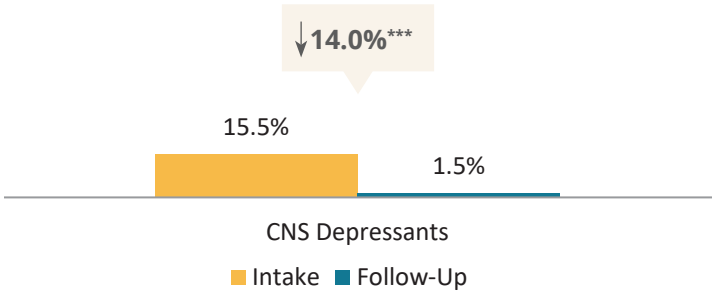
[58] One individual had missing data for use of opioids (including heroin) in the 30 days before follow-up.

CNS Depressants

Past-12-month CNS Depressant Use

A minority of respondents (15.5%) reported using CNS depressants, including tranquilizers, benzodiazepines, sedatives, and barbiturates in the 12 months before entering treatment, which decreased to 1.5% at follow-up. Overall, for the KTOS follow-up sample, there was a significant 14.0% decrease in the number of respondents reporting CNS depressant use in the past 12 months (see Figure 2.16).

FIGURE 2.16. PAST-12-MONTH CNS DEPRESSANT USE AT INTAKE AND FOLLOW-UP (N = 470)

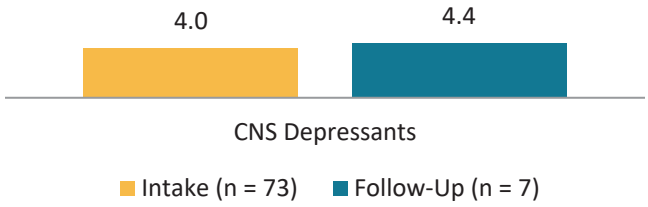


***p < .001.

Average Maximum Number of Months Used CNS Depressants

Figure 2.17 shows the average maximum number of months respondents who used CNS depressants reported using these illicit drugs.[59] Among the respondents who reported using these substances in the 12 months before entering treatment (n = 73), they reported using CNS depressants an average 4.0 months. Among respondents who reported using CNS depressants in the 12 months before follow-up (n = 7), they reported using an average of 4.4 months.

FIGURE 2.17. AVERAGE MAXIMUM NUMBER OF MONTHS OF CNS DEPRESSANT USE

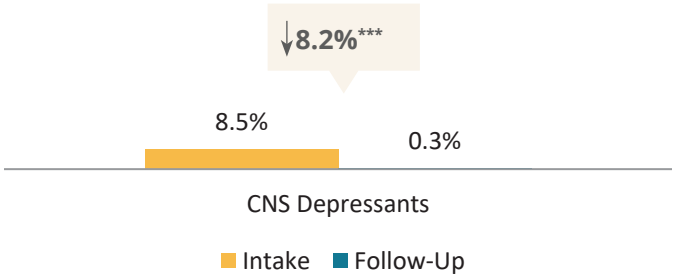


Past-30-day CNS Depressant Use

The percentage of respondents who reported using CNS depressants in the 30 days before intake decreased significantly by 8.2%, from 8.5% at intake to 0.3% at follow-up (see Figure 2.18).

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

FIGURE 2.18. PAST-30-DAY CNS DEPRESSANT USE AT INTAKE AND FOLLOW-UP (N = 400)



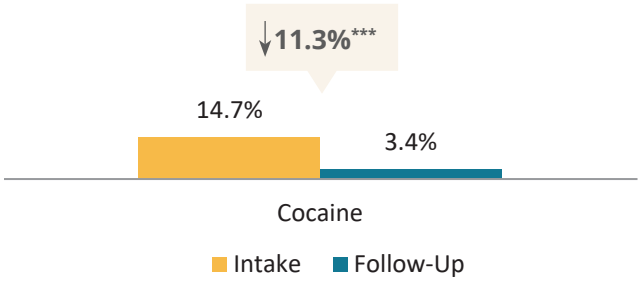
***p < .001.

Cocaine

Past-12-month Cocaine Use

A minority of respondents (14.7%) reported using cocaine (including crack) in the 12 months before entering treatment, which decreased to 3.4% at follow-up. Overall, there was a decrease of 11.3% in the number of respondents reporting cocaine use (see Figure 2.19).

FIGURE 2.19. PAST-12-MONTH COCAINE USE AT INTAKE AND FOLLOW-UP (N = 470)

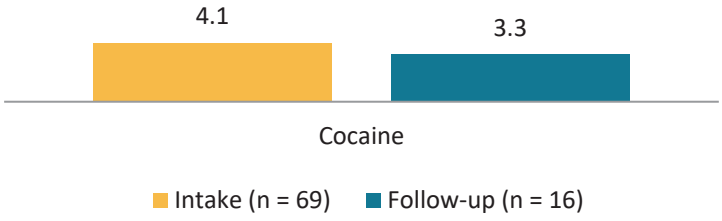


***p < .001.

Average Number of Months Used Cocaine

Among the respondents who reported using cocaine in the 12 months before entering treatment (n = 69), they reported using cocaine an average of 4.1 months (see Figure 2.20). Respondents who reported using cocaine in the 12 months before follow-up (n = 16) reported using cocaine, on average 3.3 months.

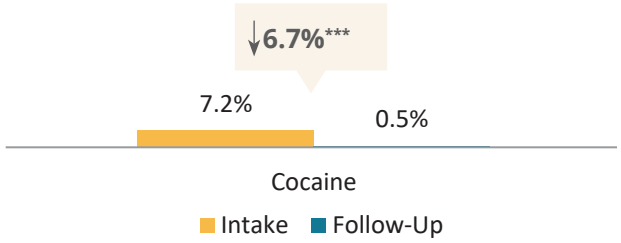
FIGURE 2.20. AVERAGE NUMBER OF MONTHS OF COCAINE USE



Past-30-day Cocaine Use

The percent of respondents who reported using cocaine in the past 30 days at intake decreased significantly by 6.7%, from 7.2% at intake to 0.5% at follow-up (see Figure 2.21).

FIGURE 2.21. PAST-30-DAY COCAINE USE AT INTAKE AND FOLLOW-UP (N = 467)



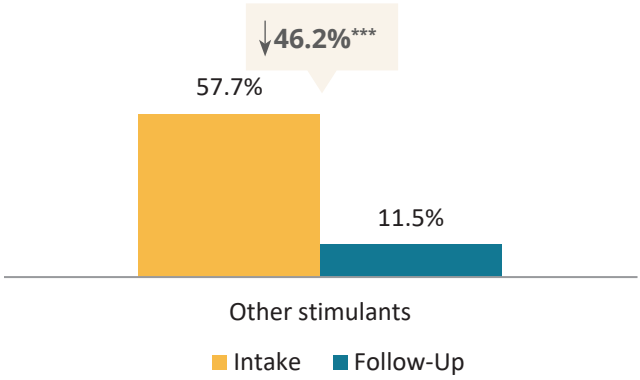
***p < .001.

Other Stimulants

Past-12-month Other Stimulant Use

The majority of respondents (57.7%) reported using stimulants other than cocaine, including methamphetamine, Ecstasy, MDMA, and non-prescription Adderall and Ritalin in the 12 months before entering treatment, which decreased to 11.5% at follow-up.[60] Overall, for the KTOS follow-up sample, there was a 46.2% decrease in the number of respondents reporting other stimulant use (see Figure 2.22).

FIGURE 2.22. PAST-12-MONTH STIMULANT USE OTHER THAN COCAINE AT INTAKE AND FOLLOW-UP (N = 470)



***p < .001.

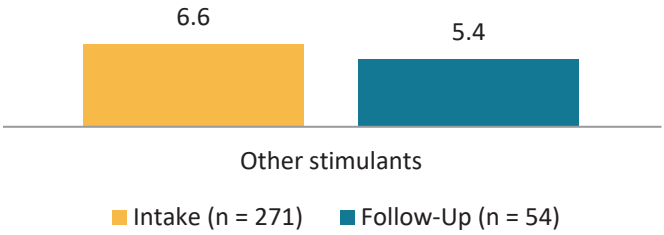
Average Number of Months Used Other Stimulants

Among the respondents who reported using stimulants other than cocaine in the 12 months before entering treatment (n = 271), they reported using other stimulants

[60] Among the individuals who reported using stimulants in the 12 months before intake (n = 271), 98.5% reported using methamphetamine, crank, crystal methamphetamine.

an average of 6.6 months (see Figure 2.23). Respondents who reported using other stimulants in the 12 months before follow-up (n = 54) reported using other stimulants, on average, 5.4 months.

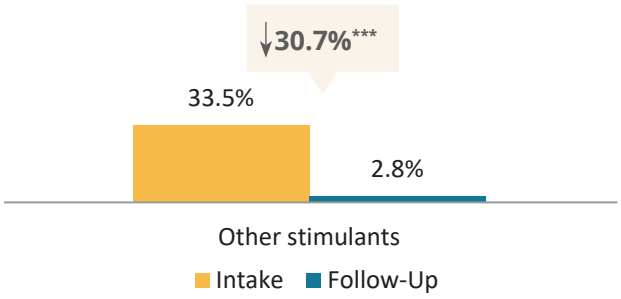
FIGURE 2.23. AVERAGE NUMBER OF MONTHS OF OTHER STIMULANT USE



Past-30-day Other Stimulant Use

One-third of respondents (33.5%) reported using stimulants other than cocaine in the 30 days before entering treatment. At follow-up, only 2.8% of individuals reported past-30-day use of stimulants—a significant decrease of 30.7% (see Figure 2.24).

FIGURE 2.24. PAST-30-DAY STIMULANT USE OTHER THAN COCAINE AT INTAKE AND FOLLOW-UP (N = 400)



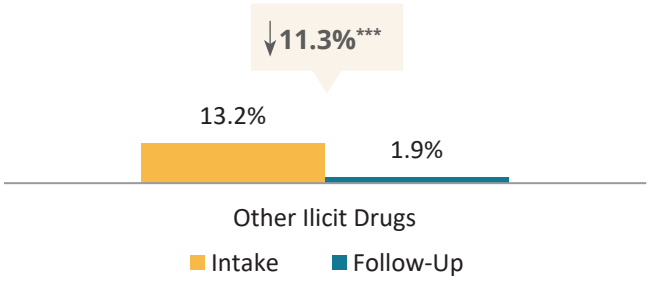
***p < .001.

Other Illicit Drugs

Past-12-month Other Illicit Drugs

A minority of KTOS respondents (13.2%) reported using any other illicit drugs (i.e., hallucinogens, inhalants, synthetic drugs) in the 12 months before entering treatment. The number of respondents who reported using other illicit drugs decreased to 1.9% at follow-up – a significant decrease of 11.3% (see Figure 2.25).

FIGURE 2.25. PAST-12-MONTH USE OF OTHER ILLICIT DRUGS AT INTAKE AND FOLLOW-UP (N = 470)

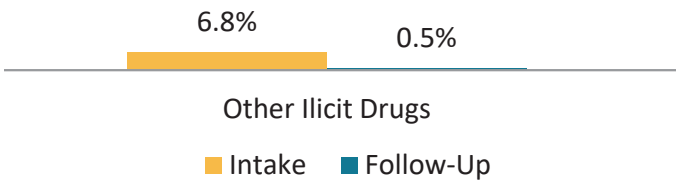


***p < .001.

Average Maximum Number of Months Used Other Illicit Drugs

Figure 2.26 shows the average maximum number of months respondents who used other illicit drugs (e.g., hallucinogens, inhalants, synthetic drugs) reported using those illicit drugs[61] in the past 12 months. Among the respondents who reported using these drugs in the 12 months before entering treatment (n = 62), they reported using other illicit drugs an average of 4.5 months. Among respondents who reported using other illicit drugs in the 12 months before follow-up (n = 9), they reported using an average of 1.6 months.

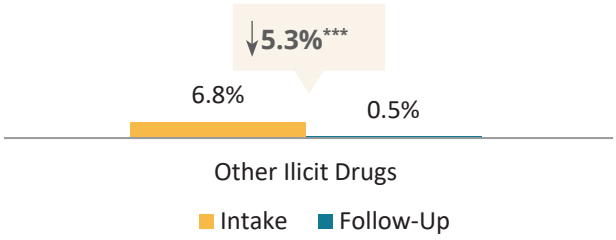
FIGURE 2.26. AVERAGE MAXIMUM NUMBER OF MONTHS OF OTHER ILLICIT DRUG USE



Past-30-day Other Illicit Drug Use

The percent of respondents who reported using other illicit drugs in the 30 days before the intake and follow-up interviews decreased significantly by 5.3%, from 6.8% at intake to 0.5% at follow-up (see Figure 2.27).

FIGURE 2.27. PAST-30-DAY USE OF OTHER ILLICIT DRUGS AT INTAKE AND FOLLOW-UP (N = 400)



***p < .001.

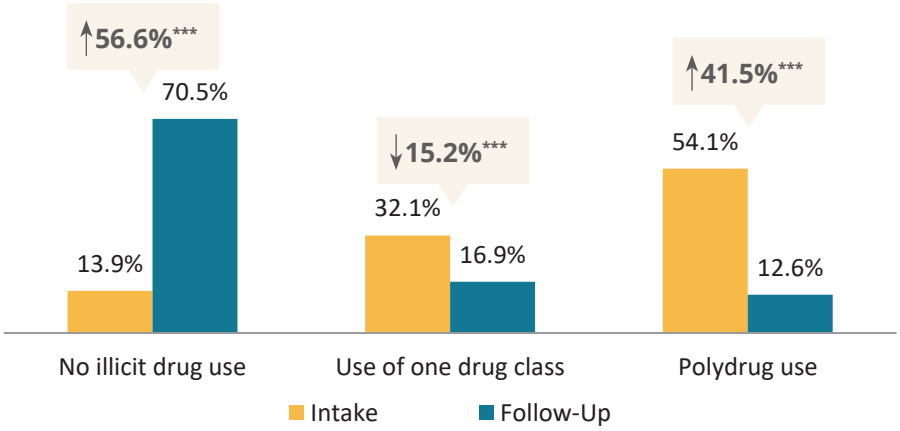
[61] Because number of months of use of each class of substance was measured separately (e.g., hallucinogens, inhalants, synthetic drugs), the value is a calculation of the maximum number of months respondents used any substance class.

Polydrug Use

Past-12-month Polydrug Use

The use of more than one drug class was also examined at intake and follow-up.[62] Significantly smaller percentages of individuals reported using one drug class and polydrug use at follow-up than at intake (see Figure 2.28).

FIGURE 2.28. PAST-12-MONTH USE OF POLYDRUG USE AT INTAKE AND FOLLOW-UP (N = 468)[63]



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

Average Number of Drug Classes Used, Among Individuals Who Used More Than One Drug Class

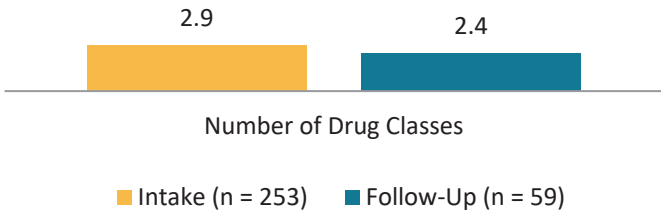
Among individuals who reported use of more than one class of illicit drugs, Figure 2.29 shows the average number of drug classes they reported using in the corresponding period. Among the respondents who reported using more than one drug class in the 12 months before entering treatment (n = 253), they reported using an average of 2.9 classes. Among respondents who reported using more than one drug class in the 12 months before follow-up (n = 59), they reported using an average of 2.4 drug classes.

> "It really works and the peer counselors were really great. Helped with past traumas and was a really eye opening experience. I am over 50 years old and I have been an addict since I was 11. This program has allowed me to be sober the longest."
>
> — KTOS RESPONDENT

[62] The following eight drug classes were counted: cannabis, opioids including heroin, CNS depressants (sedatives, tranquilizers, benzodiazepines, barbiturates), cocaine, amphetamines (including methamphetamine, prescription stimulants), psychedelics, synthetic drugs, and inhalants.

[63] Two individuals had missing values for polydrug use in the 12 months before follow-up.

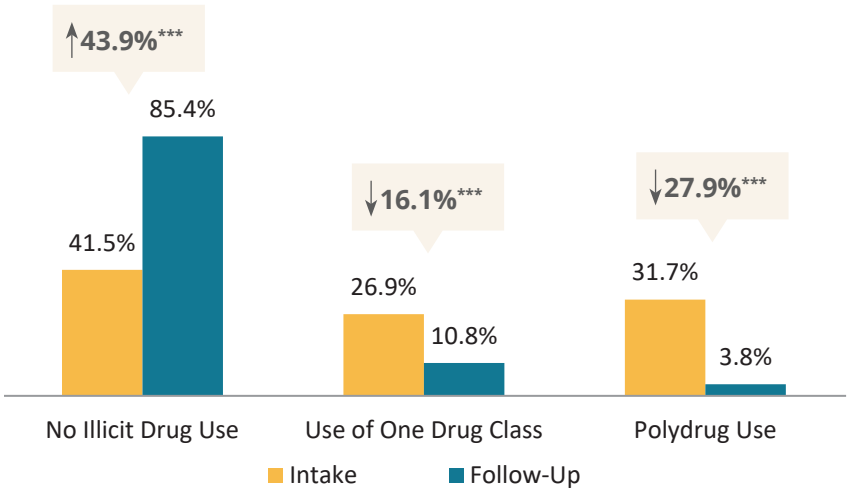
FIGURE 2.29. AMONG INDIVIDUALS WHO USED MORE THAN ONE BROAD CLASS OF ILLICIT DRUGS, AVERAGE NUMBER OF DRUG CLASSES USED



Past-30-day Polydrug Use

Significantly fewer individuals reported using one drug class and polydrug use at follow-up than at intake (see Figure 2.30).[64]

FIGURE 2.30. PAST-30-DAY USE OF POLYDRUG USE AT INTAKE AND FOLLOW-UP (N = 398)[65]



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

Injection Drug Use

At intake, 41.7% of respondents reported having ever injected any drug in their lifetime. Of those respondents (n =198), 40.4% reported having ever used a syringe exchange service in Kentucky. At follow-up, 7.4% of respondents reported injecting drugs in the past 12 months.[66] Of those respondents (n = 34),[67] 50.0% reported having used syringe exchanges services in Kentucky.

[64] The following eight drug classes were counted: cannabis, opioids including heroin, CNS depressants (sedatives, tranquilizers, benzodiazepines, barbiturates), cocaine, amphetamines (including methamphetamine, prescription stimulants), psychedelics, synthetic drugs, and inhalants.

[65] Two respondents had missing values for polydrug use in the 30 days before follow-up.

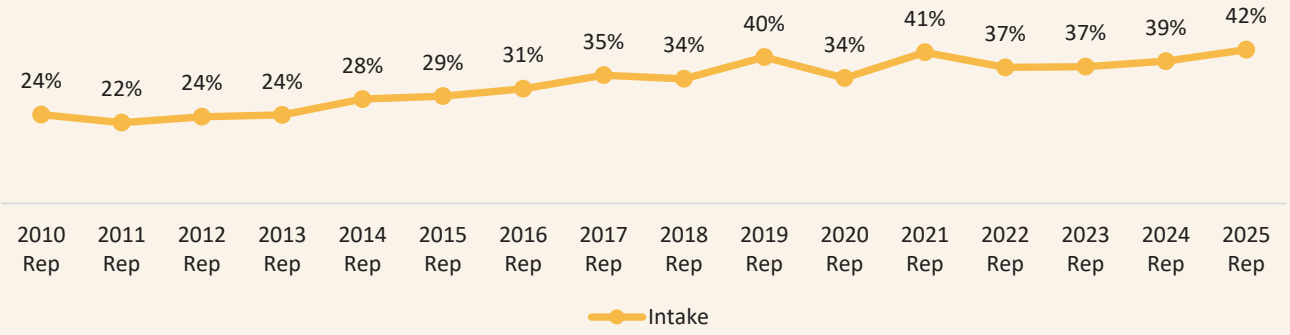
[66] One respondent had a missing value for injecting drugs in the 12 months before follow-up.

[67] One respondent who reported engaging in IDU in the 12 months before follow-up had a missing value for using syringe exchange services.

Trends in Lifetime Injection Drug Use

The percentage of respondents reporting at intake that they had ever injected any drug has generally increased from Rep 2010 (24%) to Rep 2025 (42%).

FIGURE 2.31. TRENDS IN PERCENT OF RESPONDENTS REPORTING HAVING EVER INJECTED ANY DRUG AT INTAKE, REPORTS 2010-2025



Alcohol Use

There were three measures of alcohol use including: (1) any alcohol use, (2) alcohol use to intoxication, and (3) binge drinking. Binge drinking was defined as having 5 or more (4 or more if respondent was female) alcoholic drinks in a period of about 2 hours.[68]

Past-12-month Alcohol Use

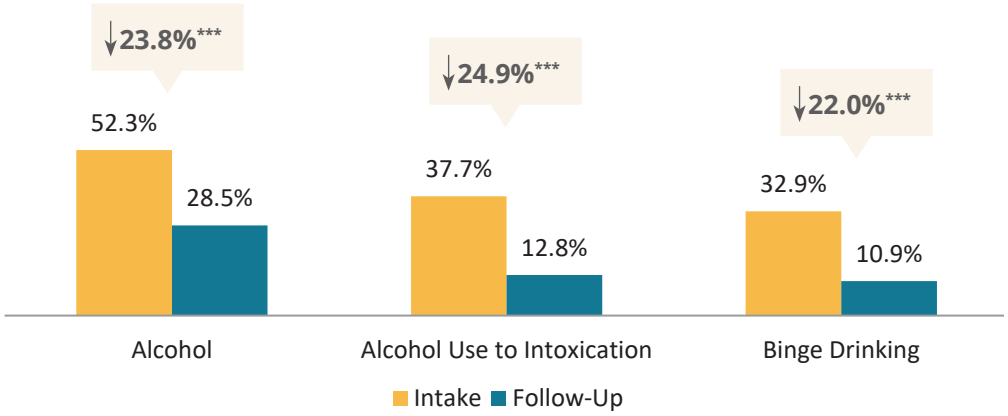
At intake, respondents were asked how old they were when they had their first alcoholic drink (other than just a few sips). On average, KTOS respondents who completed a follow-up survey reported they were 15.0 years old when they had their first alcoholic drink (not depicted in figure).[69]

More than half of respondents (52.3%) reported using alcohol in the 12 months before entering treatment, with significantly fewer respondents (28.5%) using alcohol in the 12 months before follow-up (see Figure 2.32). Overall, for the KTOS follow-up sample, there was a 34.4% decrease in the percentage of respondents reporting alcohol use in the past 12 months. More than one-third of respondents (37.7%) reported using alcohol to intoxication at intake, with 12.8% reporting alcohol use to intoxication in the 12 months before follow-up. Similarly, there was a significant decrease of 22.0% in the number of respondents who reported past-12-month binge drinking from intake to follow-up (32.9% vs. 10.9%).

[68] National Institute on Alcohol Abuse and Alcoholism. (2004, Winter). NIAAA council approves definition of binge drinking. NIAAA Newsletter, Winter 2004 (3). Rockville, MD: Department of Health and Human Services, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism.

[69] Of the individuals in the follow-up sample, 14 reported they have never had an alcoholic drink.

FIGURE 2.32. PAST-12-MONTH ALCOHOL USE AT INTAKE AND FOLLOW-UP (N = 470)[70]

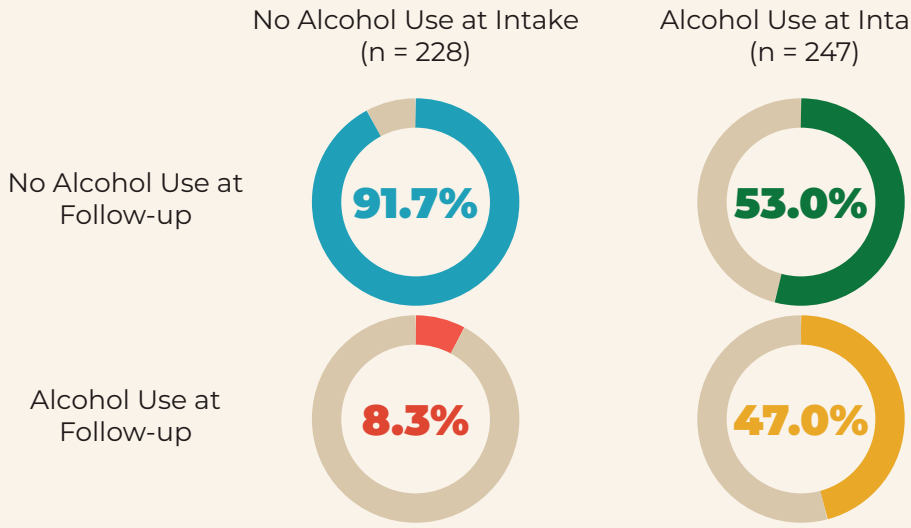


***p < .001.

Taking a Closer Look at Alcohol Use

More than half of KTOS respondents reported using alcohol in the 12 months before entering treatment (52.0%; n = 247). Of these respondents who reported using alcohol in the past 12 months at intake, 53.0% did not use alcohol in the past 12 months at follow-up (see Figure 2.33). A little less than one-half (47.0%) of individuals who reported alcohol use at intake also reported use at follow-up. A majority of those who did not use alcohol at intake also reported abstinence at follow-up (91.7%) while 8.3% of respondents reported using alcohol at follow-up after reporting no use at intake.

FIGURE 2.33. PAST-12-MONTH ALCOHOL USE AT INTAKE AND FOLLOW-UP BASED ON ALCOHOL USE AT INTAKE

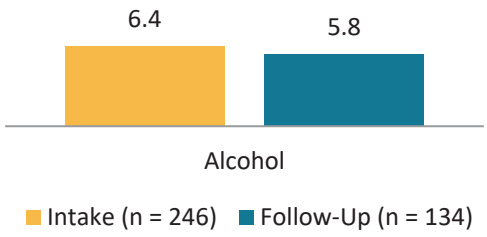


[70] One respondent had a missing value for alcohol use to intoxication at follow-up and two respondents had missing values for binge drinking alcohol at follow-up.

Average Number of Months Used Alcohol

Figure 2.34 shows the average number of months alcohol users reported using alcohol at intake and follow-up. Among the respondents who reported using alcohol in the 12 months before entering treatment (n = 246), they reported using alcohol, on average, 6.4 months. Among respondents who reported using alcohol in the 12 months before follow-up (n = 134), they reported using, on average, 5.8 months.

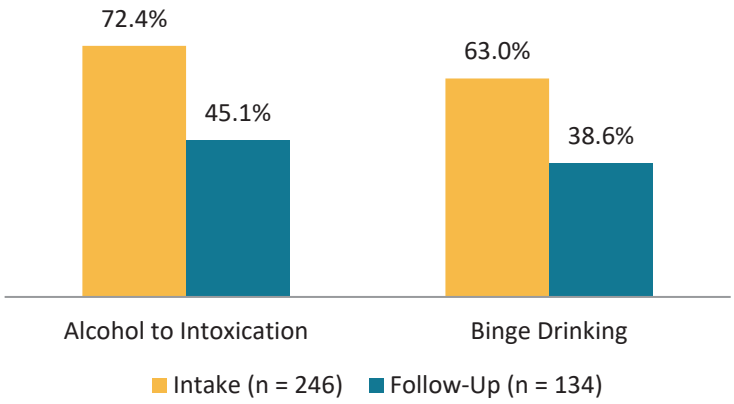
FIGURE 2.34. AVERAGE NUMBER OF MONTHS OF ALCOHOL USE



Past-12-month Alcohol Intoxication and Binge Drinking Among Those Who Used Alcohol at Each Point

Of the respondents who used alcohol in the 12 months before entering treatment (n = 246), 72.4% used alcohol to intoxication in the 12 months before intake and 63.0% reported binge drinking (see Figure 2.35). Of the respondents who used alcohol in the 12 months before follow-up (n = 134), 45.1% reported alcohol use to intoxication and 38.6% reported binge drinking.

FIGURE 2.35. PAST-12-MONTH ALCOHOL USE TO INTOXICATION AND BINGE DRINKING AT INTAKE AND FOLLOW-UP, AMONG THOSE REPORTING ALCOHOL USE AT EACH POINT[71]

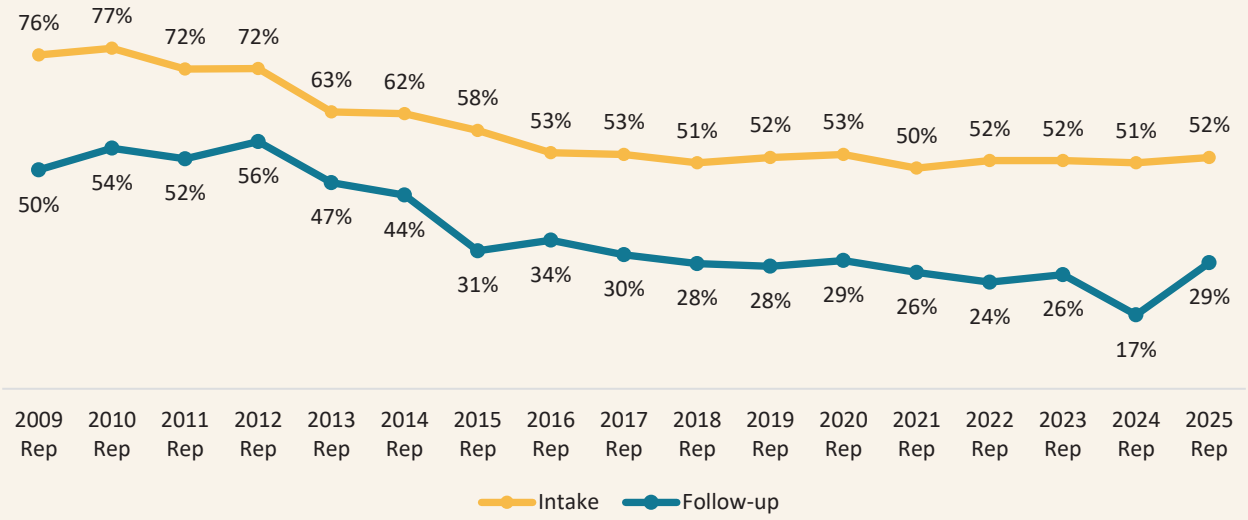


[71] At follow-up, one respondent had missing data for alcohol use to intoxication and two respondents had missing data for binge drinking.

Trends in Past-12-month Alcohol Use

The percentage of KTOS respondents reporting alcohol use in the 12 months before treatment has decreased over time (see Figure 2.36). Overall, at follow-up, the percentage of respondents reporting alcohol use has also decreased over the years. In the 2024 report, a low of 17% reported using any alcohol in the 12 months before follow-up. In this years' report, the percentage was similar to the 2018 – 2021 reports and the 2023 report.

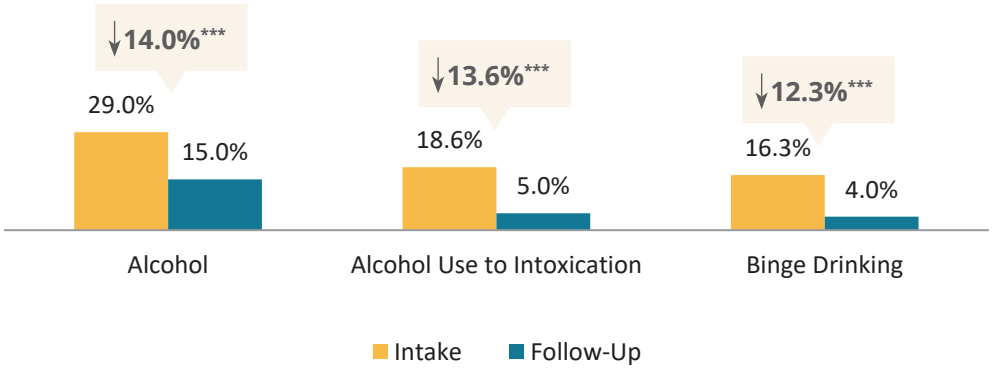
FIGURE 2.36. TRENDS IN ALCOHOL USE AT INTAKE AND FOLLOW-UP, REPORTS 2009-2025



Past-30-day Alcohol Use

A minority of respondents reported using alcohol, alcohol to intoxication, and binge drinking in the 30 days before entering treatment. There were significant decreases in the percentage of respondents who used alcohol, alcohol to intoxication, and binge drinking from intake to follow-up (see Figure 2.37).

FIGURE 2.37. PAST-30-DAY ALCOHOL USE AT INTAKE AND FOLLOW-UP (N = 400)[72]



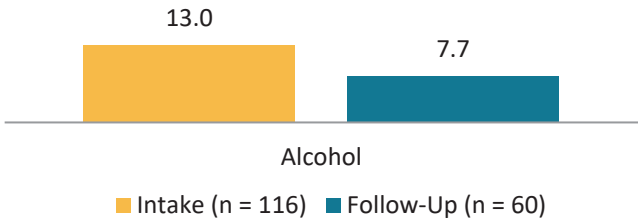
***p < .001.

[72] Two respondents had missing values for alcohol use to intoxication at follow-up and one respondent had missing data for binge drinking at follow-up.

Average Number of Days Used Alcohol

Figure 2.38 shows the average number of days alcohol users reported using alcohol in the 30 days before intake and follow-up. Among the respondents who reported using alcohol in the 30 days before entering treatment (n = 116), they reported using alcohol, on average, 13.0 days. Among respondents who reported using alcohol in the 30 days before follow-up (n = 60), they reported using, on average, 7.7 days.

FIGURE 2.38. AVERAGE NUMBER OF DAYS OF ALCOHOL USE

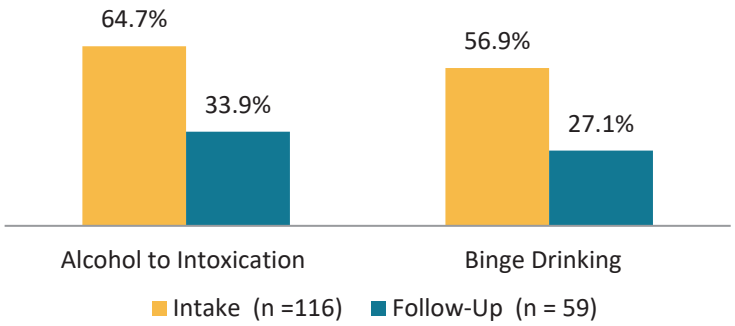


Past-30-day Alcohol Intoxication and Binge Drinking Among Those Who Used Alcohol

Of the 116 respondents who used alcohol in the 30 days before intake, 64.7% used alcohol to intoxication and 56.9% binge drank in the 30 days before intake (see Figure 2.39).

Of the 59 respondents who reported using alcohol in the 30 days before follow-up, 33.9% reported using alcohol to intoxication and 27.1% reported binge drinking in the 30 days before follow-up.

FIGURE 2.39. PAST-30-DAY ALCOHOL USE TO INTOXICATION AND BINGE DRINKING AT INTAKE AND FOLLOW-UP, AMONG THOSE REPORTING ALCOHOL USE AT EACH POINT

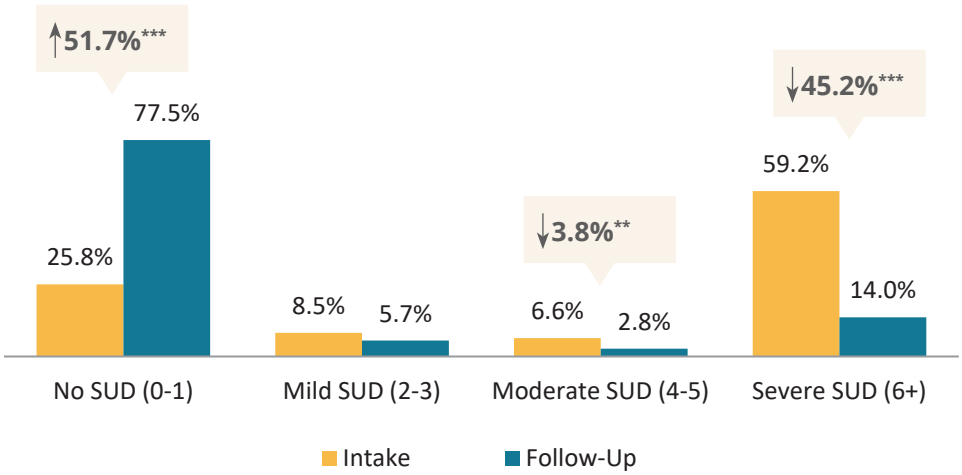


Self-reported Symptoms of Alcohol and Drug Use Severity

DSM-5 Criteria for Substance Use Disorder, Past 12 Months

One way to examine overall change in degree of severity of substance use is to ask respondents to self-report whether they met any of the 11 symptoms included in the DSM-5 criteria for diagnosing respondents' substance use disorder (SUD) in the past 12 months.[73] 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 (0 or 1 criterion 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). Respondent self-reports of DSM-5 criteria suggest, but do not diagnose, a substance use disorder. At intake, the majority of respondents met criteria for severe SUD, while at follow-up, the majority of respondents met criteria for no SUD (see Figure 2.40).[74] Significant changes in the proportion of individuals classified in each category for severity of SUD were found.

FIGURE 2.40. DSM-5 SUD SEVERITY AT INTAKE AND FOLLOW-UP (N = 458)[a]



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$). **$p < .01$, ***$p < .001$.

[73] The DSM-5 diagnostic criteria for substance use disorders included in the KTOS 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 SUD 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.

[74] Twelve individuals had missing data for DSM-5 criteria for substance use disorder at follow-up.

Addiction Severity Index (ASI), Past 30 Days

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

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

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

ASI Alcohol and Drug Composite Scores and Substance Use Disorder

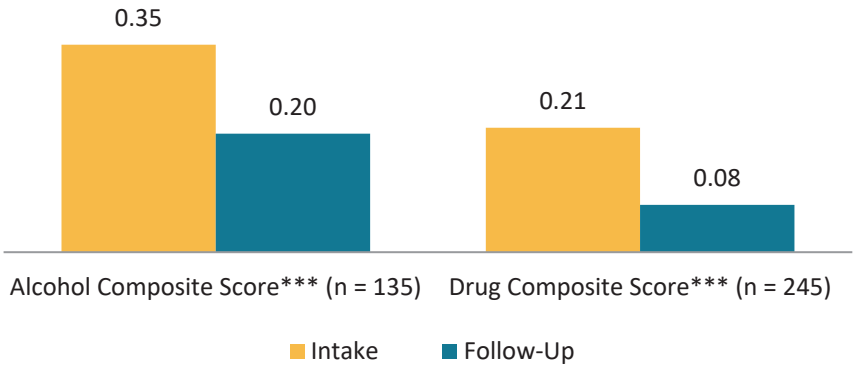
Rikoon et al. (2006) conducted two studies to determine the relationship between the ASI composite scores for alcohol and drug use and DSM-IV substance dependence diagnoses. They identified alcohol and drug use composite score cutoffs that had 85% sensitivity and 80% specificity about identifying DSM-IV 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, 31(1), 17–24.

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

Figure 2.41 displays the change in average composite scores.[75], [76] The average for the alcohol composite score decreased significantly from 0.35 at intake to 0.20 at follow-up. The average for the drug composite score decreased significantly from 0.21 at intake to 0.08 at follow-up.

FIGURE 2.41. AVERAGE ASI ALCOHOL AND DRUG COMPOSITE SCORES AT INTAKE AND FOLLOW-UP



***p < .001.

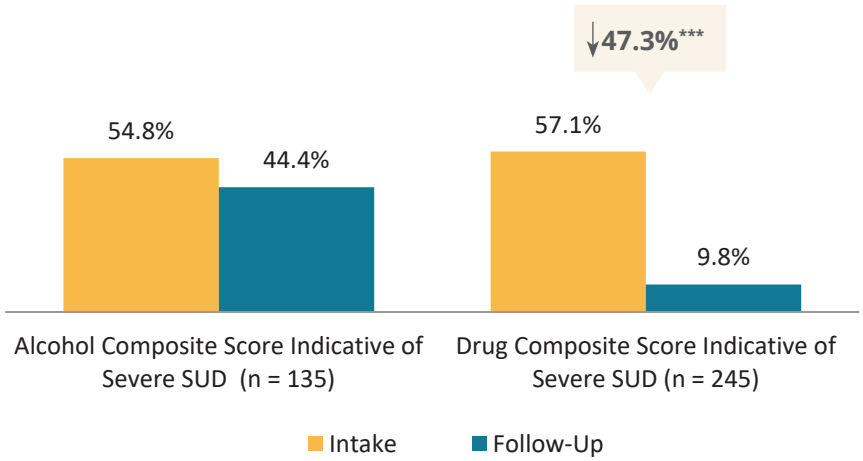
The percentage of individuals who had an ASI alcohol composite scores that met the cutoff for severe substance use disorder (SUD) did not change significantly from intake to follow-up (see Figure 2.42). More than half individuals (55.3%) who reported any alcohol use in the 30 days before intake and/or follow-up had alcohol composite scores indicative of severe SUD at intake. At follow-up, this percentage was 44.4%. The percentage of individuals who had an ASI drug decreased significantly from intake to follow-up (see Figure 2.42). The majority of individuals who reported any drug use in the 30 days before intake and/or follow-up had drug composite scores indicative of severe SUD at intake (57.1%). At follow-up, 9.8% had drug composite scores indicative of severe SUD.

> "It helped me a lot, When I first started I was addicted and lost. I had a lot of loss in my life. I am now working as a peer mentor and working. I got custody of my girl now and my CPS case is closed."
>
> — KTOS RESPONDENT

[75] The following number of cases were not included in the analysis of change in alcohol composite score: 61 individuals reported being in a controlled environment all 30 days before intake; 13 additional individuals were in a controlled environment all 30 days before follow-up; 1 respondent had a missing value for the number of days they were in a controlled environment before the follow-up; an additional 261 respondents reported abstaining from alcohol in the 30 days before intake and follow-up; and 4 individuals had missing data from items included in the calculation of the alcohol composite at follow-up.

[76] The following number of cases were not included in the analysis of change in drug composite score: 61 individuals reported being in a controlled environment all 30 days before intake; 13 additional individuals were in a controlled environment all 30 days before follow-up; 1 respondent had a missing value for the number of days they were in a controlled environment before the follow-up; an additional an additional 151 respondents reported abstaining from drugs in the 30 days before intake and follow-up, and 4 respondents had missing data from items included in the calculation of the drug composite score at follow-up.

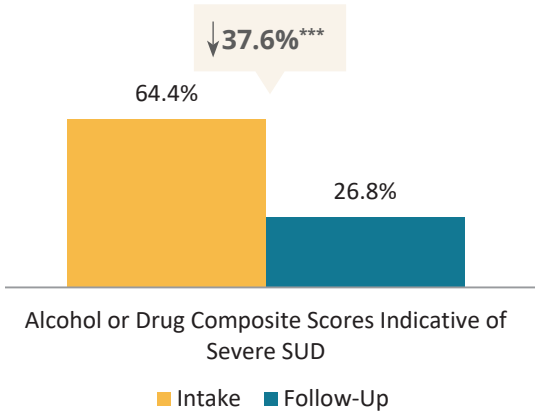
FIGURE 2.42. INDIVIDUALS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR SEVERE SUBSTANCE USE DISORDER AT INTAKE AND FOLLOW-UP[77]



***p < .001.

Among the individuals who were not in a controlled environment all 30 days before entering treatment and who reported using alcohol and/or drugs at intake or follow-up, a majority of individuals had alcohol or drug composite scores that met the cutoff for severe SUD at intake (see Figure 2.43). The percentage of respondents who had composite scores that met the cutoff for severe SUD for either alcohol or drugs decreased by 37.6% at follow-up.

FIGURE 2.43. RESPONDENTS WITH ASI COMPOSITE SCORES MEETING THE CUTOFF FOR ALCOHOL OR DRUG SEVERE USE DISORDERS AT INTAKE AND FOLLOW-UP (N = 295)[78]



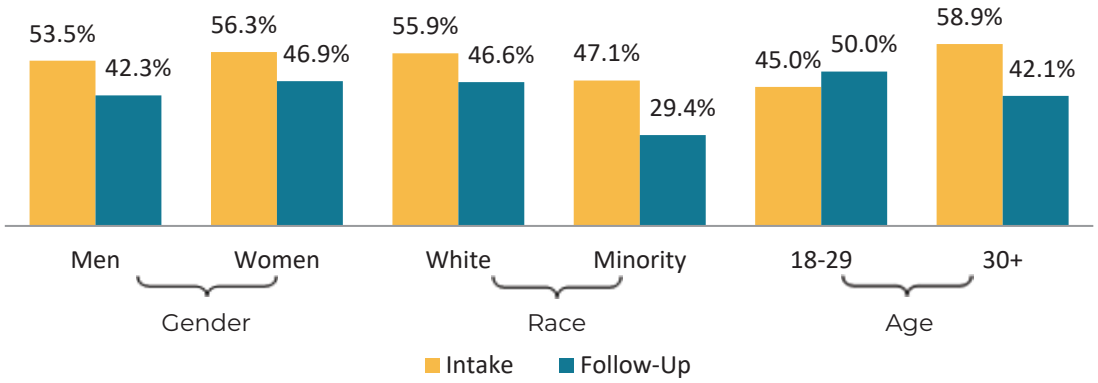
***p < .001.

[77] Six clients had missing data for the alcohol score variables at follow-up and 5 clients had missing data for the drug composite score variables at follow-up.

[78] The following number of cases were not included in the analysis of change in composite scores: 61 respondents were in a controlled environment all 30 days before treatment; 13 additional individuals were in a controlled environment all 30 days before follow-up; 1 had a missing value for number of days in a controlled environment in the 30 days before follow-up; and an additional 105 respondents reported abstaining from alcohol and drugs in the 30 days before intake and follow-up.

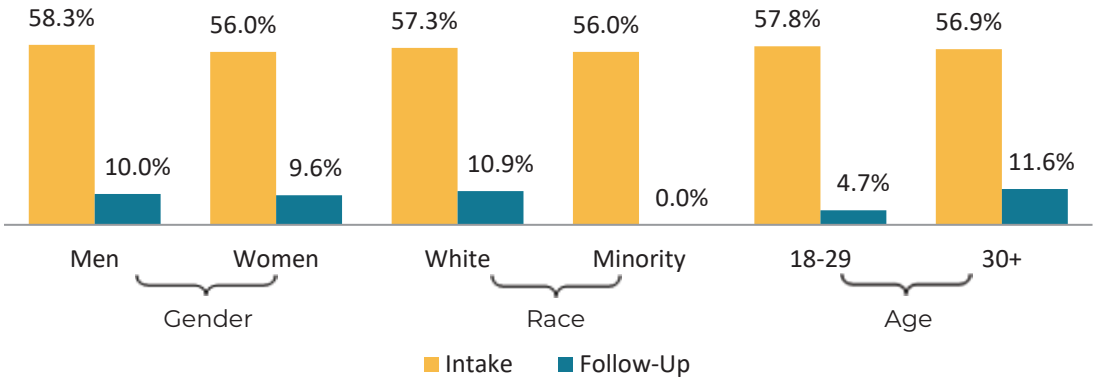
The data was examined to determine whether respondents who had alcohol composite scores indicative of severe SUD at intake and follow-up differed by gender, race/ethnicity, or age (see Figure 2.44). There were no significant differences in the percent of respondents who had alcohol composite scores indicative of severe SUD by gender, race, or age at intake or follow-up.

FIGURE 2.44. RESPONDENTS WHO USED ALCOHOL AND HAD AN ALCOHOL COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 135)



Analyses were also conducted to determine if respondents 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 2.45). There were no statistically significant differences.

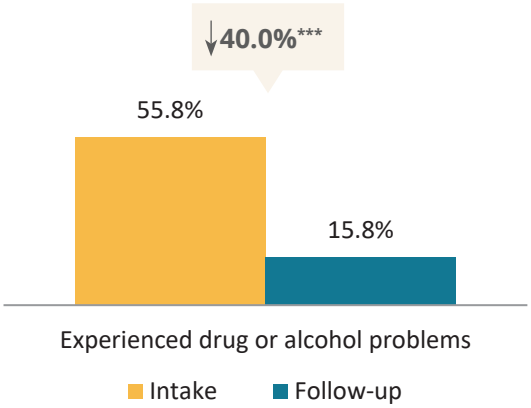
FIGURE 2.45. RESPONDENTS WHO REPORTED ANY DRUG USE AND HAD A DRUG COMPOSITE SCORE INDICATIVE OF SEVERE SUD AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (N = 245)



Problems Experienced with Substance Use in the Past 30 Days

In the past 30 days at intake, 55.8% of respondents reported they experienced problems with drugs or alcohol such as craving, withdrawal, wanting to quit but being unable, or worrying about return to use (see Figure 2.46). In the past 30 days at follow-up, 15.8% of respondents reported experiencing problems with drugs or alcohol (a significant decrease of 40.0%).

FIGURE 2.46. RESPONDENTS EXPERIENCING PROBLEMS WITH ILLICIT DRUGS OR ALCOHOL AT INTAKE AND FOLLOW-UP (N = 475)



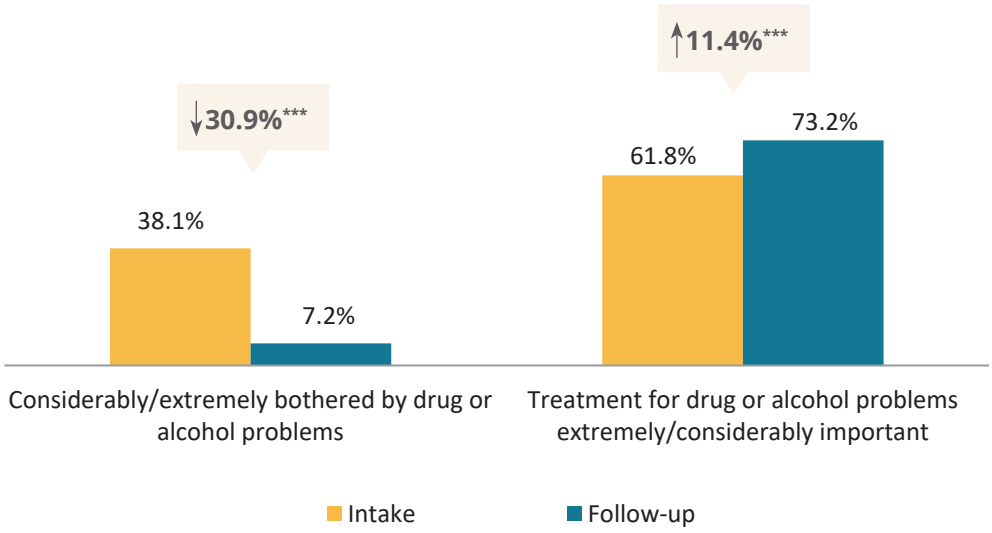
***p < .001.

Readiness for Substance Use Disorder Treatment

Figure 2.47 shows that 38.1% of respondents reported they were considerably or extremely troubled or bothered by drug or alcohol problems in the past 30 days at intake. In the past 30 days at follow-up, 7.2% of respondents reported that they were considerably or extremely troubled or bothered by drug or alcohol problems (a significant decrease of 30.9%).

The figure below also shows that 61.8% of respondents in the past 30 days at intake and 73.2% of respondents in the past 30 days at follow-up reported that treatment for drug or alcohol problems was considerably or extremely important, which was a significant increase of 11.4%.

FIGURE 2.47. READINESS FOR TREATMENT FOR ILLICIT DRUG OR ALCOHOL USE AT INTAKE AND FOLLOW-UP (n = 475)[79]

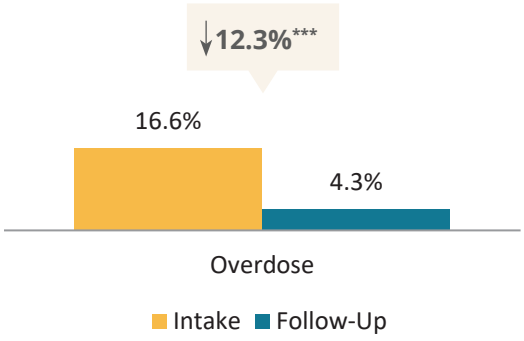


***p < .001.

Overdose in the Past 12 Months

The percentage of individuals who reported that they had experienced an overdose in the past 12 months decreased significantly from intake to follow-up (see Figure 2.48).

FIGURE 2.48. RESPONDENTS REPORTED OVERDOSE IN THE PAST 12 MONTHS AT INTAKE AND FOLLOW-UP (N = 470)[80]



***p < .001.

[79] Four respondents had missing values for the item about how important treatment for drug or alcohol problems was for them at follow-up.

[80] The following number of cases were not included in the analysis of change in overdose: 6 respondents were incarcerated all 365 days before treatment; 1 additional individual had missing data for the number of days they were incarcerated before follow-up; and an additional 8 respondents had missing data for overdose in the 12 months before follow-up.

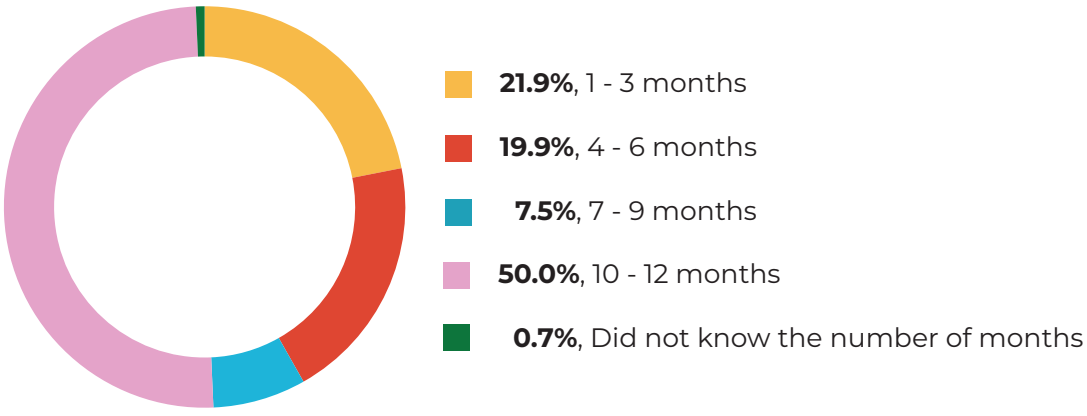
Received Medication for Opioid Use Disorder (MOUD)

At follow-up, 45.5% of respondents (n = 216) reported they had ever received MOUD for their substance use in their lifetime (see Figure 2.49). About 3 in 10 (30.7%, n = 146) reported they had received MOUD in the 12 months before follow-up.

FIGURE 2.49. RECEIVED MOUD IN LIFETIME AND DURING THE FOLLOW-UP PERIOD (N = 475)

Among the respondents who received MOUD at some point during the follow-up period, Figure 2.50 shows the distribution of the number of months respondents reported they had received MOUD during the follow-up period. Around one-fifth received MOUD for 1 – 3 months, and 4 – 6 months, while only 7.5% reported receiving MOUD for 7 – 9 months. Half of individuals reported receiving MOUD for 10 – 12 months.

FIGURE 2.50. AMONG FOLLOWED-UP RESPONDENTS WHO RECEIVED MOUD, THE NUMBER OF MONTHS THEY RECEIVED DURING THE FOLLOW-UP PERIOD (N = 145)[81]

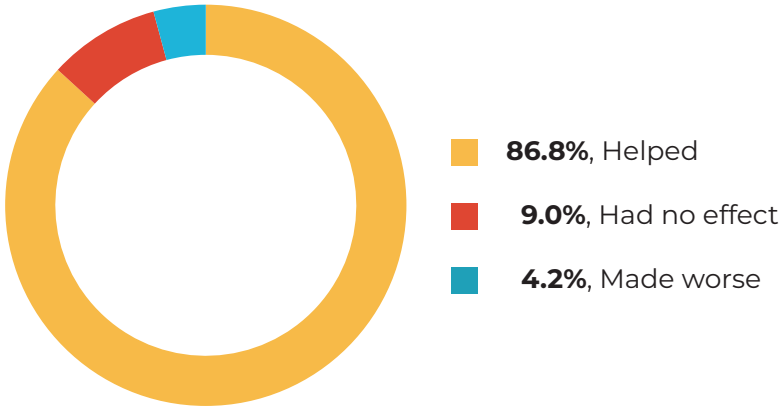


The majority of respondents who had received MOUD during the follow-up period reported that the most recent medication they had used was buprenorphine (71.9%), followed by Vivitrol (24.7%), and then methadone (3.4%; not depicted in a figure).

[81] One respondent had a missing value for the number of months they received MOUD during the 12 months before follow-up.

The majority of individuals who received MOUD during the follow-up period reported the prescribed medication helped with their drug use problems (86.8%), 9.0% reported the prescribed medication had no effect on their drug use problems (see Figure 2.51). A small minority (4.2%) reported the prescribed medication made their drug use problems worse.

FIGURE 2.51. AMONG FOLLOWED-UP RESPONDENTS WHO RECEIVED MOUD, PERCEIVED HELPFULNESS OF THE PRESCRIBED MEDICATION (N = 144)[82]



Nicotine Use

Past-12-month Smoking, Smokeless Tobacco, and Vaporized Nicotine Use

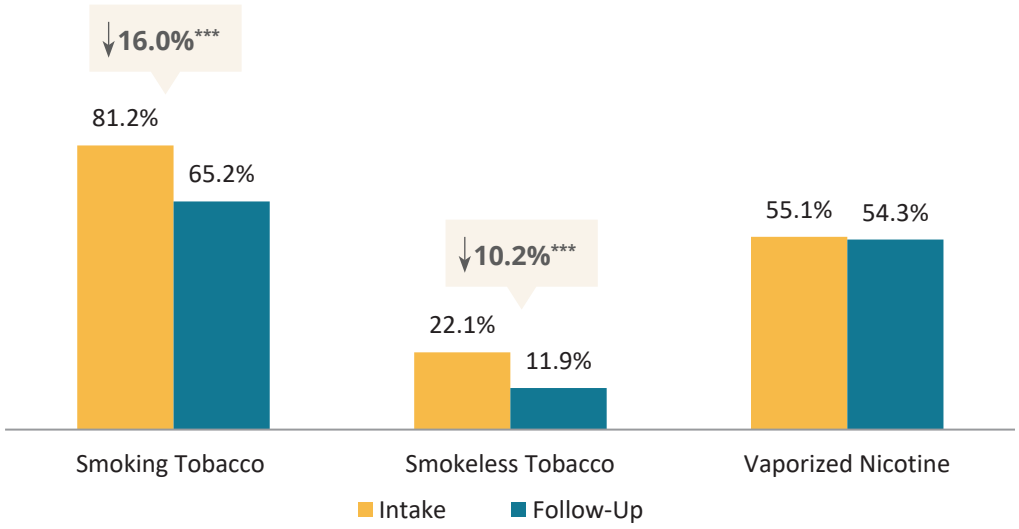
At intake, respondents were asked how old they were when they first began to smoke tobacco regularly (i.e., daily). On average, KTOS respondents reported they were 15.8 years old when they started smoking tobacco regularly (not depicted in figure).[83]

Past-12-month smoking tobacco and smokeless tobacco use significantly decreased from intake to follow-up while use of vaporized nicotine (e.g., e-cigarettes) remained stable (see Figure 2.52). Most respondents reported smoking tobacco in the 12 months before entering treatment (81.2%) and in the 12 months before follow-up (65.2%). A minority of respondents reported using smokeless tobacco in the 12 months before entering treatment and follow-up. More than one-half of respondents (55.1%) reported using vaporized nicotine in the 12 months before entering treatment and in the 12 months before follow-up (54.3%).

[82] Two individuals had missing data for about the perceived helpfulness of MOUD.

[83] Of individuals in the follow-up sample, 58 reported they had never smoked regularly, so they were not included in the analysis.

FIGURE 2.52. CHANGE IN PAST-12-MONTH TOBACCO AND VAPORIZED NICOTINE USE FROM INTAKE TO FOLLOW-UP (n = 470)[84]

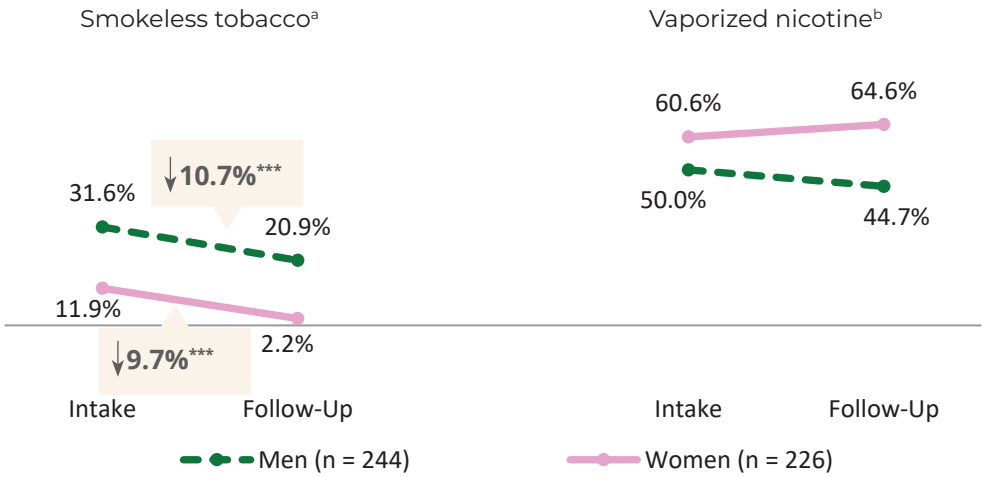


***p < .001.

Gender Differences in Past-12-month Smokeless Tobacco and Vaporized Nicotine

A significantly higher percentage of men reported using smokeless tobacco at intake and follow-up relative to women (see Figure 2.53). There was a significant decrease in the percentage of men and women who reported using smokeless tobacco from intake to follow-up. A significantly higher percentage of women reported using vaporized nicotine in the 12 months before entering treatment and before follow-up compared to men. There was no significant change in the percentage of women and men who reported using vaporized nicotine products from intake to follow-up.

FIGURE 2.53. GENDER DIFFERENCES IN PAST-12-MONTH SMOKELESS TOBACCO AND VAPORIZED NICOTINE USE FROM INTAKE TO FOLLOW-UP (n=470)a,b



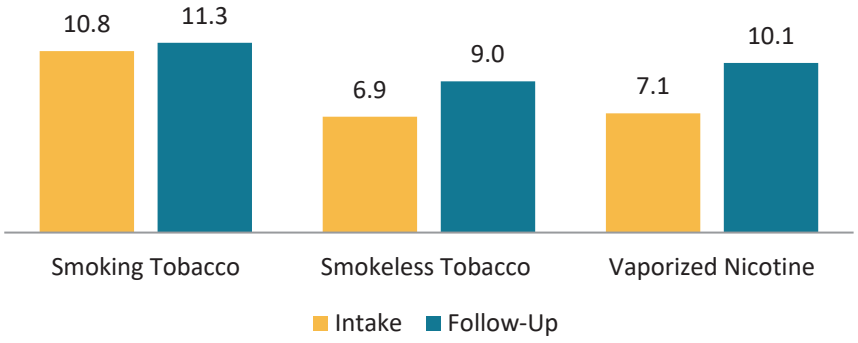
a—Significant difference by gender at intake and follow-up (p < .001).
b—Significant difference by gender at intake (p < .05) and follow-up (p < .001).

[84] One respondent had missing data for smoking tobacco use in the 12 months before follow-up.

Average Number of Months of Smoking, Smokeless Tobacco, and Vaporized Nicotine Use

Figure 2.54 shows the average number of months respondents who smoked tobacco or used smokeless tobacco or vaporized nicotine products reported using tobacco at intake and follow-up. Among the respondents who reported smoking tobacco in the 12 months before entering treatment (n = 381), they reported using tobacco, on average, 10.8 months. Of the respondents who reported using smoking tobacco in the 12 months before follow-up (n = 306), they reported using, on average, 11.3 months. Among the respondents who reported using smokeless tobacco in the 12 months before entering treatment (n = 104), they reported using it, on average, 6.9 months. Among the respondents who reported using smokeless tobacco in the 12 months before follow-up (n = 56), they reported using it, on average, 9.0months. Among the respondents who reported using vaporized nicotine in the 12 months before entering treatment (n = 259), they reported using it, on average, 7.1 months. Of the individuals who reported using vaporized nicotine products in the 12 months before follow-up (n = 255), they reported using them, on average, 10.1 months.

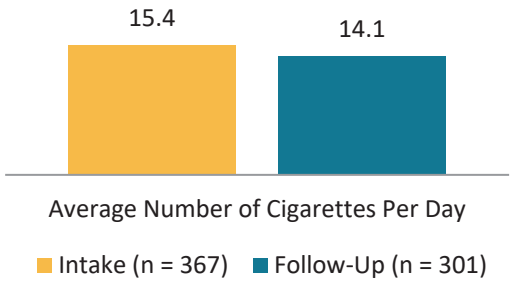
FIGURE 2.54. AVERAGE NUMBER OF MONTHS OF SMOKING TOBACCO, SMOKELESS TOBACCO, AND VAPORIZED NICOTINE USE



Average Number of Cigarettes Smoked

The average number of cigarettes respondents reported smoking at intake and follow-up remained relatively stable (see Figure 2.55). Among respondents who smoked tobacco in the 12 months before entering treatment, they reported smoking an average of 15.4 cigarettes per day. At follow-up, among respondents who reported smoking tobacco, they reported smoking an average of 14.1 cigarettes per day.

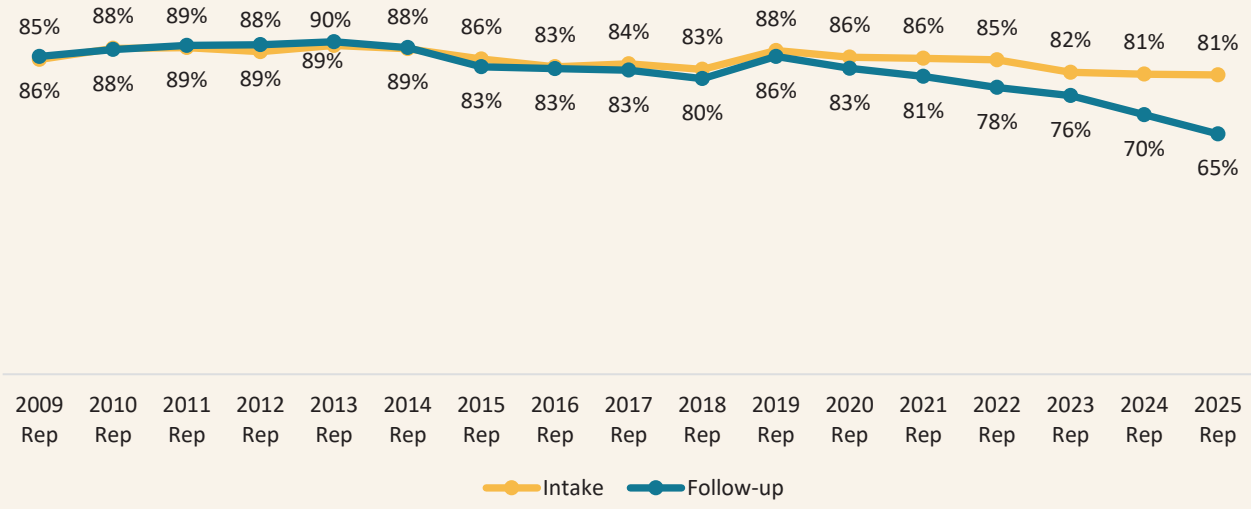
FIGURE 2.55. NUMBER OF CIGARETTES SMOKED IN AN AVERAGE DAY AMONG RESPONDENTS WHO SMOKED TOBACCO[85]



Trends in Past-12-month Smoking Tobacco Use

The majority of KTOS respondents at intake and follow-up reported smoking tobacco. The percentage of respondents reporting smoking tobacco use at either intake or follow-up has remained between a low of 65% at follow-up in this year's report and a high of 90% at follow-up in Rep 2023. The percentage of KTOS respondents who report smoking tobacco at follow-up has been significantly lower than the percentage at intake since the 2022 report. During this same period, the percentage of respondents using vaporized nicotine has increased.

FIGURE 2.56. TRENDS IN SMOKING TOBACCO USE AT INTAKE AND FOLLOW-UP, REPORTS 2009 - 2025

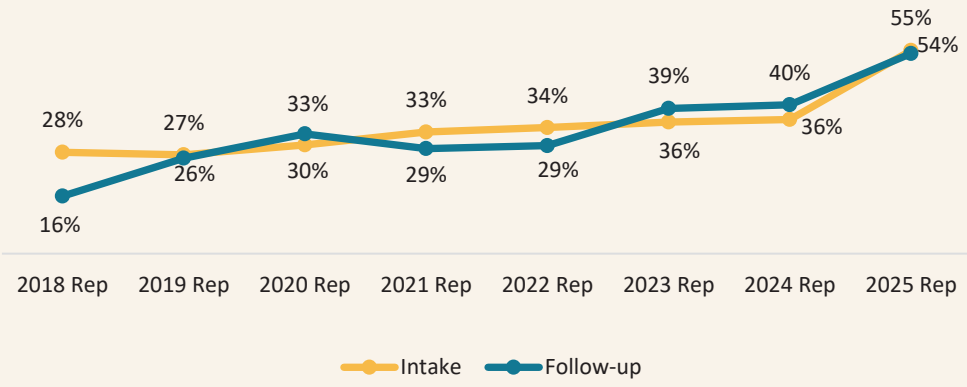


[85] Fourteen respondents had missing data for number of cigarettes smoked at intake, and 5 respondents had missing data for number of cigarettes smoked at follow-up.

Trends in Past-12-month Vaporized Nicotine Use

KTOS respondents have been providing data about their use of vaporized nicotine since the 2018 report. The percentage of KTOS respondents who reported past-12-month use of vaporized nicotine at intake has increased from 28% in the 2018 report to 3655% in this year's report. The percentage of respondents reporting vaporized nicotine use at follow-up has also increased over time, from 16% in the 2018 report to 54% in this year's report.

FIGURE 2.57. TRENDS IN VAPORIZED NICOTINE USE AT INTAKE AND FOLLOW-UP, REPORTS 2018 - 2025

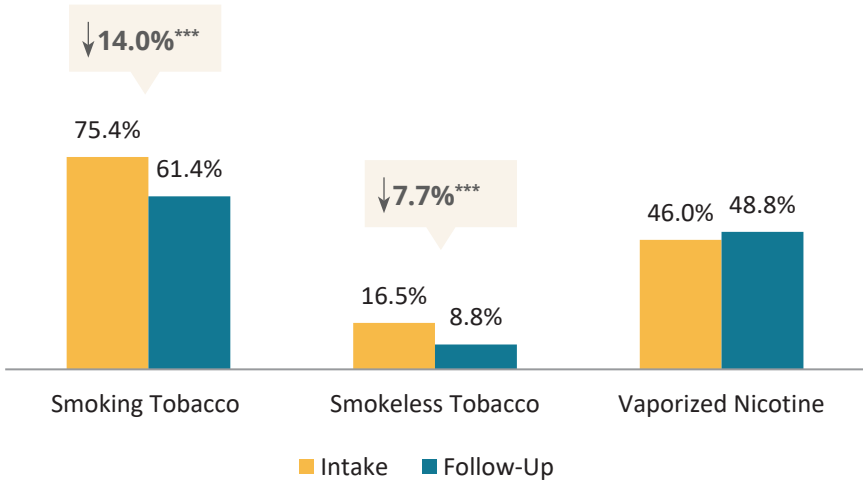


Past-30-day Smoking Tobacco, Smokeless Tobacco, and Vaporized Nicotine Use

The percentage of respondents who reported any past-30-day smoking tobacco significantly decreased from intake (75.4%) to follow-up (61.4%; see Figure 2.58). Past-30-day use of smokeless tobacco also decreased significantly intake to follow-up. The percentage of respondents who used vaporized nicotine did not change significantly from intake to follow-up.

> "It was just a perfect fit for me and they were there for me in every way they could. They really cared about the patients."
>
> — KTOS RESPONDENT

FIGURE 2.58. PAST-30-DAY SMOKING, SMOKELESS TOBACCO, AND VAPORIZED NICOTINE USE AT INTAKE AND FOLLOW-UP (N = 400)[86]

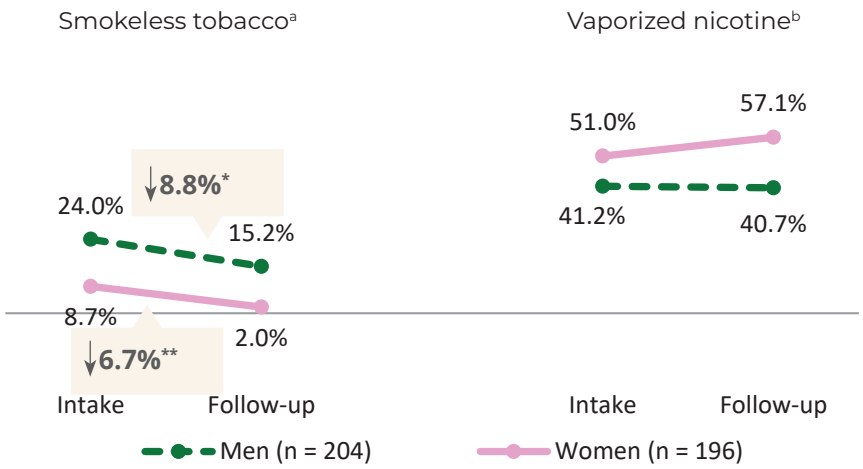


***p < .001.

Gender Differences in Past-30-day Smokeless Tobacco and Vaporized Nicotine Use

Significantly more men than women reported using smokeless tobacco in the 30 days before intake and follow-up (see Figure 2.59). There was a significant decrease in the percentage of men and women who reported past-30-day smokeless tobacco use. The percentage of women who reported using vaporized nicotine in the past 30 days was significantly higher than the percentage of men at intake and follow-up. There was no significant change in the percentage of women and men who used vaporized nicotine from intake to follow-up.

FIGURE 2.59. GENDER DIFFERENCES IN THE PAST-30-DAY SMOKELESS TOBACCO AND VAPORIZED NICOTINE AT INTAKE AND FOLLOW-UP



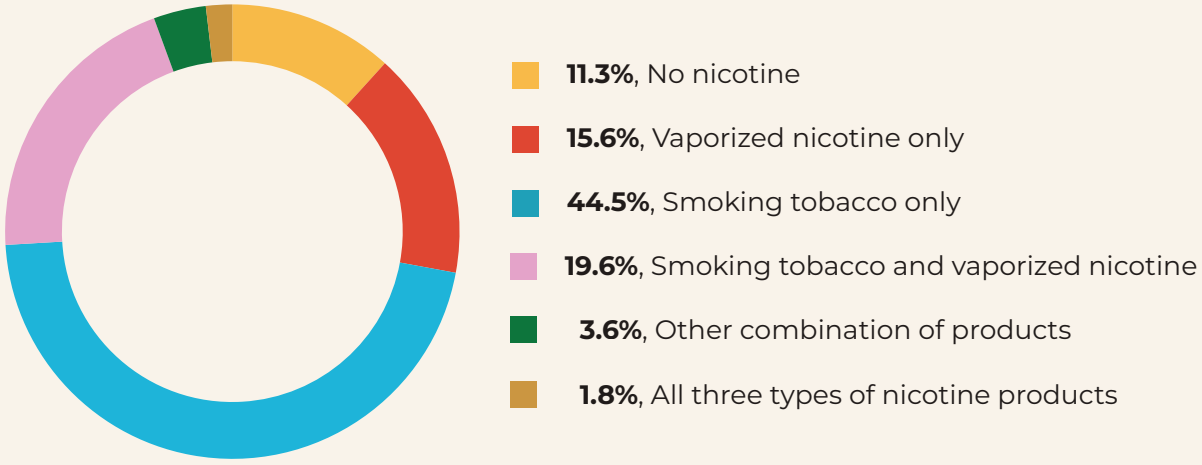
a—Significant difference by gender at intake (p < .001) and follow-up (p < .001).
b—Significant difference by gender at intake (p < .05) and follow-up (p < .001).
*p < .05, **p < .01.

[86] One respondent had missing data for smoking tobacco use in the 30 days before follow-up.

Taking a Closer Look at Nicotine Use at Follow-up

Among individuals who completed the follow-up survey, the vast majority reported using nicotine in the 30 days before follow-up; only 11.3% reported no use of nicotine products (see Figure 2.60). The most frequently reported type of nicotine use was smoking tobacco only (44.5%), followed by smoking tobacco and vaporized nicotine use (19.6%), and then vaporized nicotine use only (15.6%).

FIGURE 2.60. TYPES OF NICOTINE USE REPORTED IN THE 30 DAYS BEFORE FOLLOW-UP



SECTION 3. BIVARATE AND MULTIVARIATE ANALYSIS OF FACTORS ASSOCIATED WITH RETURN TO SUBSTANCE USE

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

KTOS respondents who reported using any illicit drugs and/or engaged in problem alcohol use (i.e., alcohol to intoxication or binge drinking) in the 12 months before follow-up (n = 163, 34.3%) were compared to respondents who did not report use of any drugs or alcohol in the 12 months before follow-up (n = 312, 65.7%) in bivariate statistical tests. Several factors measured at intake were significantly associated with return to use in the follow-up period (see Table 3.1): met criteria for moderate or severe SUD (per DSM-5 symptom criteria), number of mental health symptoms, and quality of life rating. Specifically, more individuals who reported return to use (illicit drug use/problem alcohol use) at follow-up met criteria for a moderate or severe SUD at intake compared to individuals who did not report illicit drug use or problem alcohol use at follow-up. Also, individuals who reported return to use had significantly higher number of mental health symptoms and lower quality of life at intake compared to individuals who reported no return to use at follow-up.

TABLE 3.1. BIVARIATE COMPARISON OF TARGETED FACTORS BY RETURN TO USE VS. NO RETURN TO USE

	Used illicit drugs or engaged in problem alcohol in the 12 months before follow-up (n = 163)	Did not use illicit drugs or engage in problem alcohol use in the 12 months before follow-up (n = 312)
Average age at intake	37.0	38.3
Male	53.4%	51.3%
Met criteria for moderate or severe SUD per DSM-5*	73.0%	62.2%
Number of nights incarcerated in the 12 months before intake	30.1	38.8
Number of months employed in the 12 months before intake[a]	5.0	5.4
Average number of mental health symptoms (depression and anxiety) reported at intake***	9.8	7.6
Number of people client could count on for recovery support at intake	5.8	6.4
Average quality of life rating at intake***	6.6	7.3
Average number of adverse childhood experiences	4.5	4.0

a—The following number of cases had missing values for number of months employed: 34 among individuals who used illicit drugs/engaged in problem alcohol use before follow-up and 63 among individuals who did not use illicit drugs/engaged in problem alcohol use before follow-up.
*p < .05, ***p < .001.

These same factors in Table 3.1, except number of months of employment (because there were so many cases with missing values) were included in a logistic regression to examine which factors were significantly associated with return to use, after controlling for other factors. In addition, program completion/involvement in SUD treatment at follow-up was added to the logistic regression model as a predictor variable. Any illicit drug or problem alcohol use in the 12-month follow-up period was the dependent variable.

Results of the logistic regression show that when controlling for other variables in the model, gender, number of depression and anxiety symptoms at intake, quality of life at intake, and completing or still being involved with SUD treatment at follow-up were significantly associated with illicit drug and/or problem alcohol use in the follow-up period (see Table 3.2). Controlling for the other targeted factors included in the logistic regression, female respondents had .608 lower odds of reporting illicit drug use and/or problem alcohol use during the follow-up period relative to male respondents. For every increase in 1 unit of depression and anxiety symptoms in the 12-month period before intake, individuals had a 5.5% increase in the odds of reporting return to use in the 12-month follow-up period. Individuals with higher ratings of quality of life at intake had lower odds of reporting illicit drug/problem alcohol use at follow-up. Individuals who completed treatment or were still involved in SUD treatment at follow-up had .409 lower odds of reporting return to substance use at follow-up relative to individuals who did not complete SUD treatment.

TABLE 3.2. ASSOCIATION OF TARGETED FACTORS AND RETURN TO USE (N = 463)[87]

				95% CI	
Factors at intake	B	Wald	Odds ratio	Lower	Upper
Age	-.014	1.916	.986	.967	1.006
Gender [1 = Male, 2 = Female]	-.498	4.961	.608*	.392	.942
Number of nights incarcerated	-.002	2.226	.998	.995	1.001
Number of depression and anxiety symptoms	.054	6.896	1.055**	1.014	1.099
Number of people respondent could count on for recovery support	-.006	.311	.994	.972	1.016
Quality of life rating	-.114	4.271	.893*	.801	.994
Number of adverse childhood experiences	.000	.000	1.000	.929	1.077
Completed or still involved in SUD treatment	-.893	12.986	.409***	.252	.665

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

[87] Twelve cases had missing values for program completion.

SECTION 4. MENTAL HEALTH, PHYSICAL HEALTH, AND INTERPERSONAL VICTIMIZATION

This section examines changes in mental health symptoms, physical health, and interpersonal victimization from intake to follow-up. Specifically, this subsection examines: (1) depression, (2) generalized anxiety, (3) comorbid depression and generalized anxiety, (4) suicide ideation and attempts, (5) posttraumatic stress disorder, (6) perceptions of poor physical and mental health, (7) health status, (8) chronic pain, (9) health insurance, and (10) interpersonal victimization experiences. Mental health and physical health questions in the KTOS intake and follow-up surveys were self-report measures.

Depression Symptoms

To assess depression, first respondents were 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 General Anxiety Disorder

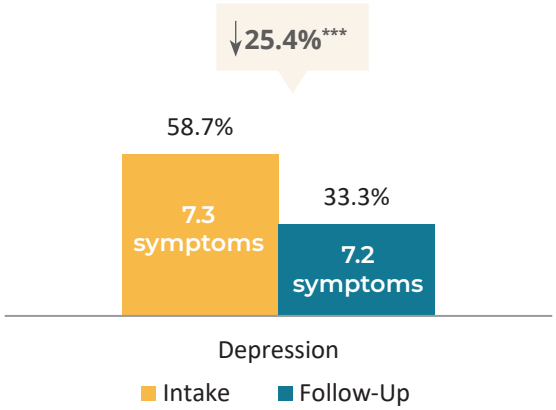
To meet study criteria for general anxiety disorder, respondents had to say "yes" to the one screening question and at least 3 of the other 6 symptoms. Thus, minimum score to meet study criteria: 4 out of 7.

If respondents 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).

More than half of respondents (58.7%) met criteria for depression in the 12 months before they entered treatment (see Figure 4.1). At follow-up, one-third of respondents met criteria for depression—a significant decrease of 25.4%. Of those who met study criteria at intake (n = 279), they had an average of 7.3 symptoms out of 9. At follow-up, among those who met study criteria for depression (n = 158),[88] respondents reported an average of 7.2 symptoms out of 9.

[88] Three individuals had missing data on at least one of the items used to measure depression at follow-up; thus, they were excluded from the analysis of mean number of depression symptoms at follow-up.

FIGURE 4.1. MEETING STUDY CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP (N = 475)

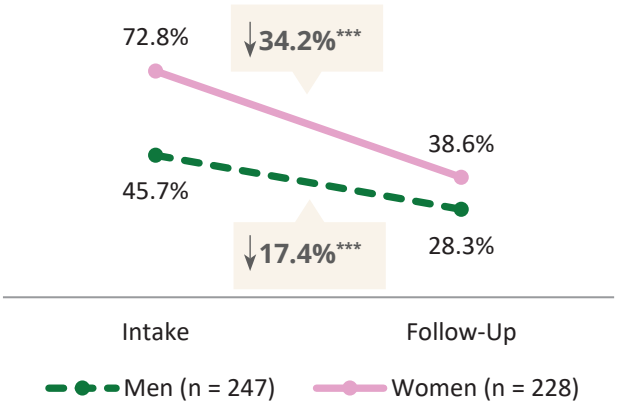


***p < .001.

Gender Difference in Depression

Significantly more women met study criteria for depression at intake and follow-up compared to men. At intake, 72.8% of women met study criteria compared to 45.7% of men. The number of women and men who met criteria for depression decreased significantly 34.2% and 17.4% respectively (see Figure 4.2).

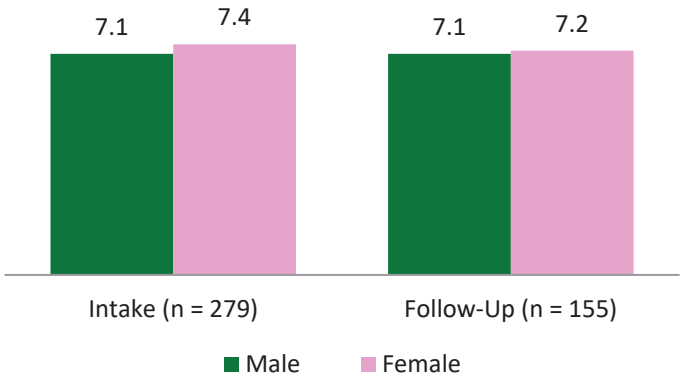
FIGURE 4.2. GENDER DIFFERENCE IN PERCENT OF RESPONDENTS MEETING STUDY CRITERIA FOR DEPRESSION[a]



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

Among individuals who met study criteria for depression at intake, women reported more depression symptoms than men (7.4 vs. 7.1; see Figure 4.3). There was no significant difference in depression symptoms by gender at intake or follow-up.

FIGURE 4.3. GENDER DIFFERENCE IN NUMBER OF DEPRESSION SYMPTOMS REPORTED BY THOSE WHO MET STUDY CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP[a]

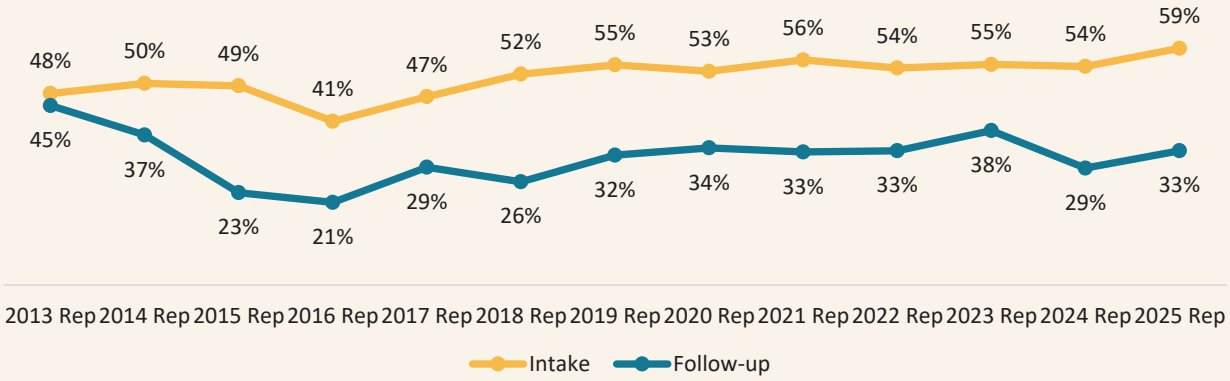


a – To meet study criteria, a client had to endorse at least 5 of 9 depression symptoms.

Trends in Past-12-month Depression

In the past 13 annual reports, the percent of respondents who met criteria for depression at intake has been between a low of 41% in the 2016 report and a high of 59% in the 2025 report. The percent of respondents who met criteria for depression at follow-up decreased from a high of 45% in the 2013 report to 21% in the 2016 report. In all reports, except 2013, the percent of individuals who met criteria for depression decreased from intake to follow-up.

FIGURE 4.4. TRENDS IN THE NUMBER OF RESPONDENTS MEETING STUDY CRITERIA FOR DEPRESSION AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Anxiety Symptoms

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

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

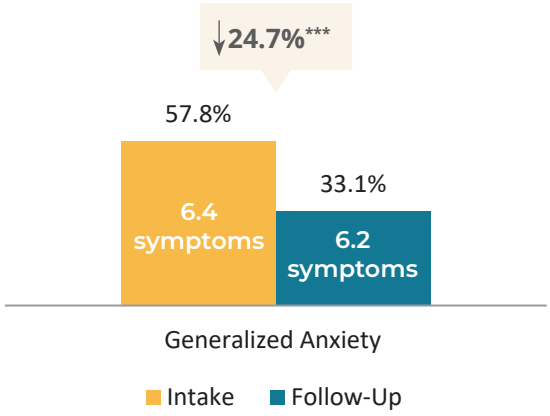
Study Criteria for General Anxiety Disorder

To meet study criteria for general anxiety disorder, respondents 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.

Respondents 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).

In the 12 months before entering treatment, more than half of respondents reported symptoms that met study criteria for generalized anxiety (57.8%; see Figure 4.5). By follow-up, the percent of respondents meeting study criteria for generalized anxiety had decreased by 24.7% to 33.1%. At intake, among those who met study criteria for generalized anxiety (n = 274), respondents reported an average of 6.4 symptoms out of 7. Among those who met study criteria for generalized anxiety at follow-up (n = 157), respondents reported an average of 6.2 symptoms out of 7.

FIGURE 4.5. RESPONDENTS MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N = 474)[89]



***p < .001.

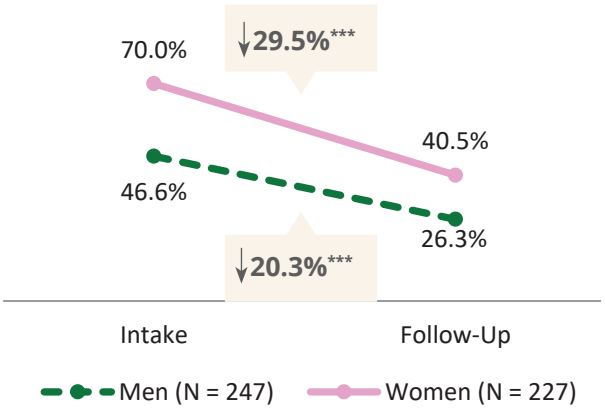
Gender Difference in Generalized Anxiety Symptoms

Significantly more women met criteria for generalized anxiety at intake compared to men (see Figure 4.6). The percent of women and men who met criteria for

[89] One individual has missing values for generalized anxiety at follow-up.

generalized anxiety decreased significantly from intake. At follow-up, there was also gender differences in meeting criteria for generalized anxiety.

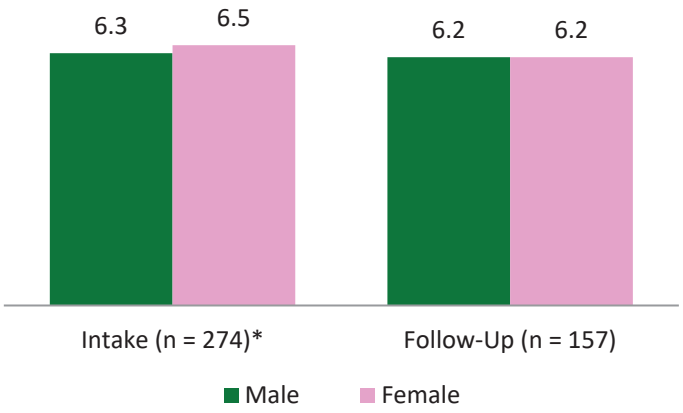
FIGURE 4.6. GENDER DIFFERENCE IN PERCENT OF RESPONDENTS MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY[a]



a—Statistical difference by gender at intake ($p < .001$) and follow-up ($p < 0.01$)
***$p < .001$.

Among individuals who met study criteria for generalized anxiety at intake, women reported significantly more anxiety symptoms than men (6.5 vs. 6.3) (see Figure 4.7). There was no significant difference in anxiety symptoms by gender at follow-up.

FIGURE 4.7. GENDER DIFFERENCE IN NUMBER OF GENERALIZED ANXIETY SYMPTOMS REPORTED BY THOSE WHO MET STUDY CRITERIA FOR GENERALIZED ANXIETY DISORDER AT INTAKE AND FOLLOW-UP[a]

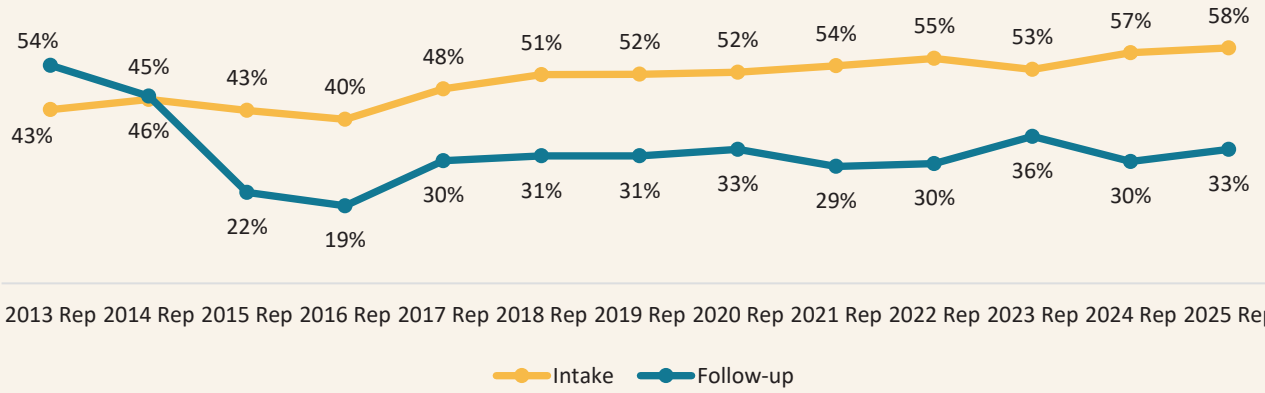


a – To meet study criteria, a client had to endorse at least 4 of 7 anxiety symptoms.
*$p < .05$.

Trends in Past-12-month Generalized Anxiety

The percent of respondents who met criteria for generalized anxiety at intake has steadily and gradually increased over the past 13 annual reports. The percent of respondents who met study criteria for generalized anxiety at follow-up decreased from the 2013 report through the 2016 report, but was in the low 30s from the 2017 report through the 2022 report, and again in the 2024 and 2025 reports. In the 2023 report, 36% of respondents met study criteria for generalized anxiety. For the past 11 annual reports, there have been significant decreases in the percent of individuals meeting criteria for generalized anxiety from intake to follow-up

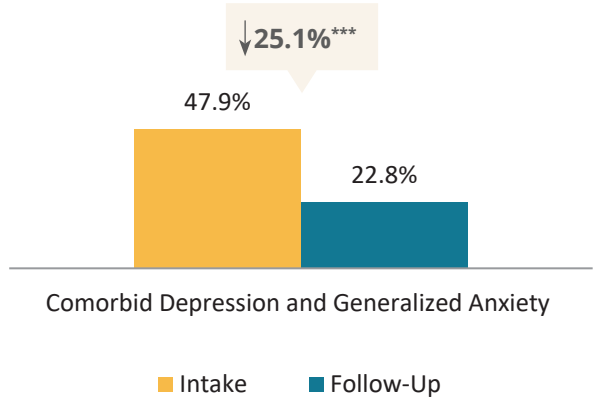
FIGURE 4.8. TRENDS IN THE NUMBER OF RESPONDENTS MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Comorbid Depression and Anxiety Symptoms

Figure 4.9 shows that at intake, 47.9% of respondents met study criteria for both depression and generalized anxiety and there was a significant 25.1% decrease in the percent of individuals who met study criteria for depression and generalized anxiety at follow-up (22.8%).

FIGURE 4.9. RESPONDENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP (N =474)

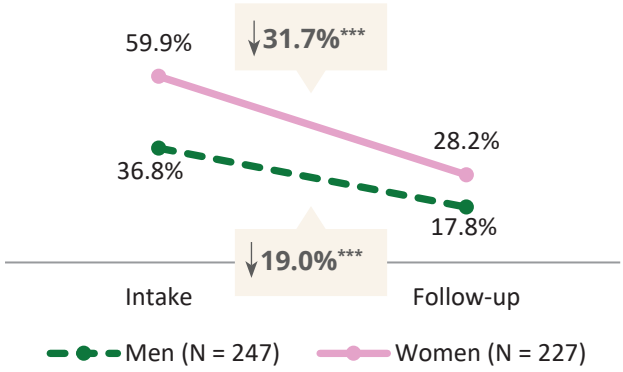


***p < .001.

Gender Difference in Comorbid Depression and Generalized Anxiety Symptoms

A significantly higher percentage of women met criteria for comorbid depression and generalized anxiety at intake and follow-up compared to men (see Figure 4.10). The percentage of women and men who met criteria for depression and generalized anxiety decreased significantly by 31.7% and 19% respectively.

FIGURE 4.10. GENDER DIFFERENCE IN PERCENT OF RESPONDENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]



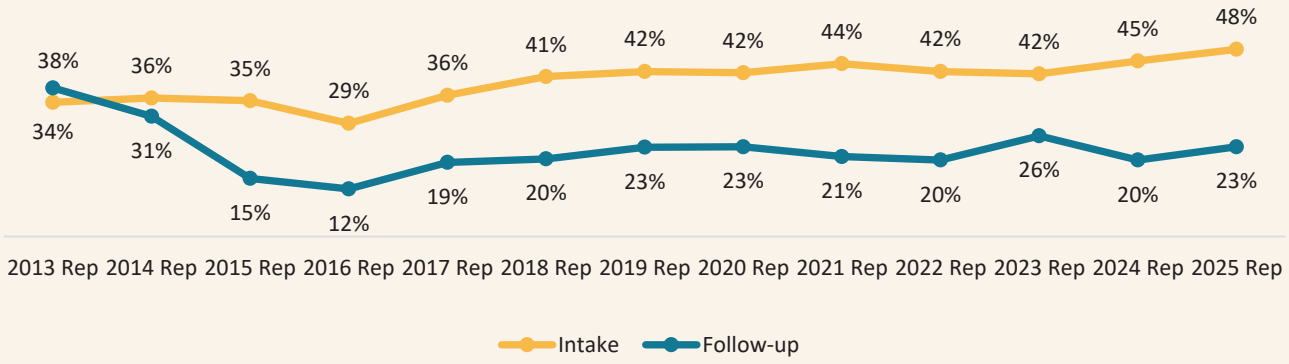
a—Statistical difference by gender at intake (p<.001) and follow-up (p<0.01)
***p < .001.

> "I felt like the instructors really cared and that made me want to try harder and they let everyone have their own opinion. There were a few [clients] that did not really care, but the teachers were able to change that"
>
> — KTOS RESPONDENT

Trends in Comorbid Depression and Anxiety

Past-13-year trends for comorbid depression and anxiety show that beginning in the 2015 report the percentage of respondents who reported meeting criteria for comorbid depression and anxiety was significantly higher at intake than at follow-up. At follow-up, however, the percentage of respondents meeting criteria for comorbid depression and anxiety was relatively stable from the 2017 report through the 2022 report. In the 2023 report, there was an increase in the percentage of respondents with comorbid depression and anxiety at follow-up (26%), and then a decrease to 20% in 2024 and 23% in the 2025 reports.

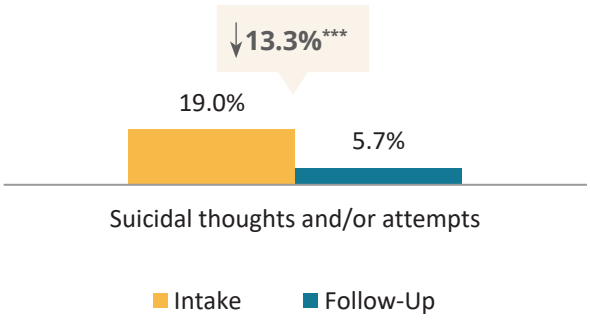
FIGURE 4.11. TRENDS IN THE PERCENT OF RESPONDENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND ANXIETY AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Suicidal Thoughts and/or Attempts

Suicide ideation and suicide attempts were measured with self-reported questions about thoughts of suicide and actual attempts of suicide. In the 12 months before entering treatment, 19.0% of respondents reported thoughts of suicide or attempted suicide and 5.7% of respondents reported thoughts of suicide or attempted suicide in the 12 months before follow-up. There was a decrease of 13.3% from intake to follow-up in the number of respondents reporting suicidal thoughts and attempts (see Figure 4.12).

FIGURE 4.12. RESPONDENTS REPORTING SUICIDAL THOUGHTS AND/OR ATTEMPTS AT INTAKE AND FOLLOW-UP (N = 474)[90]



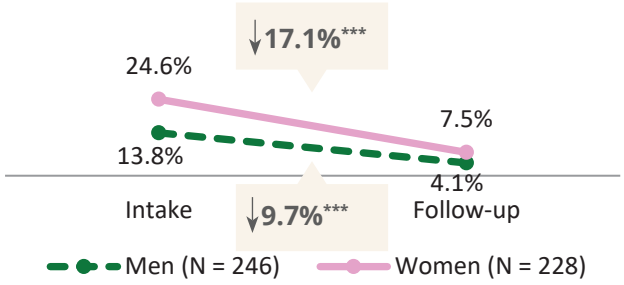
***p < .001.

[90] One individual has missing values for suicidality at follow-up.

Gender Difference in Suicidality

A significantly higher percentage of women (24.6%) reported suicidal thoughts and/or attempts in the 12 months before entering treatment when compared to men (13.8%; see Figure 4.13). The percentage of women and men who reported suicidality decreased significantly from intake to follow-up by 17.1% and 9.7% respectively. At follow-up, there was no gender difference.

FIGURE 4.13. GENDER DIFFERENCE IN PERCENT OF RESPONDENTS MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY AT INTAKE AND FOLLOW-UP[a]

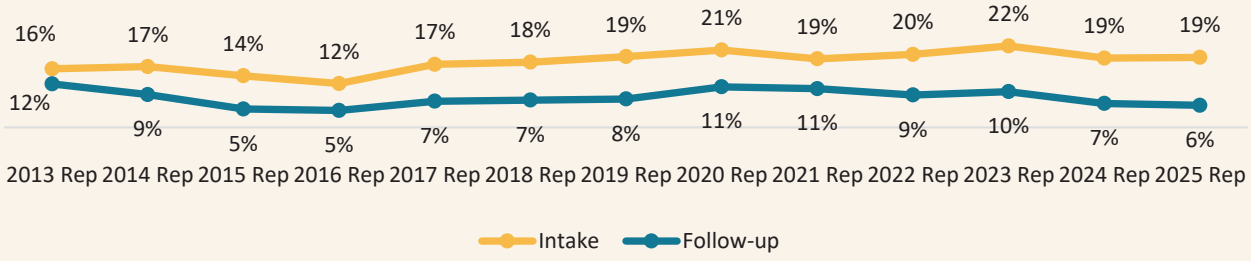


a—Statistical difference by gender at intake (p<.01).
***p < .001.

Trends in Past-12-month Suicidal Thoughts and/or Attempts

The percentage of respondents who reported suicidal ideation and attempts at intake was a low of 12% in the 2016 report and a high of 22% in the 2023 report. The percentage of respondents reporting suicidal ideation and attempts at follow-up was a high of 12% in the 2013 report and a low of 5% in the 2015 and 2016 reports.

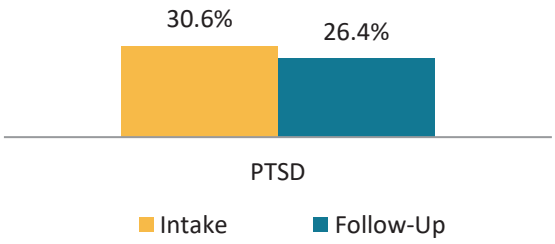
FIGURE 4.14. TRENDS IN THE NUMBER OF RESPONDENTS REPORTING SUICIDAL THOUGHTS AND/OR ATTEMPTS AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Posttraumatic Stress Disorder Symptoms

Included in the intake and follow-up surveys, respondents were asked to think about the worst experience and four items from the PTSD checklist asked about how bothered they had been about the symptoms in the prior 12 months.[91] At intake, 30.6% had a score of at least 10 on the PTSD checklist, indicating clinically significant PTSD symptoms, and at follow-up, 26.4% of respondents (see Figure 4.15). There was no significant change in the percentage of individuals who met study criteria for PTSD.

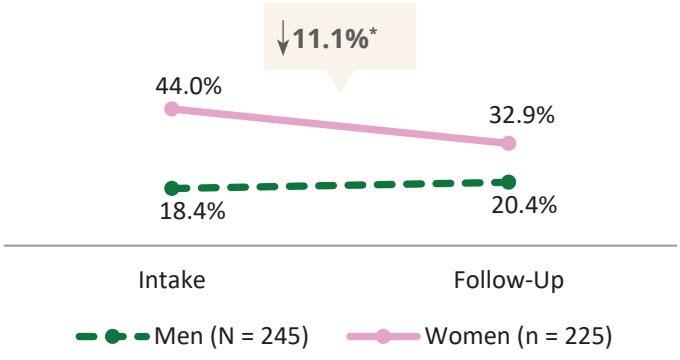
FIGURE 4.15. RESPONDENTS WHO MET STUDY CRITERIA FOR PTSD AT INTAKE AND PAST-12-MONTHS AT FOLLOW-UP (N = 470)[92]



Gender Difference in Posttraumatic Stress Disorder Symptoms

A significantly higher percentage of women met criteria for PTSD at intake and follow-up compared to men (see Figure 4.16). The percent of women who met criteria for PTSD decreased significantly from intake to follow-up. The percent of men who met criteria for PTSD did not change significantly.

FIGURE 4.16. GENDER DIFFERENCE IN PERCENT OF RESPONDENTS WHO MET STUDY CRITERIA FOR PTSD AT INTAKE AND FOLLOW-UP[a]



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

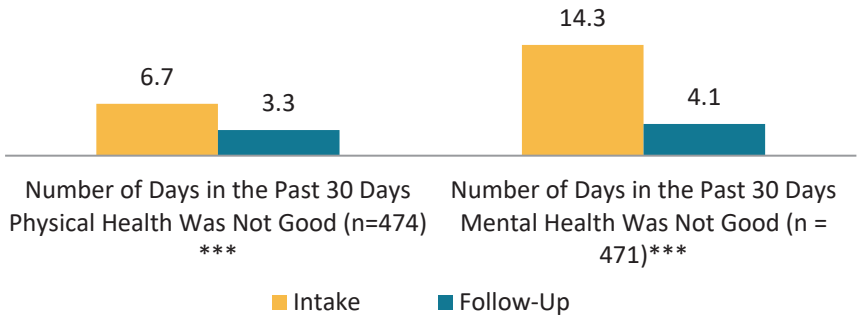
[91] Price, M., Szafranski, D., van Stolk-Cooke, K., & Gros, D. (2016). Investigation of an abbreviated 4 and 8-item version of the PTSD Checklist 5. Psychiatry Research, 239, 124-130.

[92] Five individuals had a missing value on at least one of the items about PTSD symptoms in the 12 months before follow-up.

Perceptions of Poor Physical and Mental Health

At intake and follow-up, respondents were asked how many days in the past 30 days their physical health was not good and their mental health was not good (see Figure 4.17). There was a significant decrease from intake to follow-up in the number of days respondents reported their physical health was not good (6.7 vs. 3.3). The number of days respondents' mental health was not good also decreased significantly from 14.3 at intake to 4.7 at follow-up.

FIGURE 4.17. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP[93, 94]

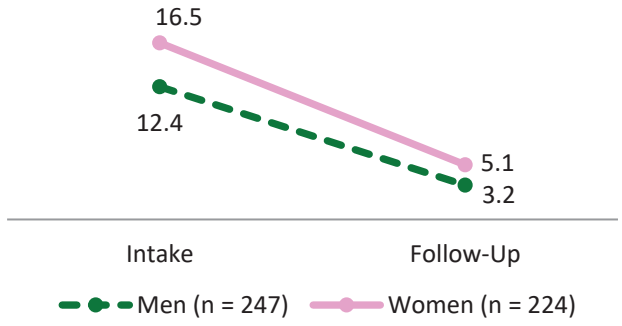


***p < .001.

Gender Difference in Perceptions of Mental Health

Women's reported average number of days their mental health was not good was significantly higher at intake and follow-up compared to men (see Figure 4.18). For both men and women, there was a significant decrease from intake to follow-up in the reported number of days their mental health was not good.

FIGURE 4.18. GENDER DIFFERENCE IN NUMBER OF DAYS IN THE PAST 30 DAYS MENTAL HEALTH WAS NOT GOOD[a,b]



a—Statistical difference by gender at intake (p < .001) and follow-up (p < .05).
b—Statistically significant decrease from intake to follow-up for men and women; tested with paired t-test (p < .001).

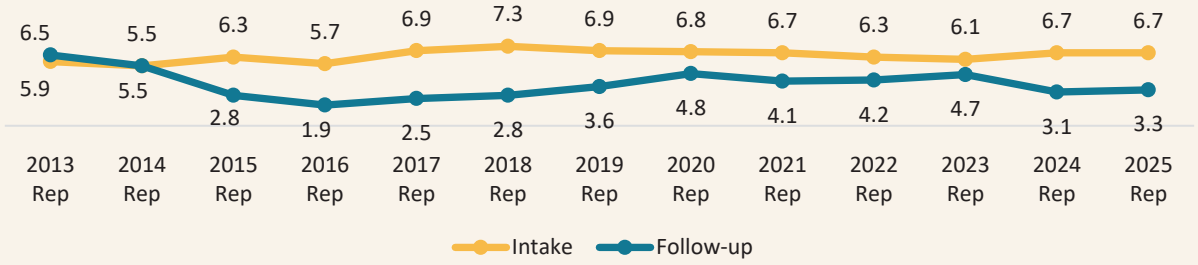
[93] One respondent had missing data for the number of days their physical health was not good at follow-up.

[94] Four respondents had missing data for the number of days their mental health was not good at follow-up.

Trends in Perceptions of Poor Physical Health

The average number of days respondents reported their physical health was not good in the past 30 days at intake has fluctuated from a low of 5.5 in the 2014 report to a high of 7.3 in the 2018 report. The average number of days respondents reported their physical health was not good in the past 30 days at follow-up has decreased from 6.5 days in the 2013 report to a low of 1.9 in the 2016 report. In the 2020 – 2023 reports, the difference between the average number of days respondents' physical health was not good at intake and follow-up was smaller than it had been since the 2014 report. However, the gap has widened in the 2024 and 2025 reports.

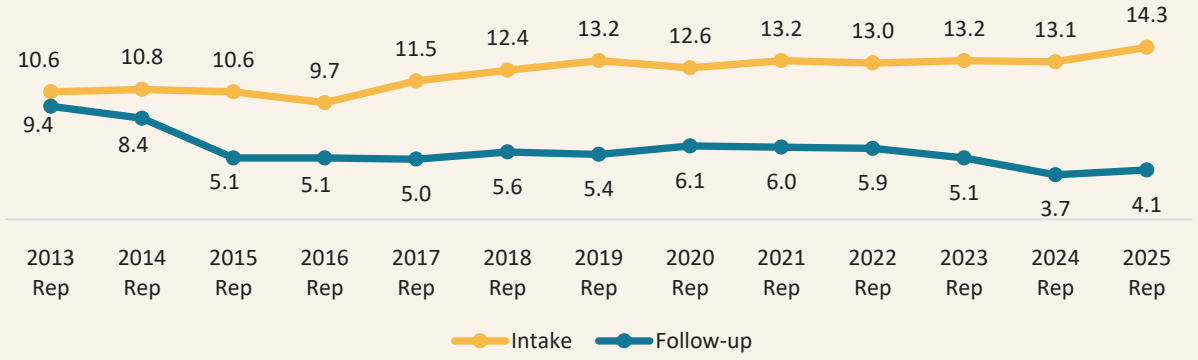
FIGURE 4.19. TRENDS IN SELF-REPORTED AVERAGE NUMBER OF DAYS OF POOR PHYSICAL HEALTH AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Trends in Perceptions of Poor Mental Health

The average number of days respondents reported their mental health was not good in the past 30 days has increased at intake in the past several years to a high of 14.3 in this year's report. At follow-up, the average number of days respondents reported their mental health was not good in the past 30 days has decreased from a high of 9.4 days in the 2013 report to a low of 3.7 in the 2024 report. The average number of days respondents' mental health was not good was 3.5 times higher at intake than at follow-up in this year's report.

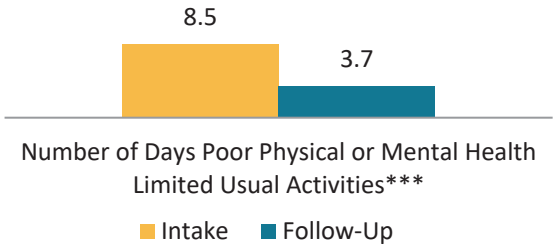
FIGURE 4.20. TRENDS IN SELF-REPORTED AVERAGE NUMBER OF DAYS OF POOR MENTAL HEALTH AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Perceptions of Poor Physical or Mental Health Limiting Activities

Respondents were also asked to report the number of days in the past 30 days poor physical or mental health had kept them from doing their usual activities. The number of days respondents reported their physical or mental health kept them from doing their usual activities decreased significantly from 8.5 days at intake to 3.7 days at follow-up (see Figure 4.21).

FIGURE 4.21. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH LIMITING ACTIVITIES IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 471)[95]

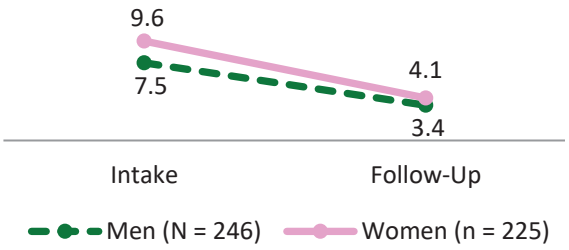


***p < .001.

Gender Difference in Perceptions of Physical or Mental Health Limiting Activities

The average number of days respondents indicated their physical or mental health had kept them from doing their usual activities was higher for women than for men at intake (see Figure 4.22). The average number of days physical or mental health kept respondents from doing their usual activities decreased significantly from intake to follow-up for men and women.

FIGURE 4.22. GENDER DIFFERENCE IN THE NUMBER OF DAYS POOR PHYSICAL OR MENTAL HEALTH LIMITED USUAL ACTIVITIES[a,b]



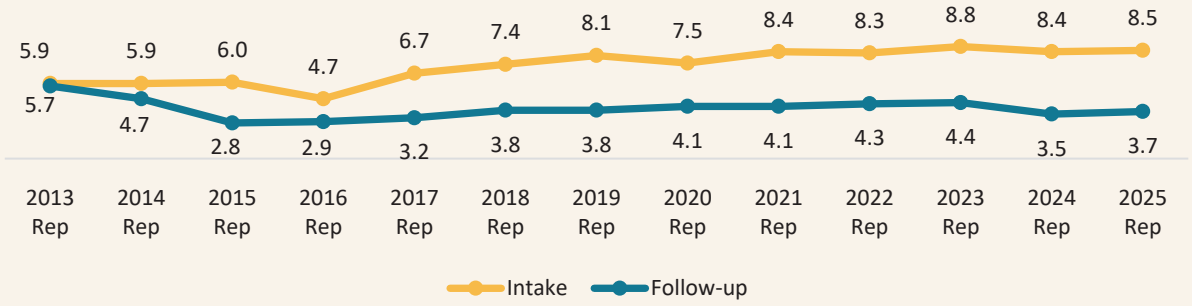
a—Statistical difference by gender at intake (p < .05).
b – Significant decrease from intake to follow-up for men (p < 0.001) and women (p < .001).

[95] Four respondents had missing data for the question about perceptions of their physical or mental health limiting their activities at follow-up.

Trends in Number of Days Poor Physical or Mental Health Kept Client from Doing Usual Activities

The average number of days in the past 30 days respondents reported their physical or mental health kept them from doing their usual activities at intake has gradually increased from 5.9 in the 2013 report to a high of 8.8 in the 2023 report, except in the 2016 report when it decreased to 4.7 days. Since the 2017 report, the average number of days respondents reported their physical or mental health kept them from doing their usual activities in the past 30 days at follow-up has been between 3.2 to 4.4 days.

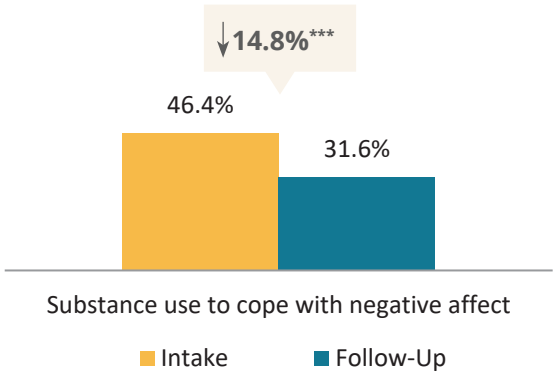
FIGURE 4.23. TRENDS IN THE NUMBER OF DAYS THEIR PHYSICAL OR MENTAL HEALTH KEEP RESPONDENT FROM DOING USUAL ACTIVITIES AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Substance Use to Cope with Negative Affect

Included in the intake and follow-up surveys was a question about how often in the past 30 days the respondent used alcohol, prescription drugs, or illicit drugs to reduce stress, anxiety, worry, sadness, or fear. Individuals who gave the following responses were recoded as having used substances to cope with negative affect: sometimes, about half the time, most of the time, almost always/always. At intake, 46.4% had used alcohol, prescription drugs, or illicit drugs to cope with negative affect, and at follow-up, significantly fewer respondents had (31.6%; see Figure 4.24).

FIGURE 4.24. RESPONDENTS WHO USED SUBSTANCES TO COPE WITH NEGATIVE AFFECT IN THE PAST 30 DAYS AT INTAKE AND FOLLOW-UP (N = 474)[96]



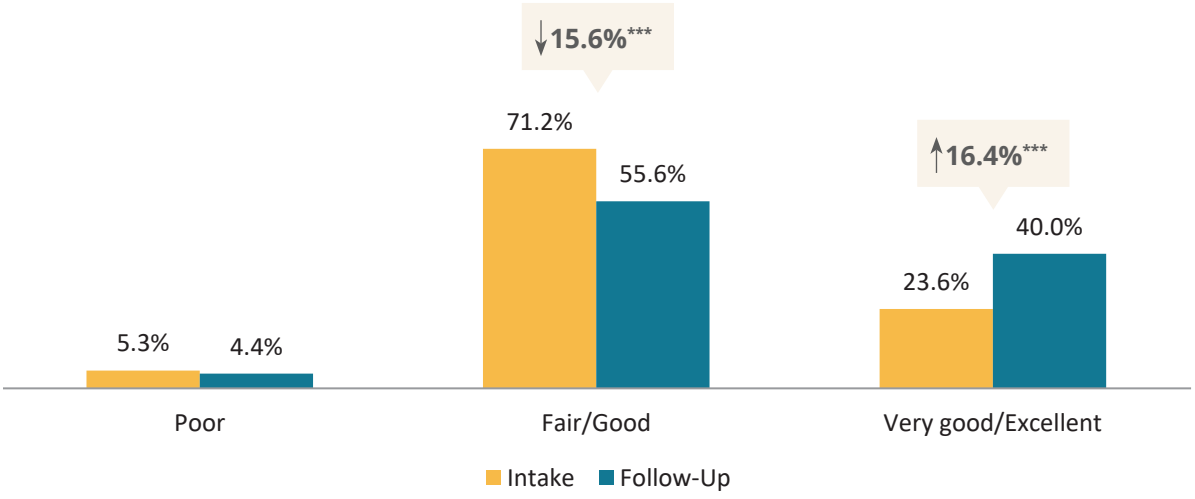
***p < .001.

Physical Health Status

General Health

At both intake and follow-up, respondents were asked to rate their general health from 1 = poor to 5 = excellent. Respondents rated their health, on average, as 2.9 at intake and this significantly increased to 3.3 at follow-up (not depicted in figure). Figure 4.25 shows that significantly more respondents rated their health as "very good" or "excellent" (40.0%) at follow-up compared to intake (23.6%). Additionally, significantly fewer respondents reported their health was "fair" or "good" at follow-up than at intake.

FIGURE 4.25. RESPONDENTS' SELF-REPORTED GENERAL HEALTH STATUS AT INTAKE AND FOLLOW-UP (N = 475)[a]



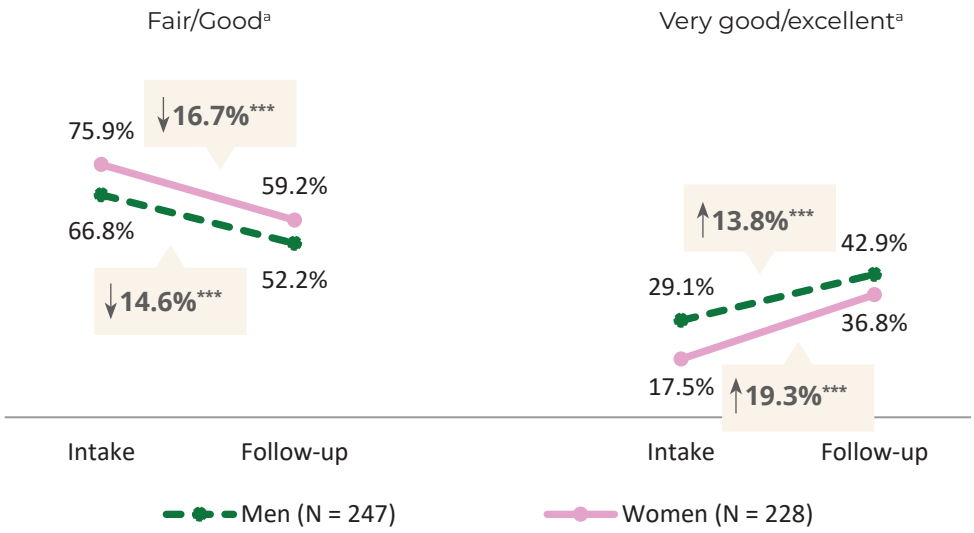
a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity (p < .001).
***p < .001.

[96] One individual had a missing value for the item at follow-up.

Gender Difference in General Health Rating

Compared to men, significantly more women reported that their health was fair/good and significantly fewer rated it as very good/excellent at intake (see Figure 4.26). There was a significant decrease in the percentage of men and women who rated their health as fair/good at intake.

FIGURE 4.26. GENDER DIFFERENCES IN RESPONDENTS' GENERAL HEALTH RATING AT INTAKE AND FOLLOW-UP[a]

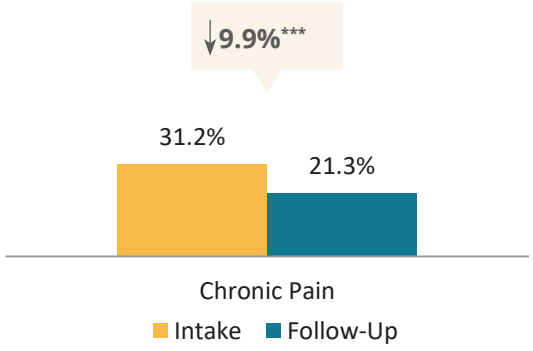


a—Statistical difference by gender at intake ($p < .01$).

Chronic Pain

At intake, around 3 in 10 respondents (31.2%) reported they had chronic pain (lasting at least 3 months) (see Figure 4.27). There was a significant decrease from intake to follow-up.

FIGURE 4.27. RESPONDENTS REPORTING CHRONIC PAIN AT INTAKE AND FOLLOW-UP (N = 474)[97]



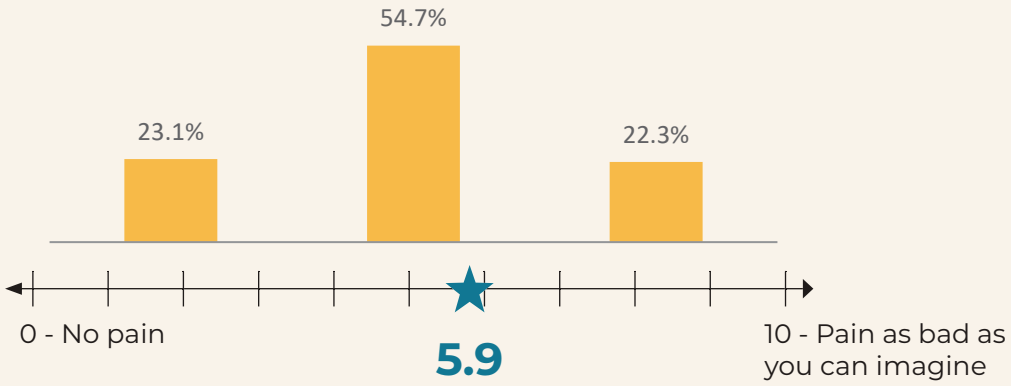
***$p < .001$.

[97] One individual had a missing value for the item at follow-up.

Taking a Closer Look at Chronic Pain

At intake, 31.2% (n = 148) of KTOS respondents reported experiencing chronic pain for at least 3 months before entering treatment. On average, respondents reported their chronic pain began at age 27.3 (ranging from ages 1 to 58).[98] In the 30 days before entering treatment, respondents experienced chronic pain, on average, 23.9 days. Respondents were also asked to rate their chronic pain on a scale from 0 (no pain) to 10 (pain as bad as you can imagine). At intake, respondents rated their pain as an average intensity of 5.9 with 22.3% of respondents giving their pain the highest ratings of 8, 9, and 10.

FIGURE 4.28. INTENSITY RATING OF CHRONIC PAIN AT INTAKE (n = 148)



Prescription Opioid Misuse and Chronic Pain

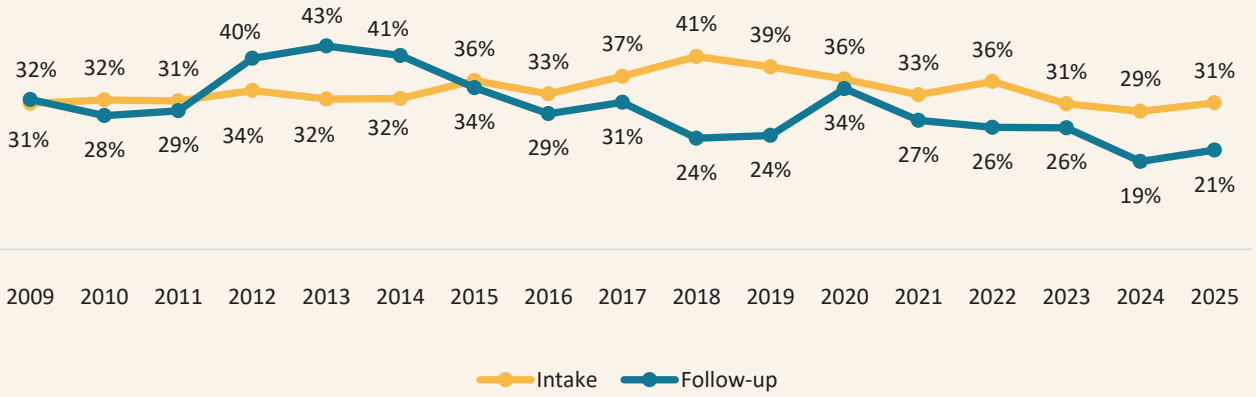
Of those who misused prescription opioids at intake (n = 127), 41.7% reported chronic pain in the 12 months before entering SUD treatment, and 23.6% experienced chronic pain at follow-up, which was a significant decrease of 18.1%.

[98] Two respondents had a missing value for the age they first experienced chronic pain.

Trends in Chronic Pain

The percentage of respondents who have reported chronic pain has fluctuated over time at intake and follow-up. Between the 2012 and 2014 reports, more respondents reported chronic pain at follow-up than at intake. In the 2018 and 2019 reports, the decrease in chronic pain from intake to follow-up was greater than in other years. In this year's report, the percentage of individuals reporting chronic pain decreased by 10%.

FIGURE 4.29. TRENDS IN THE NUMBER OF RESPONDENTS REPORTING CHRONIC PAIN AT INTAKE AND FOLLOW-UP, REPORTS 2009 - 2025

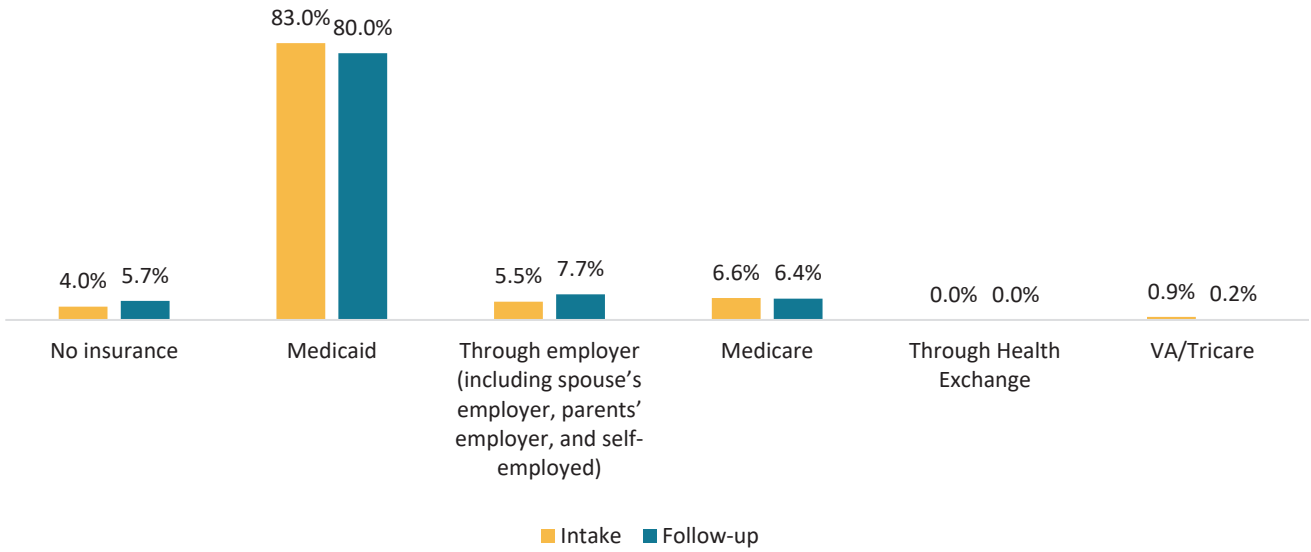


Health Insurance

At intake, most KTOS respondents reported they had health insurance through Medicaid (83.0%; see Figure 4.30). A small percentage did not have any insurance (4.0%). Small numbers of respondents had insurance through an employer, including through a spouse, parent, or self-employment (5.5%), through Medicare (6.6%), and VA/Tricare (0.9%). There was no significant change in the percentage of respondents with different types of health insurance.

> "I am still sober. I felt like it really impacted me and helped me. Everyone checked on me and helped me set goals."
>
> — KTOS RESPONDENT

FIGURE 4.30. HEALTH INSURANCE FOR KTOS RESPONDENTS AT INTAKE AND FOLLOW-UP (N = 470)[99]



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity.

A Closer Look at Insurance

Of those respondents who were employed full-time at intake (n = 135), only 13.3% had insurance through their employer. At follow-up, of those respondents employed full-time (n = 197),[100] only 15.8% had insurance through their employer.

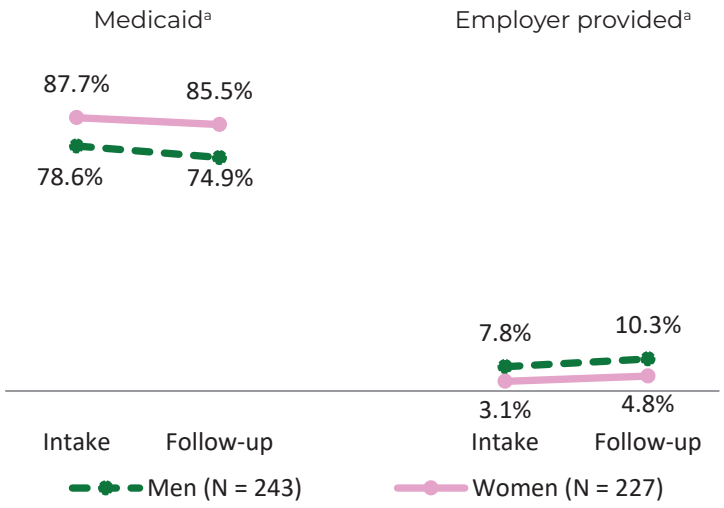
Gender Difference in Health Insurance

There was a statistically significant difference in type of health insurance by gender at follow-up. Significantly more women reported being insured by Medicaid at follow-up compared to men (see Figure 4.31). Significantly more men had health insurance through an employer-sponsored plan (including through a spouse's plan, parent's).

[99] One respondent at intake and 3 respondents at follow-up had missing data for health insurance. The missing responses are not included in this analysis.

[100] Of the 197 respondents employed full-time at follow-up, one had missing information for insurance at follow-up.

FIGURE 4.31. GENDER DIFFERENCE IN RESPONDENTS' HEALTH INSURANCE AT INTAKE AND FOLLOW-UP[a]

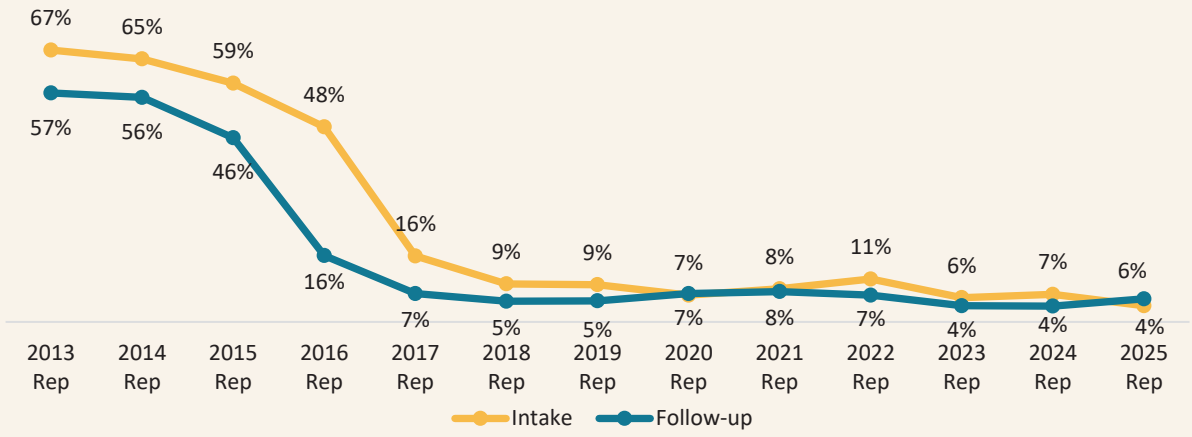


a— Statistical difference by gender follow-up ($p < .05$).
**$p < .01$.

Trends in Not Having Health Insurance

At intake, the majority of KTOS respondents who completed a follow-up survey reported they had no health insurance in the 2013 through 2015 reports. With the expansion of Medicaid starting in 2014 in Kentucky, the percentage of KTOS respondents who reported having no health insurance declined dramatically at intake and follow-up beginning in the 2016 and 2017 reports, which correspond to intake surveys completed in FY 2014 and FY 2015 and follow-up surveys completed in FY 2015 and FY 2016.

FIGURE 4.32. TRENDS IN THE NUMBER OF RESPONDENTS NOT HAVING HEALTH INSURANCE AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025

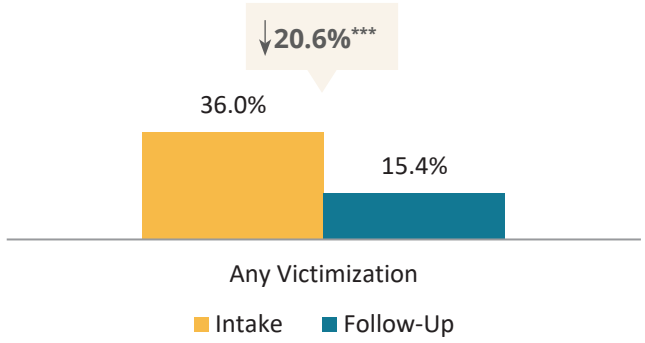


Interpersonal Victimization

In addition to items about adverse childhood experiences, respondents were asked about several types of interpersonal victimization they may have experienced in two periods: (1) lifetime, and (2) past 12 months. These items were included in the intake and follow-up surveys. Because relatively small percentages of respondents reported each type of victimization experience in the 12-month periods, several related items were collapsed into one category: (1) any victimization (e.g., robbed or mugged by force, assaulted with or without a weapon, threatened with a gun, intimate partner violence, stalking).

More than one-third of respondents (36.0%) reported interpersonal victimization in the 12 months before entering treatment. The percentage of respondents who reported experiencing any victimization in the past 12 months decreased significantly from intake to follow-up (see Figure 4.33).

FIGURE 4.33. INTERPERSONAL VICTIMIZATION IN THE PAST 12 MONTHS AT INTAKE AND FOLLOW-UP (N = 475)

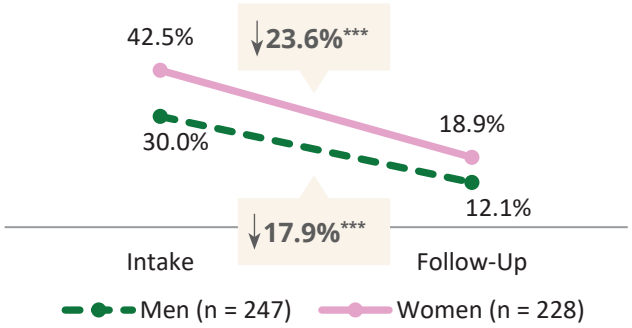


***p < .001.

Gender Difference in Interpersonal Victimization

Significantly more women reported experiencing interpersonal victimization in the 12 months intake and at follow-up when compared to men (see Figure 4.34). The percent of women and men who reported experiencing any victimization decreased significantly from intake to follow-up by 23.6% and 17.9% respectively.

FIGURE 4.34. GENDER DIFFERENCE IN INTERPERSONAL VICTIMIZATION IN THE PAST 12 MONTHS[a]

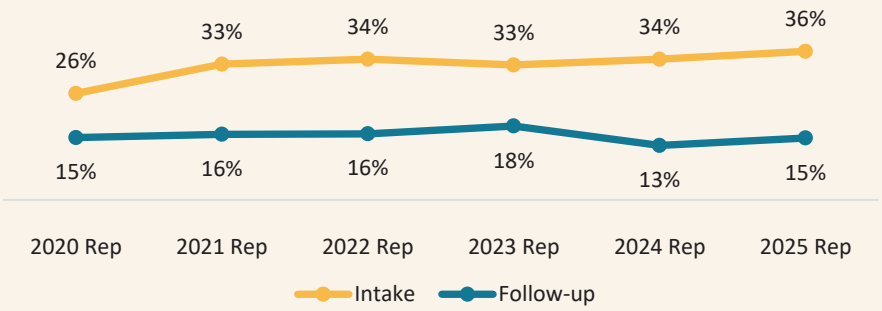


a—Statistical difference by gender at intake (p < .01) and follow-up (p < .05).
***p < .001.

Trends in Interpersonal Victimization

The percentage of respondents who reported experiencing interpersonal victimization (e.g. assault, threats with a firearm, mugging/robbery, intimate partner violence, stalking, sexual assault, and harassment) in the 12 months before entering the program has been a low of about one-fourth to a high of more than 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 12 months, with a relatively steady percent each year at follow-up (13% - 18%).

FIGURE 4.35. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING INTERPERSONAL VICTIMIZATION AT INTAKE AND FOLLOW-UP, REPORTS 2020 - 2025[101]



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

SECTION 5. ECONOMIC AND LIVING CIRCUMSTANCES

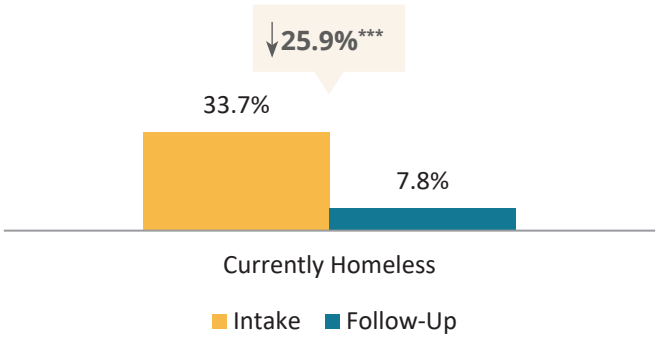
This section examines changes from intake to follow-up on: (1) homelessness, (2) living situation, (3) education, (4) employment, and (5) economic hardship. Results for each targeted factor are presented for the overall sample and separately by gender when there were significant differences.

Living Situation

Homelessness

One-third of respondents (33.7%) reported at treatment intake they were currently homeless and at follow-up 7.8% of respondents reported they were currently homeless – a significant decrease of 25.9% (see Figure 5.1).

FIGURE 5.1. CURRENT HOMELESSNESS AT INTAKE AND FOLLOW-UP (N = 475)

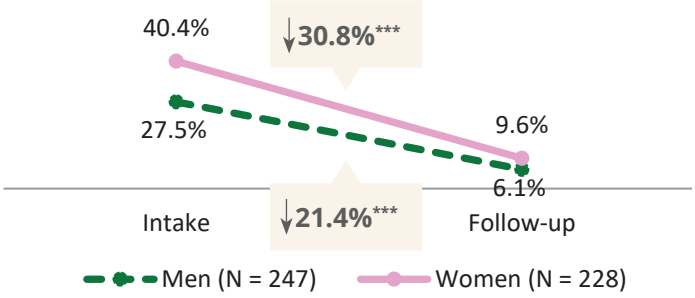


***p < .001.

Gender Difference in Homelessness

Significantly more women reported being homeless at intake and follow-up when compared to men (see Figure 5.2). At intake, 2 in 5 women reported homelessness compared to about 1 in 4 men. The percent of women and men reporting homelessness at follow-up decreased significantly 30.8% and 21.4%, respectively. At follow-up, there was no significant difference in homelessness by gender.

FIGURE 5.2. GENDER DIFFERENCE IN RESPONDENTS REPORTING HOMELESSNESS AT INTAKE AND FOLLOW-UP[a]

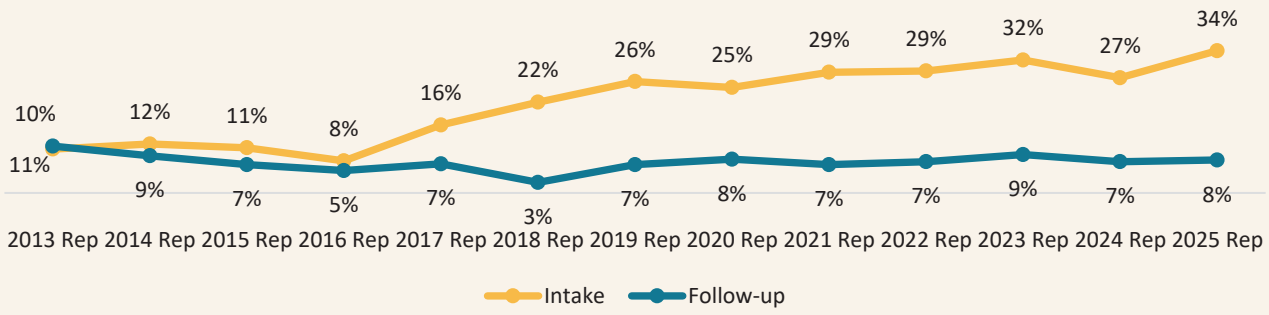


a—Statistical difference by gender at intake (p < .01).
***p < .001.

Trends in Homelessness

In the 2013 through 2016 reports, the percentage of respondents reporting being currently homeless did not change significantly from intake and follow-up. In the 2017 report, however, the percentage of respondents reporting homelessness increased to 16% at intake, increased again to 29% in the 2021 report, and was its highest in the 2025 report (34%). The percentage of individuals who reported homelessness at follow-up has remained consistent (between 5% and 9%) over the years, except for the 2013 and 2018 reports.

FIGURE 5.3. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING HOMELESSNESS AT INTAKE AND FOLLOW-UP, 2013 - 2025

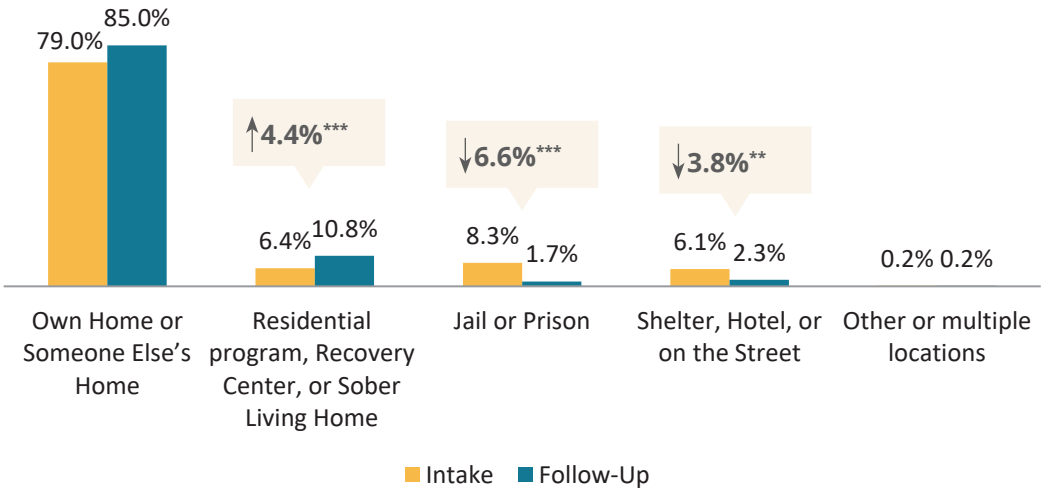


Usual Living Situation

Change in usual living situation from intake to follow-up was examined for the KTOS follow-up sample (see Figure 5.4). At intake, respondents were asked about where they lived most of the time in the 12 months before entering treatment and at follow-up respondents were asked where they lived most of the time in the 12 months before the follow-up interview.

The majority of respondents reported living in their own home or someone else's home for most of the past 12 months at intake (79.0%) and follow-up (85.0%). A small percentage of respondents (6.4%) reported their usual living situation was in a residential program, Recovery Center, or Sober Living Home at intake and that number increased significantly to 10.8% at follow-up. There was a significant decrease in the percentage of respondents who reported their usual living situation in the past 12 months was in a jail or prison: 8.3% vs. 1.7%. A very small percentage of respondents reported living in a shelter or on the street at intake, with a significant decrease at follow-up.

FIGURE 5.4. USUAL LIVING SITUATION AT INTAKE AND FOLLOW-UP (N = 472)[102]

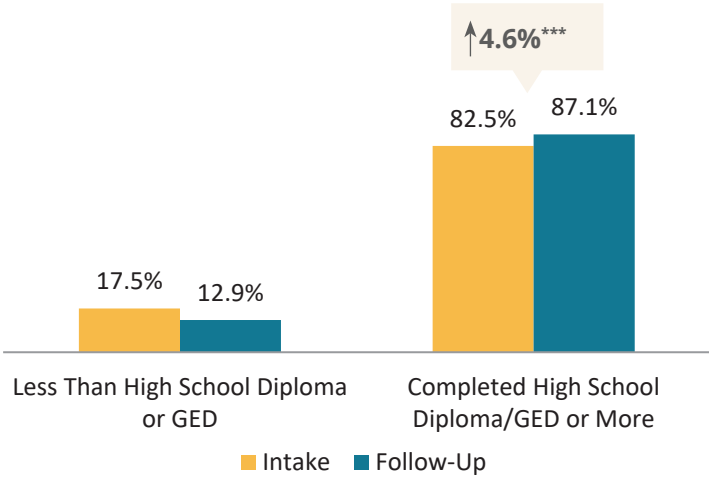


a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$).
**$p < .01$, ***$p < .001$.

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 5.5). At intake, 82.5% 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 percentage had increased significantly to 87.1%. At intake, 17.5% of the follow-up sample reported that they had less than a high school diploma or GED. At follow-up, 12.9% reported that they had completed less than a high school diploma or GED.

FIGURE 5.5. HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE AND FOLLOW-UP (N = 473)[103]



***$p < .001$.

[102] One individual had missing data for usual living situation in the 12 months before entering treatment and two respondents had missing data for usual living situation in the 12 months before follow-up.

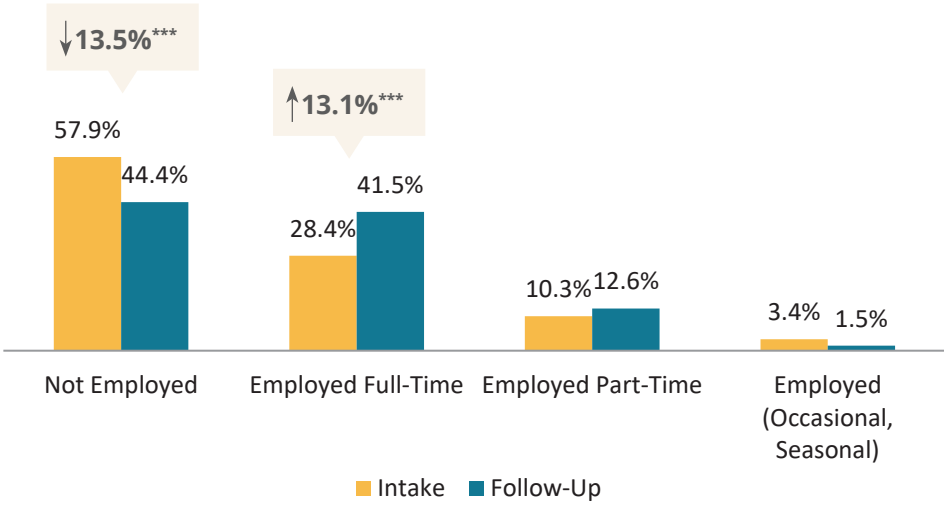
[103] Two individuals had missing data for highest level of education at follow-up.

Employment

Current Employment Status

There were significant changes in current employment status from intake to follow-up (see Figure 5.6).[104] The majority of respondents (57.9%) reported they were not employed when they entered treatment, while less than half of respondents (44.4%) reported they were unemployed at follow-up. This represents a 13.5% significant decrease in the number of respondents who reported they were currently unemployed. The percentage of respondents who were employed full-time increased significantly by 13.1% from intake to follow-up (28.4% vs. 41.5%), and the percentage with occasional/seasonal work did not change significantly.

FIGURE 5.6. CHANGE IN CURRENT EMPLOYMENT STATUS (N = 475)[a]



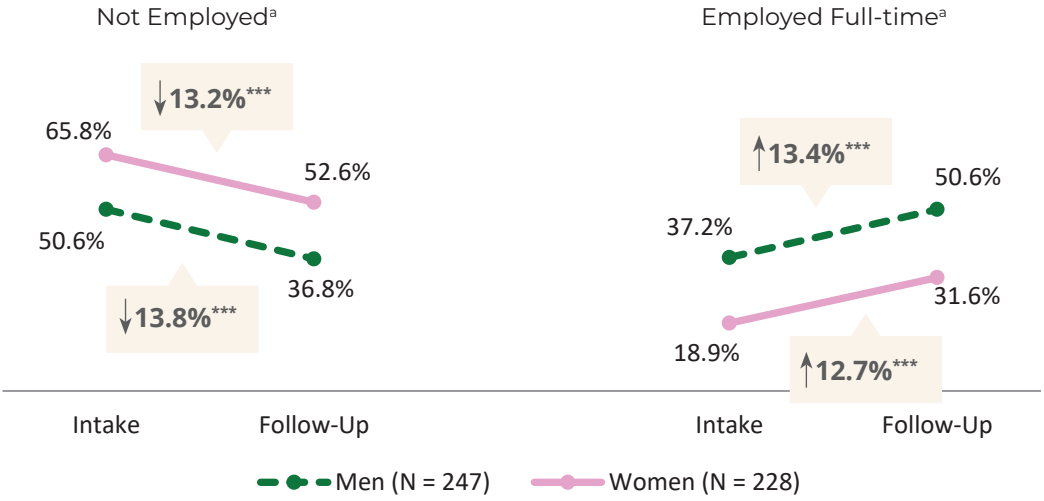
a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .001$).
***$p < .001$.

Gender Difference in Current Employment Status

Significantly more women reported at intake and follow-up that they were currently unemployed compared to men: 65.8% vs. 50.6% at intake and 52.6% vs. 36.8% at follow-up. The percentage of respondents who were currently unemployed decreased significantly for both women and men (see Figure 5.6). The percentage of men who reported they were employed full-time was significantly greater than the percent of women who were employed full-time at intake (37.2% vs. 18.9%) and at follow-up (50.6% vs. 31.6%). Both genders, however, had significant increases in full-time employment from intake to follow-up (12.7% for women and 13.4% for men).

[104] One individual had missing data for current employment status at intake.

FIGURE 5.7. GENDER DIFFERENCE IN EMPLOYMENT STATUS AT INTAKE AND FOLLOW-UP[a]

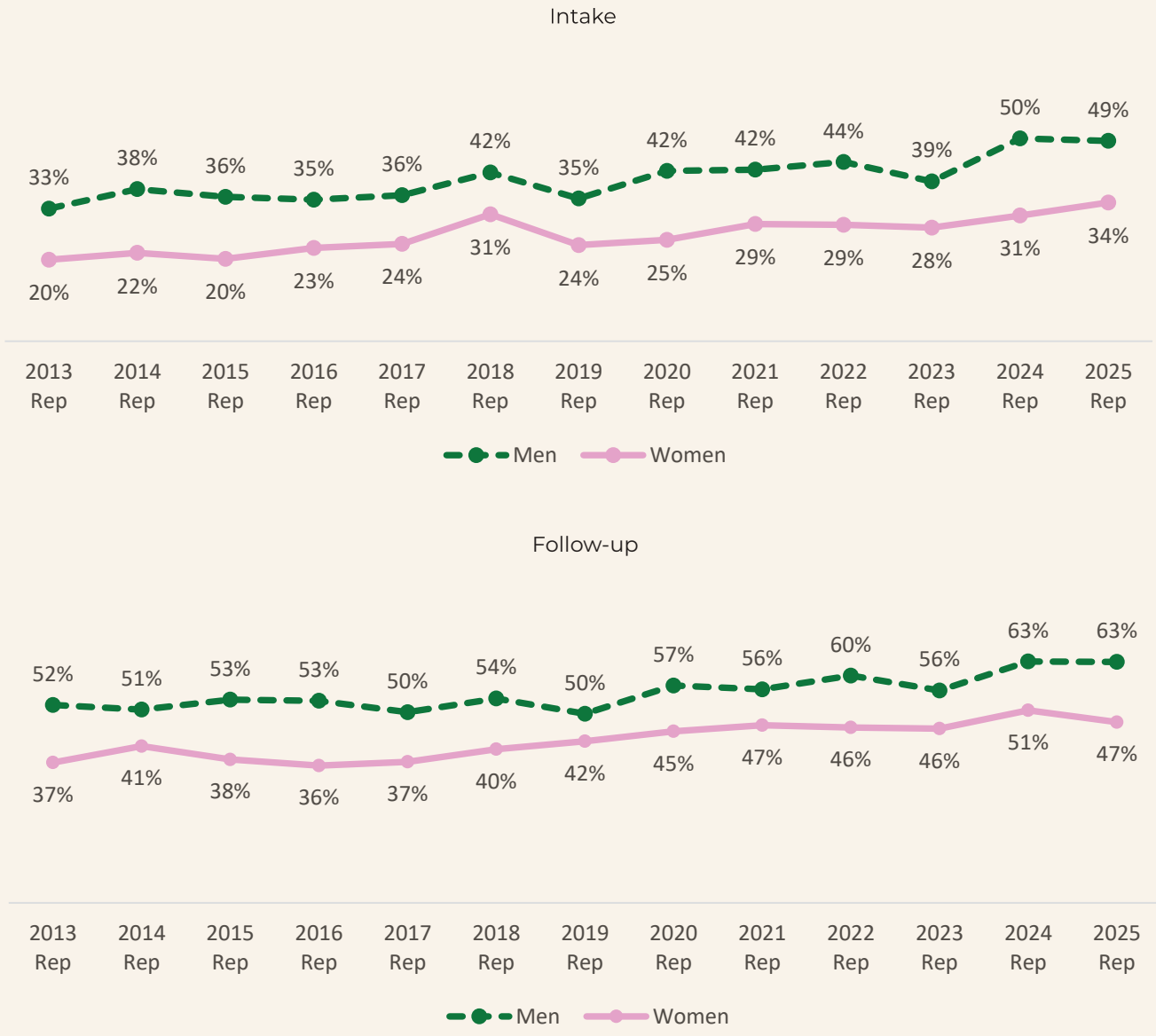


a – Significant difference by gender at intake ($p < .001$) and follow-up ($p < .001$).
***$p < .001$

Trends in Employment

Over the 13 years from the 2013 report to this year's report, one-fifth to about one-third of women reported being employed (part- or full-time) compared to as much as 50% of men in the 2024 report and 49% in the 2025 report. At follow-up, about half or over half of men reported being employed across the 13 years compared to less than half of women until the 2024 report, when half of women reported being employed at follow-up.

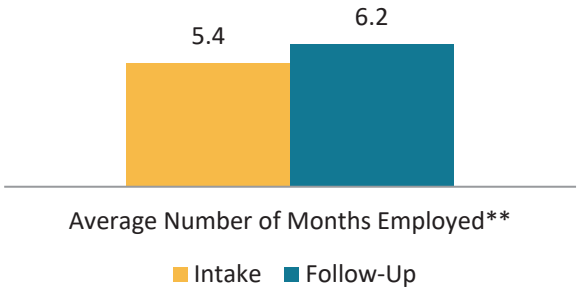
FIGURE 5.8. TRENDS IN GENDER DIFFERENCE IN PERCENT OF RESPONDENTS EMPLOYED AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



Average Number of Months Employed

Respondents were asked in the intake survey and follow-up survey to report the number of months they were employed full-time or part-time in the 12 months before they entered treatment (past 12 months at follow-up). As seen in Figure 5.9, respondents reported working significantly more months at follow-up (6.2) than at intake (5.4).

FIGURE 5.9. AVERAGE NUMBER OF MONTHS EMPLOYED AT INTAKE AND FOLLOW-UP (N = 352)[105]

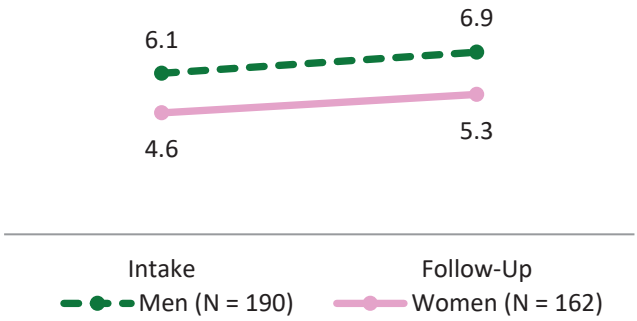


**p < .01.

Gender Difference in the Number of Months Employed

Men reported working significantly more months at both periods compared to women (intake, 6.1 vs. 4.6 months and at follow-up, 6.9 vs. 5.3 months). The average number of months men worked increased significantly from intake to follow-up; however, the increase was not significant for women (see Figure 5.10).

FIGURE 5.10. GENDER DIFFERENCES IN NUMBER OF MONTHS EMPLOYED AT INTAKE AND FOLLOW-UP[a,b]

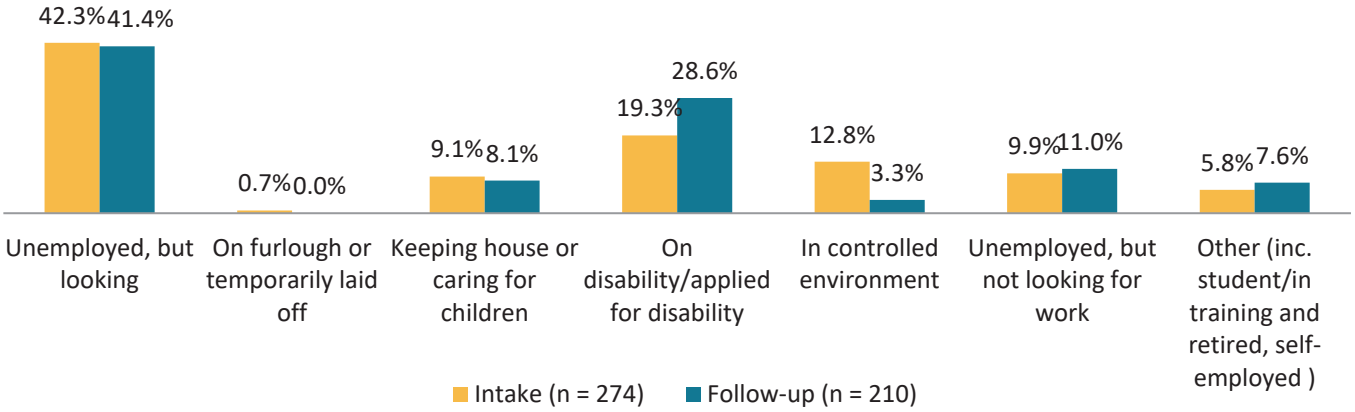


a—Significant difference by gender in number of months worked at intake and follow-up (p < .01).
b – Significant increase from intake to follow-up for men (p < .05).

[105] A total of 123 individuals had data with missing values for this analysis because they had inconsistent data with their usual employment status at intake (n = 97), inconsistent data with their usual employment status at follow-up (n = 24), and missing values for number of months employed at follow-up (n = 2).

Among individuals who were not employed at each point, respondents were asked why they were not currently employed. At intake (n = 274),[106] 42.3% of respondents reported they were unemployed, but looking for work, and 19.3% were on disability or had applied for disability, 12.8% were in a controlled environment, prohibited from working, 9.9% were not looking for work, and 9.1% were keeping house or caring for children/other relatives (see Figure 5.10). Among respondents who were not employed at follow-up (n = 210),[107] 41.4% were unemployed, but looking for work, 28.6% reported they were on disability or had applied for disability, 11.0% were not looking for work, 8.1% were keeping house or caring for children/other relatives, 7.6% were in school/training or retired, and 3.3% were in a controlled environment.

FIGURE 5.11. REASONS FOR UNEMPLOYMENT STATUS AT EACH POINT



Hourly Wage

Among respondents who were currently employed at intake (n = 196),[108] the median hourly wage was $15.00. Among respondents who were employed at follow-up (n = 228),[109] the median hourly wage was $15.00 (see Figure 5.12).

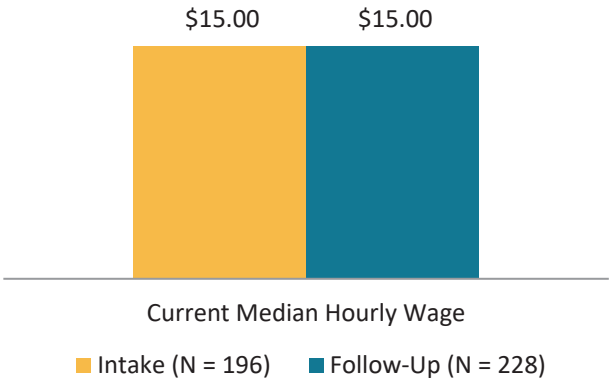
[106] Of the 275 unemployed persons at intake, 1 respondent had a missing value for the reason they were not currently employed.

[107] Of the 212 unemployed persons at follow-up, two respondents had missing values for reasons for not being currently employed.

[108] Among the 200 individuals who reported any employment in the 30 days before intake, 4 respondents had missing values for hourly wage.

[109] Of the 264 individuals who reported being currently employed full-time, part-time, or seasonally at follow-up, 36 individuals had missing data on hourly wage because they did not know the answer, or they declined to answer.

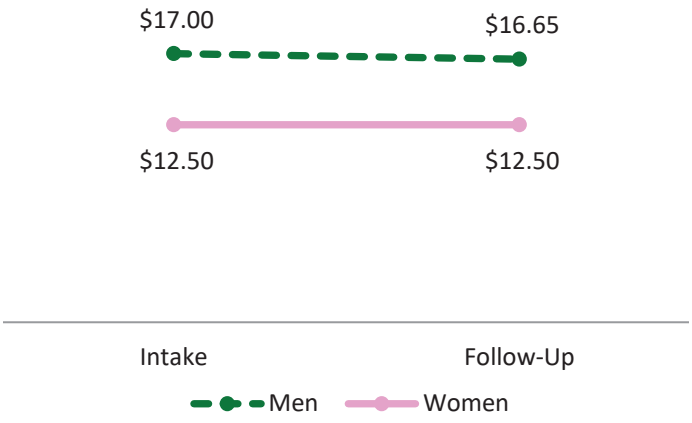
FIGURE 5.12. CURRENT MEDIAN HOURLY WAGE AT INTAKE AND FOLLOW-UP, AMONG THOSE WHO WORKED



Gender Difference in Hourly Wage

Among respondents who were employed at each period, men had significantly higher median hourly wages compared to women (see Figure 5.13). At intake, employed women made $0.74 for every dollar employed men made in this sample. At follow-up, employed women made $0.75 for every dollar employed men made.

FIGURE 5.13. GENDER DIFFERENCE IN THE CURRENT MEDIAN HOURLY WAGE AT INTAKE AND FOLLOW-UP



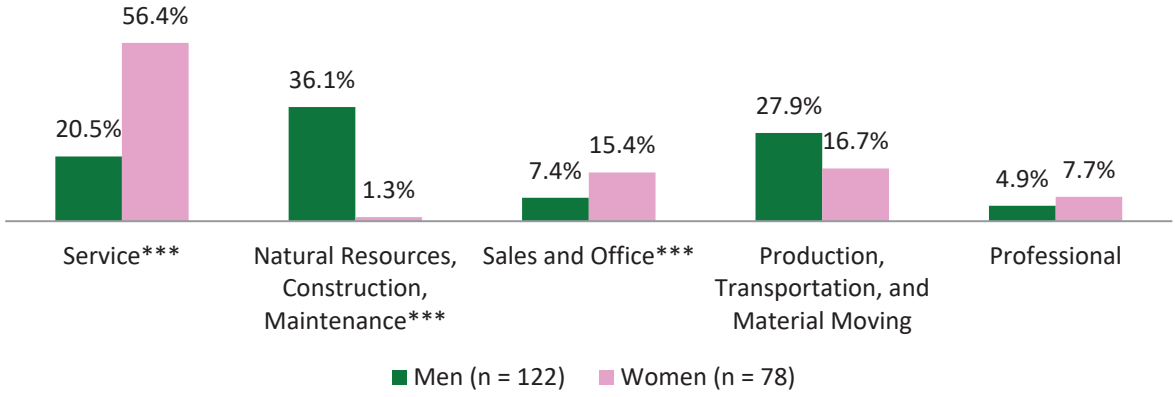
a—Significant difference in median hourly wage at intake and follow-up by gender, tested with Mann-Whitney U test ($p < .001$).

Gender Difference in Occupation Type

There was a significant difference in occupation type for employed individuals by gender at intake and follow-up. At intake, the type of occupation the highest percentage of women had was the service sector (56.4%), whereas only 20.5% of employed men had a service sector job (see Figure 5.13a). In addition, compared

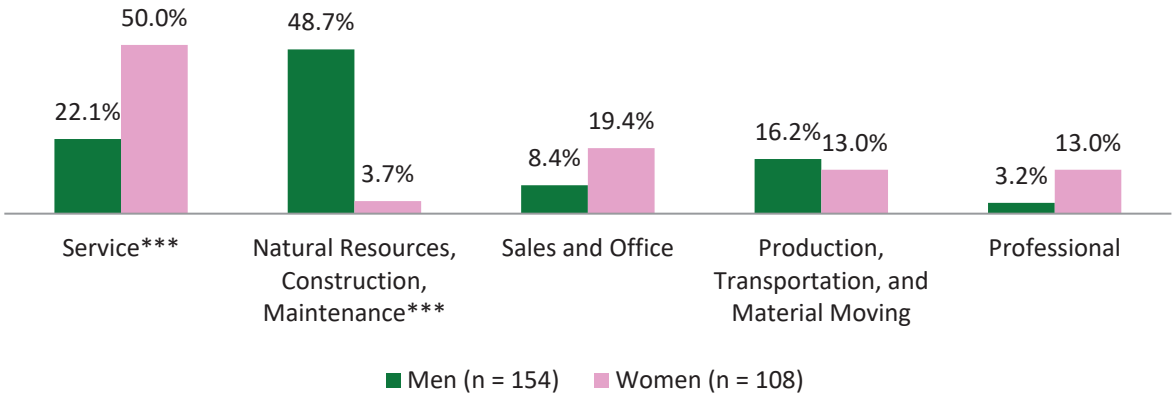
to women (1.3%), 36.1% of employed men reported having a job in the natural resources, construction, and maintenance sector, which typically has higher average wages than service sector jobs. Significantly more women had sales/office jobs compared to men (15.4% vs. 7.4%). These patterns were also found at follow-up; 50.0% of women had a service sector job, whereas only 22.1% of employed men had a service sector job, while 48.7% of men and only 3.7% of women had natural resources, construction, and maintenance jobs (see Figure 5.13b). However, at follow-up, there was no longer a significant difference in the percent of women and men with production, transportation, and materials moving jobs.

FIGURE 5.14a. AMONG EMPLOYED INDIVIDUALS, TYPE OF OCCUPATION BY GENDER AT INTAKE (N = 200)***



***p < .001.

FIGURE 5.14b. AMONG EMPLOYED INDIVIDUALS, TYPE OF OCCUPATION BY GENDER AT FOLLOW-UP (N = 262)***

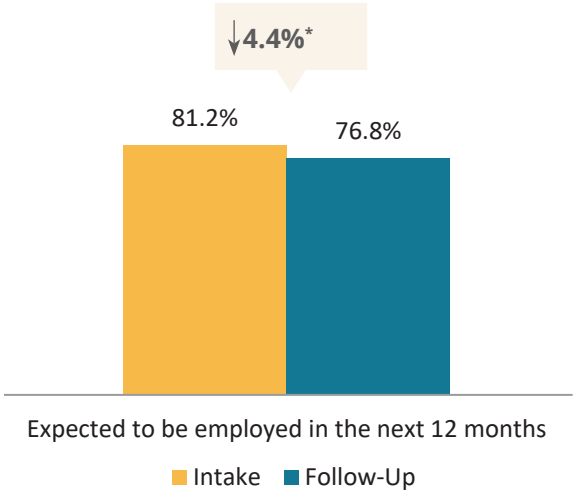


***p < .001

Expect to Be Employed

Most individuals said they expected to be employed in the next 12 months at intake and follow-up, with a significant decrease from intake to follow-up (see Figure 5.15).

FIGURE 5.15. EXPECTED TO BE EMPLOYED IN THE NEXT 12 MONTHS AT INTAKE AND FOLLOW-UP (N = 474)[110]



*p < .05.

Economic Hardship

Economic hardship, rather than a measure of income, may be a better indicator of the actual day-to-day stressors individuals face. Therefore, the intake and follow-up surveys included several questions about respondents' ability to meet expenses for basic needs and food insecurity.[111] Respondents 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 obtaining healthcare for financial reasons. Two of the items were combined into one housing item. Thus, the total maximum number of difficulties a person could report at intake and follow-up was 7. Individuals reported significantly fewer needs they had difficulty meeting at follow-up (0.9) compared to intake (1.6; not depicted in figure).[112]

A sizeable minority of respondents (45.4%) reported at intake that they had difficulty meeting basic living needs such as food, shelter, or utilities (see Figure 5.15). The percentage of individuals who reported having difficulty meeting basic living needs decreased significantly from intake to follow-up. About one-fourth of respondents (25.3%) reported their household had difficulty meeting healthcare needs in the 12 months before respondents entered treatment. The percentage of individuals

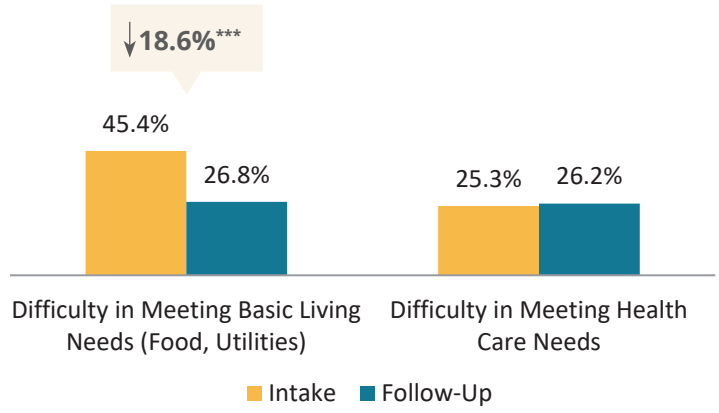
[110] One individual had a missing value for expect to be employed in the next 12 months at follow-up.

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

[112] Two individuals had missing values for at least one of the items about economic hardship at follow-up.

reporting they had difficulty with healthcare did not change significantly from intake to follow-up.

FIGURE 5.16. DIFFICULTY IN MEETING BASIC AND HEALTH CARE NEEDS FOR FINANCIAL REASONS (N = 473)[113]



***p < .001.

Gender Difference in Economic Hardship

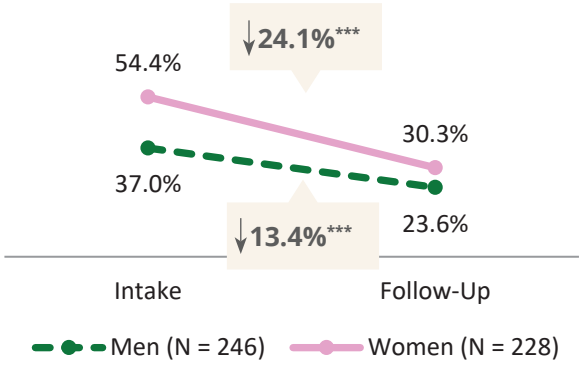
At intake, women reported significantly more basic needs they had difficulty meeting (1.9) compared to men (1.3; not depicted in figure). At follow-up, there was no gender difference in the average number of basic needs individuals had difficult meeting (not depicted in a figure).

There was a significant gender difference in respondents' difficulty meeting basic living needs at intake (see Figure 5.17). Compared to men, significantly more women reported having difficulty meeting their basic living needs (e.g., housing, utilities, telephone, and food) at intake. More than half of women (54.4%) reported difficulty meeting basic living needs at intake compared to 37.0% of men. There was a significant decrease in the percent of women and men who reported having difficulty meeting basic living needs at follow-up. There was no significant difference by gender in the percentage of men and women who had difficulty meeting healthcare needs for financial reasons at intake or follow-up.

> "I liked the counselor, she had a different approach that fit with the entire group of people and we were able to talk and openly communicate."
>
> — KTOS RESPONDENT

[113] Two individuals had missing values items about difficulty meeting needs at follow-up.

FIGURE 5.17. GENDER DIFFERENCE IN DIFFICULTY MEETING BASIC LIVING NEEDS FOR FINANCIAL REASONS[a]

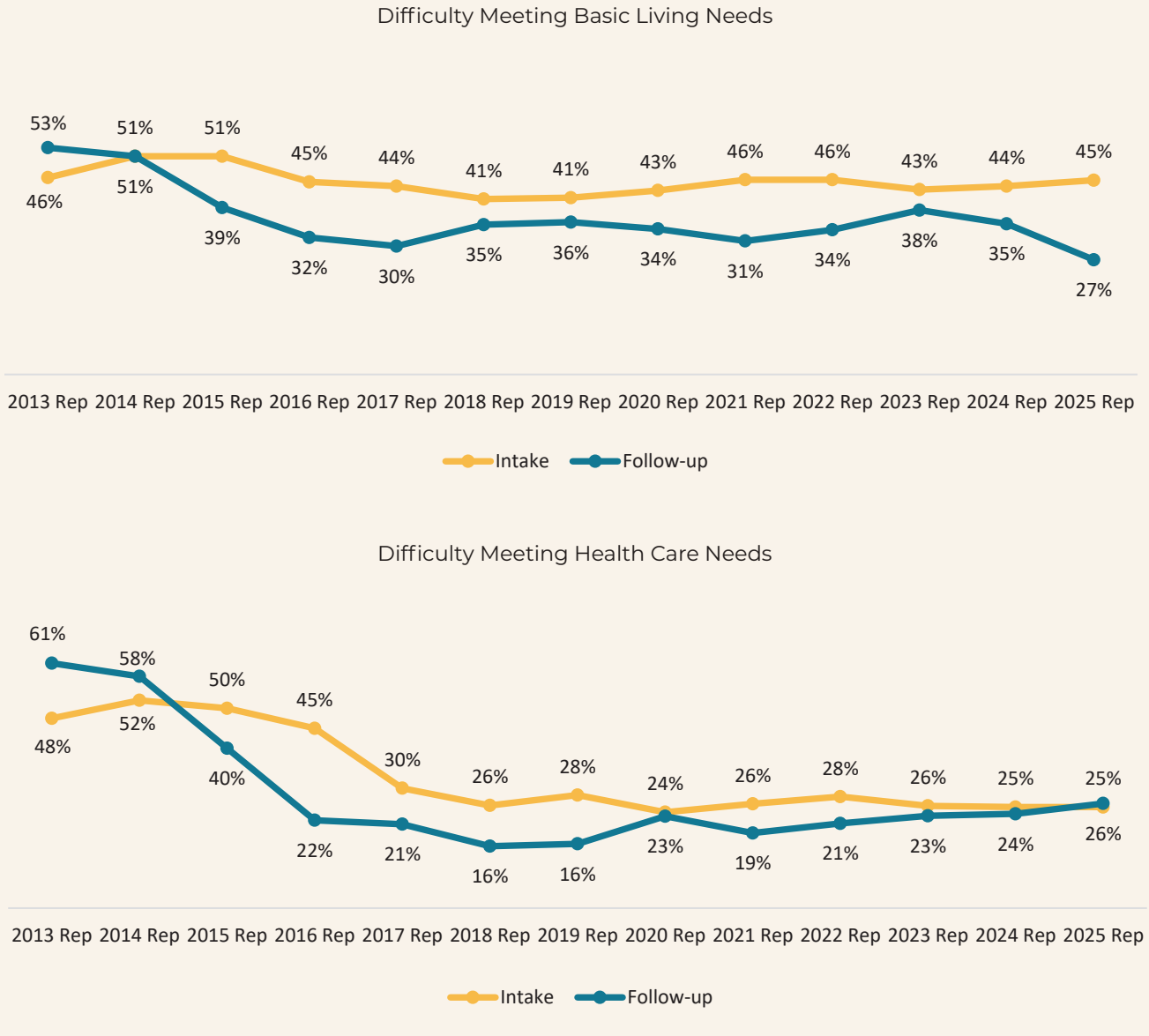


a—Significant difference by gender at intake ($p < .001$).
***$p < .001$.

Trends in Difficulty Meeting Basic Living and Health Care Needs

The percentage of KTOS follow-up respondents who have reported difficulty meeting basic living needs at intake has fluctuated between 41% and 51%. The percentage of KTOS respondents who have reported difficulty meeting basic living needs at follow-up decreased from the 2013 report until the 2017 report, when it began increasing again. Nonetheless, the percent has not been to the level it was in the 2014 report (51%). The decrease in the percentage of respondents reporting difficulty meeting healthcare needs at follow-up was even more dramatic: 61% in the 2013 report to 16% in the 2018 and 2019 reports. In the 2020 report, this percentage increased to 23%, and has fluctuated from 19% to 26% since.

FIGURE 5.18. TRENDS IN THE NUMBER OF RESPONDENTS REPORTING ECONOMIC DIFFICULTY IN THE PAST-12-MONTHS AT INTAKE AND FOLLOW-UP, REPORTS 2013 - 2025



SECTION 6. CRIMINAL LEGAL SYSTEM INVOLVEMENT

This section describes changes in respondents' involvement with the criminal legal system during the 12-month period before entering treatment and during the 12-month period before the follow-up interview. Specifically, results include changes in: (1) any arrest, (2) convictions for misdemeanors and felonies, (3) any incarceration, and (4) supervision by the criminal legal system. Results for each targeted factor are presented for the overall sample and by gender when there were significant gender differences.

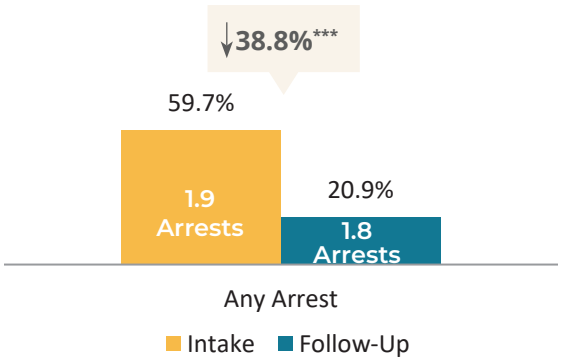
Arrests

Arrested in the Past 12 Months

Respondents were asked about their arrests in the 12 months before they entered treatment (at intake) and the past 12 months (at follow-up). More than half of respondents (59.7%) reported at least one arrest in the 12 months before entering treatment (see Figure 6.1). At follow-up, nearly one-fourth (20.9%) reported at least one arrest in the past 12 months, which was a significant 38.8% decrease from intake.

Among respondents who reported at least one arrest in the 12 months before intake (n = 283), respondents were arrested an average of 2.2 times. Among respondents who reported at least one arrest in the 12 months before follow-up (n = 99), the average number of arrests was 1.6.

FIGURE 6.1. RESPONDENTS REPORTING ARRESTS AT INTAKE AND FOLLOW-UP (N = 474)[114]



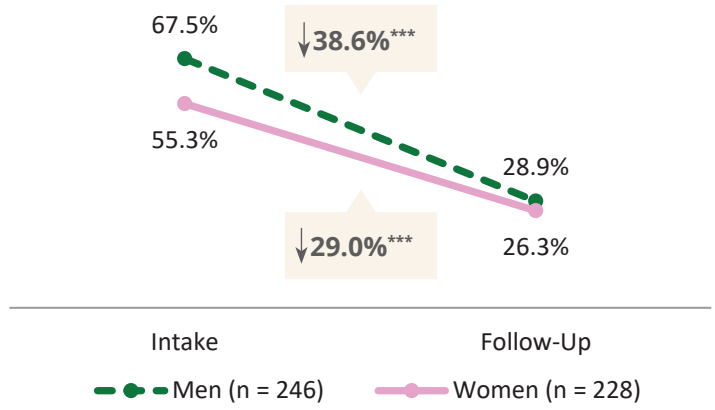
***p < .001.

Gender Difference in Arrests

There were significant decreases from intake to follow-up in the percent of men and women who reported being arrested in the previous 12 months. At intake, significantly more men reported they had been arrested when compared to women (see Figure 6.2). At follow-up, there was no difference by gender.

[114] One respondent had missing data for number of arrests at follow-up.

FIGURE 6.2. GENDER DIFFERENCES IN ARRESTS IN THE PAST 12 MONTHS

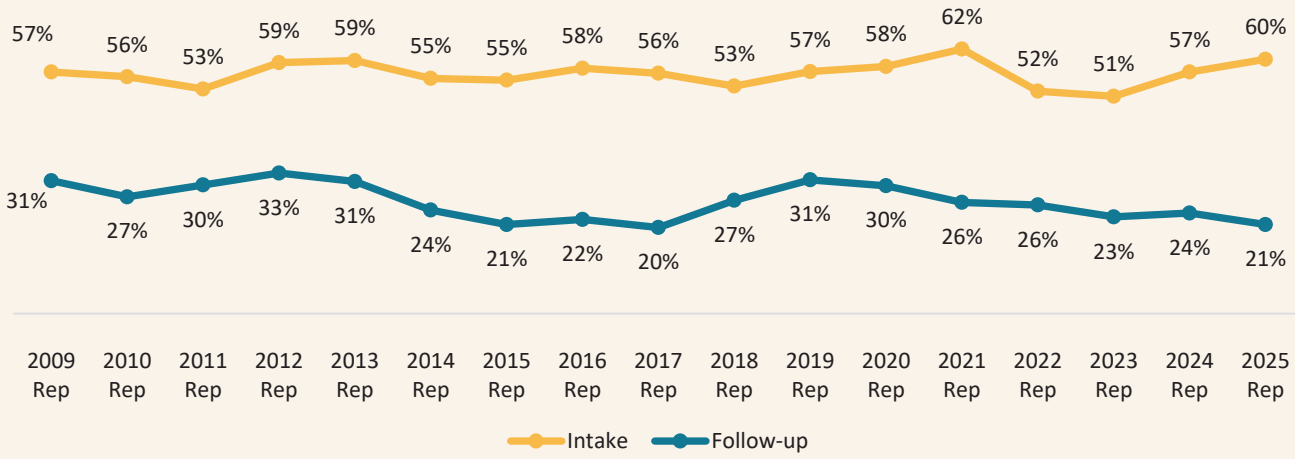


a—Statistical difference by gender at intake ($p < .05$)
***$p < .001$.

Trends in Past-12-month Arrests

Over the past 16 years the percentage of respondents who reported an arrest in the past 12 months at intake has ranged from a low of 51% in the 2023 report to a high of 62% in the 2021 report. At follow-up, since the 2009 report, between one-fifth to nearly one-third of respondents reported an arrest, which were significant decreases from intake each year.

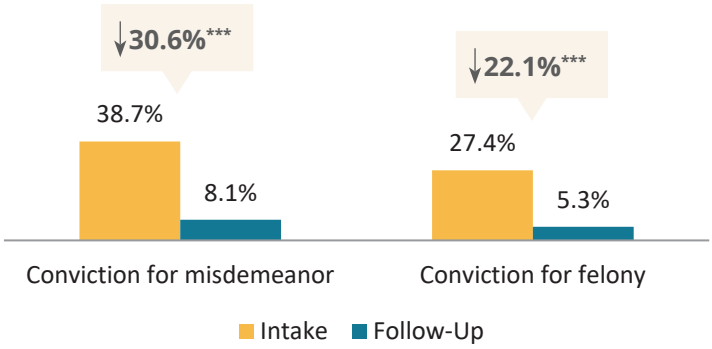
FIGURE 6.3. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING AN ARREST IN THE PAST-12-MONTHS AT INTAKE AND FOLLOW-UP, REPORTS 2009 - 2025



Convictions

More than one-third of individuals (38.7%) reported they had at least one conviction for a misdemeanor offense in the 12 months before entering treatment, with a significant decrease to 8.1% at follow-up (see Figure 6.4). One-quarter of respondents (27.4%) reported at least one felony conviction in the 12 months before intake. That percentage decreased significantly to 5.3% in the 12 months before follow-up.

FIGURE 6.4. CONVICTIONS FOR MISDEMEANOR AND FELONY OFFENSES (N = 470)[115]



***p < .001.

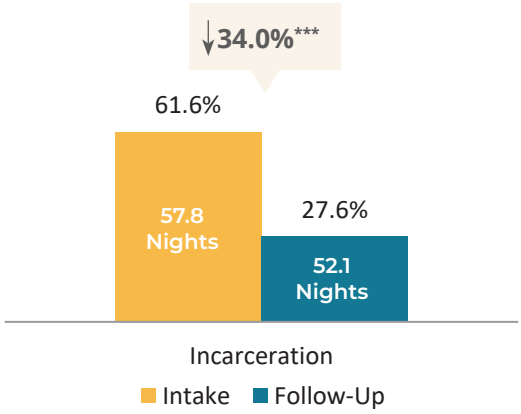
Incarceration

Incarcerated in the Past 12 Months

The majority of respondents (61.6%) reported spending at least one night in jail or prison in the 12 months prior to entering treatment (see Figure 6.5). At follow-up, 27.6% of respondents reported spending at least one day incarcerated in the past 12 months--a significant decrease of 34.0%. Among those who were incarcerated at least one night, they reported spending, on average, similar time in jail or prison in the 12 months before entering treatment (n = 292, 57.8 nights) and follow-up (n = 131, 52.1 nights).

[115] Five cases had missing data on convictions for misdemeanour and four cases for felony offenses at follow-up.

FIGURE 6.5. RESPONDENTS REPORTING BEING INCARCERATED AT INTAKE AND FOLLOW-UP (N = 474)[116]

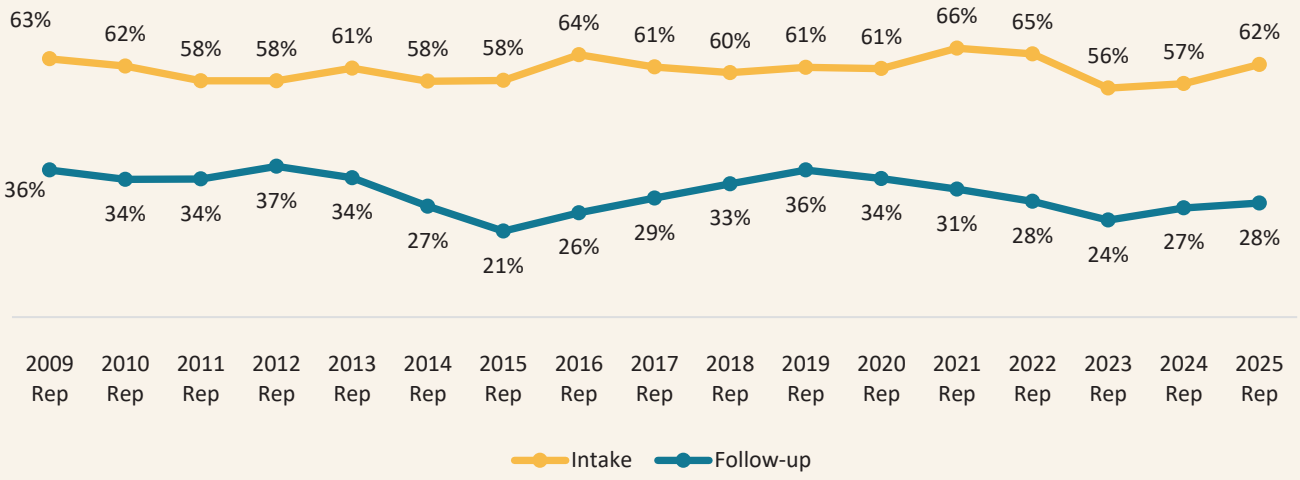


***p < .001.

Trends in Past-12-month Incarceration

The percentage of respondents reporting spending at least one night in jail or prison has been relatively steady over the past 17 years with between 56% and 66% of respondents reporting incarceration at intake. At follow-up, the percentage of respondents reporting spending at least one night in jail or prison in the past 12 months has fluctuated more than at intake: from a low of 21% in the 2015 report to a high of 37% in the 2012 reports. The decreases from intake to follow-up were significant each year.

FIGURE 6.6. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING BEING INCARCERATED IN THE PAST-12-MONTHS AT INTAKE AND FOLLOW-UP, REPORTS 2009 - 2025

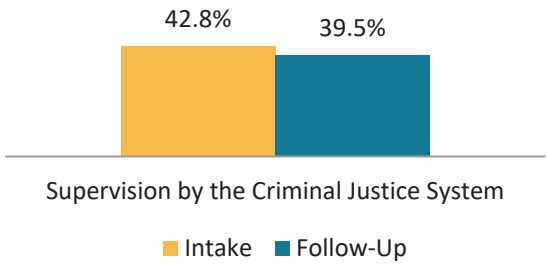


[116] One individual had missing data for incarceration at follow-up.

Supervision by the Criminal Legal System

The percentage of respondents that self-reported they were under criminal legal system supervision (e.g., probation or parole) did not significantly change from intake (42.8%) to follow-up (39.5%; see Figure 6.7).

FIGURE 6.7. RESPONDENTS REPORTING SUPERVISION BY THE CRIMINAL LEGAL SYSTEM AT INTAKE AND FOLLOW-UP (N = 474)[117]



> "When I realized I want help and want to better—they helped me get back on my feet whenever I did not know what to do. They didn't keep you there if you didn't want to be".
>
> — KTOS RESPONDENT

[117] One individual had missing data for criminal legal supervision at follow-up.

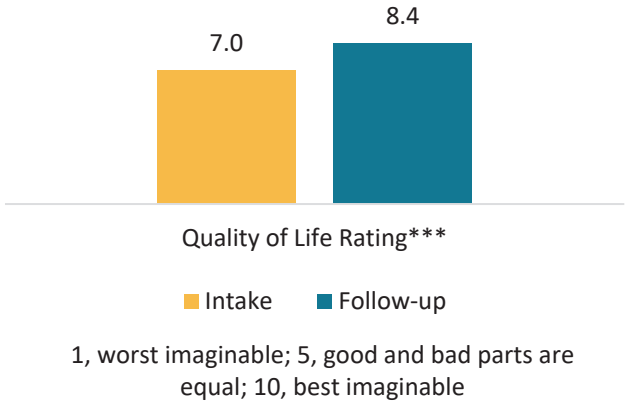
SECTION 7. SUBJECTIVE QUALITY OF LIFE

This section describes change in subjective quality of life during the 12-month period before entering treatment and the 12-month period before the follow-up interview. Results for each targeted factor are presented for the overall sample and by gender when there were significant gender differences.

Subjective Quality of Life

At intake and follow-up, respondents were asked to rate their quality of life at the time of the interview. Ratings were from 1 = 'Worst imaginable' to 5 = 'Good and bad parts were about equal' to 10 = 'Best imaginable'. KTOS respondents rated their quality of life as a 7.0, on average, at intake (see Figure 7.1). The average quality of life rating significantly increased to 8.4 at follow-up.

FIGURE 7.1. RATING OF SUBJECTIVE QUALITY OF LIFE AT INTAKE AND FOLLOW-UP (N = 470)[118]



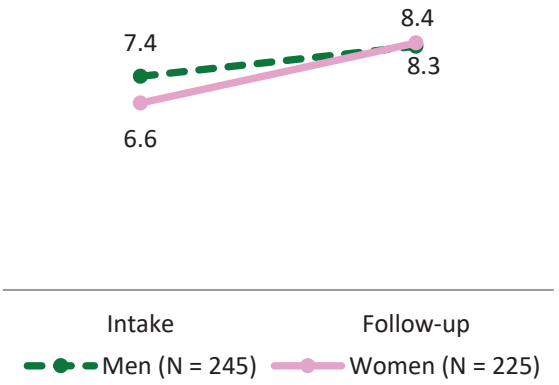
***p < .001.

Gender Difference in Subjective Quality of Life

At intake, men rated their quality of life as significantly higher than women did (see Figure 7.2). The average rating for their quality of life increased significantly for men and women. At follow-up, there was no gender difference.

[118] Five individuals had missing values for the quality of life rating at follow-up

FIGURE 7.2. GENDER DIFFERENCE IN SUBJECTIVE QUALITY OF LIFE[a,b]

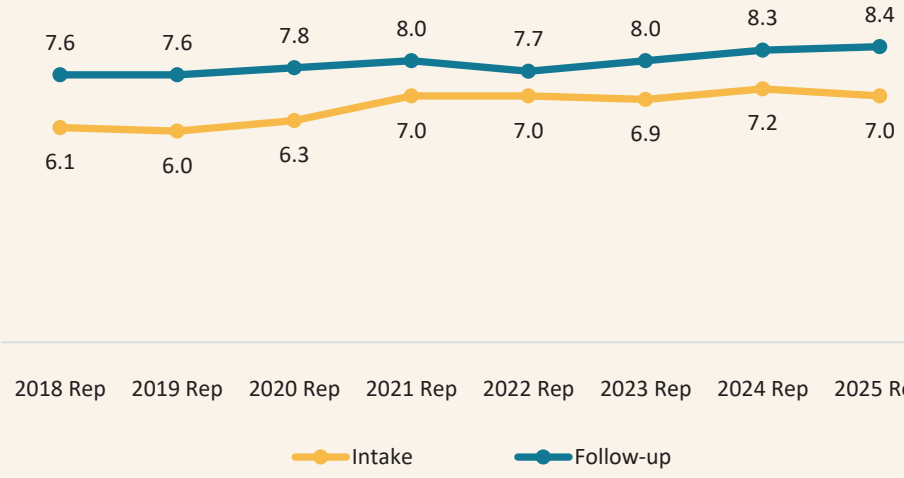


a—Statistical difference by gender at intake ($p < .001$).
b—Statistically significant decrease from intake to follow-up for men and women; tested with paired t-test ($p < .001$).

Trends in Subjective Quality of Life

KTOS clients rated their quality of life between 6.0 and 7.2, on average, at intake. The average quality of life rating at follow-up ranged from 7.6 to 8.3. Over the past 8 years, at both intake and follow-up, clients rated their quality of life as the highest in 2025.

FIGURE 7.3. TRENDS IN THE RATING OF SUBJECTIVE QUALITY OF LIFE AT INTAKE AND FOLLOW-UP, REPORTS 2018 - 2025



SECTION 8. RECOVERY SUPPORT

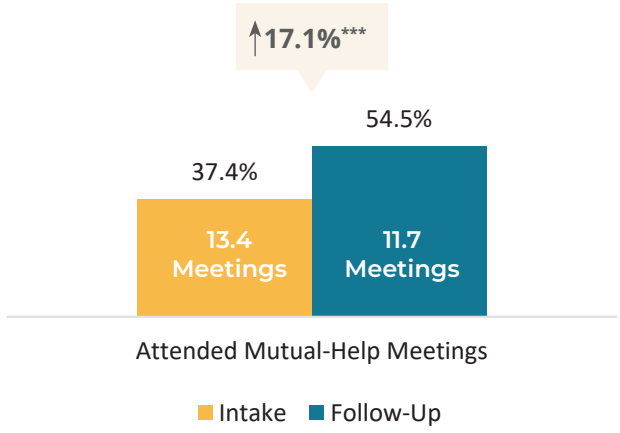
This section focuses on five main areas of recovery support: (1) respondents attending mutual help recovery group meetings, (2) recovery supportive interactions with family/friends and a sponsor in the past 30 days, (3) the number of people the respondent said they could count on for recovery support, (4) what will be most useful to the respondent in abstaining from drugs/alcohol use, and (5) respondents' perceptions of their chances of abstaining from drugs/alcohol use. Results for each targeted factor are presented for the overall sample and by gender when there were significant gender differences.

Attendance of Mutual Help Recovery Group Meetings

At intake, more than one-third of respondents (37.4%) reported going to mutual help recovery group meetings (e.g., AA, NA, or faith-based) in the past 30 days (see Figure 8.1). At follow-up, there was a significant increase of 17.1%, with more than half of respondents (54.5%) reporting they had gone to mutual help recovery group meetings in the past 30 days.

Among individuals who attended recovery group meetings at intake (n = 177), they reported attending an average of 13.4 meetings in the past 30 days. Those who attended self-help meetings at follow-up (n = 258) reported an average of 11.7 meetings attended in the past 30 days.

FIGURE 8.1. ATTENDANCE OF MUTUAL HELP RECOVERY GROUPS AT INTAKE AND FOLLOW-UP (N = 473)[119]



***p < .001.

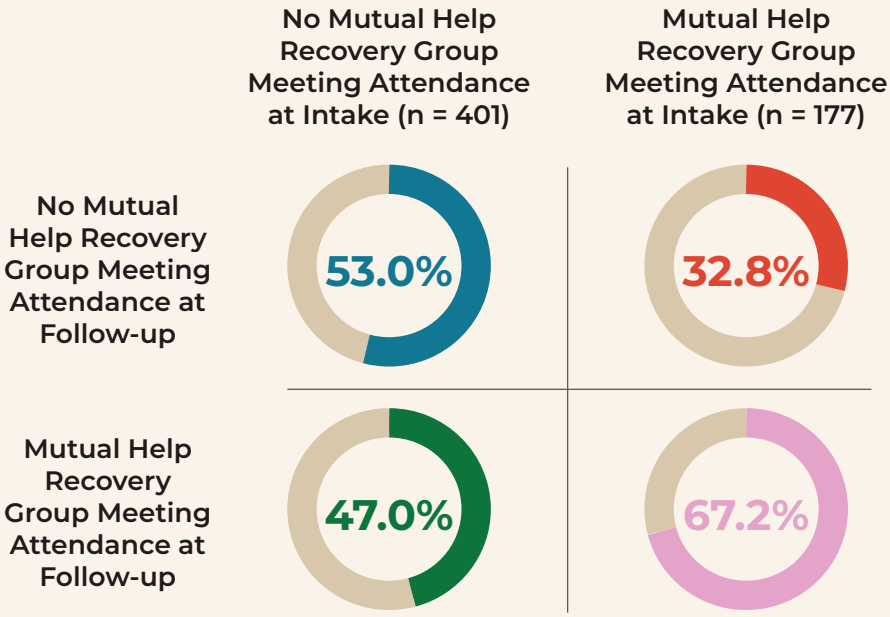
[119] Two respondents were missing data for attendance at mutual health group at follow-up.

Taking a Closer Look at Recovery Support

More than one-third of respondents (37.4%, n = 177) reported going to mutual help recovery group meetings in the 30 days before entering treatment. Among respondents who reported attending mutual help recovery group meetings at intake, about two-thirds (67.2%) also attended mutual help recovery group meetings at follow-up (see Figure 8.2).

Among the individuals who did not report going to mutual help recovery meetings in the 30 days before entering treatment, 47.0% attended meetings at follow-up.

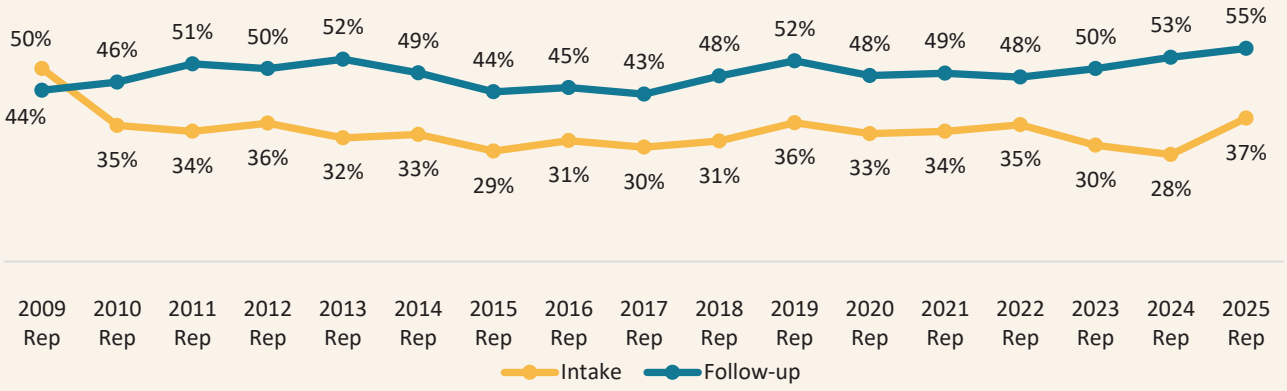
FIGURE 8.2. ATTENDANCE OF MUTUAL HELP RECOVERY GROUP MEETINGS AT INTAKE AND FOLLOW-UP BASED ON MEETING ATTENDANCE AT INTAKE



Trends in Clients Attending Mutual Help Recovery Meetings

Significantly more respondents reported attending meetings like AA/NA at follow-up compared to intake every year, except in the 2009 report when the number of respondents reporting attending mutual help recovery group meetings was higher at intake than at follow-up. Overall, around one-third of respondents reported attending meetings at intake and less than one half to about one half reported attending meetings at follow-up from the 2010 report to the 2023 report. The percentage of respondents who attended mutual help recovery meetings at follow-up has been higher than 50% for the past two years' reports.

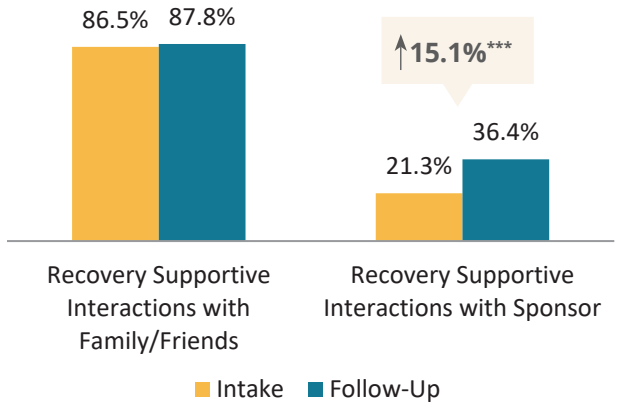
FIGURE 8.3. TRENDS IN THE PERCENT OF RESPONDENTS REPORTING PAST-30-DAY ATTENDANCE OF MUTUAL HELP RECOVERY GROUP MEETINGS AT INTAKE AND FOLLOW-UP, REPORTS 2009 - 2025



Recovery Supportive Interactions

The majority of respondents reported they had interactions with family or friends who were supportive of their recovery in the 30 days before treatment intake and before follow-up, with a small increase over time (see Figure 8.4). The percentage of individuals who reported having contact with an AA/NA sponsor in the past 30 days was higher at follow-up (29.8%) compared to intake (13.9%).

FIGURE 8.4. RECOVERY SUPPORTIVE INTERACTIONS IN THE PAST 30 DAYS (N = 474)[120]

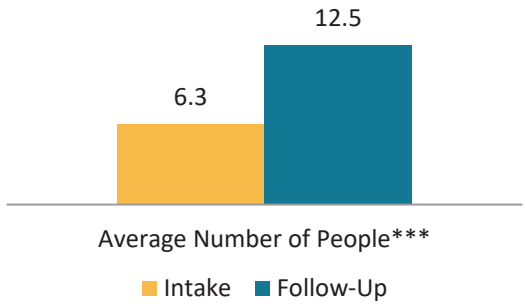


***p < .001.

Average Number of People Client Could Count on for Recovery Support

The average number of people respondents reported that they could count on for recovery support increased significantly, from 6.3 people at intake to 12.5 people at follow-up (see Figure 8.5).

FIGURE 8.5. AVERAGE NUMBER OF PEOPLE RESPONDENTS COULD COUNT ON FOR RECOVERY SUPPORT AT INTAKE AND FOLLOW-UP (N = 470)[121]



***p < .001.

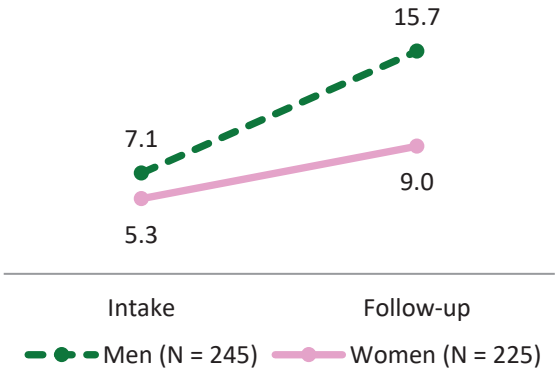
Gender Difference in Number of People Respondents Can Count on for Recovery Support

At intake and follow-up, men had a significantly higher average number of people they could count on for recovery support relative to women (see Figure 8.6). The average number of people they could count on for recovery support increased significantly for men and women.

[120] One respondent had missing data for recovery support with friends and family at follow-up.

[121] Five individuals had missing values for the number of people they could count on for recovery support at follow-up.

FIGURE 8.6. GENDER DIFFERENCE IN NUMBER OF PEOPLE RESPONDENTS COULD COUNT ON FOR RECOVERY SUPPORT[a,b]

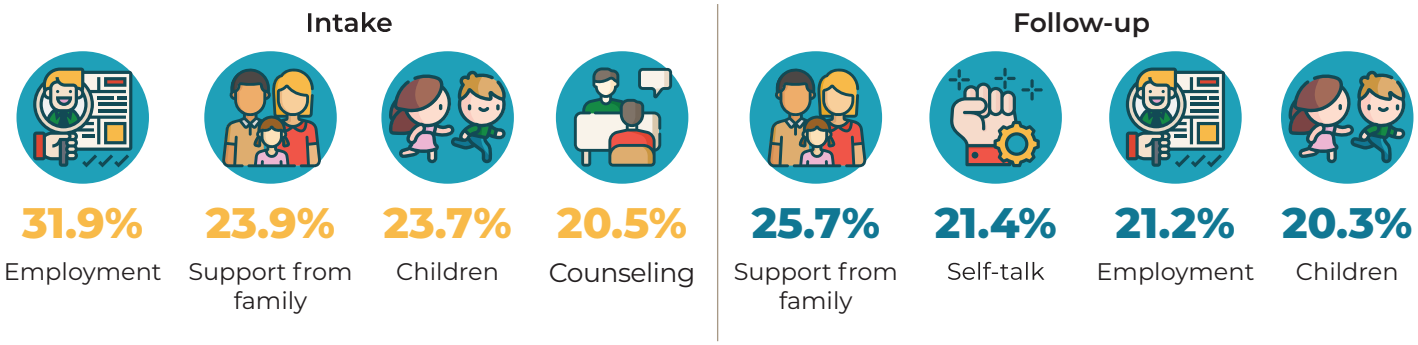


a—Statistical difference by gender at intake ($p < .05$) and follow-up ($p < .05$).
b—Statistically significant decrease from intake to follow-up for men ($p < .01$) and women ($p < .001$); tested with paired t-test.

What Will Be Most Useful in Abstaining from Drugs/Alcohol

At intake and follow-up, respondents were asked what 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, the top responses that were reported by respondents are presented for descriptive purposes in Figure 8.7. The most common responses at intake were employment, support from family, taking care of their children or dependents, and counseling. At follow-up, the most common responses were support from family, self-talk, employment, and caring for children or dependents.

FIGURE 8.7. TOP CATEGORIES RESPONDENTS REPORTED WILL BE MOST USEFUL IN STAYING OFF DRUGS AND/OR ALCOHOL AT INTAKE AND FOLLOW-UP (N = 439)[122]

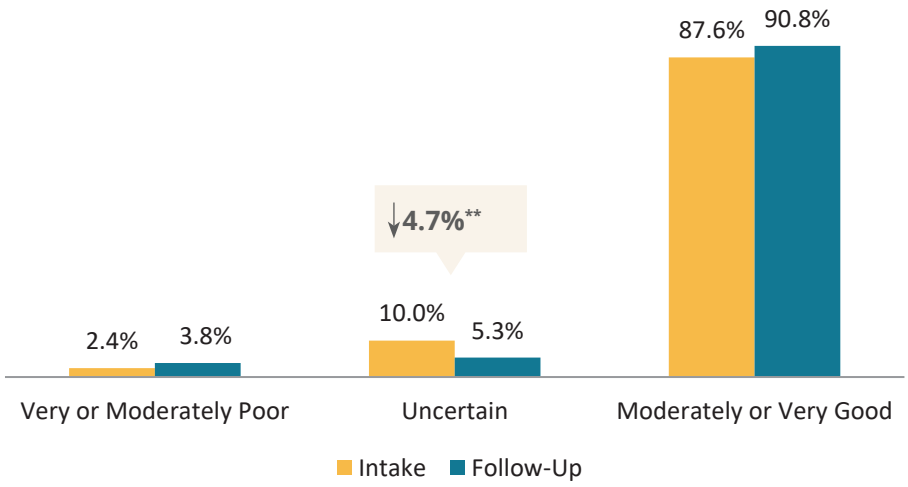


[122] Thirty-six individuals had missing data on what will be most useful in staying off drugs and/or alcohol at follow-up.

Likelihood of Abstaining from Drugs/Alcohol

Respondents were asked, based upon their situation, how good they believed their likelihood of abstaining from drugs/alcohol using a scale from 1 (very poor) to 5 (very good). Overall, 87.6% of respondents believed they had a moderately or very good likelihood of abstaining from drugs/alcohol at intake with no significant change at follow-up (90.8%; see Figure 8.8).[123]

FIGURE 8.8. RESPONDENTS REPORTING THEIR LIKELIHOOD OF ABSTAINING FROM DRUGS/ ALCOHOL AT INTAKE AND FOLLOW-UP (N = 468)



a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity ($p < .05$).
**$p < .01$.

[123] Seven individuals had missing data for chances of staying off drugs/alcohol at follow-up.

SECTION 9. MULTIDIMENSIONAL RECOVERY STATUS

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

Recovery goes beyond return to use or 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).[124] 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.[125] 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

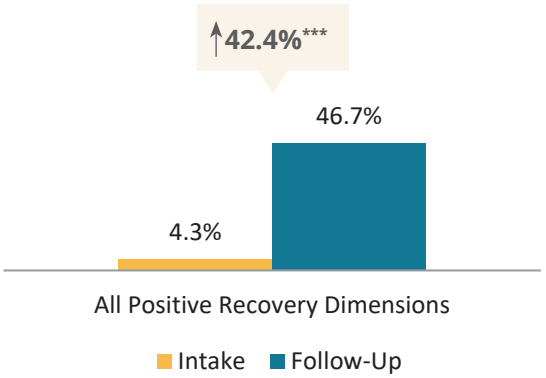
INDICATOR	POSITIVE RECOVERY DIMENSIONS	NEGATIVE RECOVERY DIMENSIONS
Substance use disorder (SUD) symptoms	No substance use disorder (SUD)	Mild, moderate or severe substance use disorder (SUD)
Employment	Employed at least part-time or in school	Unemployed (not on disability, not going to school, not a 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)
Health status	Fair to excellent health	Poor 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, as expected, a small percent of the followed-up sample (4.3%) was classified as having all eight dimensions of recovery (see Figure 9.1). At follow-up, there was a significant increase of 42.4% so that 46.7% of respondents had all positive dimensions of recovery.

[124] 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.

[125] 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 = 460)[126]



***p < .001.

Table 9.2 presents the frequency of respondents who reported each of the specific components of the multidimensional recovery index at intake and follow-up. At intake, the positive dimensions of recovery with the lowest percent of individuals reporting them were meeting criteria for no substance use disorder and not being arrested or incarcerated. At follow-up, the positive dimensions of recovery with the lowest percentage of individuals reporting them were not being arrested or incarcerated and meeting criteria for no substance use disorder.

TABLE 9.2. PERCENT OF RESPONDENTS WITH SPECIFIC POSITIVE DIMENSIONS OF RECOVERY AT INTAKE AND AT FOLLOW-UP (N = 460)

Factor	Intake Yes	Follow-up Yes
Met DSM-5 criteria for no SUD in the past 12 months	26.1%	77.6%
Usual employment was employed full-time or part-time in the past 12 months (or retired, on disability, a student, or caregiver)	78.7%	82.4%
Reported no homelessness	66.5%	92.8%
Reported not being arrested and/or incarcerated in the past 12 months	32.6%	71.3%
Reported no thoughts of suicide or attempted suicide in the 12 months	82.0%	94.1%
Self-rating of overall health was fair, good, very good, or excellent	94.8%	95.9%
Reported having someone they could count on for recovery support	90.7%	97.4%
Reported a quality of life rating in the mid or higher range (rating of 5 or higher)	90.2%	97.2%

[126] Fifteen individuals had missing data for at least one of the variables that was used to compute the multidimensional recovery status at follow-up and could not be assigned to a group. Additional numbers of cases had missing values for some of the variables used to compute the multidimensional recovery at follow-up, but because they had at least one negative dimension, they could be classified as not having all eight positive dimensions of recovery at follow-up.

To better understand which factors at entry to the program were associated with having all positive dimensions of recovery at follow-up, each element that defined the multidimensional status at intake was entered as predictor variables in a logistic regression model (see Table 9.3). Having all positive dimensions of recovery at follow-up is the criterion (i.e., dependent) variable. None of the intake predictor variables was significantly associated with having all the positive dimensions of recovery at follow-up.

TABLE 9.3. MULTIVARIATE ASSOCIATIONS HAVING ALL POSITIVE DIMENSIONS OF RECOVERY AT FOLLOW-UP

Factor	B	Wald	Odds Ratio	95% CI	
				Lower	Upper
Met DSM-5 criteria for no SUD in the 12 months before entering the program	.187	.709	1.205	.781	1.861
Usual employment was employed (or retired, on disability, a student, or caregiver) in the 12 months before entering the program	.347	2.036	1.414	.878	2.277
No homelessness in the 12 months before entering the program	.276	1.691	1.318	.869	1.997
Not arrested or incarcerated in the 12 months before entering the program	-.050	.059	.951	.632	1.430
Reported no thoughts of suicide or attempted suicide in the 12 months before entering the program	.377	2.003	1.457	.865	2.455
Self-rating of overall health at intake was fair, good, very good, or excellent	.547	1.308	1.728	.677	4.409
Reported have at least one person he/she could count on for recovery support before entering the program	-.001	.000	.999	.517	1.932
Reported a mid to higher quality of life before entering the program	.706	3.721	2.027	.989	4.154

Note: Categorical variables were coded in the following ways: Met DSM-5 criteria for SUD (0= mild, moderate, or severe SUD, 1 = no SUD), Usual employment was employed (0=not employed or in a controlled environment, 1= employed full-time, part-time, or retired, on disability, a student, or caregiver), homeless (0 = yes, 1 = no), arrested or incarcerated (0 = yes, 1 = no), had thoughts of suicide or attempts (0 = yes, 1 = no), self-rating of overall health was fair, good, very good, or excellent (0 = no, 1 = yes), had at least one person the client could count on for recovery support (0=no, 1=yes), mid to high quality of life (0 = no, 1 = yes).

***$p < .001$

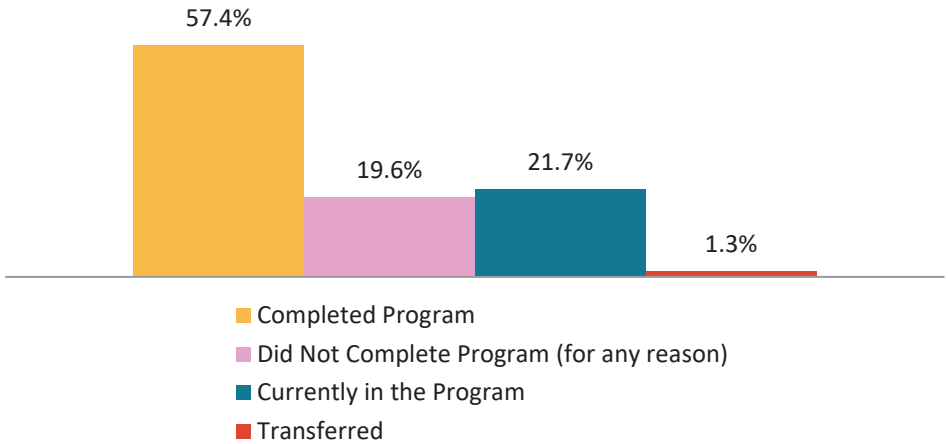
SECTION 10. RESPONDENTS' PERCEPTIONS OF THE SUBSTANCE USE DISORDER TREATMENT PROGRAMS

One of the important outcomes assessed during the follow-up interview is the respondents' perception of the treatment program experience. This section describes three aspects of respondents' satisfaction and perceptions of care in treatment: (1) respondent involvement in the program and how their involvement ended, (2) whether they would recommend the program to others, and (3) respondents' overall satisfaction with the program and ratings of program experiences.

Respondent Involvement in the Program

The majority of respondents (57.4%) reported at follow-up that they had completed the program they attended or that the program agreed they were ready to leave, 19.6% self-reported they did not complete the program, and 21.7% self-reported they were currently in the program at follow-up (see Figure 10.1). A small number of respondents (n = 6, 1.3%) stated they had transferred to a different program (but we have no information if they are currently in the program or have completed it). The average number of months individuals reported at follow-up they were involved in the program was 5.8.[127] Individuals who reported they were currently in the treatment program reported they had been involved in the program an average of 11.1 months. In contrast, individuals who had completed the program reported being in the program an average of 4.6 months and those who did not complete the program reported an average of 3.5 months.

FIGURE 10.1. RESPONDENTS REPORTED HOW THEIR PARTICIPATION IN SUD TREATMENT ENDED (N = 469)[128]

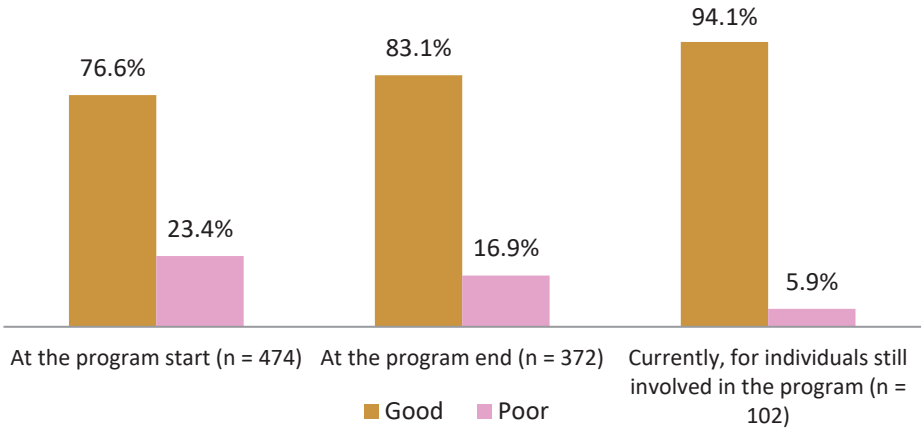


[127] Five individuals had missing data for the length of time they were involved in the SUD program.

[128] Six individuals had missing data for how treatment ended.

Figure 10.2 shows the percentage of respondents who reported the program started poor or good and ended poor or good. About three-fourths of respondents (76.6%) reported that the program started good, and among individuals who were no longer involved in the program, 83.1% reported it ended good. The vast majority of respondents (94.1%) who were still involved in the program at follow-up reported the program was currently good for them.

FIGURE 10.2. PERCENT OF RESPONDENTS WHO REPORTED AT FOLLOW-UP THE TREATMENT STARTED AND ENDED POOR OR GOOD[129]



Overall, the majority of respondents (89.9%) reported that the treatment episode was working/had worked pretty well (24.6%) or extremely well (65.3%) for them, 5.3% said the program worked somewhat well for them, and 4.8% said the program did not work for them at all.

About one-fourth of respondents (24.9%) reported they had been in other treatment programs since they left this treatment episode. Of those respondents (n = 114),[130] they reported they had been involved in an average of 1.3 other treatment programs or episodes (Min. = 1, Max. = 4).

Recommend the Program to Others

The majority of respondents (91.6%) indicated they would refer a close friend or family member to their treatment provider. Of the respondents who reported they would refer a close friend or family member to the program (n = 433),[131] 83.8% reported they would warn their friend or family member about certain things or tell them who to work with or who to avoid.

[129] Seven individuals had missing data for program rating at the start of treatment and 7 had missing data for program rating at the end of treatment.

[130] Although 118 individuals reported they had been in other treatment programs since intake, 4 individuals had missing values for the number of treatment episodes during the follow-up period.

[131] One individual who reported they would refer a close friend or family member to the program had a missing value for the question about warning the person about something about the program.

Respondent Satisfaction and Ratings of Program Experiences

At the beginning of the follow-up survey, interviewers asked respondents to provide an overall rating of the treatment programs where 0 represented "not at all right for me" and 10 represented "exactly right fit for me." Overall, the majority of respondents (79.5%) gave a high positive rating between 8 and 10 for their satisfaction with the treatment program (not in a table).[132] The average rating was 8.6.

Figure 10.3 shows that KTOS respondents were satisfied with the overall program services. More than 4 in 5 respondents reported the program staff believed in them and believed that treatment would work for them, they worked on the things that were most important to them in treatment, they had input into their treatment goals, plans, and how they were progressing over time, the program staff cared about them and their treatment progress, and they felt listened to and heard by staff when they told them personal things. The majority reported they had a connection with their counselor or staff person, their expectations and hopes for treatment and recovery were met, the treatment approach and method was a good fit for them and they fully discussed or talked about everything they wanted to with their counselor or program staff. Two-thirds reported the length of the program was just right (66.9%).

FIGURE 10.3. RATINGS OF 8, 9, OR 10 OF SPECIFIC TREATMENT PROGRAM EXPERIENCES (N = 475)[133]

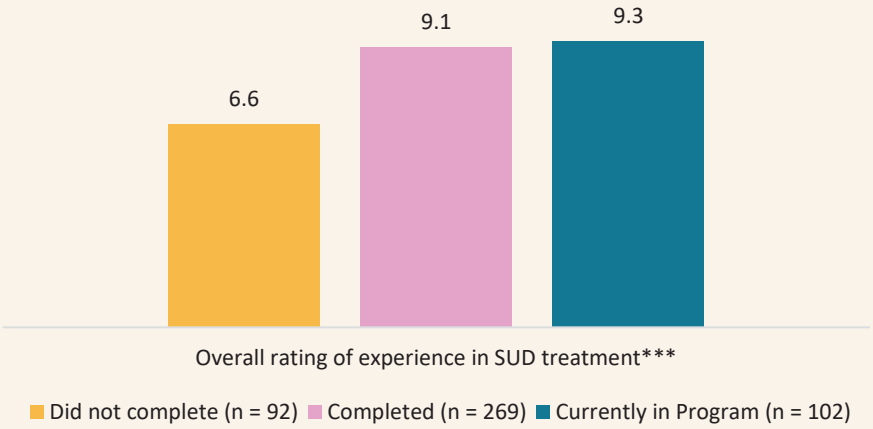
[132] One individual had missing data for the item about the overall rating of the program.

[133] Between 0 and 3 individuals had missing data for some satisfaction questions because the interviewer skipped the question, the respondent refused to answer, or the respondent did not remember the program we were asking about.

Association of Perceptions of Care and Program Completion

Respondents' perceptions of care in SUD treatment were examined by program completion status to better understand if there are aspects of treatment that individuals who did not complete perceived of differently from individuals who had completed treatment or were currently in the program at follow-up.
As expected, individuals who had not completed treatment gave lower overall ratings for their experiences in the program relative to individuals who had completed treatment and individuals who were currently in treatment (see Figure 10.4).

FIGURE 10.4. AVERAGE RATING OF OVERALL EXPERIENCE IN SUD TREATMENT AT FOLLOW-UP BY PROGRAM COMPLETION STATUS[134]



***p < .001.

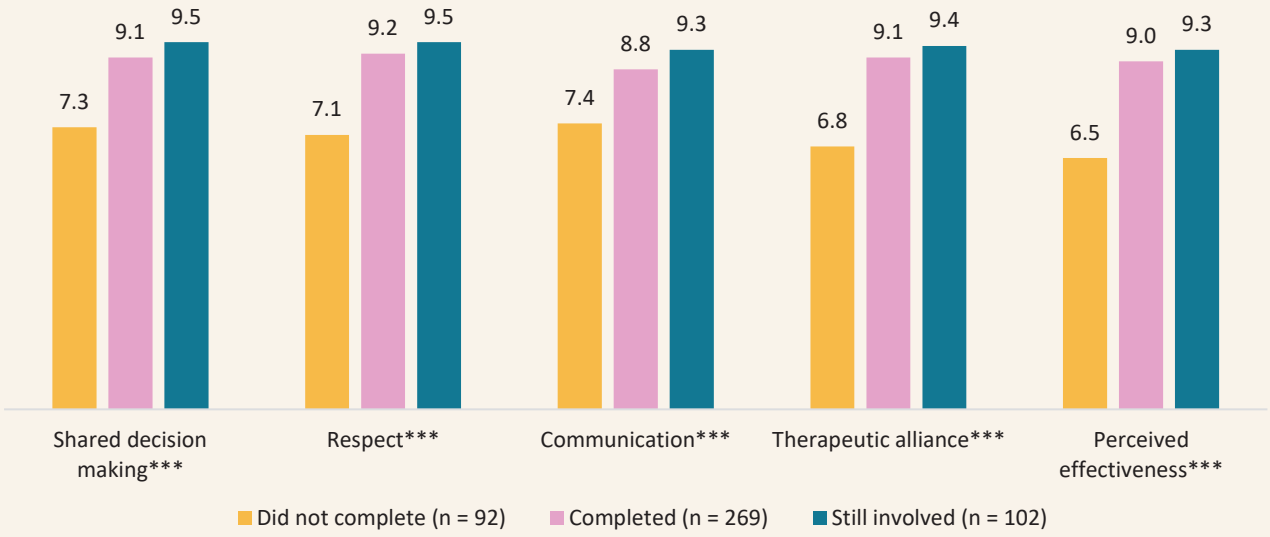
There was a significant association of program completion status and self-reported number of months spent in SUD treatment. The length of time in treatment was significantly different for each pair of groups. Individuals who reported they had not completed SUD treatment reported being in treatment the smallest average number of months, 3.5 months. Individuals who completed treatment reported an average involvement of 4.6 months, which was greater than the length of involvement for individuals who did not complete treatment and less than the length of involvement for individuals who were still in treatment (11.1 months; not depicted in figure).

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 they participated in.

[134] Six individuals who had been transferred to another program were omitted from this analysis because a group of 6 individuals was too small to conduct a one-way ANOVA.

Using the dimensions of clients'/patients' perceptions of care identified by the IOM (2015), specific items included in the follow-up surveys were mapped onto the domains with face validity, but no other psychometrics were assessed (see Figure 10.5). For each of the domains, the group of individuals who had not completed treatment gave significantly lower ratings than individuals in the other two groups: completed treatment and currently in treatment. In addition, individuals who were still involved in treatment gave higher ratings than individuals who had completed treatment for communication.

FIGURE 10.5. AVERAGE RATINGS OF CARE IN SUD TREATMENT AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



***p < .001.

SECTION 11. ASSOCIATION OF PROGRAM COMPLETION AND TREATMENT OUTCOMES

We examined treatment outcomes by program completion status as reported by respondents at follow-up: (1) completed the program (or left in good standing), (2) did not complete the program, and (3) currently in the program.

The majority of individuals who completed the follow-up survey reported at follow-up that they had completed treatment/program (57.4%, n = 269), while similarly smaller percentages reported they had not completed the program (19.6%, n = 92), were currently in the program (21.7%, n = 102), and a small number reported they were transferred to a different program (1.3%, n = 6).[135]

Individuals in the three different program completion groups did not differ significantly on average age, gender, or race/ethnicity (see Table 11.1).[136]

TABLE 11.1. DEMOGRAPHICS FOR KTOS RESPONDENTS AT INTAKE BY PROGRAM COMPLETION

	Did not complete the program (n = 92)	Completed the program (n = 269)	Currently in the program (n = 102)
Age	37.1	37.5	39.3
Gender			
Male	50.0%	55.8%	44.1%
Female	50.0%	44.2%	55.9%
Race			
White	88.0%	91.1%	87.3%
Black/African American	4.3%	4.5%	4.9%
Other or multiracial	7.6%	4.5%	7.8%

* $p < .05$.

Examination of reported substance use in the 12 months before entering treatment by program completion status showed no statistically significant associations (see Table 11.2).

[135] Six individuals had missing data for the item about completing treatment/SUD program.

[136] Among the 469 individuals who gave a response to the question about completing treatment, six individuals reported they were transferred to a different program, which is too small of a group to include in the analysis. Thus, this analysis is for the 463 individuals who gave a response of other than transferring to the item about how their participation in the program ended.

TABLE 11.2. SUBSTANCE USE REPORTED IN THE 12 MONTHS BEFORE ENTERING TREATMENT BY PROGRAM COMPLETION STATUS

	Did not complete the program (n = 92)	Completed the program (n = 269)	Currently in the program (n = 102)
Problem alcohol use (i.e., used alcohol to intoxication, binge drank)	48.9%	39.0%	36.3%
Illicit drugs	91.1%	83.5%	89.2%
Cannabis	62.2%	58.4%	57.8%
Stimulants and/or cocaine	65.6%	61.0%	58.8%
Opioids (including heroin)	45.6%	37.8%	33.3%
CNS depressants (sedatives/ benzodiazepines/tranquilizers)	15.6%	16.75%	13.7%
Used more than one drug class	58.9%	55.8%	52.0%
Severity of SUD (per DSM-5 criteria)			
No SUD	21.1%	26.6%	27.5%
Mild SUD	5.6%	9.0%	7.8%
Moderate SUD	4.4%	4.9%	12.7%
Severe SUD	68.9%	59.6%	52.0%

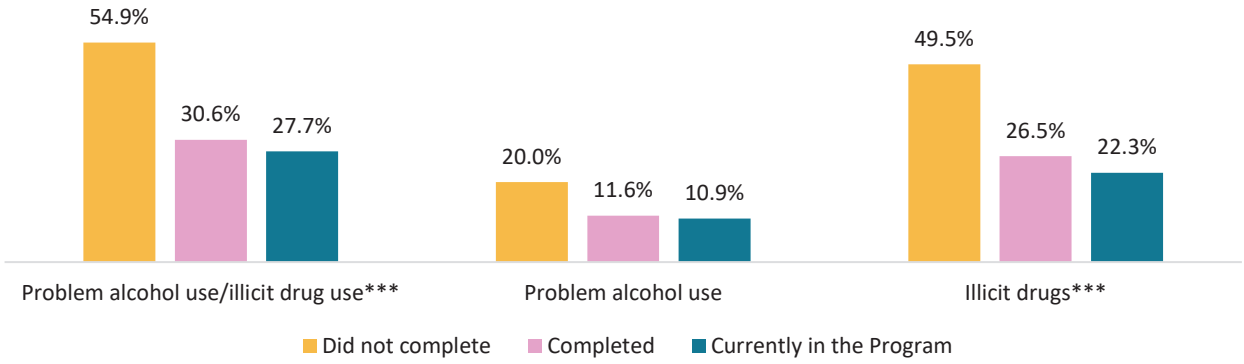
Treatment Outcomes

Substance Use

As for overall substance use at follow-up, a significantly higher percentage of individuals who had not completed the program (54.9%) reported problem alcohol use and/or illicit drug use in the 12 months before follow-up compared to individuals who had completed the program (30.6%) and individuals who were currently in the program (27.7%; see Figure 11.1). There was a significant association of program completion and illicit drug use. A significantly higher percentage of individuals who had not completed the program (49.5%) reported they had used any illicit drug relative to individuals who had completed the program (26.5%) and individuals who were currently in the program (22.3%).

> "I'm going to miss going to group when I leave—they are just amazing people. It's hard to explain, but I have been to other programs before and this is the only one who has helped me with my trauma and addiction. They broke me down to help remember my past, grow, and they loved me right back to life. They cared about every person."
>
> — KTOS RESPONDENT

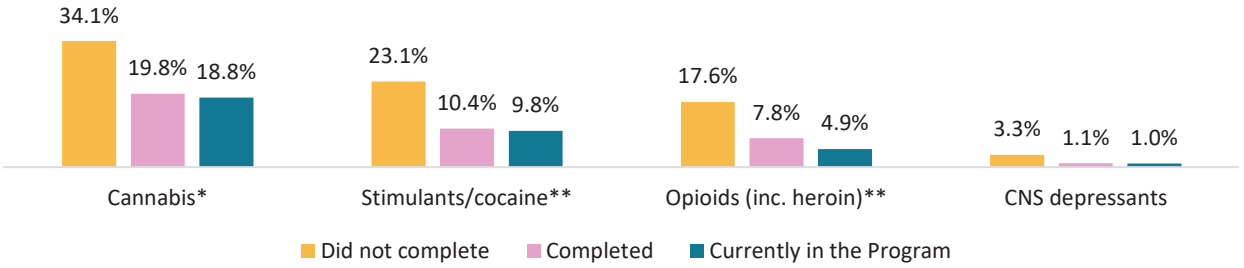
FIGURE 11.1. SUBSTANCE USE IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS



***p < .001.

Significantly higher percentages of individuals who had not completed treatment reported they had used cannabis, stimulants/cocaine (including methamphetamine, and opioids (including heroin) in the 12 months before follow-up compared to individuals who had completed treatment and individuals who were currently in treatment (see Figure 11.2).

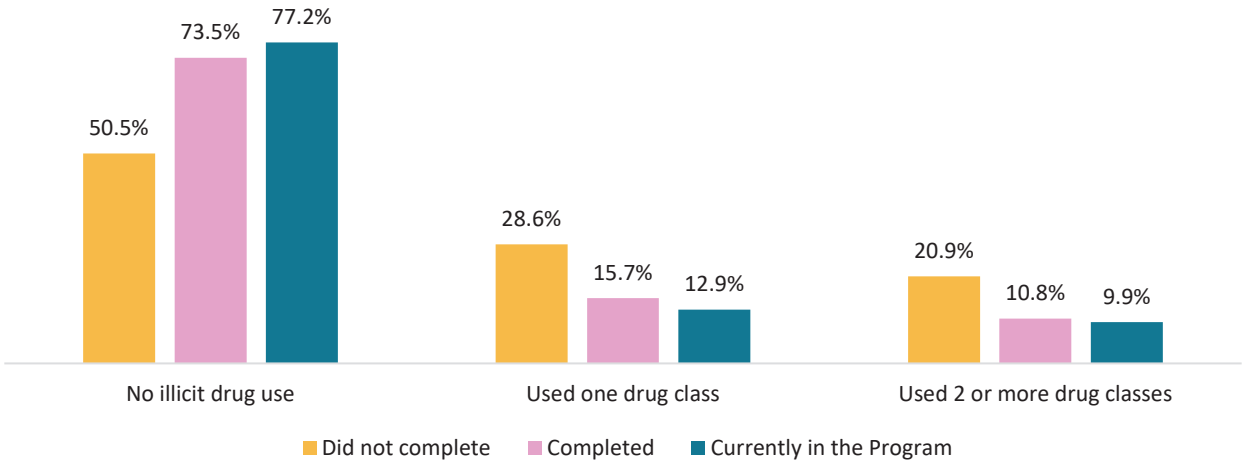
FIGURE 11.2. USE OF SPECIFIC CLASSES OF ILLICIT DRUGS IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS



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

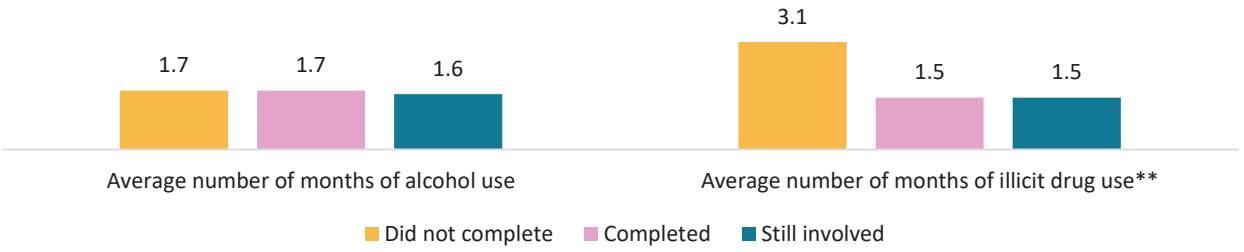
Looking at polydrug use, a significantly lower percentage of individuals who did not complete treatment reported they had used no illicit drugs compared to individuals who had completed treatment and individuals who were still involved in treatment (see Figure 11.3). Relative to individuals who had completed treatment, a significantly higher percentage of individuals who had not completed treatment reported they had engaged in polydrug use in the 12 months before follow-up.

FIGURE 11.3. POLYDRUG USE IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS



Examining number of months of drug use in the 12-month follow-up period among the entire follow-up sample, individuals who had not completed the SUD program reported a significantly higher number of months they used illicit drugs (based on the maximum number of months they used each drug class) compared to individuals who had completed the program and individuals who were currently in the program (see Figure 11.4).

FIGURE 11.4. NUMBER OF MONTHS OF ALCOHOL USE AND ILLICIT DRUG USE IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS (N = 462)

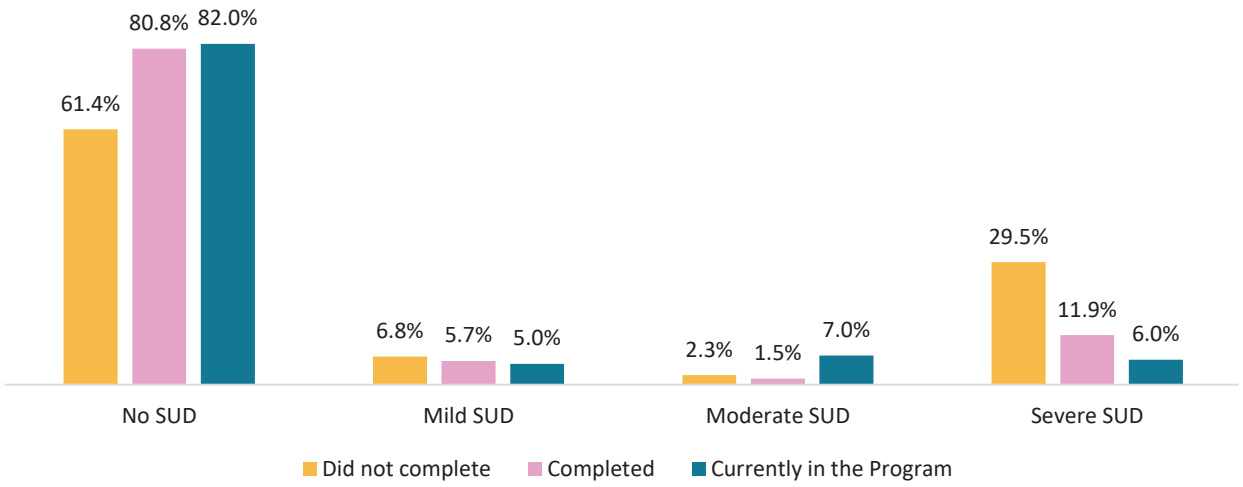


***p < .001.

There was a significant association of program completion status and severity of substance use disorder according to DSM-5 criteria (see Figure 11.5). A significantly higher percentage of respondents who had not completed the program reported criteria that were consistent with severe SUD at follow-up (29.5%) compared to individuals who had completed the program (11.9%) and individuals who were involved in the program (6.0%). Likewise, significantly higher percentages of individuals who had completed the program (80.8%) and who were currently in

the program (82.0%) reported criteria that were consistent with no substance use disorder at follow-up compared to individuals who had not completed the program (61.4%).

FIGURE 11.5. SEVERITY OF SUBSTANCE USE DISORDER IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS (N = 449)***

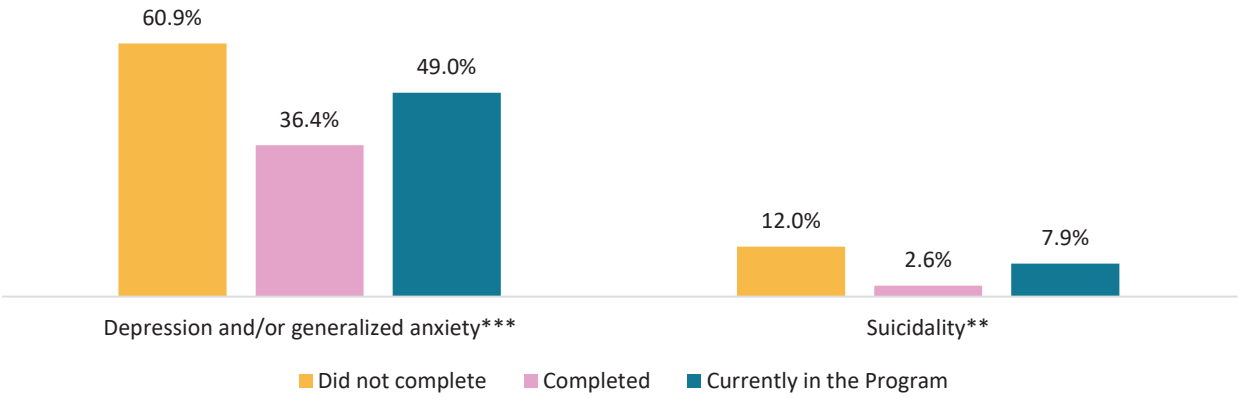


***p < .001.

Mental Health and Physical Health

A significantly smaller percentage of individuals who had completed the SUD program (36.4%) met criteria for depression and/or generalized anxiety during the follow-up period than individuals who had not completed the program (60.9%). A significantly smaller percentage of individuals who had completed the program (2.6%) reported suicidal ideation and/or suicide attempts in the follow-up period compared to individuals who had not completed the program (12.0%).

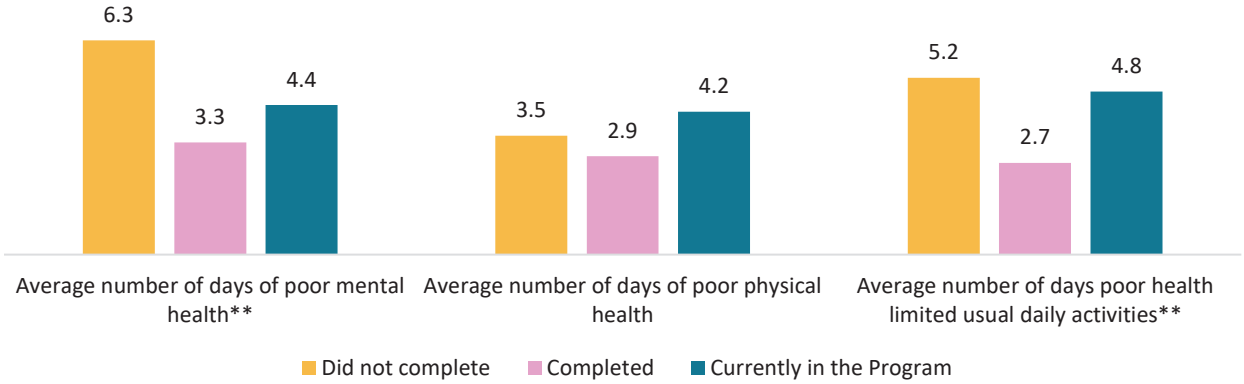
FIGURE 11.6. MENTAL HEALTH IN THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS



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

There was a significant association of program completion status with number of days of poor mental health and number of days poor health limited usual daily activities in the 30 days before follow-up (see Figure 11.7). Individuals who had not completed the program reported significantly greater number of days of poor mental health and greater number of days poor health limited their usual activities compared to individuals who had completed the program. There were no other differences between the groups.

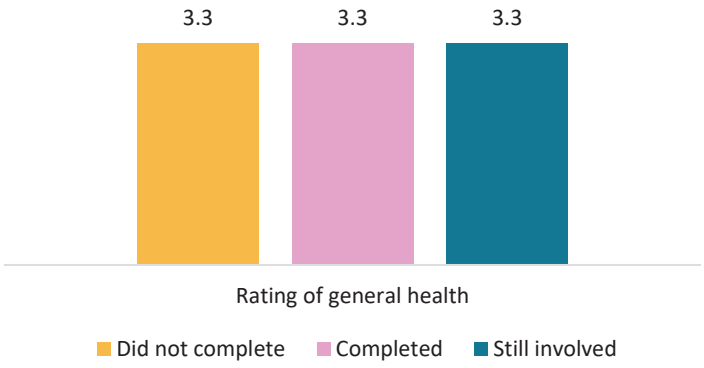
FIGURE 11.7. AVERAGE NUMBER OF DAYS OF POOR MENTAL HEALTH, PHYSICAL HEALTH IN THE 30 DAYS BEFORE FOLLOW-UP BY PROGRAM COMPLETION STATUS



**p < .01.

There was no association between program completion and the respondents' rating of their general health at follow-up; each group had an average rating of 3.3 (see Figure 11.8).

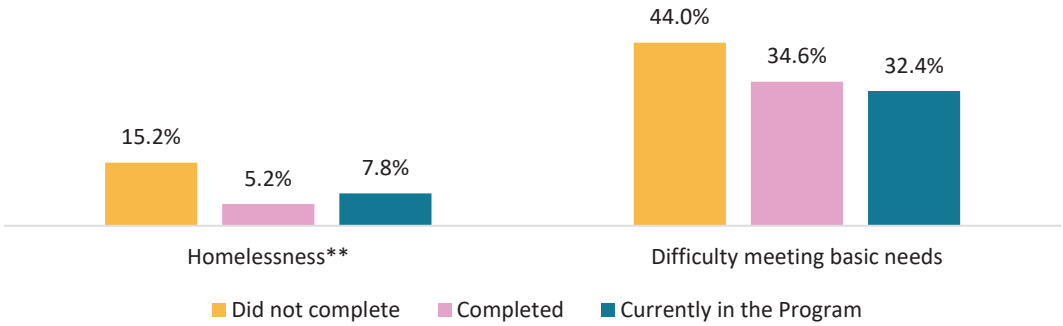
FIGURE 11.8. AVERAGE RATING OF HEALTH AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



Economic and Living Situation

A significantly higher percentage of individuals who had not completed the program reported they were homeless at follow-up compared to individuals who had completed the program (see Figure 11.9). There was no statistically significant association between program completion status and difficulty meeting basic needs (including basic living needs and healthcare) in the follow-up period.

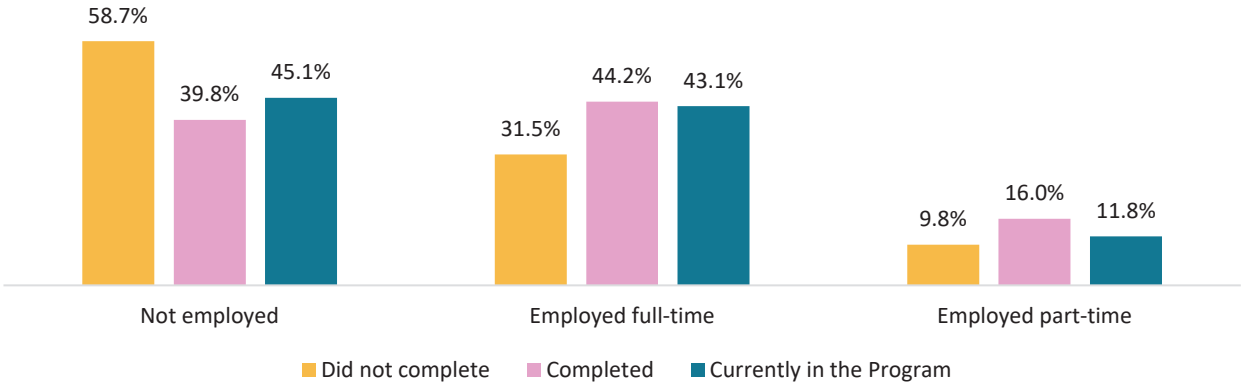
FIGURE 11.9. HOMELESSNESS AND DIFFICULTY MEETING BASIC NEEDS AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



**p < .01.

There was a significant association between program completion status and current employment at follow-up. A significantly higher percentage of individuals who had not completed treatment reported they were currently unemployed at follow-up when compared to individuals who had completed treatment (see Figure 11.10).

FIGURE 11.10. CURRENT EMPLOYMENT STATUS AT FOLLOW-UP BY PROGRAM COMPLETION STATUS*

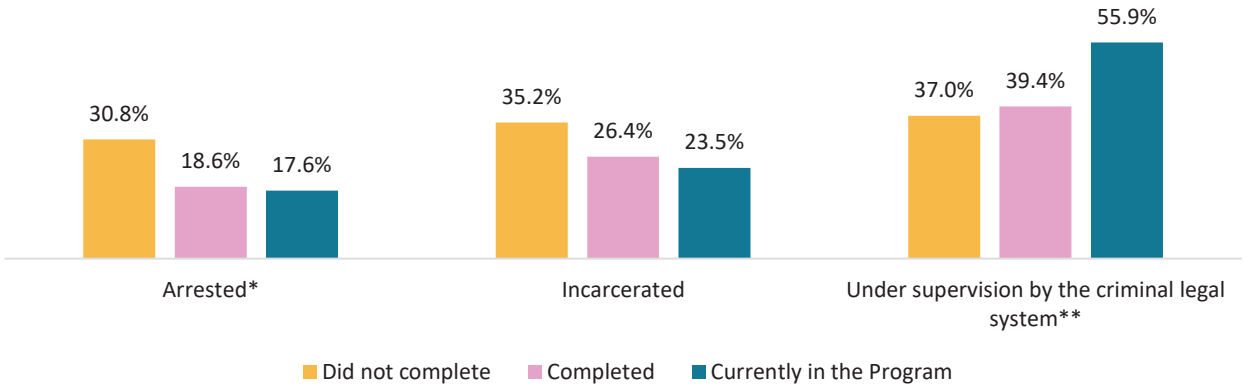


*p < .05.

Criminal Legal System Involvement

A significantly higher percentage of individuals who did not complete the program reported they had been arrested in the 12-month follow-up period compared to individuals who had completed the program (see Figure 11.11). There was no significant association between program completion status and incarceration during the follow-up period. A significantly higher percentage of individuals who were currently in the program were under supervision by the criminal legal system (55.9%) relative to individuals who had not completed the program (37.0%) and individuals who had completed the program (39.4%).

FIGURE 11.11. ARRESTS, INCARCERATION, AND SUPERVISION BY THE CRIMINAL LEGAL SYSTEM DURING THE 12-MONTH FOLLOW-UP PERIOD BY PROGRAM COMPLETION STATUS

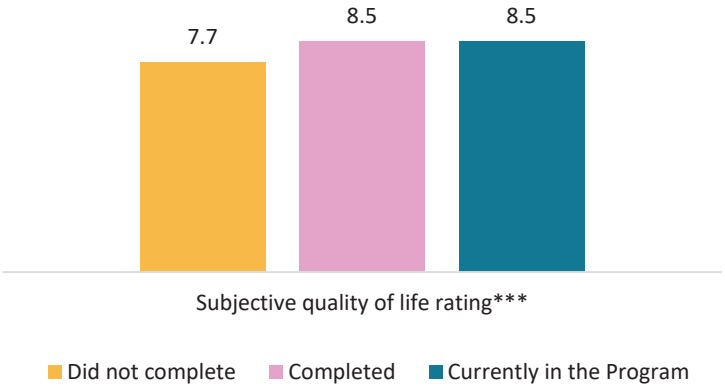


*p < .05, **p < .01.

Subjective Quality of Life

The average subjective quality of life ratings for each program completion status group significantly differed by program completion status. Respondents who had not completed treatment rated their quality of life at follow-up as significantly lower than individuals who completed treatment and those who were still involved in treatment (see Figure 11.12).

FIGURE 11.12. AVERAGE RATING OF QUALITY OF LIFE AT FOLLOW-UP BY PROGRAM COMPLETION STATUS

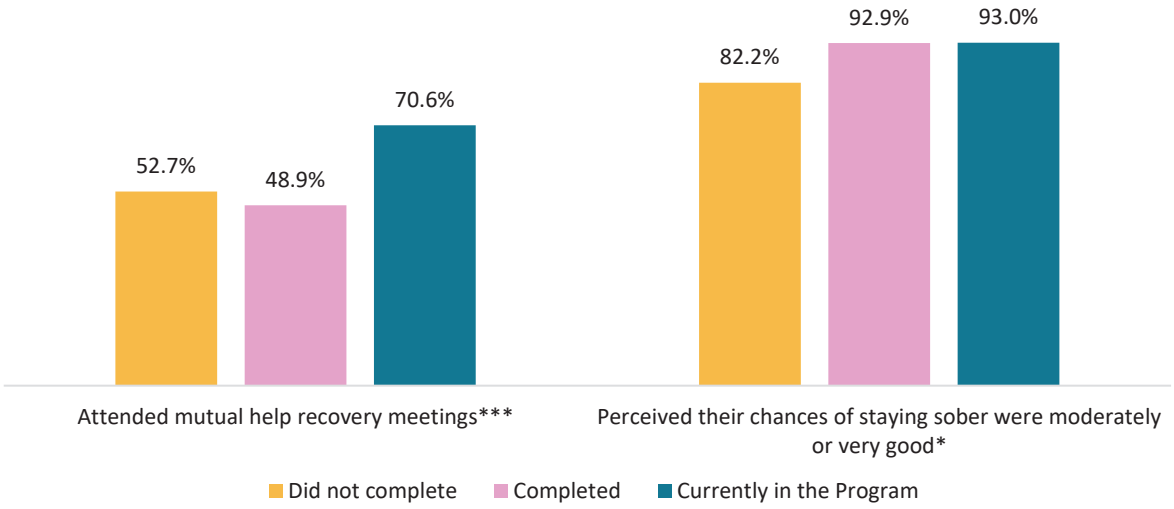


***p < .001.

Recovery Support

A significantly higher percentage of individuals who were currently in the program at follow-up (70.6%) reported they had participated in mutual help recovery meetings in the past 30 days compared to individuals who had not completed the program (52.7%) and individuals who had completed the program (48.9%; see Figure 11.13). The vast majority of individuals in each group perceived their chances of staying/getting off alcohol and drugs was moderately to very good, with a significantly higher percentage of individuals who had completed treatment reporting their chances were moderately to very good compared to individuals who had not completed treatment.

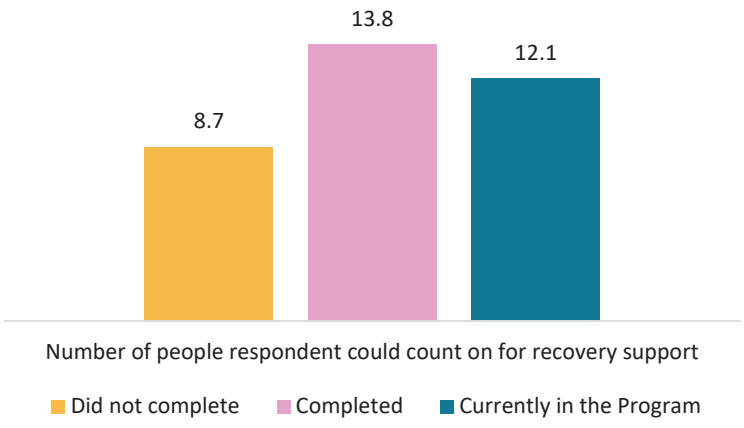
FIGURE 11.13. PARTICIPATION IN MUTUAL HELP RECOVERY MEETINGS AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



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

The average number of people respondents could count on for recovery support at follow-up was high and not significantly different by program completion status (see Figure 11.14).

FIGURE 11.14. AVERAGE NUMBER OF PEOPLE RESPONDENTS COULD COUNT ON FOR RECOVERY SUPPORT AT FOLLOW-UP BY PROGRAM COMPLETION STATUS



SECTION 12. ESTIMATE OF COST SAVINGS OF SUBSTANCE USE DISORDER TREATMENT IN KENTUCKY

This section examines cost reductions or avoided costs to society after respondents begin participation in CMHC substance use disorder treatment. Using the number of respondents who self-reported illicit drug and alcohol use at intake and follow-up in the KTOS sample, a cost per person based on national aggregate data was applied to this study sample. This information was then used to estimate the cost to society for the year prior to when respondents entered treatment and then for the same respondents during the year after treatment intake.

Importance of Cost Savings Analysis

There is great continuing policy interest in examining cost reductions or avoided costs to society after individuals participate in CMHC substance use disorder treatment. This policy interest is fueled by concerns over the cost of SUD to overall personal health and to incarceration. 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, thorough assessment requires a great number of econometrics. 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[137] and a separate study of the societal costs of excessive alcohol consumption in the U.S. in 2006.[138] 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.[139, 140] These updated costs were used in the calculations for the cost savings analysis in this KTOS follow-up report.

Estimates of the Cost of Alcohol and Drug Use Disorders

The national report and the subsequent revisions of estimates of costs referenced in this report factored in all the many explicit and implicit costs of alcohol and drug abuse 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, each of these

[137] 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.

[138] 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.

[139] 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.

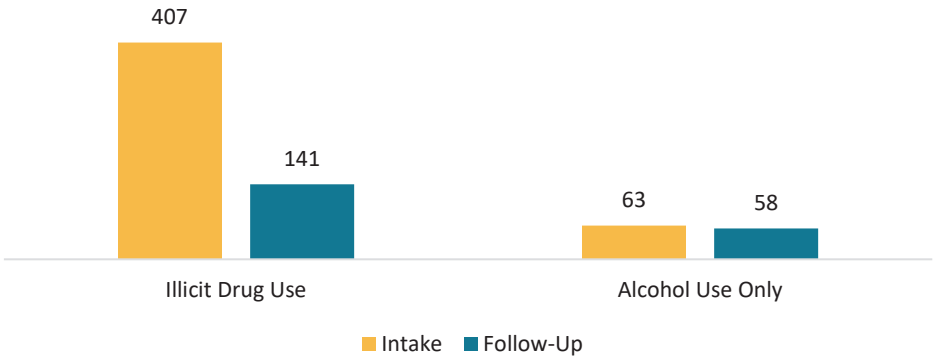
[140] National Drug Intelligence Center. (2011). The Economic Impact of Illicit Drug Use on American Society. Washington, DC: United States Department of Justice.

reports analyzes the hidden and obvious costs that are caused by individuals with SUD. To calculate the estimate of the cost per individual with alcohol use disorder or drug use disorder, 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 2011 for drug use).[141] 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 a federal reserve bank 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. Analysis hinged on estimating the differences in cost to society between persons who are actively engaged in problematic substance compared to those who are abstinent from drug and/or alcohol use. Thus, reductions in the number of respondents who reported using illicit drugs and alcohol use in the period before treatment to after treatment was examined.

Figure 12.1 shows the change in the number of respondents who reported any use of drugs and/or alcohol in the 12 months before intake and follow-up. Respondents who reported using illicit drugs only or illicit drugs as well as alcohol were counted in the drug use category because the cost per person of drug use was higher per drug user than the cost per person of alcohol use. Respondents who reported using alcohol only were counted in the alcohol use category. The change from intake to follow-up was significant. At intake, 407 respondents reported using illicit drugs and an additional 63 respondents reported using alcohol only. At follow-up, 141 respondents reported using illicit drugs and 58 additional respondents reported using any alcohol.

[141] Substance Abuse and Mental Health Services Administration. (2019). Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health (HHS Publication No. PEP19-5068, NSDUH Series H-54). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from http://www.samhsa.gov/data

FIGURE 12.1. THE NUMBER OF RESPONDENTS WHO REPORTED USING ILLICIT DRUGS AND/OR ALCOHOL IN THE 12 MONTHS BEFORE INTAKE AND FOLLOW-UP (N = 473)[142]



When the estimated cost per individual drug user was applied to the 407 individuals who engaged in illicit drug use in the year before intake, the annual estimated cost to society for the KTOS sample who used illicit drugs before entry into treatment was $16,834,334. When the average annual cost per individual with alcohol use disorder was applied to the 63 respondents who reported using alcohol only at intake, the estimated annual cost to Kentucky in 2023 was $1,210,104. The estimated total annual cost of drug and alcohol use in the 12 months before intake applied to the follow-up sample of KTOS respondents was $18,044,438. By follow-up, the estimated cost of the 141 individuals who reported illicit drug use was $5,832,042 and the estimated cost of the 58 individuals who reported using alcohol was $1,114,064, for a total of $6,946,106. Thus, as shown in Figure 12.2, after participation in CMHC substance use disorder treatment, the estimated gross cost to Kentucky taxpayers for these 473 respondents was reduced by $11,098,332.

FIGURE 12.2. ESTIMATED COST TO SOCIETY AT INTAKE AND FOLLOW-UP (AMOUNTS IN MILLIONS OF DOLLARS) (N=473)

$18 million
COST TO SOCIETY AT INTAKE

—

$6.9 million
COST TO SOCIETY AT FOLLOW-UP

=

$11.1 million
GROSS DIFFERENCE IN COST TO SOCIETY

Cost of Treatment

In KTOS reports from 2002 until the 2017 report, clinical service event data collected by the community mental health centers (CMHCs) that were submitted to Department for Behavioral Health, Developmental and Intellectual Disabilities (DBHDID) and managed by the University of Kentucky Institute for Pharmaceutical Outcomes and Policy (IPOP) was included in sections presenting clinical service

[142] Two individuals had missing data for illicit drug use in the follow-up period; thus, these cases are excluded from this analysis.

data for KTOS respondents. In these reports, the clinical service event data was matched to the KTOS survey data for the KTOS follow-up sample by clients' identifying data to calculate an estimate of the cost of substance use disorder treatment for the KTOS follow-up sample. Unit costs for different types of services was provided by the DBHDID and the Department for Medicaid Services Behavioral Health and Substance Abuse Services Inpatient and Outpatient Fee Schedules,[143, 144] and then applied to the total number of services KTOS respondents received wherein the payer was Medicaid or the DBHDID from the date of the intake survey submission to the follow-up survey completion date. However, the number of cases included the follow-up sample with no service data in the IPOP data increased over time. For example, in the KTOS 2018 report, when the clinical service data was matched to respondents in the KTOS follow-up sample (n = 1,224), 1,047 cases had no services listed or no services that could be assigned a unit cost (e.g., other than miscellaneous services). There are concerns that CMHC providers may not enter all the services, particularly Medicaid-funded services with the expansion of Medicaid funding of SUD services in recent years, into the data set. Because the services included in the current IPOP data may not capture all the services respondents included in the follow-up sample may have received, we decided to compute the average cost of treatment per respondent over several years (2012 – 2015), and use this average in the calculation of avoided costs. The average total costs of providing CMHC behavioral health treatment services in 2012, 2013, 2014, and 2015 as calculated from the service event data submitted to IPOP by the CMHCs were updated to 2015 dollar amounts, divided by the total number of respondents included in the follow-up samples for those years, yielding an average cost of treatment of $3,868 (in 2015 dollars). The estimate of cost of treatment per person was transformed to 2023 dollars: $4,951). This estimated cost of treatment was multiplied by 473, which was the number of individuals in the follow-up sample for whom we had alcohol and illicit drug use data for the 12-month follow-up period. The estimate of the cost of treatment was $2,341,823.

Cost Savings

The estimated net cost savings of providing treatment to the KTOS follow-up sample was estimated using the net difference in costs of alcohol and drug use divided by the cost of providing treatment: $11,098,332/$2,341,823, which equals $4.74 (see Table 12.1). In other words, for every dollar spent on CMHC substance use disorder treatment in FY 2022, there was an estimated savings of $4.74 in costs to Kentucky taxpayers associated with alcohol and drug use disorder.

[143] Department of Medicaid Services. Behavioral Health and Substance Abuse Services Inpatient (facility) Fee Schedule (Rev 06/2016). Retrieved from http://chfs.ky.gov/NR/rdonlyres/5F888306-0400-4FC1-91D1-530BC7A554CD/0/BHandSUFeeSchduleIPFrev612016r1.pdf.

[144] Department of Medicaid Services. Behavioral Health and Substance Abuse Services Outpatient (facility) Fee Schedule (Rev 06/2016). Retrieved from http://chfs.ky.gov/NR/rdonlyres/63561642-4335-45FB-9F06-FE3E75A9E101/0/BHandSUFeeScheduleOPNFrev612016.pdf.

TABLE 12.1. ESTIMATED COST SAVINGS OF PROVIDING TREATMENT TO INDIVIDUALS WHO USED ILLICIT DRUGS AND/OR ALCOHOL

	USED ALCOHOL AND/OR ILLICIT DRUGS IN THE 12-MONTH PERIOD	
	INTAKE	**FOLLOW-UP**
Drug use		
Number of clients	407	141
Alcohol use		
Number of clients	63	58
Estimate of total cost to society of drug and alcohol use	$18,044,438	$6,946,106
Gross cost difference from intake to follow-up	$11,098,332	
Estimate of cost of treatment (based on average cost per client in 2012 – 2015)	$2,341,823	
Off-set as net cost/benefit ratio	$11,098,332/$2,341,823	
Return on $1.00 Investment	$4.74	

SECTION 13. CONCLUSIONS AND IMPLICATIONS

Many states' efforts to evaluate the quality of SUD treatment focus on access and process measures for SUD treatment, with less attention to client-level outcomes, because of the cost, need for human resources, and difficulty of carrying out systematic evaluations. Kentucky's multi-year client-level outcome evaluation, KTOS, is a valuable resource for understanding and informing CMHC SUD treatment.[145] Kentucky is in the fortunate position of having a data infrastructure to collect client-level outcome data for adults entering SUD treatment in the state's community mental health centers. However, the value of client-level outcome data is only as good as SUD programs' level of participation in data collection efforts. Data presented for the past 11 KTOS annual reports shows that the decreasing number of adults in the follow-up sample, beginning in the 2022 report is driven by the decreasing number of intake surveys and the decreasing percentage of adults who give consent to be contacted for the follow-up survey. With decreasing participation in KTOS over the past several fiscal years, beginning in 2020, the utility of the data collected decreases. High staff turnover and the burdens on staff and programs that the COVID-19 pandemic put on programs may have led to the dramatic decrease in participation in KTOS. However, as business has returned to normal, participation in KTOS has not increased. Efforts to reengage SUD programs in KTOS would be beneficial.

The Institute of Medicine (IOM) committee (2015), which examined psychosocial interventions for mental health disorders and SUD, stated that recovery (from a mental or substance use disorder) is a more meaningful objective and domain than solely abstaining/reducing substance use or a reduction in target symptoms. The IOM committee conceptualized outcomes as fitting into three categories: target symptoms (e.g., depression, anxiety), functional status (performance on daily living tasks, participation in work/school, maintaining relationships, and community involvement) and wellbeing (life satisfaction, quality of life, recovery, self-determination, and respondents' perceptions of care). Thus, the outcomes examined in KTOS focus on target symptoms, functional status, wellbeing, and perceptions of care in addition to substance use.

The KTOS 2025 Annual Follow-Up Report describes characteristics of adults who participated in CMHC substance use disorder treatment programs in Kentucky and completed intake interviews in FY 2023 (N = 3,343). In addition, outcomes are presented for 475 respondents who completed a follow-up telephone interview about 12 months later, which yielded a 75.4% follow up rate for those selected into the statewide sample.

Of the respondents with intake interviews, over half were male (60.2%), 39.5% were female, and 0.3% were transgender, with ages 18 to 84(average age 37.9 years old). Most were White (91.8%), had children under the age of 18 (54.3%), and 82.4% had

[145] Cole, J., Logan, T., Tillson, M., Staton, M., & Scrivner, A. (2023). State of performance indicators in SUD treatment: How does Kentucky measure up? Lexington, KY: University of Kentucky, Center on Drug & Alcohol Research.

experienced at least one type of adverse childhood experience. The majority of respondents (57.2%) were unemployed at intake. More than half (55.5%) had been arrested and 60.5% spent at least one night in jail 12 months before treatment. Most respondents self-reported they were court-referred to treatment (67.1%), followed by deciding to get help on their own (18.7%). Most adults who completed an intake interview reported using illicit drugs (75.1%) and smoking tobacco (77.8%), while a minority reported use of alcohol (44.2%) in the 12 months before intake. On average, respondents reported being about 16.9 years old when they first began using drugs, 15.0 years old when they had their first alcoholic drink (other than a sip) and 15.9 years old when they began smoking tobacco.

Past-12-year trends in specific drug use at intake indicate that the percentage of respondents reporting non-prescribed opioid and methadone use have both decreased while the percentage of respondents reporting heroin use has remained relatively stable after an increase to the low teens in the 2015 report. The use of bup-nx increased in the 2017 report and has been less than one-quarter since the 2018 report. The percentage of respondents reporting methamphetamine use has increased from 6% in the 2014 report to a high of 50% in in the 2022 report. For the past two years, 49% of KTOS respondents have reported use of methamphetamine in the 12 months before entering treatment.

Of the 475 adults who completed a 12-month follow-up interview for this report, 52.0% of the sample was male, and 48.0% was female. The majority of follow-up respondents (89.7%) were White. Respondents in the follow-up sample were an average of 37.8 years old at the time of the intake interview and 35.6% reported they were married or cohabiting at intake. When individuals with a follow-up interview were compared with those who did not have a follow-up interview on a variety of intake variables, there were few significant differences for gender, homelessness, economic hardship, education, physical health, mental health, substance use, and severity of substance use. These differences indicate that followed-up individuals were worse off in several key domains (economic hardship, substance use, mental health) but also had higher education compared to those who were not followed up.

Many respondents showed significant improvements in substance use, mental health, physical health, criminal legal system involvement, employment and economic hardship, quality of life, and recovery supports. Respondents also report high levels of satisfaction with their substance use disorder treatment experiences. These improvements will be summarized in more detail below.

Areas of Success

Substance Use

Severity of substance use decreased significantly at follow-up. The percent of individuals with self-reported symptoms of severe substance use disorder (per the DSM-5) decreased from intake (59.2%) to follow-up (14.0%). Also, the percentage of

respondents with ASI alcohol or drug composite scores that met or surpassed the cutoff for SUD decreased from intake to follow-up. There were significant decreases from intake to follow-up in the percentage of respondents reporting that they experienced problems with drugs and alcohol and that they were considerably or extremely bothered by drug or alcohol problems in the prior 30 days.

Trends in any illicit drug use show that the percentage of respondents reporting illicit drug use has been significantly lower at follow-up than at intake each year for the past 17 years of reports. Percentages of respondents reporting any illicit drug use in the 12 months before follow-up has been a high of 43% in the 2012 report and a low of 25% in the 2015 report. In the current year's follow-up sample, 30% reported using illicit drugs at any point in the 12 months before follow-up.

Analysis of past-12-month use of drug classes indicates more than half of respondents (58.8%) reported using cannabis at intake, whereas 21.4% reported cannabis use at follow-up. For the fourth consecutive year, more than half of respondents (57.7%) reported using stimulants (other than cocaine) at intake in the 2025 report. Among the individuals who reported using stimulants at intake, 98.5% of them reported using methamphetamine. Significantly fewer individuals reported stimulant use at follow-up (11.5%) than at intake (57.7%). More than one-third of respondents (39.4%) reported using opioids (including heroin) at intake, whereas 9.1% of respondents reported opioid use at follow-up. A minority of followed-up respondents (15.5%) reported using CNS depressants in the 12 months before intake, with a significant decrease to 1.5% at follow-up. The percentage of followed-up respondents who used cocaine in the 12-month periods decreased from intake to follow-up by 11.3%. The same percent decrease (11.3%) was found for other illicit drugs including hallucinogens, inhalants, and synthetic drugs such as bath salts).

Not only are there significant decreases in the percentage of individuals who engaged in illicit drug use at follow-up, but also, significantly fewer individuals reported polydrug use in the 12-month and 30-day periods at follow-up compared to intake. Polydrug use has been associated with poorer treatment outcomes; thus, it is worthwhile to consider polydrug use in a treatment evaluation study.[146]

A little more than half of respondents reported using alcohol in the 12 months before intake, with a 23.8% decrease so that 28.5% reported use of any alcohol in the 12 months before follow-up. There were significant decreases in the percent of individuals who reported use of alcohol to intoxication (24.9%) and binge drinking (22.0%). Since the 2012 report, the percentage of the KTOS follow-up sample that has reported past-12-month alcohol use at intake has decreased steadily from 77% to a low of 50% in the 2021 report, and most recently to 52% in the 2025 report. There has also been a decrease in the percentage of respondents who reported past-12-month alcohol use at follow-up since the 2012 report (56%) to a low of 17% in the 2024 report, and most recently, 29% in this year's report.

[146] Wang, L., Min, J.E., Krebs, E., Evans, E., Huang, D., Liu, L., Hser, Y., & Nosyk,B. (2017). Polydrug use and its association with drug treatment outcomes among primary heroin, methamphetamine, and cocaine users. International Journal of Drug Policy, 49, 32-40. https://doi.org/10.1016/j.drugpo.2017.07.009.

Mental Health, Physical Health, and Interpersonal Victimization

Respondents' mental health showed significant improvements over the study follow-up period. The percentage of individuals who met study criteria for depression, generalized anxiety, comorbid depression and anxiety, and suicidal thoughts or suicide attempts decreased significantly from intake to follow-up. Trends in both depression and anxiety show that the percentage of respondents meeting criteria for each of these mental health concerns have increased at intake since the 2016 report when 41% reported symptoms that met study criteria for depression and 40% of respondents reported symptoms that met study criteria for generalized anxiety. In this year's report, 59% of respondents met criteria for depression and 58% met criteria for generalized anxiety at intake. The percentage of respondents with depression at follow-up has fluctuated from a high of 45% in the 2013 report to a low of 21% in the 2016 report. The percentage of respondents with anxiety at follow-up decreased from a high in the 2013 report (54%) to a low in the 2016 report (19%). In this year's report, 33% of respondents met study criteria for generalized anxiety at follow-up.

More than one-third of respondents (36.0%) reported they had experienced any interpersonal victimization in the 12 months before intake. By follow-up, significantly fewer respondents (15.4%) reported they had experienced any interpersonal victimization in the past 12 months.

KTOS respondents' perceptions of poor physical and mental health decreased significantly from intake to follow-up. For example, at intake, KTOS respondents reported that for nearly half of the past 30 days their mental health was not good (average of 14.3 days), whereas at follow-up, the average number of days was 4.1. The average number of days KTOS respondents reported their physical health was not good decreased in half from 6.7 at intake to 3.3 at follow-up. Also, individuals' ratings of their general health significantly improved from intake to follow-up.

Economic Status and Living Conditions

There were improvements in respondents' economic and living circumstances improved from intake to follow-up. For example, significantly fewer respondents considered themselves homeless in the past 12 months before follow-up (7.8%) than in the 12 months before entering treatment (33.7%). About 42% of respondents reported being employed full-time at follow-up compared to 28.4% at intake. Furthermore, the average number of months respondents reported working in the past 12 months increased from 5.4 months at intake to 6.2 months at follow-up. There was also a significant decrease in the percent of individuals who reported they had difficulty meeting basic living needs from intake to follow-up.

Criminal Legal System Involvement

Individuals' involvement with the criminal legal system decreased from the 12 months before treatment intake to the 12 months before follow-up. Over half of

individuals (59.7%) reported an arrest at intake, which decreased significantly to 20.9% at follow-up. A trend report shows that the percent of respondents reporting an arrest in the past 12 months at intake has remained between 51% and 62%. Percentages at follow-up have fluctuated between a low of 20% in the 2017 report and a high of 33% in the 2012 report. In this year's report, 21% of respondents self-reported an arrest at follow-up.

In this year's sample, 38.7% of individuals reported they had a conviction for a misdemeanor offense in the 12 months before intake, and at follow-up, only 8.1% reported a conviction for a misdemeanor. More than one-fourth of individuals (27.4%) reported a conviction for a felony in the 12 months before entering treatment, whereas at follow-up, only 5.3% reported a conviction for a felony. The majority of respondents (61.6%) reported being incarcerated at least one night in the past 12 months at intake compared to 27.6% of respondents at follow-up. Like arrests, the trend report for incarceration shows that, overall, the number of respondents reporting spending at least one night in jail has been relatively stable at intake (with a high of 66% in the 2021 report and a low of 56% in the 2023 report). The percentages of individuals who were incarcerated in the past 12 months at follow-up have fluctuated from a low of 21% in the 2015 report to a high of 37% in the 2012 report.

Subjective Quality of Life

Compared to intake (7.0) respondents rated their quality of life as significantly higher at follow-up (8.4), which was after participating in substance use disorder treatment for the majority of respondents.

Recovery Supports

Compared to intake (37.4%), significantly more individuals reported they had attended mutual help recovery group meetings in the past 30 days at follow-up (54.5%). Also, at follow-up, respondents reported having significantly more people they could count on for recovery support than at intake: 12.5 vs. 6.3. Significantly more individuals reported they had recovery supportive interactions with a sponsor at follow-up than at intake. The majority of respondents reported they had interactions with family and friends who were supportive of their recovery at intake and follow-up, with no change over time. Respondents reported at follow-up that support from their families, self-talk, employment, and parenting children would be most useful in staying off drugs/alcohol.

Multidimensional Recovery Status

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 multiple key dimensions of individuals' lives. At intake, as expected, a small percent of the followed-up sample (4.3%) was classified as having all eight dimensions of recovery.

At follow-up, there was a significant increase of 42.4% so that 46.7% of respondents had all eight dimensions of recovery.

Perceptions of Care in Sud Treatment

Respondent ratings of the treatment services they received were high (an average of 8.6 out of 10, with 10 representing the best possible experience). Four-fifths of individuals (79.5%) gave a high positive rating of 8 to 10. Overall, the majority of respondents (90%) reported that the treatment episode was working/worked pretty well or extremely well for them. Most respondents (92%) indicated they would refer a close friend or family member to their treatment provider. More than 4 in 5 respondents reported the program staff believed in them and believed that treatment would work for them, they worked on the things that were most important to them in treatment, they had input into their treatment goals, plans, and how they were progressing over time, the program staff cared about them and their treatment progress, and they felt listened to and heard by staff when they told them personal things. The majority reported the length of the program was just right (67%).

Areas of Concern

While there were many positive outcomes for respondents in the KTOS follow-up study, there are also potential opportunities to make even more significant improvements in some respondents' functioning after they begin treatment.

Alcohol and Illicit Drug Use

Even though there were significant decreases in substance use and severity of substance use, it is worth noting that 29.5% of KTOS respondents reported using illicit drugs, 28.5% of respondents reported using alcohol, and 14.0% met criteria for severe SUD at some point in the 12 months before follow-up.
Looking at trends over time in past-12-month use at intake, results show that while prescription opioid and methadone use has decreased gradually over the past 10 years, the percentage of respondents reporting methamphetamine use has increased from 6% in the 2014 report to 50% in the 2022 report and remained high in the 2024 and 2025 report (49%). Higher percentages of respondents reported use of methamphetamine but no opioids, or opioids and methamphetamine compared to the percent of respondents who reported use of opioids without methamphetamine use in the same 30-day period.

Nicotine Use

Even though there was a significant decrease in the percent of individuals who reported smoking tobacco, smoking tobacco remained very high for KTOS respondents at follow-up (65.2%). Moreover, the smoking rates at intake and follow-up were stable from the 2009 report to the 2020 report, when the percent of individuals reporting smoking at follow-up began decreasing. Further, the

percentage of individuals reporting vaporized nicotine use has been increasing in recent years. A common belief among individuals who smoke tobacco is that they can use vaporized nicotine products to transition to quitting smoking tobacco.[147] Research has shown that using e-cigarettes may result in some individuals quitting smoking cigarettes.[148] About 1 in 5 adults in the KTOS follow-up sample (19.6%) reported using smoking tobacco and vaporized nicotine in the 30 days before follow-up.

There is a commonly held belief that individuals should not attempt to quit smoking while in substance use disorder treatment, because smoking cessation can endanger their sobriety. This belief, however, has been refuted by recent empirical research studies.[149] Voluntary smoking cessation during substance use disorder treatment has been associated with lower return to use. Tobacco use is associated with increased mental health symptoms as well as well-known physical health problems, including increased mortality, and smoking cessation has been associated with lower alcohol and drug return to use.[150]

Mental Health

Compared to the general population, individuals who have a substance use disorder are more likely to also have mental health disorders.[151] Individuals with co-occurring substance use and mental health disorders often have medication noncompliance, return to use, homelessness, and suicidal behavior.[152] Overall, there was a significant decrease in mental health problems from intake to follow-up. However, 33.3% individuals were still reporting symptoms of depression and 33.1% were still reporting symptoms of anxiety at follow-up. Also, 26.4% reported symptoms of PTSD at follow-up, which was not significantly lower than the 30.6% of individuals with symptoms of PTSD at intake. Also, even though there were significant reductions in the average number of days individuals reported their mental health was not good at follow-up, the average number of days was 4.1 at follow-up, which is about 1 in 8 days, on average, individuals' mental health was poor in the past 30 days.

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[147] Gravely, S., Yong, H.H., Reid, J.L., East, K.A., Gartner, C.E., Levy, D.T., Cummings, K.M., Borland, R., Quah, A.C.K., Bansal-Travers, M., Ouimet, J., & Fong, G.T. (2022, Oct 29). Do current smokers and ex-smokers who use nicotine vaping products daily versus weekly differ on their reasons for vaping? Findings from the 2020 ITC Four Country Smoking and Vaping Survey. International Journal of Environmental Research & Public Health, 19(21), 14130. doi: 10.3390/ijerph192114130. PMID: 36361015; PMCID: PMC9653847.

[148] Kasza, K. A., Edwards, K. C., Anesetti-Rothermel, A., Creamer, M. R., Cummings, K. M., Niaura, R. S., Sharma, A., Pitts, S. R., Head, S. K., Everard, C. D., Hatsukami, D. K., & Hyland, A. (2022). E-cigarette use and change in plans to quit cigarette smoking among adult smokers in the United States: Longitudinal findings from the PATH Study 2014-2019. Addictive behaviors, 124, 107124. https://doi.org/10.1016/j.addbeh.2021.107124

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

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

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

[152] Center for Substance Abuse Treatment. Substance Abuse Treatment: Addressing the Specific Needs of Women. Treatment Improvement Protocol (TIP) Series, No. 51. HHS Publication No. (SMA) 15-4426. Rockville, MD: Center for Substance Abuse Treatment, 2009. Retrieved from: https://store.samhsa.gov/shin/content//SMA15-4426/SMA15-4426.pdf.

Chronic Pain

At follow-up, around one-fifth of KTOS respondents (21.3%) reported persistent chronic pain that lasted at least 3 months. Research has shown that individuals with persistent or chronic pain are more likely to report anxiety, depression, lower overall health ratings[153] and substance use disorders.[154] Self-medication can be problematic in substance use disorder treatment program for clients who report chronic pain.[155]

Basic Needs for Recovery Success

Meeting basic needs including health, stable living arrangements, having a purpose with daily meaningful activities, and recovery community are the four key dimensions to recovery.[156] In this year's report, there was no significant change in the percentage of individuals who reported having difficulty meeting health care needs from intake to follow-up, with 26.2% reporting difficulty meeting health care needs for financial reasons at follow-up. Even though there was a significant decrease in difficulty meeting basic living needs, 26.8% of respondents still reported having difficulty meeting basic living needs at follow-up. While the number of respondents reporting current full-time employment increased significantly, 44.4% of respondents remained unemployed at follow-up. The resulting financial strain from these economic factors could lead to increased substance use to alleviate the stress.[157] Providing referrals and vocational rehabilitation training may help improve basic living situations for many individuals and support continued recovery living for long-term positive results after treatment.

Multidimensional Recovery Status

Even though there were significantly more individuals who had all positive dimensions of recovery at follow-up than at intake (46.7% vs. 4.3%), the majority of individuals (53.3%) were still classified as not having all eight positive dimensions of recovery. Involvement in the criminal legal system and having symptoms of mild, moderate, or severe substance use disorder were the dimensions of recovery that individuals were most likely to have the negative aspect of at follow-up.

Gender Differences on Targeted Factors

At follow-up, among the individuals who self-reported they had not completed the SUD program and among individuals who were currently in the program, a higher

[153] Gureje, O., Von Korff, M., Simon, G., & Gater, R. (1998). Persistent pain and well-being: A World Health Organization study in primary care. JAMA, 280(2), 147-151.

[154] Ballantyne, J. & LaForge, S. (2007). Opioid dependence and addiction during opioid treatment of chronic pain. Pain, 129(3), 235-255.

[155] Rosenblum, A., Joseph, H., Fong, C., Kipnis, S., Cleland, C., Portenoy, R. (2003). Prevalence and characteristics of chronic pain among chemically dependent patients in methadone maintenance and residential treatment facilities. JAMA, 289(18), 2370-2378.

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

[157] 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.

percentage were female than male. Some gender differences in targeted factors were found in this report. Most, but not all of these, indicate that more women had mental health concerns, interpersonal victimization experiences, and greater economic hardship relative their male counterparts. More men reported smokeless tobacco use compared to women.

The only gender differences in substance use were found in nicotine use. More women reported use of vaporized nicotine at intake and follow-up for the 12-month and 30-day periods compared to men. Significantly more men reported using smokeless tobacco in the 12 months and 30 days before intake and follow-up. Mental health concerns assessed were more frequently reported by women than men. A significantly higher percentage of women met study criteria for depression, generalized anxiety, comorbid depression and anxiety, and posttraumatic stress disorder (PTSD) at intake and follow-up compared to men. A higher percentage of women reported thoughts of suicide and/or attempted suicide at intake relative to men. Compared to men, on average, women reported their mental health was not good for significantly more days than men at intake and follow-up and that poor mental and/or physical health limited their activities in the 30 days before intake. Compared to men, significantly fewer women rated their general health as very good or excellent at intake. Significantly more women reported they had experienced any interpersonal victimization than men at intake and follow-up. Research shows that women with co-occurring mental health and substance use disorders have poorer treatment outcomes and high rates of program dropout. Men and women have been shown to use different coping styles and thus may benefit from separate groups to plan recovery support.

Women's housing situation, employment, and economic hardship were worse than men's situations at intake and follow-up. First, significantly more women reported homelessness at intake when compared to men. Second, more women also reported difficulty meeting basic living needs at intake compared to men (54.4% vs. 37.0%). Significantly more women were unemployed at intake and follow-up when compared to men. Likewise, significantly more men reported they had full-time employment at intake and follow-up when compared to women. Even though women made significant gains in their employment by follow-up, they still lagged behind men in their economic standing. Employed men also had a significantly higher median hourly wage than employed women at both intake and follow-up. At intake, employed women made only $0.74 for every dollar employed men made at intake and $0.75 at follow-up. One possible explanation for men's higher median hourly wage when compared to women's is likely due to gender differences in occupation type. At follow-up, 56.4% of employed women had a service sector job, whereas 36.1% of employed men had a job in the natural resources, construction, and maintenance sector--which has higher average wages than service sector jobs. At intake, men had a higher average subjective quality of life rating than women. Finally, at follow-up, men reported they had significantly more people they could count on for recovery support compared to women.

Overall, a higher percentage of men reported being arrested in the 12 months

before entering treatment compared to women. Unlike other annual reports, no other gender differences were found in the criminal legal outcomes: incarceration, convictions for misdemeanor offenses and convictions for felony offenses, and supervision by the criminal legal system.

Perceptions of Care and Treatment Outcomes by Program Completion

Respondents' perceptions of care in SUD treatment were examined by program completion status to better understand if there were aspects of treatment that individuals who did not complete perceived of differently from individuals who had completed treatment or were currently in treatment at follow-up. For each of the domains (shared decision-making, respect, communication, therapeutic alliance, and perceived effectiveness) the group of individuals who had not completed treatment gave significantly lower ratings than individuals in the other two groups: completed treatment and currently in treatment.

As for overall substance use at treatment intake, there were no significant differences by program completion status. However, at follow-up, a significantly higher percentage of individuals who had not completed the program (49.5%) reported illicit drug use in the 12 months before follow-up than individuals who had completed the program (26.5%) and individuals who were currently in the program (22.3%). Significantly higher percentages of individuals who had not completed treatment reported they had used cannabis, opioids (including heroin), and stimulants/cocaine (including methamphetamine) in the 12 months before follow-up compared to individuals who had completed treatment and individuals who were currently in treatment. Further, a significantly higher percentage of individuals who had not completed the program reported criteria that were consistent with severe SUD at follow-up (29.5%) compared to individuals who had completed the program (11.9%) and individuals who were in the program (6.0%).

Mental health concerns at follow-up were also associated with program completion status. Smaller percentages of individuals who had completed the program had mental health concerns relative to individuals who had not completed the program (i.e., depression and/or anxiety, suicidality, average number of days of poor mental health, and average number of days poor health limited daily activities). A significantly higher percentage of individuals who had not completed the program reported they were homeless at follow-up compared to individuals who had completed the program (15.2% vs. 5.2%). Arrests and being under supervision by the criminal legal system were associated with program completion status. Specifically, a significantly higher percentage of individuals who did not complete the program reported they had been arrested in the 12-month follow-up period compared to individuals who were currently in the program (30.8% vs. 18.6%). A significantly higher percentage of individuals who were in treatment at follow-up (55.9%) reported they were under supervision by the criminal legal system compared to individuals who had not completed treatment (37.0%) and individuals who had completed treatment (39.4%). Individuals who were currently in treatment had the highest rate of participation in mutual help recovery meetings in the 30 days before

follow-up compared to the other two groups. Even though most respondents rated their chances of staying sober as moderately to very good, a significantly lower percentage of individuals who had not completed treatment reported their chances of staying sober were moderately to very good compared to individuals who had completed treatment. Respondents who had not completed treatment had a significantly lower subjective quality of life relative to respondents who had completed treatment and individuals who were still involved in treatment.

Study Limitations

The study findings must be considered within the context of the study's limitations. First, because there is no appropriate group of substance-using individuals who would like to receive substance use disorder treatment but do not receive it to compare with the KTOS respondents who participate in treatment, one cannot attribute all changes from intake to follow-up to substance use disorder treatment. Second, because not all respondents in the KTOS intake interviews agree to participate in the 12-month follow-up survey, it is unclear how generalizable the findings are to the entire population that completes an intake survey. Beginning with the COVID-19 pandemic, the number of KTOS respondents and the percent of individuals who have agreed to be contacted for the follow-up study have declined; thus, the generalizability of the current KTOS follow-up respondents to all adults receiving SUD treatment in Kentucky's CMHCs is very likely even lower than it was in the report years before 2022. Analysis comparing those individuals who completed a follow-up survey with those who did not complete a follow-up survey (for any reason, for example, they did not agree to be in the follow-up study, they were not selected into the follow-up sample, or they were not successfully contacted for the follow-up survey) found some significant differences between the two groups (gender, highest level of education, difficulty meeting basic needs, homelessness, chronic medical problems, depression, generalized anxiety, PTSD, use of illicit drugs, cannabis, opioids, and stimulants/cocaine, alcohol, alcohol to intoxication, vaporized nicotine use, and substance use disorder severity). Most importantly, significantly more women were followed up than were not followed up. For the most part, the significant differences suggest that individuals who were followed up were worse off in terms of substance use and severity of SUD, physical health, mental health concerns, living situation when compared to individuals who were not followed up. However, individuals who completed a follow-up survey had better higher education compared to individuals who did not complete a follow-up surveys. Nonetheless, most of the examined factors were not significantly different between the two groups, suggesting that the findings may generalize well to the entire population of adults who complete a KTOS intake interview.

Third, data included in this report were self-reported by respondents. There is reason to question the validity and reliability of self-reported data, particularly about sensitive topics, such as illegal behaviors and stigmatizing issues such as mental health and substance use. However, recent research has supported findings about the reliability and accuracy of individuals' reports of their substance

use.[158, 159, 160, 161] Earlier studies found that the context of the interview influences reliability.[162] During the informed consent process for the KTOS follow-up study, interviewers tell participants that the research team operates independently from the community mental health centers, responses will be reported in group format and will not be identifiable at the individual level, and that the research team has a federal Certificate of Confidentiality. These assurances of confidentiality and lack of affiliation with the data collectors may minimize individuals' concern about reporting stigmatizing or illegal behaviors or conditions.

Collecting all the secondary data that would be required to estimate the costs and cost savings for the individuals who participated in the KTOS follow-up study is labor intensive, expensive, and beyond the scope of the treatment outcome study; thus, funding constraints prevented estimating actual costs of alcohol and drug use disorders for the respondents. The cost-offset analysis included in this report is based on using national estimates of the annual cost of alcohol and drug use disorders and the annual NSDUH estimate of the number of individuals with alcohol use disorder and drug use disorder in the U.S. to estimate a cost per person with a SUD. This cost per person was then applied to the KTOS respondents based on their self-reported alcohol and drug use at intake and follow-up. As with any cost-offset analysis, there are several assumptions underlying the logic of this approach—any of which could prove to be faulty. Therefore, we have clearly laid out the assumptions in Section 12 to help interpret the findings.

Conclusion

This KTOS 2024 report provides a valuable examination of client-level outcomes for adults in CMHC substance use disorder treatment in Kentucky. Overall, clients of CMHC SUD treatment, including a variety of treatment modalities, who participated in the outcome evaluation made significant strides in all the targeted outcomes. Specifically, there were significant decreases in use of alcohol and all drugs, severity of SUD, depression and anxiety symptoms, suicidality, homelessness, economic hardship, arrests, convictions, and incarceration, and a significant increase in full-time employment, subjective quality of life, and recovery supports. Moreover, an estimate of the cost to Kentucky for alcohol and drug use disorder in the year before treatment compared to the cost to the state for alcohol and drug use in the year after treatment intake, while accounting for the cost of CMHC treatment, showed a significant estimated cost savings.

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APPENDIX A. METHODS

The KTOS evaluation uses a pre- and post-intervention research design, meaning that respondent data is collected at treatment intake and compared to data collected 12 months later at follow-up. All CMHC substance use disorder treatment programs in Kentucky are required to collect intake data on individuals entering treatment. Intake data are collected by clinicians on-site via an evidence-based web-based survey. At the end of the intake survey, clinicians explain the follow-up study to individuals and give them the opportunity to volunteer to participate in the follow-up study. During the informed consent process respondents are told that the research staff at the University of Kentucky have obtained a Certificate of Confidentiality from the U.S. Department of Health and Human Services to protect the research team from being forced to release respondent-identifying data to law enforcement or other government agencies. Respondents who agree to participate in the follow-up study give their consent using an electronic consent form on the web survey, which is approved by the University of Kentucky Medical Institutional Review Board (IRB). Identifying data are encrypted as the data are submitted on the web-based survey. Electronic data are stored on password protected computers and servers in secure facilities.

Of the 3,343 unduplicated respondents who completed an intake survey in FY 2023, 850 (25.4%) agreed to be contacted for the follow-up study. The percentage of respondents who agree to be contacted for the follow-up survey has decreased since the COVID pandemic, and is varied by region. This suggests that changing ways the information about the follow-up study is being presented to some individuals is having a negative impact on their willingness to agree to be contacted. From this group of respondents of the intake interviews who voluntarily agreed to be contacted for the follow-up study, the research team pulled the follow-up sample by first identifying individuals who had provided the minimum amount of contact information (e.g., two phone numbers or one phone number and one address), and individuals who reported either alcohol or drug use in the 12 months before treatment (or if they did not they were incarcerated all 365 days before entering treatment), and then selecting respondents by intake month (n = 720).

Follow-up surveys were conducted by interviewers on the research team at the University of Kentucky Center on Drug and Alcohol Research via telephone 12 months after the intake survey is submitted. Of the 720 individuals included in the follow-up sample, 90 were ineligible for participating in the follow-up survey for a variety of reasons (e.g., incarcerated, in residential treatment, deceased), which left 630 individuals eligible for follow-up. Of these 630 individuals, 475 completed a follow-up survey (see Table AA.1). Thus, the follow-up rate was 75.4%. The remaining individuals either (1) refused (1.1%) to complete the follow-up survey, or (2) were never successfully contacted, or if contacted they never completed the follow-up survey (23.5%).

TABLE AA.1. FINAL CASE OUTCOMES FOR FOLLOW-UP EFFORTS (N = 720)

	Number of Records	Percent
Ineligible for follow-up survey	90	12.5%
	Number of cases eligible for follow-up (N = 630)	
Completed follow-up surveys	475	
Follow-up rate *((the number of completed surveys/ the number of eligible cases)*100)*		75.4%
Expired cases *(i.e., never contacted, did not complete the survey during the follow-up period)*	148	
Expired rate *((the number of expired cases/eligible cases)*100)*		23.5%
Refusal	7	
Refusal rate *(the number of refusal cases/eligible cases)*100)*		1.1%
Cases accounted for *(i.e., records ineligible for follow-up + completed surveys + refusals)*	572	
Percent of cases accounted for *((the number of cases accounted for/total number of records in the follow-up sample)*100*		79.4%

Respondents were considered ineligible for follow-up if they were living in a controlled environment during the follow-up period or were deceased (see Table AA.2). Of the 90 individuals who were ineligible for follow-up, the majority (68.9%) were ineligible because they were incarcerated during the follow-up period. Among the 90 individuals who were ineligible at the time of follow-up, 15.6% were in residential treatment at the time of follow-up, 11.1% were deceased, at the time of follow-up, 2.2% had a health condition that prevented participating in the survey, one person provided invalid data, and one person was overseas during the follow-up period.

TABLE AA.2. REASONS RESPONDENTS WERE INELIGIBLE FOR FOLLOW-UP (N = 90)

	Number	Percent
Incarcerated	62	68.9%
In residential treatment	14	15.6%
Deceased	10	11.1%
Health condition	2	2.2%
Overseas	1	1.1%
Invalid data	1	1.1%

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

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

Respondents who completed a follow-up interview are compared in this section with respondents who did not complete a follow-up interview for any reason[163] (e.g., did not agree to be contacted for the follow-up survey, not selected into the follow-up sample, ineligible for follow-up, unable to be located for the follow-up).

Demographics

The majority of the respondents represented in this annual report were White (see Table AB.1). Significantly more female respondents completed a follow-up survey than did not complete a follow-up survey. Age, race, and marital status were not significantly different by follow-up status.

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

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Age	37.9 years	37.8 years
Gender**		
Male	61.6%	52.0 %
Female	38.1%	48.0%
Transgender	0.3%	0.0%
Race		
White	92.2%	89.7%
Black/African American	4.4%	4.4%
Other or multiracial	3.4%	5.9%
Marital status		
Never married	30.4%	31.2%
Married or cohabiting	37.9%	35.6%
Separated or divorced	28.8%	29.5%
Widowed	2.9%	3.8%

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

[163] Significance is reported for p < .01 because of the large sample size.

Socioeconomic Indicators

More than three-fourths of respondents reported that their usual living arrangement in the 12 months before entering substance use disorder treatment was living in their own or someone else's home or apartment (i.e., private residence; see Table AB.2). The second most frequently reported usual living situation was in jail or prison. Small percentages of respondents reported their usual living situation was in a shelter or on the streets, or in a residential treatment or sober living home. There was no statistically significant difference in respondents' usual living situation by follow-up status.

At the time of entering treatment, significantly more clients who were followed up (33.7%) reported they had experienced homelessness in the 12 months before entering treatment when compared to the clients who were not followed-up (26.2%). Most respondents who were currently homeless at intake, considered themselves to be homeless because they were staying temporarily with friends or family, or they were living on the street or in a car, with no significant difference by follow-up status (see Table AB.2).

TABLE AB.2 LIVING SITUATION OF RESPONDENTS BEFORE ENTERING TREATMENTS[164]

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Usual living arrangement in the 12 months before entering the program		
Own or someone else's home or apartment	78.7%	78.9%
Jail or prison	10.1%	8.2%
Shelter, hotel/motel, or on the street	5.9%	6.3%
Residential treatment, recovery center, sober living home, personal care home, hospital, school or work dormitory	5.0%	6.3%
Other or multiple situations above	0.2%	0.2%
Considered self to be homeless at any point in the 12 months before entering the program**	26.2%	33.7%
Why the individual considers himself/herself to be homeless [165]	(N = 740)	(N = 156)
Staying temporarily with friends or family	48.4%	54.5%
Staying on the street or living in car	37.0%	33.3%
Staying in a shelter	8.4%	9.0%
Staying in a hotel or motel	2.3%	1.9%
Staying in residential treatment, recovery center, or hospital	1.2%	0.6%
Incarcerated and does not have a place to stay after release	0.8%	0.0%
Multiple options selected (such as all of the above)	1.9%	0.6%

**p < .001.

[164] Five individuals had missing data for usual living situation.

[165] Fourteen individuals had missing for the reasons they considered themselves to be unhoused.

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

Table AB.3 presents the percent of respondents who reported inability to meet basic living needs (e.g., food, shelter, utilities, telephone), and any of their health care needs for financial reasons. A significantly higher percentage of individuals who completed a follow-up reported that in the 12 months before they entered treatment their household had difficulty meeting the basic living needs of food, shelter, utilities, or telephone compared to those who did not complete a follow-up.

TABLE AB.3. DIFFICULTY MEETING BASIC AND HEALTHCARE NEEDS IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Had difficulty meeting basic living needs *(e.g. shelter, utilities, phone, food)**	38.0%	45.5%
Had difficulty obtaining needed health care for financial reasons *(e.g., doctor visit, dental care, or fill prescription)*	22.3%	25.5%

*p < .01.

Table AB.4 describes respondents' level of education when entering treatment. A significantly higher percent of individuals who completed a follow-up survey reported they had an education level beyond a high school diploma/GED relative to individuals who did not complete a follow-up survey. Almost one-fourth of individuals who did not complete a follow-up survey reported at intake that their highest level of education was less than a high school diploma/GED.

TABLE AB.4. RESPONDENTS' HIGHEST LEVEL OF EDUCATION COMPLETED AT INTAKE

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Highest level of education completed**		
Less than GED or high school diploma	$24.3\%_a$	$17.5\%_b$
GED or high school diploma	$46.1\%_a$	$42.3\%_a$
Some vocational school to graduate school	$29.5\%_a$	$40.2\%_b$

a,b—subscripts not sharing the same value are significantly different at p < .01.
**p < .001.

There was no difference in respondents' usual employment status in the 12 months before treatment intake by follow-up status (see Table AB.5).

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

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Usual employment		
Employed full-time	43.5%	44.6%
Employed part-time	8.8%	12.2%
Irregular part-time work (seasonal, day)	4.5%	4.4%
Unemployed	19.4%	17.1%
On disability/applied for disability	12.9%	9.9%
In a controlled environment (jail, prison, residential treatment)	4.8%	4.4%
Unemployed, homemaker/caregiver	3.8%	4.6%
Retired	1.1%	1.5%
Unemployed, student	1.1%	1.3%

Respondents' employment status in the 30 days before they entered treatment did not differ significantly by follow-up status (see Table AB.6). More than half of respondents in both groups reported they were unemployed.

TABLE AB.6. DESCRIPTION OF EMPLOYMENT STATUS IN THE 30 DAYS BEFORE ENTERING TREATMENT[166]

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Employment in the past 30 days		
Employed full-time	32.6%	28.4%
Employed part-time	7.4%	10.3%
Irregular part-time work (seasonal, day)	3.0%	3.4%
Unemployed	57.1%	57.9%

Criminal Legal System Involvement

Less than one half of respondents reported being under supervision by the criminal legal system, with no difference by follow-up status (see Table AB.7).

[166] Three respondents had missing values for employment in the 30 days before entering treatment.

Over half of respondents reported they had been arrested in the 12 months before entering treatment, with no difference by follow-up status. Among the individuals who reported at least one arrest in the 12 months before entering treatment, the average number of arrests did not differ by follow-up status. The majority of both groups reported being incarcerated at least one night in the 12 months before entering treatment (see Table AB.7). Among the respondents who were incarcerated at least one night, the average incarceration time in the 12 months before entering treatment did not differ significantly by follow-up status.

TABLE AB.7. CRIMINAL LEGAL SYSTEM INVOLVEMENT WHEN ENTERING TREATMENT

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Currently under supervision by the criminal legal system	45.2%	42.9%
Arrested for any charge in the 12 months before entering treatment	54.8%	59.8%
Of those with an arrest,	n = 1,571	n = 284
Average number of arrests	1.9	2.2
Incarcerated at least one day	60.3%	61.7%
Of those incarcerated	(n = 1,729)	(n = 293)
Average number of days incarcerated in the past 12 months	71.1	58.0

Physical Health

Physical health measures were included in the intake survey (see Table AB.8). Respondents' average rating of their general health was 2.9, with no statistically significant difference.

There were no group differences for average number of days physical health was not good and the percent with chronic pain. Respondents were asked at intake if a doctor had ever told them they had any of the 12 chronic medical problems listed (e.g., asthma, arthritis, cardiovascular disease, diabetes, chronic obstructive pulmonary disease [COPD], tuberculosis, severe dental disease, cancer, Hepatitis B, Hepatitis C, HIV, and other sexually transmitted diseases). A significantly higher percentage of followed-up individuals reported at intake that they had been diagnosed with a chronic medical problem relative to individuals who were not followed-up (63.2% vs. 55.8%).

TABLE AB.8. PHYSICAL HEALTH STATUS AT INTAKE

	Followed Up	
	No (n = 2,868)	Yes (n = 475)
Average rating of overall health [1 = Poor, 5 = Excellent]	37.9 years	37.8 years
Average number of days physical health was not good in the past 30 days	6.1	6.7
Chronic pain (lasting at least 3 months)	26.7%	29.7%
Ever told by a doctor that client had one of the chronic medical problems listed*	55.8%	63.2%

*p < .01.

Mental Health

The mental health questions included in the KTOS intake and follow-up surveys are not clinical measures, but instead are research measures (see Table AB.9). A total of 9 questions were asked to determine if they met study criteria for depression, including at least one of the two leading questions: (1) “Did you have a two-week period when you were consistently depressed or down, most of the day, nearly every day?” and (2) “Did you have a two-week period when you were much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?” Significantly more individuals who completed a follow-up interview than individuals who did not complete a follow-up interview reported symptoms that met criteria for depression: 58.7% vs. 44.5%.

A total of 7 questions were asked to determine if respondents met study criteria for generalized anxiety, including the leading question: “In the 12 months before you entered this program, did you have a period lasting 6 months or longer where you worried excessively or were anxious about multiple things on more days than not (like family, health, finances, school, or work difficulties)?” Significantly more individuals who completed a follow-up interview than individuals who did not complete a follow-up interview reported symptoms that met study criteria for generalized anxiety: 57.9% vs. 44.7%.

Significantly higher percentages of individuals who completed a follow-up survey reported symptoms that met criteria for PTSD and suicidal ideation/attempts at intake compared to individuals who did not complete a follow-up survey. Also, individuals who completed a follow-up survey had a significantly higher average number of days they reported their mental health was not good in the 30 days before intake compared to individuals who did not complete a follow-up survey (14.4 vs. 10.7).

TABLE AB.9. PERCENT OF CLIENTS REPORTING MENTAL HEALTH PROBLEMS IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	Followed Up	
	No (n = 2,868)	Yes (n = 475)
Depression**	44.5%	58.7%
Generalized Anxiety Disorder**	44.7%	57.9%
Met criteria for PTSD**	19.1%	30.7%
Suicidality (e.g., thoughts of suicide or suicide attempts)	14.7%	18.9%
Number of days mental health was not good**	10.7	14.4

**p < .001.

Substance Use

Use of illicit drugs in the 12 months before entering treatment is presented by follow-up status in Table AB.10. Significantly more respondents who completed a follow-up survey reported using any illicit drugs, cannabis, stimulants/cocaine, and opioids (other than heroin) compared to those who did not complete a follow-up.

TABLE AB.10. PERCENT OF RESPONDENTS REPORTING ILLICIT DRUG USE IN THE 12 MONTHS BEFORE ENTERING TREATMENT[167]

	Followed Up	
	No (n = 2,833)	Yes (n = 471)
Any illicit drug**	73.2%	86.6%
Cannabis**	47.4%	58.8%
Stimulants and cocaine**	51.3%	61.1%
Opioids (prescription, methadone, suboxone)**	31.4%	39.3%
Heroin	13.3%	16.1%
CNS depressants (tranquilizers, sedatives, benzodiazepines, barbiturates)	12.1%	15.5%
Synthetic Drugs (synthetic marijuana, bath salts)	5.9%	7.6%
Hallucinogens	4.7%	7.0%
Inhalants	1.1%	1.9%

**p < .001.

Among individuals who were no in a controlled environment all 365 days before entering treatment, a significantly higher percent of individuals who completed a follow-up survey reported they had used alcohol, alcohol to intoxication, and binge

[167] Thirty-nine individuals were not included in the substance use comparison because they were incarcerated all 365 days before entering treatment.

drank alcohol in the 12 months before entering treatment compared to individuals who did not complete a follow-up survey (see Table AB.11).

TABLE AB.11. PERCENT OF RESPONDENTS REPORTING ALCOHOL USE IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	Followed Up	
	No (n = 2,833)	**Yes (n = 471)**
Alcohol**	42.8%	52.2%
Alcohol to intoxication**	28.9%	37.8%
Binge drank alcohol (i.e., drank 5 or more (4 for women) drinks in 2 hours**	25.2%	32.9%

**p < .001.

A majority of followed-up and non-followed-up respondents reported they had smoked tobacco products in the 12 months before entering treatment, with no difference by follow-up status (see Table AB.12). Significantly more followed-up respondents (55.2%) reported they had used vaporized nicotine products when compared to the respondents who did not complete a follow-up survey (43.2%). A minority of both groups reported using smokeless tobacco use, with no difference by follow-up status.

TABLE AB.12. PERCENT OF RESPONDENTS REPORTING TOBACCO USE IN THE 12 MONTHS BEFORE ENTERING TREATMENT

	Followed Up	
	No (n = 2,833)	**Yes (n = 471)**
Smoked tobacco	77.3%	81.3%
Vaporized nicotine**	43.2%	55.2%
Used smokeless tobacco	20.4%	22.1%

**p < .001.

Self-reported severity of alcohol and drug use was measured with Addiction Severity Index (ASI) alcohol and drug composite scores. Alcohol and drug composite scores are presented in Table AB.12 The lowest composite score is 0 and the highest composite score is 1.0.

Of respondents who were not in a controlled environment all 30 days, 38.0% of those not followed-up and 51.9% of those followed-up met or surpassed the Addiction Severity Index (ASI) composite score cutoff for alcohol and/or drug severe SUD, which was a significant difference (see Table AB.13). Significantly more respondents who completed a follow-up surpassed the cutoff score for severe drug use disorder when compared to those who did not complete a follow-up (38.4% vs. 26.3%).

Among respondents who were not in a controlled environment all 30 days before entering the program, the average score for the alcohol severity composite score was significantly higher for individuals who completed a follow-up survey than individuals who had not completed a follow-up survey (.15 vs. .12). Additionally, the average score for the drug severity composite score was 0.11 for respondents who did not complete a follow-up interview and 0.15 for followed up respondents, which was statistically significant (see Table AB.13).

TABLE AB.13. SUBSTANCE ABUSE AND DEPENDENCE PROBLEMS AT INTAKE

	Not in a controlled environment all 30 days before entering treatment[168]	
	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Percent of clients with ASI composite score equal to or greater than cutoff score for …		
Severe alcohol or drug use disorder**	38.0%	51.9%
Severe alcohol use disorder	19.4%	24.4%
Severe drug use disorder**	26.3%	38.4%
Average composite score for alcohol use[a]*	.12	.15
Average composite score for drug useb**	.11	.15

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

A significantly higher percent of respondents who were followed up reported at intake that they had ever been in SUD treatment before the current episode in their lifetime compared to individuals who were not followed up (see Table AB.14). Among respondents who reported a history of substance use disorder treatment, there was no significant difference in the average number of treatment episodes by follow-up status.

TABLE AB.14. HISTORY OF SUBSTANCE USE DISORDER TREATMENT IN LIFETIME

	Followed Up	
	No (n = 2,868)	**Yes (n = 475)**
Ever been in substance use disorder treatment in lifetime**	58.9%	67.6%
Among those who had ever been in substance use disorder treatment in lifetime,	(n = 1,688)	(n = 321)
Average number of times in treatment	3.1	3.7

**p < .001.

[168] Individuals who were in a controlled environment all 30 days before entering treatment (n = 430) were not included in this analysis.