

KY-Moms Maternal Assistance Towards Recovery

Annual Report 2024



Project Acknowledgments

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Postnatal assessments completed between
July 2022 and June 2023 for women who
were pregnant when they entered KY-Moms
MATR and gave birth between February 2022
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Executive Summary

KY-Moms MATR is a state-funded prevention and case management program aimed at reducing substance use and increasing positive birth outcomes for Kentucky women who are at risk for negative birth outcomes.

Evaluation Methods

The KY-Moms MATR outcome evaluation includes a face-to-face evidence-based assessment by program staff from KY-Moms MATR case management staff to assess substance use, mental health symptoms, intimate partner violence, and other factors such as education, employment status, and living situation prior to pregnancy and while involved in the program.¹

This report presents: (1) demographic and targeted factors of women who participated in the KY-Moms MATR program prior to the birth of their babies, and were eligible for a postnatal follow-up interview between July 2022 and June 2023 (pre-birth; n = 31), (2) self-reported birth and infant outcomes for KY-Moms MATR clients are described for women who participated in the KY-Moms MATR program before their babies were born, (3) changes in targeted risk factors for women who participated in the KY-Moms MATR program before their babies were born, completed a face-to-face evidence-based baseline interview with program staff, and completed a postnatal follow-up interview between July 2022 and June 2023, and (4) client satisfaction with their program experience.

Additionally, demographic and targeted factors for women who participated in the KY-Moms MATR program after their babies were born (post-birth; n = 26) and were eligible for a postnatal follow-up interview between July 2022 and June 2023 (n = 10) are reported separately in each section.

Description of Pre-birth Clients at Baseline

Overall, 68 pregnant women participated in the KY-Moms MATR program and completed a pre-birth baseline assessment.² The majority of pregnant clients coming into the program were White (92.6%), about 29 years old, and either married or cohabiting with a partner (52.9%) or never married (27.9%). Of the clients who were married or cohabiting (n = 36), the majority (86.1%) reported that their current partner was the father of the baby. The majority of clients (77.9%) had a high school diploma or GED or greater education and just over half (52.9%) were not currently employed.

Most clients (63.3%) were referred to KY-Moms MATR through a Community Mental Health Center (CMHC) or health care provider. A small proportion (7.4%) were referred to the KY-Moms MATR program

¹ For more information, see: Scrivner, A., Logan, T., Cole, J., & Miller, J. (2020). *Evidence Base for the KY-Moms MATR Evaluation Assessment and Methods*. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research.

² Clients who completed a prenatal baseline (n = 68) entered the KY-Moms MATR program between June 2019 and November 2020 and were eligible for follow-up between June 2021 and October 2022. There was an average of 13.4 days between when the client entered the program and when the baseline assessment was completed.

through the KY-Moms MATR prevention program. The remaining clients were referred by a treatment facility (other than CMHCs, 6.5%), were self-referred (3.8%), or referred by the justice system (1.3%).

Clients were an average of 24 weeks pregnant when they completed the baseline assessment and 83.8% reported that they had previously been pregnant. Clients reported an average of 6.6 prenatal visits with a health care professional. Close to half of clients (49.3%) were planning to breastfeed their babies.

KY-Moms MATR clients reported on several specific behavioral health risks associated with negative birth outcomes before becoming involved in the program. In the six months before pregnancy, 63.2% of clients reported illicit substance use, 35.3% reported alcohol use, and 82.4% reported smoking tobacco. In the past 30 days at baseline (while pregnant), none of the clients reported illicit substance use, 4.5% reported alcohol use, and 67.2% reported smoking tobacco.

At baseline, clients were asked about Adverse Childhood Experiences (ACE). Overall, clients reported an average of 5.4 adverse childhood experiences. Results indicated that only 2.9% of clients reported no ACEs while 58.8% reported experiencing between 4-9 ACEs. Specifically, 66.2% experienced emotional maltreatment, 54.4% reported that they had experienced emotional neglect, 47.1% of clients reported experiencing physical maltreatment, 41.2% experienced physical neglect and 41.2% reported sexual violence as a child before the age of 18. More than three-quarters of clients reported their parents were divorced or separated (77.9%) and 70.6% reported they had a household member with substance use disorder symptoms. Almost 56% reported they had a household member with a mental illness or had attempted

suicide and 47.1% witnessed intimate partner violence of a parent before the age of 18. Over one-third (33.8%) of clients reported a household member had been incarcerated.

Clients were also asked about situations in which the client may have ever experienced violence, harmed by someone else, or felt unsafe by someone other than a parent or guardian. Overall, 83.8% of clients reported ever experiencing any type of violence and in the 6 months before pregnancy, 38.2% reported any experience with violence. Less than two-thirds of clients (63.2%) reported they had ever been attacked or assaulted, 60.3% had ever experienced violence from a dating or intimate partner, 42.6% reported they had ever been sexually assaulted/raped, 29.4% reported they had ever been stalked by someone who scared them, and 29.4% were directly or indirectly threatened with a gun or held at gunpoint. Further, 32.4% of clients in the 6 months before pregnancy and 16.2% in the past 30 days reported that they had experienced any intimate partner violence (including psychological violence, control, physical assault, and sexual assault) perpetrated by a current or ex-partner.

In the six months before pregnancy, 61.8% of clients met study criteria for depression and/or anxiety and 35.3% met study criteria for co-morbid depression and anxiety. In addition, 27.9% met study criteria for post-traumatic stress disorder (PTSD) in the 6 months before pregnancy.

Just having someone to talk to whenever you are going through things, my baby this time was the 4th baby. The pregnancy was different this time, and the program really helped.

KY-MOMS MATR FOLLOW-UP CLIENT

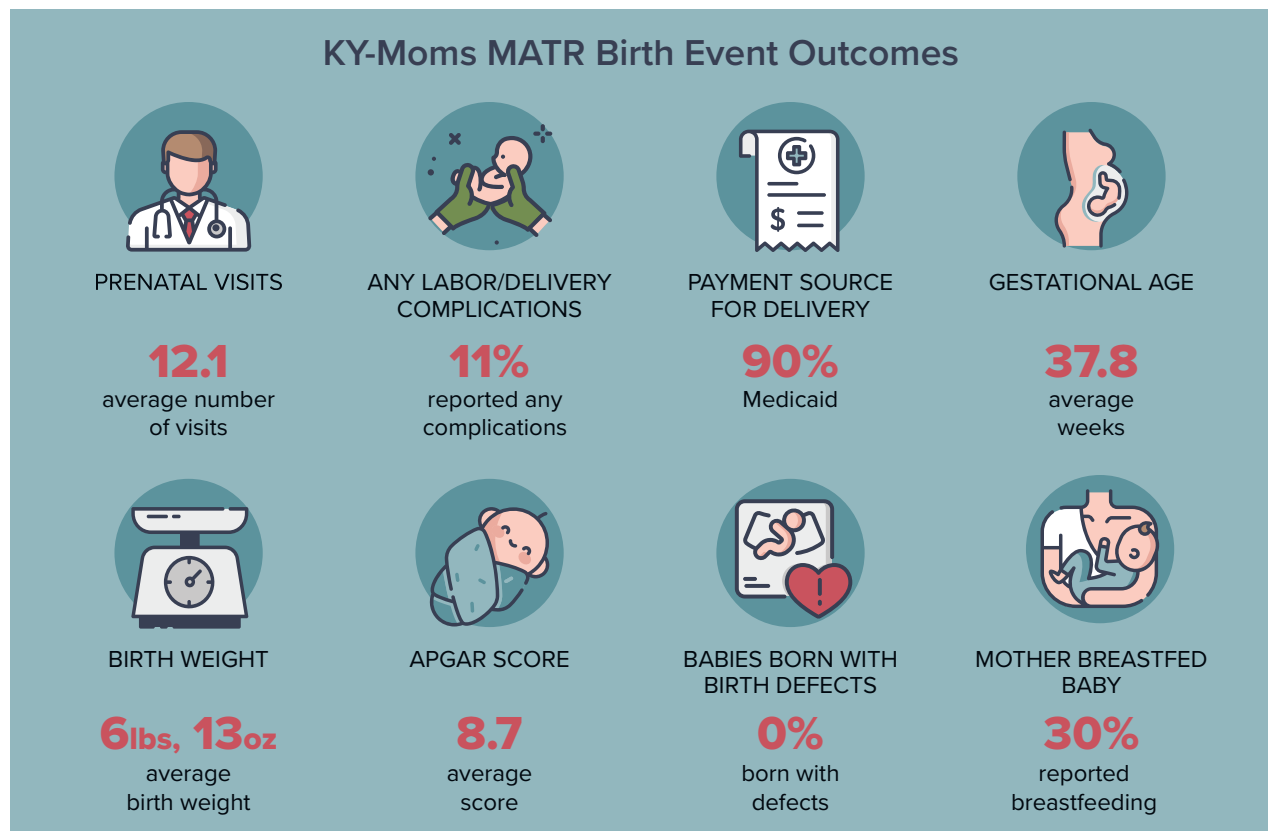
Birth Events and Outcomes of KY-Moms MATR Pre-birth Clients

Even with increased risk factors for negative birth outcomes before participating in the program, women who participated in the KY-Moms MATR program prior to the birth of their babies had birth outcomes that were positive overall. According to Kentucky Vital Statics Data, around 10% of clients reported any labor and delivery complications such as premature rupture of membranes, short and fast labor, or prolonged labor. A little more than 40% of KY-Moms MATR mothers reported experiencing at least one maternal health condition such as gestational diabetes (10.5%), hypertension (5.3%), gestational hypertension (10.5%), or previous preterm pregnancy (15.8%). Close to 16% of clients reported a sexually transmitted infection and 21.1% reported hepatitis B or C. Approximately 19% of the babies were born prematurely and another 28.6% were low birthweight babies (less than 5lbs, 8oz).

Babies were born with an average APGAR score of 8.7 and none of the babies were born with birth defects.

Change in Targeted Factors from Baseline to Follow-up for Pre-Birth Clients

At baseline, clients are given the opportunity to participate in the follow-up portion of the study and to be contacted by the University of Kentucky Center on Drug and Alcohol Research (UK CDAR) for a follow-up assessment approximately 6 months after the birth of the baby. When UK CDAR staff contact KY-Moms MATR clients, the client must not be in jail or other controlled environment (e.g., residential SUD program). During FY23, the follow-up analysis included 26 postnatal follow-up assessments with clients who had not had their babies prior to



entering the program.³

Clients were asked how their baby was doing at postnatal follow-up and all the mothers indicated the baby was “great” or “good.” Of the women who reported planning on breastfeeding at baseline (n = 14), 92.9% reported having breastfed their baby at postnatal follow-up. Of the clients who reported at prenatal baseline they were not planning on breastfeeding or had not decided yet (n = 13), 15.4% reported having breastfed at follow-up, though none were still breastfeeding.

Substance Use

Overall, in the six months before the follow-up interview, significantly fewer clients (19.4%) reported using illicit substances and/or alcohol compared to the 6 months before pregnancy (77.4%). A trend analysis from report year 2015 to the present shows a steady increase in clients reporting illicit substance use in the 6 months before pregnancy, suggesting the program is increasingly reaching high risk pregnant women with regard to substance use disorder.

Smoking tobacco rates also decreased, but not significantly, (from 83.9% of clients in the 6 months prior to pregnancy to 71.0% of clients in the past 6 months at follow-up) as did the number of cigarettes smoked among those who did smoke in the 30 days before pregnancy. About 23% of clients reported using e-cigarettes in the 6 months before pregnancy compared to 50.0% of clients in the 6 months before the follow-up, which was a significant increase.

³ Clients who completed a postnatal follow-up assessment (n = 26) were admitted to the KY-Moms MATR program and completed baseline assessments between January 2022 and December 2022.

Mental Health

The percent of women who met study criteria for depression decreased significantly from 48.4% in the 6 months before pregnancy to 22.6% in the 6 months before the follow-up. Among mothers with any mental health symptoms, there was a reduction in the number of reported depression symptoms after participation in the KY-Moms MATR program. Specifically, among women who met study criteria for depression in the 6 months before pregnancy (n = 15), they reported an average of 7.1 symptoms at baseline and 2.8 symptoms in the past 6 months at postnatal follow-up. In addition, the number of clients who met study criteria for depression and/or generalized anxiety in the past 6 months decreased significantly from baseline to follow-up. A trend analysis of mental health shows that rates of depression and/or anxiety at baseline were fairly consistent from 2015 to 2018, and increased after 2019.

In addition, 38.7% of clients met study criteria for post-traumatic stress disorder (PTSD) in the six months before pregnancy. At follow-up, 25.8% of clients met study criteria for PTSD.

Intimate Partner Violence and Experiences with Violence

The percent of mothers who reported experiencing any form of intimate partner violence perpetrated by a current or ex-partner significantly decreased from the 6 months before pregnancy (35.5%) to 16.1% in the past 6 months at postnatal follow-up. Trends show that the percent of clients who reported any intimate partner violence at prenatal baseline was fairly consistent from 2015 to 2019. In 2020, however, the percent of clients who reported experiencing any partner violence was higher compared to report year 2019 and has remained higher.

Around one-quarter to over two-fifths of clients reported any form of intimate partner violence each year in the six months before pregnancy. Overall, the number of clients who reported intimate partner violence in the 6 months since the birth of the baby was also fairly consistent over the previous 7 years but decreased slightly in 2022 before increasing again in 2023 and into 2024.

The percent of clients who reported experiencing any violence (i.e., any harassment or any assault) by a partner, ex-partner, acquaintance, or family member decreased significantly from 38.7% the 6 months before pregnancy to 12.9% the past 6 months at follow-up.

Economic Hardship, Living Situation, and Criminal Justice Involvement

Women in the KY-Moms MATR program reported improved economic conditions. Significantly fewer clients reporting they had difficulty meeting basic living needs (such as food, shelter, utilities, and telephone) at follow-up (41.9%) compared to the 6 months before pregnancy (64.5%). Less than one-quarter of clients (22.6%) reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy. At follow-up, 12.9% of clients reported they had difficulty meeting health care needs in the 6 months since the baby was born. While there was no significant change in living situation at follow-up, the majority of clients at prenatal baseline (80.6%) and postnatal follow-up (93.5%) reported living in a private residence (i.e., their own or someone else's home or apartment). Close to 19% of clients at baseline and 3.2% of clients at follow-up reported being arrested in the past 6 months. About 16% of clients reported spending at least one night in jail or prison in

the 6 months before pregnancy and none of the clients spent at least one night in jail at follow-up.

Physical Health

Over half of clients (54.8%) reported having at least one chronic health problem at prenatal baseline. Only 13% of clients reported experiencing chronic pain in the 6 months before pregnancy compared to 19.4% of clients at postnatal follow-up. The average number of days clients reported their mental health was not good decreased significantly from 9.1 days at prenatal baseline to 1.4 days at postnatal follow-up. The number of days clients reported their physical health was not good decreased from 4.5 days in the past 30 days at prenatal baseline to 1.3 days in the past 30 days at postnatal follow-up. Trend analysis shows that each year, the average number of days clients reported their physical health was not good decreased from baseline to follow-up. While the average number of days of their mental health was not good at baseline has been relatively steady over the past 9 years, the average number of days at follow-up has gradually increased before decreasing in 2024.

Quality-of-life and Emotional Support

On a scale of 1 = 'Worst imaginable' to 10 = 'Best imaginable', clients reported a significantly higher quality-of-life at follow-up (9.1) compared to prenatal baseline (7.0). In addition, clients reported they could count on significantly more people for emotional support in the past 30 days at follow-up (11.2 people on average) compared to the past 30 days at baseline (4.6 people on average). The majority of women at both baseline and follow-up were fairly or extremely satisfied with the level of emotional support they received from others.

Multidimensional Recovery

The multidimensional recovery measure examines multiple dimensions of individuals' lives and functioning. None of clients who reported alcohol and/or illicit substance use in the 6 months before pregnancy had all 8 positive dimensions of recovery at baseline. By follow-up, 50.0% of clients had all 8 positive dimensions of recovery.

Client Satisfaction with Program Experience

On a scale of 0 = "not at all right for me" to 10 = "exactly right for me," clients rated their overall KY-Moms MATR experience, on average, as 9.0 with 87.1% rating the program between 8 and 10. In addition, the majority of clients reported that the KY-Moms MATR program worked pretty well or extremely well for them (96.8%) and that they would refer a friend or family member to their treatment provider (93.5%). Close to 94% of clients agreed that their expectations and hopes for the program were met. The majority of clients (90.4%) reported that the program approach and method were a good fit for them, they felt heard by their case manager when they told them about personal things, and they had a very strong connection with a counselor or staff person during treatment. Close to 61% of clients reported that the program and the client mutually agreed that the client was ready to leave the program.

Areas of Concern

Despite significant improvements in many areas of clients' lives, there was a minority of clients who had not had their babies before entering the KY-Moms MATR program who continued to struggle with targeted risk factors at follow-up.

Overall, evaluation results indicate that the KY-Moms MATR case management program has been successful in facilitating positive changes in clients in a variety of inter-related risk factors including:



REPORTED ANY ILLICIT
SUBSTANCE USE***

68% **10%**
at baseline at follow-up



MET STUDY CRITERIA FOR
DEPRESSION AND/OR
GENERALIZED ANXIETY***

58% **23%**
at baseline at follow-up



AVERAGE NUMBER OF
DAYS MENTAL HEALTH
WAS NOT GOOD***

9.1 **1.4**
at baseline at follow-up



REPORTED ANY
INTIMATE PARTNER
VIOLENCE*

36% **16%**
at baseline at follow-up

Tobacco Use

The majority of clients smoked tobacco during pregnancy (62.1% in the past 30 days at prenatal baseline and 51.7% in the 30 days before the baby was born), both of which are considerably higher than the 12.7% of pregnant women in Kentucky who reported smoking tobacco or the 4.6% of women in the U.S. Additionally, a high percentage of KY Moms-MATR mothers reported smoking tobacco in the 30 days before pregnancy (79.3%), and in the 30 days before postnatal follow-up (65.5%). These percentages were considerably higher than either the national estimate of 12.1% of non-pregnant women aged 18-44 who are self-reported smokers or the state estimate of women who report smoking (22.2%).⁴

Mental Health and PTSD

In addition, 22.6% of KY-Moms MATR clients reported meeting study criteria for depression and/or anxiety in the six months after the baby was born. Further, 25.8% of clients met study criteria for post-traumatic stress disorder in the 6 months since the birth of the baby.

Intimate Partner Violence

At baseline, 35.5% of clients reported any form of intimate partner violence in the 6 months before they found out they were pregnant. At follow-up, 16.1% of KY-Moms MATR clients reported experiencing intimate partner violence in the six months since their baby was born, which suggests that the intimate partner violence is an ongoing concern through the pregnancy and after the baby is born.

⁴ United Health Foundation (2023). *America's Health Rankings 2023 Health of Women and Children Report*. <https://www.americashealthrankings.org/learn/reports/2023-health-of-women-and-children-report>

Financial Issues

With 41.9% of women reporting difficulty meeting basic needs because of financial reasons at follow-up, economic hardship is a continuing problem for many of these new mothers.

Multidimensional Recovery Status

Even though there were significantly more clients who had all positive dimensions of recovery at follow-up when compared to baseline, over half of KY-Moms MATR clients were still classified as not having all nine positive dimensions of recovery.

Program Issues

While clients were largely satisfied with their program experience, 67.7% of follow-up clients reported that they would warn their friend or family member about certain things or tell them who to work with or who to avoid. Almost one-third of clients reported that the length of the program was too short and 3.2% of clients reported that the length of the program was too long.

Summary

Overall, results indicate that the KY-Moms MATR program has been successful in facilitating positive changes in many clients including illicit substance use, mental health symptoms, and intimate partner violence. Results also indicate clients appreciate their experiences in the program and have a better quality-of-life after participation. These changes suggest there would be significant benefit in sustaining and expanding the KY-Moms MATR program to serve more high-risk pregnant women across the state.

Description of Post-birth Clients at Baseline

Clients who had already had their baby when they entered the program and completed a post-birth baseline (n = 26) reported an average of 13.9 visits with a healthcare professional during pregnancy and 2.0 visits since the baby was born. Close to 42% of clients reported they had breastfed their baby and 23.1% had been told by a doctor of any special health care needs since the baby was born. The majority of clients reported illicit substance use (57.7%) and cigarette use (65.4%) during pregnancy. In addition, the majority of clients reported at least one ACE, with many who reported emotional maltreatment (57.7%), physical maltreatment (50.0%), and sexual assault in childhood (46.2%). Just under three-quarters (73.1%) met study criteria for depression and/or anxiety during pregnancy and 19% met study criteria for PTSD in the past 6 months. About 42% of clients in the 6 months before pregnancy and 11.5% of clients during pregnancy reported experiencing any type of intimate partner violence.

Birth Events and Outcomes of KY-Moms MATR Post-birth Clients

All women who entered the KY-Moms MATR program after the birth of the baby and completed a follow-up interview (n = 10) gave permission to access their Vital Statistics birth data; however, a match to the data was only found for 9 clients. Post-birth clients in the birth event data reported an average of 10.8 prenatal visits during their pregnancy. The majority of clients (66.7%) reported that they received the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) during pregnancy and all clients had Medicaid as the source of payment for delivery of the

baby. About 56% of KY-Moms MATR mothers reported experiencing at least one maternal health condition at birth, none reported having a sexually transmitted infection, and two clients reported having Hepatitis B or C. In the Kentucky Vital Statistics data, 66.7% of KY-Moms MATR mothers reported smoking and among those mothers (n = 6), clients reported an average of 14.0 cigarettes per day before pregnancy and in each trimester. None of the babies were born prematurely and 11.1% of babies were born with low birthweight (less than 5lbs, 8oz). Specifically, the average birth weight of babies born to post-birth mothers was 6lbs, 14oz. Three babies were taken to NICU, but none were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit).

Change in Targeted Factors from Baseline to Follow-up for Post-birth Clients

Substance Use

In the 6 months before pregnancy, 90.0% of post-birth clients reported using illicit substances and/or alcohol and when they were pregnant 70.0% of post-birth clients reported using illicit substances and/or alcohol. In the 6 months before the post-birth follow-up interview, 10.0% of clients reported using illicit substances and/or alcohol. At post-birth baseline, 20.0% of clients reported ever injecting any substances and none of the clients reported injecting a substance in the past 30 days. At post-birth follow-up, none of the clients reported injecting substances in the past 6 months. Seventy percent of clients reported they had ever received buprenorphine/naloxone, naltrexone, or methadone as part of a medication-assisted

treatment for their substance use disorder at post-birth baseline and of these clients ($n = 7$), 28.6% participated in medication-assisted treatment in the past 6 months. Three clients reported receiving medication-assisted treatment in the past 6 months at follow-up. Seventy percent of post-birth clients reported they used tobacco in the 6 months before pregnancy, 60.0% of clients reported using tobacco during pregnancy, at post-birth follow-up, 40.0% of clients reported tobacco use.

Mental Health

Eighty percent of post-birth KY-Moms MATR clients 6 months before pregnancy and 40.0% of clients in the past 6 months at post-birth follow-up met study criteria for comorbid depression and/or anxiety. Thirty percent of post-birth women met study criteria for post-traumatic stress disorder at baseline and 10.0% met study criteria for post-traumatic stress disorder at follow-up. Ten percent of clients at baseline and follow-up reported they used substances to reduce stress. At both post-birth baseline and follow-up, 20.0% of clients were classified as having severe insomnia.

Intimate Partner Violence

Including fear of a current or ex-partner, 10% of the clients who had their babies prior to entering KY-Moms MATR reported they felt unsafe at baseline and at follow-up. In addition, 30% of post-birth clients in the 6 months before pregnancy and 10.0% of post-birth clients during pregnancy, reported experiencing any form of intimate partner violence. None of the clients reported any form of intimate partner violence at follow-up.

Economic and Living Circumstances, Economic Hardship, and Criminal Justice Involvement

At baseline, 10.0% of post-birth mothers (one mother) reported they were currently working full-time and at follow-up, 60% of post birth mothers reported they were currently working full-time. The majority of post-birth clients received public assistance at both baseline (90.0%) and follow-up (80.0%). In the 6 months before becoming pregnant, 80.0% of clients reported they had difficulty meeting at least one of the basic living needs for financial reasons and 50.0% of clients reported difficulty meeting basic living needs in the past 6 months at postnatal follow-up. In addition, 40.0% of post-birth clients reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy. At follow-up, 10.0% of clients (one client) reported they had difficulty meeting health care needs in the past 6 months at follow-up. Only 10% of clients who entered KY-Moms MATR after they had their babies considered themselves homeless. The majority of clients at both baseline (60.0%) and follow-up (80.0%) reported living in their own home or someone else's home for most of the past 30 days. Thirty percent of clients in the 6 months before pregnancy and 10.0% of clients in the past 6 months at follow-up spent at least one night incarcerated. Likewise, 30.0% of clients in the 6 months before pregnancy and 10.0% of clients in the past 6 months at follow-up reported having been arrested for any offense.

Physical Health

Only one post-birth client, at baseline and follow-up, reported having a major physical health problem that was not being currently

treated. At baseline, 40% of clients reported their overall physical health was very good or excellent compared to 60.0% of clients at follow-up. Twenty percent of clients in the 6 months before pregnancy and none of the clients at follow-up reported experiencing chronic pain.

Clients reported an average of 6.2 days out of the past 30 days their physical health was not good at post-birth baseline and 2.6 days at follow-up. The average number of days clients reported their mental health was not good was 15.7 days at post-birth baseline and 5.6 days at postnatal follow-up. Clients reported their physical or mental health kept them from doing their usual activities as an average of 8.3 days at post-birth baseline and 3.5 days at follow-up.

Quality-of-life and Emotional Support

Post-birth clients rated their current quality-of-life at baseline as a 7.3, on average. The average rating of quality-of-life at postnatal follow-up was an average of 8.1. In the past 30 days at baseline, clients reported an average of 4.2 people they could on for emotional support, and in the past 30 days at follow-up, clients reported an average of 6.6 people they could on for emotional support. The majority of clients were satisfied with the level of emotional support they received from others in the past 30 days. The majority of post-birth clients in the past 30 days at baseline (80.0%) and 90.0% of clients at postnatal follow-up reported they were extremely or fairly satisfied with the level of emotional support they received from others.

Multidimensional Recovery

At post-birth baseline, 22.2% of clients were classified as having all positive dimensions of recovery. At follow-up, 55.6% of clients were classified as all positive dimensions

of recovery at follow-up. At follow-up, the factor with the lowest percent of individuals reporting the positive dimensions of recovery were for not meeting study criteria for depression and/or anxiety.

Client Satisfaction with Program Experience

The majority of clients (80.0%) reported that the program and the client mutually agreed that the client was ready to leave the program and 20.0% of clients reported that program staff would not let them continue in the program for some reason other than missing appointments. On a scale of 1 to 10, clients rated the KY-Moms MATR program as an average of 9.7 with 80.0% of clients giving the highest possible rating of a 10. All of the post-birth clients agreed that the case management program worked pretty well or extremely well and they would refer a close friend or family to the program. Twenty percent of clients would warn the friend or family member about certain things or tell them who to work with in the program or who to avoid.

Table of Contents

Project Acknowledgments	2
Executive Summary	3
Overview of the report.....	14
Section I: Introduction and Evaluation Method.....	16
Section II: A Description of All Clients Served by the KY-Moms MATR Case Management Program	21
Clients Who Entered the Program Before the Birth of Their Child	21
Clients Who Entered the Program After the Birth of Their Child.....	34
Section III. Birth Events and Outcomes.....	45
Maternal Behavior and Health Characteristics.....	45
Infant Health Characteristics	47
Summary.....	47
Section IV: Change in Targeted Factors from Pre-birth Baseline to Follow-up for Clients in the Postnatal Follow-up Sample	49
A. Information on the Pregnancy/Baby.....	49
B. Substance Use	54
C. Mental Health, Sleep Difficulty, and Stress.....	68
D. Intimate Partner Violence and Other Experiences with Violence	77
E. Economic and Living Circumstances, Economic Hardship, and Criminal Justice Involvement.....	84
F. Physical Health	93
G. Quality-of-life and Emotional Support	100
H. Multidimensional Recovery Status.....	104
Section V. Client Experience with KY-Moms MATR Case Management	107
Manner in Which the Client Left the Program.....	107
KY-Moms MATR Case Management Program Satisfaction and Experiences	108
Summary.....	111
Section VI. Conclusion.....	112
Appendix A: Methods	126
Appendix B. Client Characteristics at Pre-birth Baseline for Those with Completed Follow-up Interviews and Those Without Completed Follow-up Interviews.....	130

Overview of the report

This report presents the results of an outcome evaluation of the KY-Moms MATR program. This outcome evaluation was conducted by the Behavioral Health Outcome Study team at the University of Kentucky Center on Drug and Alcohol Research (UK CDAR) in collaboration with the Division of Substance Use Disorder in the Department for Behavioral Health, Developmental and Intellectual Disabilities. The evaluation results are organized into 6 main sections as outlined below.

Section I: Introduction and Evaluation Method. This section briefly describes the KY-Moms MATR program and how cases are selected into the analysis for the outcome evaluation.

Section II: A Description of All Clients Served by the KY-Moms MATR Case Management Program. This section describes the KY-Moms MATR client characteristics for 68 women who participated in the KY-Moms MATR program before the baby was born, completed a baseline assessment between June 2021 and October 2022, and were eligible for follow-up in FY 2023 (pre-birth clients). Characteristics examined include: (1) demographics, (2) self-referral status, (3) information about the pregnancy, (4) risk status, (5) substance use, (6) adverse childhood experiences and violence, (7) mental health, stress, and sleep difficulty, and (8) intimate partner violence. Clients who entered the program (n = 26) after the birth of their child (post-birth clients) are also described separately in this section.

Section III: Birth Events and Outcomes. This section uses the Kentucky Vital Statistics birth data to examine: (1) maternal behavior and health characteristics 19 KY-Moms MATR case management clients who entered the program before the baby was born and who had intakes and follow-ups as well as information in the vital statistics dataset, and (2) infant health characteristics for their 21 babies. Clients who entered the program (n = 10) after the birth of their child (post-birth clients) are also described separately in this section.

Section IV: Change in Targeted Factors from Baseline to Follow-up for Pre-Birth Clients in the Postnatal Follow-up Sample. This section examines change among women with a pre-birth baseline and a completed postnatal follow-up interview (n=31) for FY23⁵ in: (1) information about the baby, (2) substance use, (3) mental health, sleep, and post-traumatic stress disorder, (4) intimate partner violence and other experiences with violence, (5) economic and living circumstances, economic hardship, and criminal justice involvement, (6) physical health, (7) quality-of-life and emotional support, and (8) multidimensional recovery status. Past-30-day and past-6-month measures are examined separately where applicable. Clients who entered the program (n = 10) after the birth of their child (post-birth clients) are also described separately in this section.

Section V: Client Experience and Satisfaction with KY-Moms MATR Case Management. This section describes the experience of the KY-Moms MATR case management program assessed by clients who completed a postnatal follow-up (n = 31): (1) manner in which the client left the program, and (2) satisfaction with KY-Moms MATR case management. Clients who entered the program (n = 10) after the birth of their child (post-birth clients) are also described separately in this section.

⁵ Post-birth follow-up interviews are now being collected as requested by the state. However, because there are so few post-birth follow-ups completed this fiscal year (n = 10), they will not be analyzed as a part of this report.

Section VI: Conclusion and Study Limitations. This section summarizes the report findings, discusses limitations, and describes implications of the main findings.

Section I: Introduction and Evaluation Method

This section briefly describes the KY-Moms MATR program and the program evaluation methodology.

KY-Moms: Maternal Assistance Towards Recovery (MATR) is a state-funded prevention, outreach, and case management program aimed at reducing substance use risk during pregnancy. Alcohol, tobacco, and illicit substance use during pregnancy have been shown to negatively influence fetal development (including significantly decreased birth weight and shorter gestational age) and women's health.^{6, 7, 8, 9, 10} In addition, substance use is often related to mental health problems and an increased risk of intimate partner violence and sexual assault.¹¹ ¹² All three of these interrelated risk factors increase the likelihood of negative birth outcomes.¹³ ¹⁴ Additionally, risks of negative birth outcomes are increased when women who use alcohol and illicit substances avoid obtaining prenatal care due to lack of access, fear of losing custody of their babies, or fear of being arrested.¹⁵ Because the KY-Moms MATR program focuses on at-risk moms, it is unique as it is a preventive program and offers moms education, support, and referrals to help facilitate healthy moms and babies.

The KY-Moms MATR program is set within the state of Kentucky which has one of the highest rates in the nation for women experiencing intimate partner violence in their lifetime (ranked 1st) with 45.3% of women reporting psychological, physical, and sexual violence.¹⁶ Kentucky ranks 8th highest in mortality rate for women and 11th highest for maternal mortality. It also has one of the lowest rates in the nation for breastfeeding (44th). Further, Kentucky is one of the highest in the nation for rates of tobacco use during pregnancy (2nd), illicit substance use deaths among females (3rd), frequent mental distress (3rd), depression (4th), and multiple chronic health

⁶ Bailey, B. A., McCook, J. G., Hodge, A., & McGrady, L. (2012). Infant birth outcomes among substance using women: why quitting smoking during pregnancy is just as important as quitting illicit drug use. *Maternal and Child Health Journal*, 16(2), 414-422.

⁷ Gouin, K., Murphy, K., & Shah, P. S. (2011). Effects of cocaine use during pregnancy on low birth weight and preterm birth: systematic review and metaanalyses. *American Journal of Obstetrics and Gynecology*, 204(4), 340-e1-12.

⁸ Behnke, M., Smith, V. C., Levy, S., Ammerman, S. D., Gonzalez, P. K., Ryan, S. A., ... & Watterberg, K. L. (2013). Prenatal substance abuse: short-and long-term effects on the exposed fetus. *Pediatrics*, 131(3), e1009-e1024.

⁹ Pinto, S. M., Dodd, S., Walkinshaw, S. A., Siney, C., Kakkar, P., & Mousa, H. A. (2010). Substance abuse during pregnancy: effect on pregnancy outcomes. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 150(2), 137-141.

¹⁰ Young, N.K., Gardner, S., Otero, C., Dennis, K., Chang, R., Earle, K., & Amatetti, S. (2007). *Substance-Exposed Infants: State Responses to the Problem*. National Center on Substance Abuse and Child Welfare.

¹¹ Logan, T., Walker, R., Jordan, C. & Leukefeld, C. (2006). *Women and victimization: contributing factors, interventions, and implications*. Washington, DC: American Psychological Association Press.

¹² Kessler, R., McGonagle, K., Zhao, S., Nelson, C. Hughes, M., Eshleman, S., Wittchen, H., & Kendler, K. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, 51, 8-19.

¹³ Shah, P. S., & Shah, J. (2010). Maternal exposure to domestic violence and pregnancy and birth outcomes: a systematic review and meta-analyses. *Journal of Women's Health*, 19(11), 2017-2031.

¹⁴ Schetter, C. D., & Tanner, L. (2012). Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. *Current Opinion in Psychiatry*, 25(2), 141-148.

¹⁵ Roberts, S.C & Nuru-Jeter, A. (2010). Women's perspectives on screening for alcohol and drug use in prenatal care. *Women's Health Issues*, 3, 193-200.

¹⁶ United Health Foundation. (2019). *America's health rankings health of women and children, State findings: Kentucky, 2019*. Minnetonka, MN: United Health Foundation. Retrieved on September 17, 2020 from <https://www.americashealthrankings.org/explore/annual/measure/Overall/state/KY>.

conditions (2nd).¹⁷

Kentucky also ranks 5th highest in the nation for adverse childhood experiences with 19.5% of children experiencing two or more adverse conditions (compared to 14.0% nationally). In 2017, 2018, and 2019, Kentucky had the highest rate of child victims of indicated or substantiated maltreatment in the U.S. according to the National Child Abuse and Neglect Data System: 22.2, 23.6, and 20.0 per 1,000 children.¹⁸ Moreover, in 2023, Kentucky had the 6th highest rate of children who were victims of substantiated or indicated maltreatment (14.7 compared to 8.1 nationally), 25th in the nation for infant mortality, and 16th in the nation for babies born with low birthweight.¹⁶

The overall goal of the KY-Moms MATR program is to educate and support at-risk moms as well as increase positive birth outcomes for pregnant women in Kentucky. The program is administered by the Division of Substance Use Disorder in the Department for Behavioral Health, Developmental and Intellectual Disabilities.¹⁹ The program has two components including providing: (1) substance disorder prevention education to pregnant women at all risk levels, and (2) client-centered intensive case management services to pregnant and parenting women who are diagnosed with a substance use disorder (referred to in this report as KY-Moms MATR program). This report focuses on outcomes for mothers who are involved with the intensive case management services component of the program.

The KY-Moms MATR program case managers provide support, referrals, information, and other needed services (e.g., transportation) in a client-centered format. More specifically, this intervention focuses on meeting clients' needs as they evolve over time, as different risks manifest, and needs change as the pregnancy progresses.²⁰ By focusing on clients' needs, client-centered intensive case management encourages continued engagement in clinical services and helps with a variety of practical needs.^{21, 22} KY-Moms MATR case managers use evidence-based practices, including Motivational Interviewing, to promote engagement in vital services such as substance use disorder and mental health treatment, partner violence services, and to encourage consistent prenatal care.^{23, 24} Further, the curriculum has been standardized across the sites as of 2017 with updates to the curriculum in 2020.

¹⁷ United Health Foundation. (2023). *America's health rankings health of women and children, State findings: Kentucky, 2023*. Minnetonka, MN: United Health Foundation. Retrieved on October 30, 2023 from <https://www.americashealthrankings.org/learn/reports/2023-health-of-women-and-children-report>

¹⁸ U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2023). *Child Maltreatment 2021*. Available from <https://www.acf.hhs.gov/cb/data-research/child-maltreatment>.

¹⁹ Since 2015, all of Kentucky's regional community mental health centers except Bluegrass participate in the KY-Moms MATR program.

²⁰ Austin, L. (2013). Treatment Planning and Case Management in Community. The Praeger Handbook of Community Mental Health Practice: *Working in the local community*, 1, 83.

²¹ Center for Substance Abuse Treatment. Comprehensive Case Management for Substance Abuse Treatment. Rockville (MD): Substance Abuse and McLaughlin, C. P., & Kaluzny, A. D. (2000). Building client centered systems of care: choosing a process direction for the next century. *Health Care Management Review*, 25(1), 73-82

²² Sheedy C. K., and Whitter M. (2009). *Guiding Principles and Elements of Recovery-Oriented Systems of Care: What Do We Know from the Research?* HHS Publication No. (SMA) 09-4439. Rockville, MD: Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration.

²³ Ingersoll, K. S., Ceperich, S. D., Hettema, J. E., Farrell-Carnahan, L., & Penberthy, J. K. (2013). Preconceptional motivational interviewing interventions to reduce alcohol-exposed pregnancy risk. *Journal of Substance Abuse Treatment*, 44(4), 407-416.

²⁴ May, P. A., Marais, A. S., Gossage, J. P., Barnard, R., Joubert, B., Cloete, M., et al. (2013). Case management reduces drinking during pregnancy among high-risk women. *The International Journal of Alcohol and Drug Research*, 2(3), 61-70.

Pregnant women who are referred to the KY-Moms MATR program are first screened for eligibility. Typically, women are referred by community organizations such as health departments, private OB/GYN providers, child welfare caseworkers, pregnancy crisis centers, domestic violence shelters and community mental health center clinicians. The screening tool used by KY-Moms MATR referral sources is the “Pregnancy Behavioral Health Risk Assessment Screening” tool, which assesses a variety of risks including substance use, mental health, and intimate partner violence, any of which make a woman eligible for prevention education services. Women that screen positive for substance use risk factors are referred to a therapist for a substance use assessment for a diagnosis. Once a diagnosis is reached (mild, moderate, or severe substance use disorder), the women would be eligible for case management services. Adolescents (under age 18) are also eligible regardless of other risk factors.

Evaluation Method

The KY-Moms MATR outcome evaluation includes a face-to-face evidence-based assessment by program staff from CMHCs to assess substance use, mental health symptoms, intimate partner violence, and other factors such as education, employment status, and living situation prior to pregnancy and while involved in the program.²⁵ Overall, a total of 68 pre-birth baselines were completed between June 2021 and October 2022 with women who had due dates that would result in target months for a follow-up interview between July 2022 and June 2023. In addition, there were 26 women who gave birth to their babies prior to entering the KY-Moms MATR program, completed a post-birth baseline, and who were targeted for follow-up in FY23.

At baseline, clients are offered the opportunity to be contacted for a postnatal follow-up interview. KY-Moms MATR clients are eligible to be included in the sample to be followed up if: (1) the client consents to be contacted by UK CDAR BHOS staff, (2) the baseline is submitted to UK CDAR within 30 days of completion, (3) the client is in the program at least 30 days before the birth of the baby, and (4) adequate contact information is provided for follow-up staff to use to attempt to locate and contact them for the follow-up interview. If any of these criteria are not met, the client is not included in the sample to be followed up.²⁶ If the client who entered KY-Moms MATR prior to the birth of her baby is included in the follow-up sample, an interviewer at UK CDAR contacts the client about 6 months after the birth of their baby (based upon estimated due date reported by the client at prenatal baseline). If this client entered KY-Moms MATR after the birth of their baby (post-birth clients), clients eligible for follow-up are contacted approximately 6 months after baseline.

The UK CDAR team begins their efforts to locate and conduct follow-up interviews with women who are eligible for follow-up one month before their target month (i.e., six months after the due date of their baby) and continues their efforts until the women have completed the follow-up interview or for two months after the target month, whichever comes first. When the follow-up team contacts women, the client must not be living in a jail or controlled environment. UK CDAR interviewers obtain verbal consent to complete the follow-up interview. Client responses to the follow-up interviews are kept confidential to facilitate accurate reporting of client outcomes

²⁵ For more information, see: Scrivner, A., Logan, T., Cole, J., & Miller, J. (2020). *Evidence Base for the KY-Moms MATR Evaluation Assessment and Methods*. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research.

²⁶ As a result of the prenatal baseline criteria, 21 clients were not eligible for the follow-up sample. See Appendix C for information on each category of ineligibility.

and satisfaction with program services. During FY23, 31 postnatal follow-up assessments were completed (a 92.1% follow-up rate) on women who entered the program before giving birth.²⁷ In addition, during FY23, 10 women who gave birth to their babies before entering the program completed a 6-month follow-up.²⁸ See Appendix A for more details about follow-up methods and eligibility.

To be included in the analysis for the birth event outcome section of this report, however, clients had to have given permission to the research team to access and to have had matching information from the Kentucky Vital Statistics birth event data set in order to compare birth outcomes. With this criterion in mind, although 31 pre-birth clients completed a postnatal follow-up assessment, 11 women did not give permission to access their birth data and one client who completed a follow-up could not be matched to the birth event data set. This left a final sample for the birth event data of 19 pre-birth women who met analysis criteria, gave birth between February 2022 and December 2022, and completed a postnatal follow-up assessment between July 2022 and June 2023. For the women who gave birth prior to entering the program, all 10 clients who completed a follow-up assessment gave permission to access their birth event data; however, a match to the data was only found for 8 women.²⁹

²⁷ Clients who completed a postnatal follow-up assessment (n = 31) were admitted to the KY-Moms MATR program and completed baseline assessments between July 2021 and October 2022.

²⁸ Of the 26 women who gave birth to their babies prior to entering the KY-Moms MATR program, 11 did not consent to being contacted for follow-up, one client did not provide enough contact information, two had intakes not submitted until after the follow-up sample for that month was pulled, and two clients could not be located during the targeted window. As a result, only 10 post-birth clients completed a follow-up.

²⁹ Post-birth women gave birth to their babies between December 2021 and October 2022.

A Closer Look at Pre-birth Clients Who Did Not Have a Postnatal Follow-up Interview

When those with a postnatal follow-up interview (n = 31) were compared with those who did not have a postnatal follow-up interview (n = 37)³⁰ on a variety of prenatal baseline variables, there were a couple of significant differences. Clients who completed a follow-up interview were significantly younger, and of those who were married or cohabiting, they reported their partner was the father of the baby. More clients who completed a postnatal follow-up reported illicit substance use in the 30 days before pregnancy and alcohol use in the 30 days before pregnancy and in the past 30 days at baseline compared to client who did not complete a follow-up. More clients who were not followed up considered themselves homeless at baseline (see Appendix B).

	Not followed up (n = 37)	Followed up (n = 31)
Demographics.....		Significantly younger More who were married or cohabiting reported the partner is the father
Living situation	Significantly more clients considered themselves homeless	
Employment.....		No difference
Physical health		
Illicit substance use.....		Significantly more clients reported illicit substance use in the 30 days before pregnancy
Alcohol use		Significantly more clients reported alcohol use in the 30 days before pregnancy and in the past 30 days at baseline
Tobacco use.....		No difference
Mental health.....		No difference
Intimate partner violence		No difference

³⁰ See Appendix C for details reasons why client did not complete a follow-up interview.

Section II: A Description of All Clients Served by the KY-Moms MATR Case Management Program

The KY-Moms MATR outcome evaluation includes a face-to-face baseline interview by program staff to assess targeted factors such as substance use, mental health symptoms, intimate partner violence, and other factors such as education, employment status, and living situation prior to pregnancy and while involved in the program. Between June 2021 and October 2022, 68 pregnant women completed a prenatal baseline interview and 26 women who gave birth prior to entering KY-Moms MATR and were eligible for a six-month postnatal follow-up within FY23 completed baseline interviews.^{31, 32}

Clients Who Entered the Program Before the Birth of Their Child

Demographics

Table II.1 shows that the majority of clients were White (92.6%) and were an average of 28.5 years old. In addition, 52.9% were married or living with an intimate partner at baseline. Of those clients who were living with an intimate partner (n = 36), 86.1% reported this partner was the father of the baby. Less than one-quarter of the KY-Moms MATR mothers (22.1%) reported at prenatal baseline they were currently homeless. Of those who indicated they were homeless (n = 15), 46.7% were staying temporarily with friends/family, 26.7% were staying on the street or living in their car, 6.7% were staying in a shelter, and 20.0% considered themselves homeless for other reasons.

They helped with everything and anything. I could still call them today and they would help.

KY-MOMS MATR FOLLOW-UP CLIENT

³¹ Clients who completed a prenatal baseline (n = 68) entered the KY-Moms MATR program between June 2019 and November 2020 and were eligible for follow-up between June 2021 and October 2022. There was an average of 13.4 days between when the client entered the program and when the baseline assessment was completed.

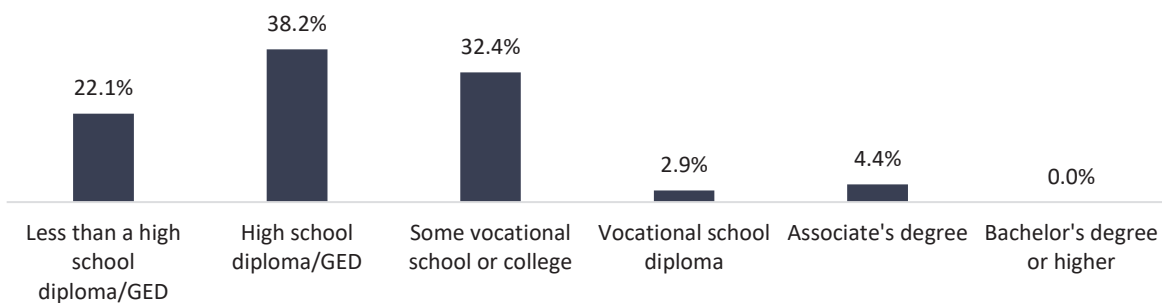
³² Because the KY-Moms MATR evaluation only analyzes clients who completed a baseline, it is not known how many women were served by the KY-Moms MATR program but did not complete a baseline assessment.

TABLE II.1. DEMOGRAPHICS FOR ALL KY-MOMS MATR CLIENTS AT BASELINE (N = 68)

Age	28.5 years (<i>range of 18-42</i>)
Race	
White	92.6%
African American.....	4.4%
Mexican	0.0%
Puerto Rican	0.0%
Other Hispanic.....	1.5%
Multiracial.....	1.5%
Marital status	
Married or cohabiting	52.9%
Never married	27.9%
Separated or divorced.....	19.1%
Widowed	0.0%
Of those married or cohabiting	(n = 36)
Partner is the father of baby.....	86.1%
Homeless	22.1%
Of those homeless	(n = 15)
Staying temporarily with friends/family	46.7%
Staying on the street or living in your car.....	26.7%
Staying in shelter.....	6.7%
Other	20.0%

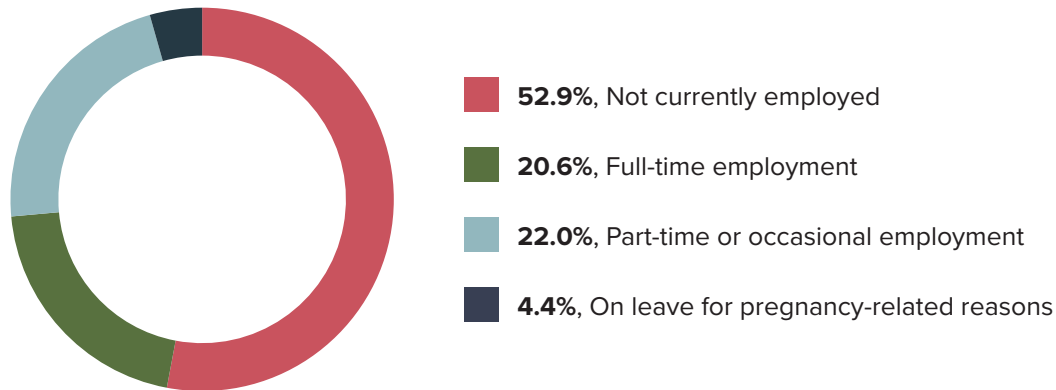
About 22% of clients had less than a high school diploma or GED at baseline (see Figure II.1). Over one-third of clients (38.2%) reported their highest level of education was a high school diploma or GED. Three percent of clients had completed some vocational/technical school or college. A small minority of clients had completed an associate's degree (4.4%) and none had a bachelor's degree.

FIGURE II.1. HIGHEST LEVEL OF EDUCATION COMPLETED AT BASELINE (N = 68)



Little over half of the women in KY-Moms MATR case management were unemployed (52.9%) at the time of the pre-birth baseline interview. Only 20.6% of clients were employed full-time and 22.0% either worked part-time or had occasional/seasonal work. Close to 4% reported they were currently on leave from their job due to pregnancy-related reasons.

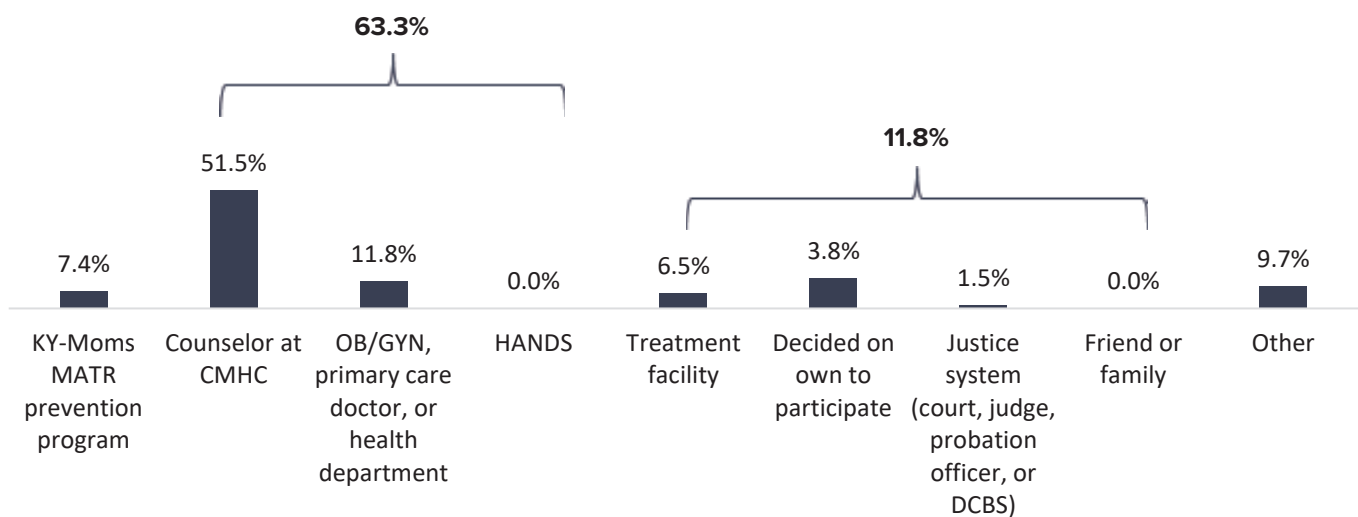
FIGURE II.2. CURRENT EMPLOYMENT STATUS AT BASELINE (N = 68)



Self-reported Referral Status

Figure II.3 shows the self-reported referral source for all KY-Moms MATR clients at baseline. Close to two-thirds of clients (63.3%) were referred by outside agencies such as a counselor at one of the community mental health centers (51.5%), or a health care provider (11.8%). A small portion (7.4%) of clients were referred to the KY-Moms MATR program by the prevention program. More than one in ten clients were referred to the program in other ways such as deciding on their own to participate (3.8%), the justice system (e.g., judge, court, probation officer, or DCBS; 1.5%), and a residential treatment facility (6.5%).

FIGURE II.3. SELF-REPORTED REFERRAL SOURCE FOR ALL KY-MOMS MATR CLIENTS AT BASELINE (N = 68)



Information About the Pregnancy

Overall, at the time clients completed the prenatal baseline, they were an average of 24 weeks into their pregnancy (ranging 6 weeks to 39 weeks). The majority of clients (98.5%) reported they were going to maintain custody of the baby.

At the time of prenatal baseline, clients had been to an average of 6.6 visits (range of 0-25 visits) with their prenatal health care provider and 49.3% reported they were planning on breastfeeding. Overall, 83.8% of clients reported they had been pregnant before.

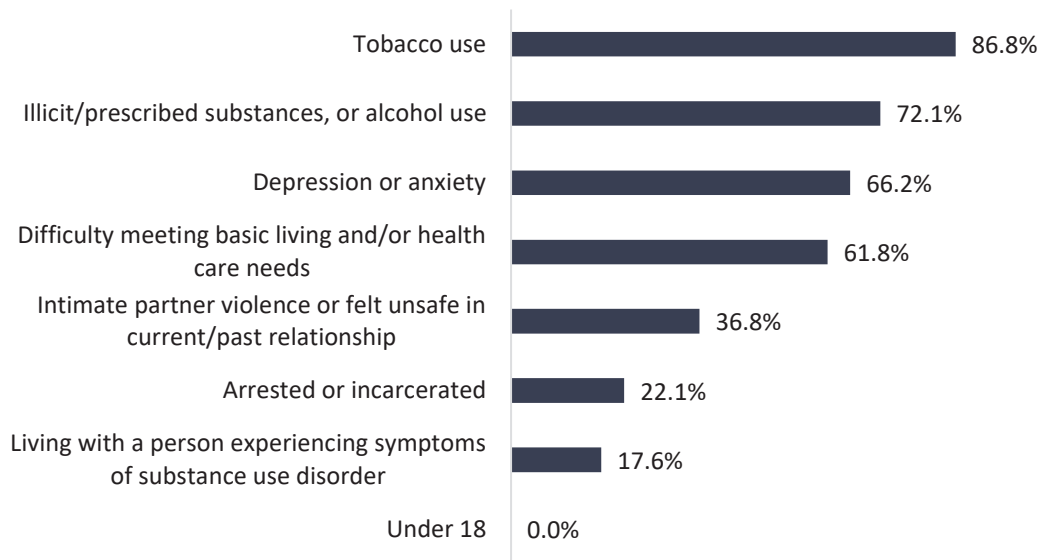
TABLE II.2. PREGNANCY STATUS FOR ALL KY-MOMS MATR CLIENTS AT BASELINE (N = 68)

Average weeks pregnant.....	24.3 weeks (range of 6-39)
Plan to keep the baby	98.5%
Average number of visits with a healthcare professional	6.6 (range 0-25)
Plan to breastfeed.....	49.3%
Been pregnant previously.....	83.8%

Risk Status

Figure II.4 shows that of the 68 clients who completed a KY-Moms MATR prenatal baseline, all fit into at least one of the major risk factor categories assessed in the baseline interview. Overall, 86.8% of clients reported tobacco use (cigarettes, e-cigarettes, or smokeless tobacco) and 72.1% reported illicit substance or alcohol use at baseline (in the 6 months before pregnancy, in the 30 days before pregnancy, or in the past 30 days). Two-thirds of clients reported they had symptoms of depression or anxiety for at least two weeks in a row at baseline (in the 6 months before pregnancy or in the past 30 days). About 62% of clients reported difficulty meeting basic living and/or health care needs and 36.8% reported intimate partner violence and/or feeling unsafe in either their current relationship or because of a partner from a previous relationship in the 6 months before pregnancy or in the past 30 days. Less than one-quarter of clients (22.1%) reported having been arrested and/or incarcerated in the 6 months before pregnancy. About 18% of clients reported currently living with someone who experienced symptoms of a substance use disorder, and none were under the age of 18 at the time of the baseline interview.

FIGURE II.4. PERCENT OF CLIENTS FALLING INTO AT LEAST ONE TARGETED RISK FACTOR IN THE 6 MONTHS BEFORE PREGNANCY OR IN THE PAST 30 DAYS AT BASELINE (N = 68)



Substance Use

The majority reported using alcohol and/or illicit substances (72.1%) in the 6 months before pregnancy.³³ Overall, a higher percentage of individuals reported using illicit substances (63.2%) compared to the percent of individuals who reported using alcohol (35.3%) in the 6 months before pregnancy. The majority of clients reported smoking tobacco (82.4%) in the 6 months before pregnancy.

Of the 67 clients who were not in a controlled environment³⁴ all 30 days before baseline, 4.5% reported using alcohol and/or illicit substances.³⁵ Specifically, none reported illicit substance use and 4.5% reported alcohol use. Also, 67.2% reported smoking tobacco in the 30 days before baseline (see Figure II.5).

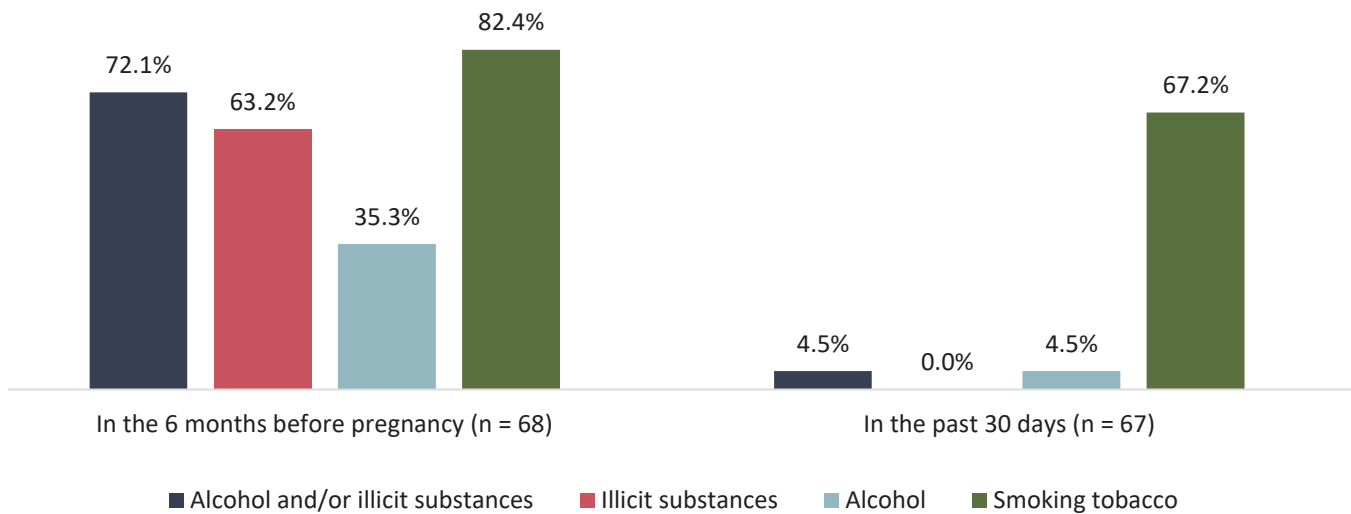
My case worker was always there to listen to me, gave me good recommendations for dealing with past trauma.

KY-MOMS MATR FOLLOW-UP CLIENT

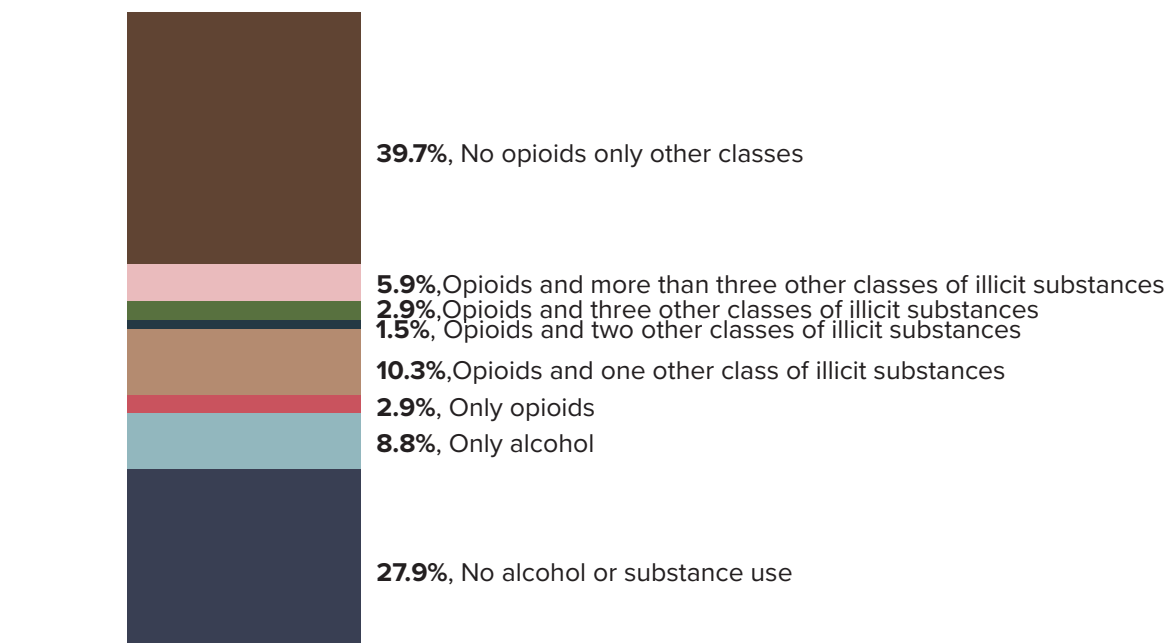
³³ None of the clients were incarcerated or in a controlled environment all 180 days before pregnancy

³⁴ A controlled environment is one where the client was not able to come and go as they pleased including a hospital, jail, or residential treatment.

³⁵ This period includes while they were pregnant, but may not have known they were pregnant yet.

FIGURE II.5. PERCENT OF CLIENTS REPORTING USE OF ILLICIT SUBSTANCES, ALCOHOL, AND SMOKING TOBACCO AT BASELINE³⁶

Among the individuals who were not incarcerated or in a controlled environment all 180 days before they were pregnant, Figure II.6 shows the percent of clients who used no alcohol and or illicit substances (27.9%), alcohol only (8.8%), no opioids and other illicit substance classes only (39.7%), and opioids only (2.9%). Additionally, Figure II.6 shows the percent of clients who reported using opioids with one other illicit substance class (10.3%), opioids with two other illicit substance classes (1.5%), opioids with three other substance classes (2.9%), and opioids with three or more other illicit substance classes (5.9%).

FIGURE II.6. OPIOID AND OTHER CLASSES OF ILLICIT SUBSTANCE USE IN THE 6 MONTHS BEFORE PREGNANCY (N = 68)³⁷

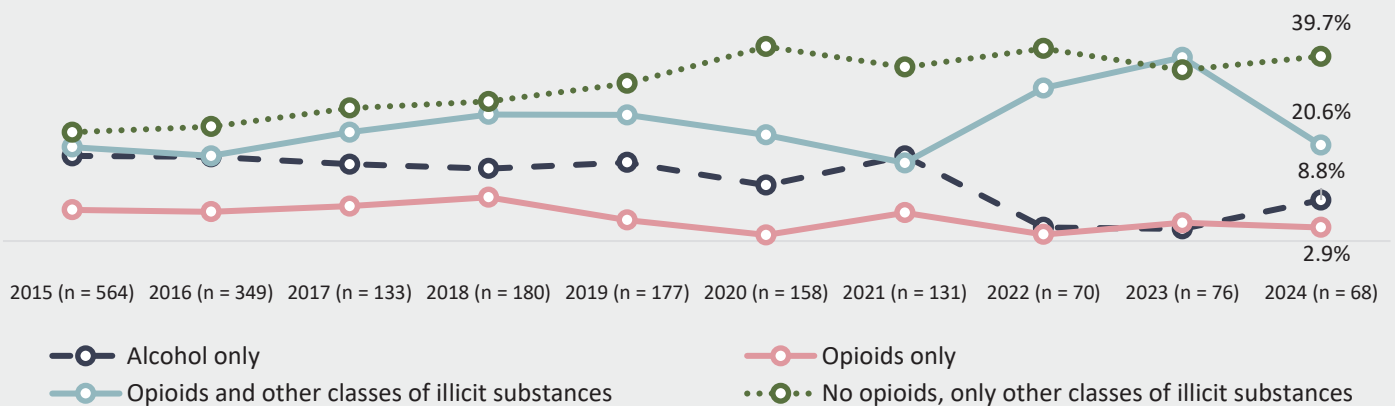
³⁶ Because being in a controlled environment decreases opportunities for substance use, individuals who were incarcerated all 180 days in the 6 months before pregnancy, or in a controlled environment/incarcerated all 30 days before entering the program (n = 1) are not included in the analysis of substance use in the corresponding period.

³⁷ The broad substance classes examined were (1) Marijuana/cannabis, (2) Opioids including heroin, (3) CNS depressants, (4) Cocaine and stimulants, and (5) Other substances (hallucinogens, inhalants, synthetic substances).

Trends in Alcohol and Illicit Substance Use Classes³⁸ in the 6 Months Before Pregnancy at Baseline

In all but the 2023 report year, more clients who were not incarcerated all 180 days before pregnancy reported not using opioids, but reported using other classes of illicit substances in the 6 months before pregnancy. The percent of clients reporting using classes of illicit substances other than opioids in the 6 months before pregnancy almost doubled from 23.4% in the 2015 report to 41.8% in 2020. In 2024, 39.7% of clients reported using classes of illicit substances other than opioids in the 6 months before pregnancy while 20.6% reported using opioids and other illicit substance classes.

FIGURE II.7. TRENDS IN CLASSES OF ILLICIT SUBSTANCES USED IN THE SIX MONTHS BEFORE PREGNANCY, 2015-2024



In the current report (2024), of those clients who reported using only classes of illicit substances other than opioids in the six months before pregnancy (n = 27), 70.4% reported marijuana use, 44.4% reported stimulant use, 7.4% reported cocaine use, and 3.7% synthetic substance use.

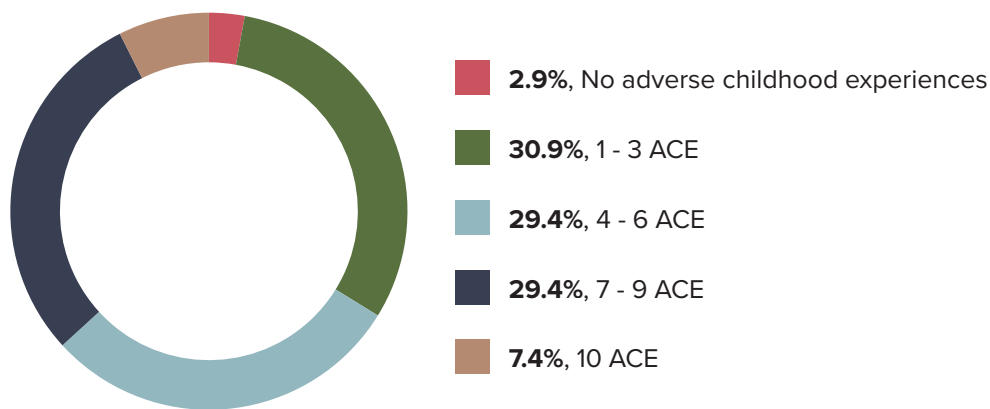
In addition, 20.6% of clients reported having ever overdosed on substances (which required intervention by someone to recover, including suicide attempts) in their lifetime. In the 6 months before pregnancy, 4.4% of clients reported overdosing on substances.

³⁸ Five classes: 1. Marijuana, 2. Opioids (prescription opiates, Suboxone, heroin, methadone), 3. Stimulants (amphetamines, methamphetamine, prescription stimulants, cocaine), 4. CNS depressants (barbiturates, tranquilizers), 5. Other illicit substances (inhalants, hallucinogens, synthetic substances).

Adverse Childhood Experiences (ACE) and Experiences with Violence

At baseline, clients were asked sixteen items about ten types of adverse childhood experiences from the Adverse Childhood Experiences (ACE).^{39, 40, 41} In addition to providing the percent of women who reported each of the ten 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 the number of items clients answered affirmatively to were added to create a score equivalent to the ACE score. A score of 0 means the client answered “No” to the five maltreatment and neglect items and the five household dysfunction items in the baseline interview. A score of 10 means the client reported all five forms of child maltreatment and neglect, and all 5 types of household dysfunction before the age of 18. Figure II.8 shows that only 2.9% reported they did not experience any of the ACE included in the baseline assessment, which means 97.1% of clients reported at least one type of ACE. Specifically, 30.9% reported experiencing 1 – 3 ACE, 29.4% reported experiencing 4 – 6 ACE, 29.4% reported experiencing 7 – 9 ACE. Close to 7% of clients reported experiencing all 10 types of adverse childhood experiences. Overall, clients reported an average of 5.4 adverse childhood experiences.

FIGURE II.8. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES REPORTED AT BASELINE (N = 68)



About 54% of all clients at baseline reported that they had experienced emotional neglect (e.g., felt that no one in the family loved them, or they weren’t special/important, or did not feel close to each other or supported) and 66.2% experienced emotional maltreatment (e.g., insults, put down, humiliation, parent acted in a way that made the child believe they would be physically hurt). A little less than half of clients (47.1%) reported experiencing physical maltreatment (e.g., being pushed/grabbed/slapped, or being hit so hard that it left marks) and 41.2% experienced physical neglect (e.g., didn’t have enough to eat as a child, had no one to protect them, parents

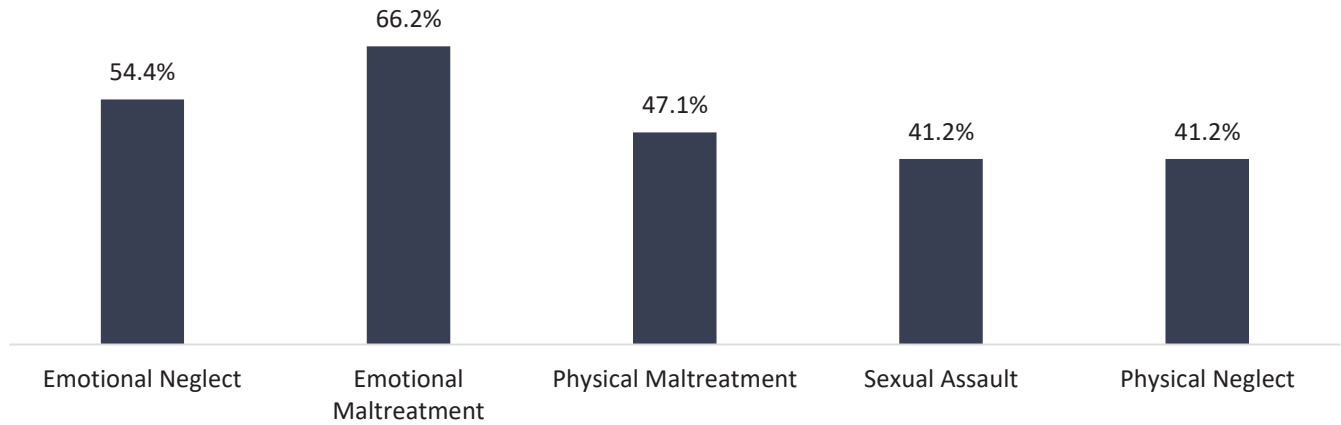
³⁹ Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245-258.

⁴⁰ 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>.

⁴¹ The baseline assessment asked about 10 major categories of adverse childhood experiences: (a) three types of maltreatment/violence (e.g., emotional maltreatment, physical maltreatment, and sexual violence), (b) two types of neglect (e.g., emotional neglect, physical neglect), and (c) five types of family risks (e.g., witnessing partner violence of parent, household member who was an alcoholic or substance user, a household member who was incarcerated, a household member who was diagnosed with a mental disorder or had committed suicide, and parents who were divorced/separated).

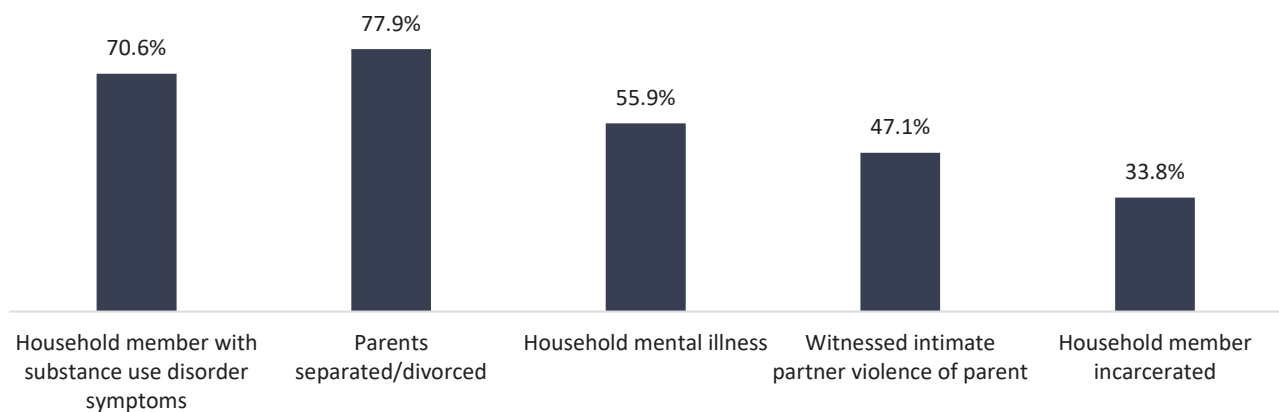
too high/drunk to take care of them) before the age of 18. Around 41% of clients reported sexual assault as a child (e.g., touched inappropriately by someone at least 5 years or older, or someone 5 years or older tried to or actually had sex with client).

FIGURE II.9. SPECIFIC MALTREATMENT AND EXPERIENCES WITH VIOLENCE IN CHILDHOOD (N = 68)



Less than three-quarters of clients (70.6%) had a household member who experienced substance use disorder symptoms and 77.9% of clients reported their parents were divorced or lived separately and (see Figure II.10). Over half of clients (55.9%) reported they had a household member with a mental illness or had attempted suicide, 47.1% witnessed intimate partner violence of a parent before the age of 18, and 33.8% reported a household member who had been incarcerated.

FIGURE II.10. HOUSEHOLD RISKS IN CHILDHOOD (N = 68)



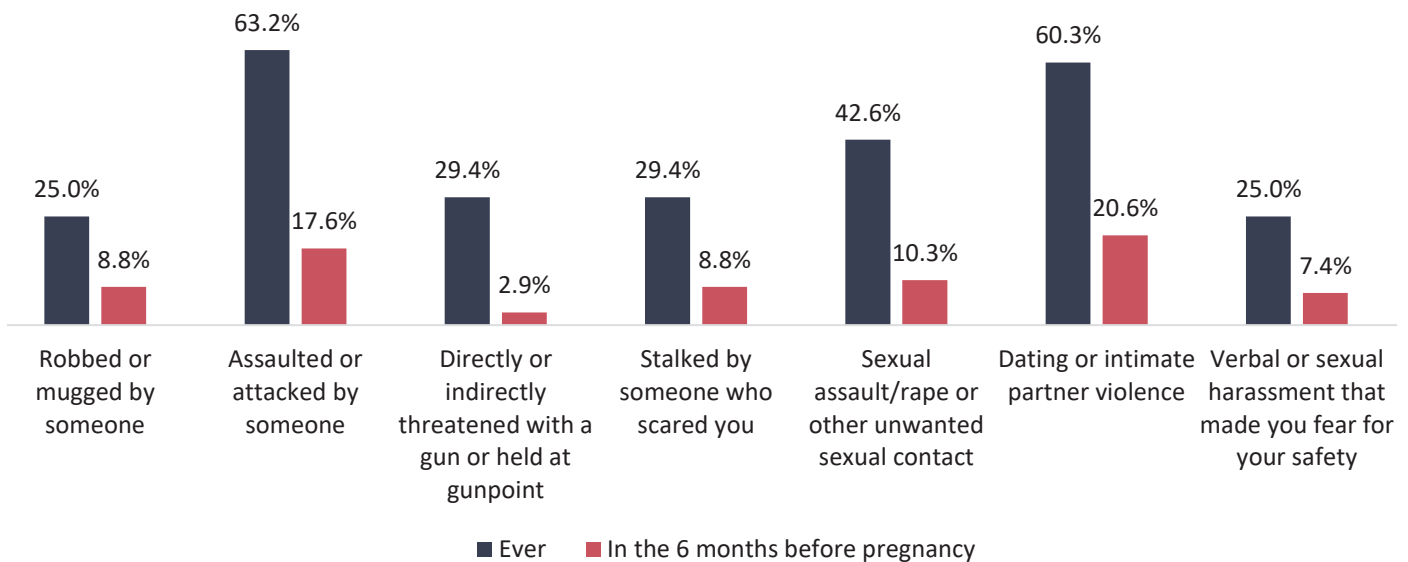
Experiences with Violence

At prenatal baseline, clients were also asked about situations in which they may have experienced violence, been harmed by someone else, or made to feel unsafe by someone other than a parent or guardian in their lifetime (including adulthood). Overall, 83.8% of clients reported ever experiencing any type of violence. Figure II.11 shows that, specifically, 25.0% of clients reported having ever been robbed or mugged (of these clients (n = 17), 82.4% reported

an acquaintance or family member was the perpetrator). Less than two-thirds of clients (63.2%) reported having ever been assaulted or attacked by someone (of these (n = 43), 74.4% reported that a partner/ex-partner was the perpetrator) and 29.4% of clients reported they had been directly or indirectly threatened with a gun or held at gunpoint (of these (n = 20), 50.0% reported that a partner/ex-partner was the perpetrator, 30% reported a stranger, and 30.0% reported an acquaintance). Close to 30% of clients reported having ever been stalked by someone who scared them (of these (n = 20), 80.0% reported that a partner/ex-partner was the perpetrator). About 43% reported having ever experienced sexual assault, rape, or other unwanted sexual contact (of these clients (n = 29), 62.1% reported an acquaintance or family member was the perpetrator and 37.9% reported a partner/ex-partner) and 60.3% reported having ever experienced dating or intimate partner violence (partner physically assaulted, controlled, or emotionally violated the client). Twenty-five percent of clients reported they were ever verbally, sexually, or otherwise harassed in some way that made them afraid for their safety (of these clients (n = 17), 82.4% reported a partner/ex-partner was the perpetrator and 47.1% reported an acquaintance or family member).

In the 6 months before pregnancy, 38.2% reported any experiences with violence. Specifically, 20.6% of clients reported experiencing dating or intimate partner violence and 17.6% reported they were assaulted or attacked by someone.

FIGURE II.11. PERCENT OF CLIENTS HAVING EXPERIENCED VIOLENCE (N = 68)



Any Intimate Partner Violence

Figure II.12 shows that in the 6 months before pregnancy, 32.4% of clients reported experiencing any type of intimate partner violence (including psychological violence, control, physical violence, and sexual violence)⁴² perpetrated by a current or ex-partner and 16.2% of clients reported experiencing intimate partner violence in the past 30 days.

⁴² Any violence was defined in this study as a client indicating “yes” to any of the intimate partner violence questions asked in the survey (e.g., verbal and psychological violence, extreme jealousy and control, threats of violence towards client and others close to them, physical violence, stalking, partner purposely damaging or destroying property, sexual assault/threats of assault) at each period.

FIGURE II.12. ANY TYPE OF INTIMATE PARTNER VIOLENCE IN THE 6 MONTHS BEFORE PREGNANCY AND IN THE PAST 30 DAYS (N = 68)

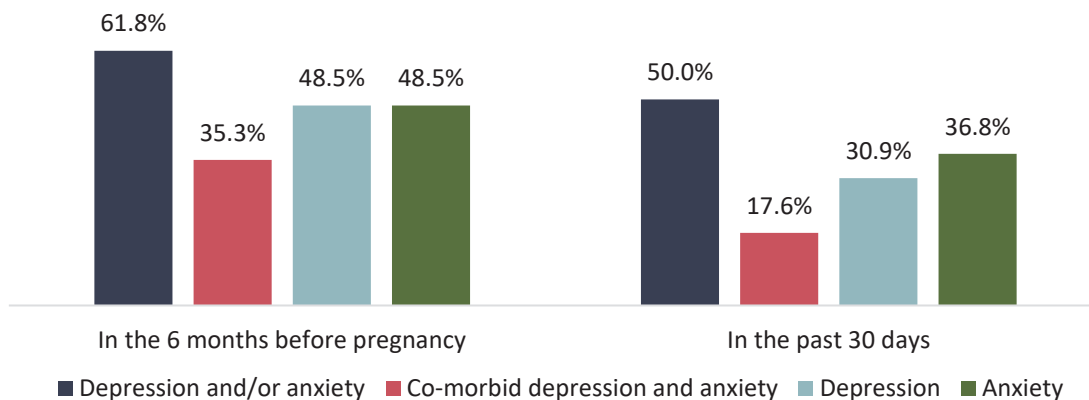


Mental Health, Stress, and Sleep Difficulty

In the 6 months before pregnancy, 61.8% of clients met study criteria for depression and/or anxiety and 35.3% of clients met criteria for co-morbid depression and anxiety. Less than half of clients (48.5%) met study criteria for depression and criteria for anxiety (see Figure II.13).

In the previous 30 days before the baseline, half of clients met criteria for depression and/or anxiety and 17.6% met criteria for both depression and anxiety.

FIGURE II.13. PERCENT OF CLIENTS MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY AT BASELINE (N = 68)



Over one-quarter of clients (27.9%) met study criteria for post-traumatic stress disorder (PTSD) in the 6 months before pregnancy (not represented in a figure).

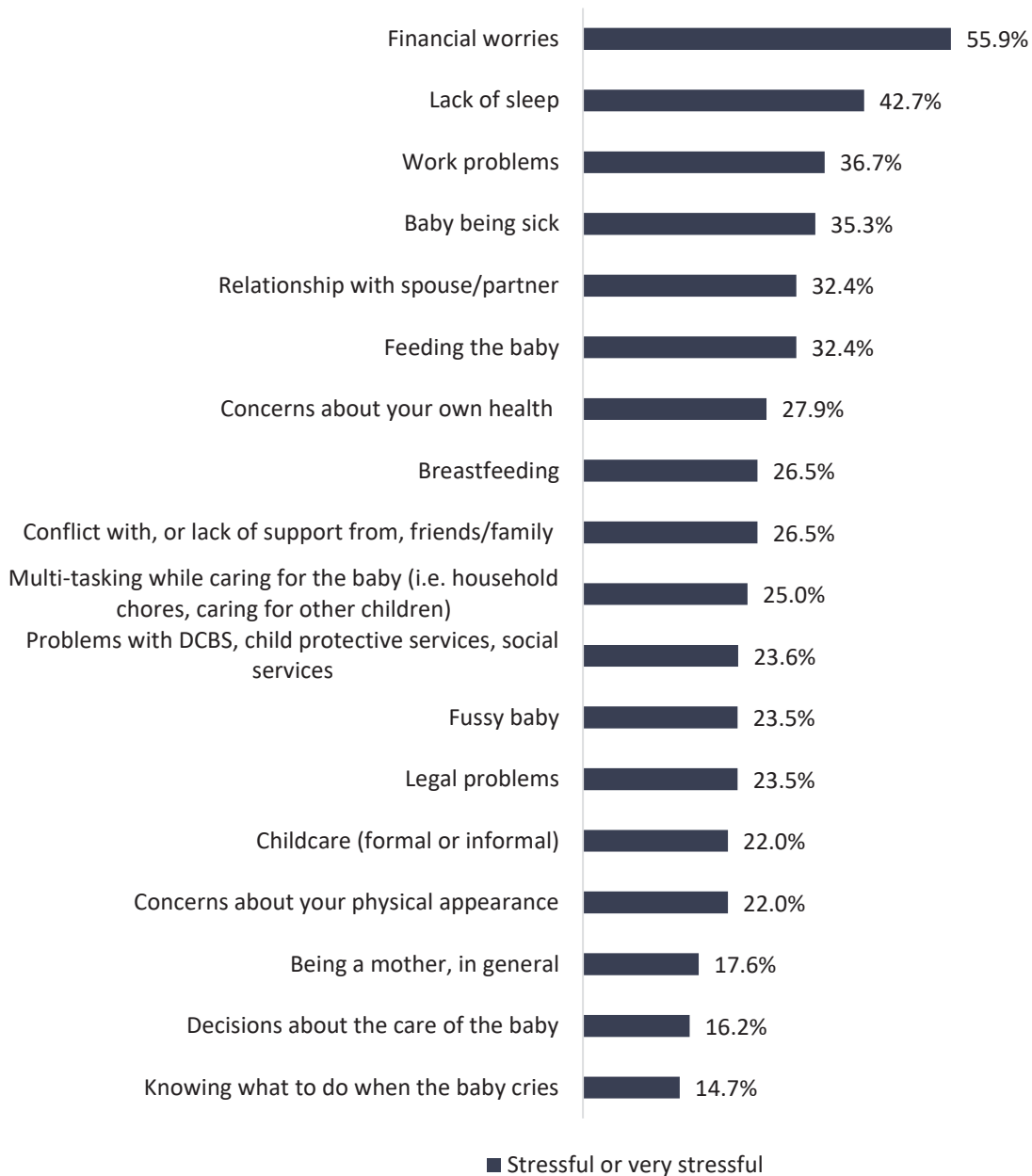
Stress

At baseline, clients were asked a series of questions regarding their expectations about how stressful certain events will be after they have their baby.⁴³ Responses ranged from a score of 1 (not at all stressful) to 4 (very stressful). The majority of clients (83.8%) rated at least one item as stressful or very stressful. Specifically, the three items reported most frequently as

⁴³ Questions regarding stress are adapted from the Postpartum Stressor Scale, which includes a 9-item scale highlighting baby care, well-being, and work problems. Park, E. R., Psaros, C., Traeger, L., Stagg, A., Jacquart, J., Willett, J., Alert, M. D., LaRoche, K. L., & Ecker, J. L. (2015). Development of a postpartum stressor measure. *Maternal and Child Health Journal*, 19(10), 2094–2101. <https://doi.org/10.1007/s10995-015-1731-0>.

being stressful or very stressful were financial worries (55.9%), lack of sleep (42.7%), and work problems (36.7%).

FIGURE II.14. RATING OF EVENTS AFTER THE BIRTH OF THE BABY AS STRESSFUL/VERY STRESSFUL (N = 68)



Sleep Difficulty

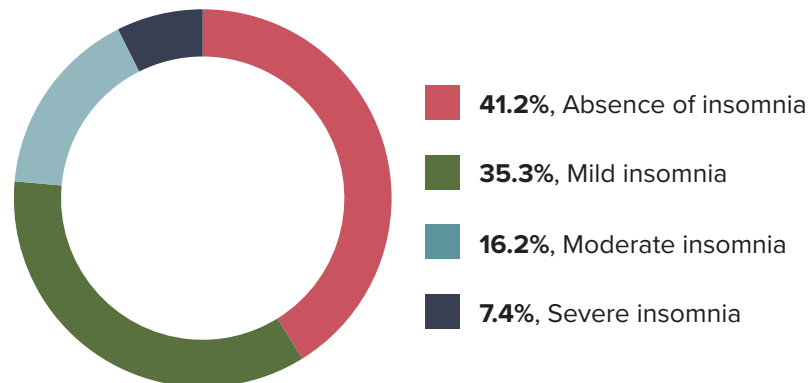
Sleep difficulty in KY-Moms MATR assessments is measured using the Insomnia Severity Index (ISI).^{44, 45} The ISI consists of 7 self-reported items that measure the nature, severity, and impact

⁴⁴ Bastien, C. H., Vallières, A., & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep Medicine*, 2(4), 297–307. [https://doi.org/10.1016/s1389-9457\(00\)00065-4](https://doi.org/10.1016/s1389-9457(00)00065-4).

⁴⁵ Morin, C., Belleville, G., Belanger, L., and Ivers, H. (2011). The Insomnia Severity Index: Psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep*, 24(5), 601-608.

of insomnia using the current time period. A 5-point Likert scale is used to rate each question on a scale of 0 (no problem) to 4 (very severe problem) where the total score can range from 0 to 28. A total score of 0-7 indicates an absence of insomnia, 8-14 indicates mild insomnia, 15-21 indicates moderate insomnia, and a score total of 22-28 indicates severe insomnia. Figure II.15 shows that 41.2% of clients were classified as having an absence of insomnia. In addition, 35.3% of clients were classified as having mild insomnia and 16.2% of clients were classified as having moderate insomnia. Only 7.4% of clients (5 clients) were classified as having severe insomnia. Overall, clients scored an average of 9.6 on the Insomnia Severity Index.

FIGURE II.15. NUMBER OF TYPES SLEEP DIFFICULTIES REPORTED AT BASELINE (N = 68)



Summary

Over half of pre-birth clients (51.5%) reported they were referred to the KY-Moms MATR program by a counselor at a community mental health agency. The majority of clients coming into the program before giving birth were White (92.6%), over half (52.9%) were either married or cohabiting with a partner, and the average age was 29 years old. Of the clients who were married or cohabiting, the majority (86.1%) reported that their current partner was the father of the baby. Close to 22% had less than a high school diploma/GED and over half (52.9%) were unemployed.

Overall, clients were an average of 24 weeks into their pregnancy when they completed a prenatal baseline assessment and the majority (83.8%) reported that they had been pregnant before. At baseline, clients reported an average of 6.6 prenatal visits with a health care professional. Almost half of clients (49.3%) were planning to breastfeed their babies.

KY-Moms MATR clients reported behavioral health risks associated with negative birth outcomes in the time before becoming involved in the program including high rates of smoking, alcohol and illicit substance use, depression or anxiety, financial difficulties, and intimate partner violence. In addition, the majority of clients (97.1%) reported at least one adverse childhood experience and two-thirds (66.2%) reported experiencing emotional maltreatment, over half (54.4%) reported emotional neglect, and 47.1% reported physical maltreatment in childhood.

Clients Who Entered the Program After the Birth of Their Child

Demographics

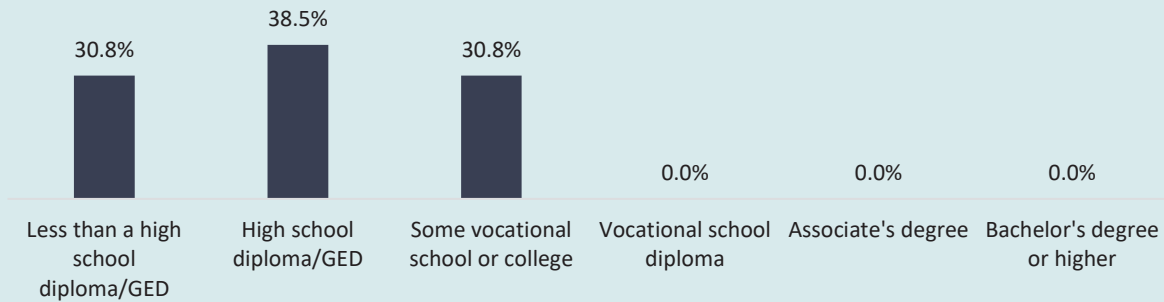
Table II.B.1 shows that the majority of clients who entered KY-Moms MATR after the birth of their baby (post-birth clients) were White (84.6%) and the average age was 29.5 years old. In addition, over half were married or cohabiting at baseline (53.8%) and 34.6% had never been married. Of those clients who were living with an intimate partner (n = 14), 92.9% reported this partner was the father of the baby. About 12% of the KY-Moms MATR mothers reported at post-birth baseline they were currently homeless. Of those who indicated they were homeless (n = 3), 33.3% were staying in a shelter, and 66.7% considered themselves homeless for other reason such as living in a short-term facility, or a hotel.

TABLE II.B.1. DEMOGRAPHICS FOR KY-MOMS MATR CLIENTS WHO HAD THEIR BABY BEFORE BASELINE (N = 26)

Age.....	29.5 years (range of 21-39)
Race	
White	84.6%
African American.....	11.5%
Mexican	0.0%
Puerto Rican	0.0%
Other or multiracial.....	3.8%
Marital status	
Married or cohabiting	53.8%
Never married	34.6%
Separated or divorced.....	11.5%
Widowed	0.0%
Of those married or cohabiting	(n = 14)
Partner is the father of baby.....	92.9%
Homeless	11.5%

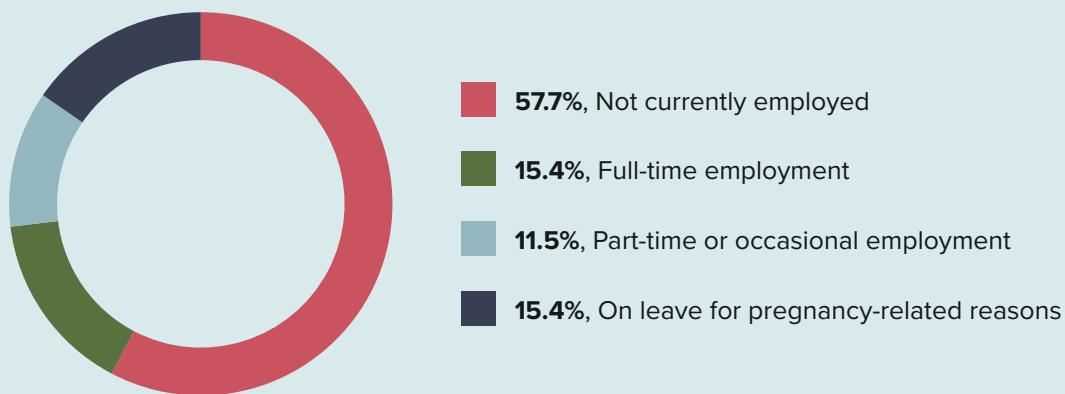
Less than one-third of clients (30.8%) had less than a high school diploma or GED at baseline (see Figure II.B.1). Close to 40% of clients reported their highest level of education was a high school diploma or GED. Less than one third of clients (30.8%) had completed some vocational/technical school or college. None of the clients had completed vocational/technical school, an associate’s degree, or a bachelor’s degree.

FIGURE II.B.1. HIGHEST LEVEL OF EDUCATION COMPLETED AT BASELINE (N = 26)



The majority of women in KY-Moms MATR case management were unemployed (57.7%) at the time of the post-birth baseline interview. Close to 15% of clients were employed full-time and 11.5% worked part-time or had occasional/seasonal work. About 15% reported they were currently on leave from their job due to pregnancy-related reasons.

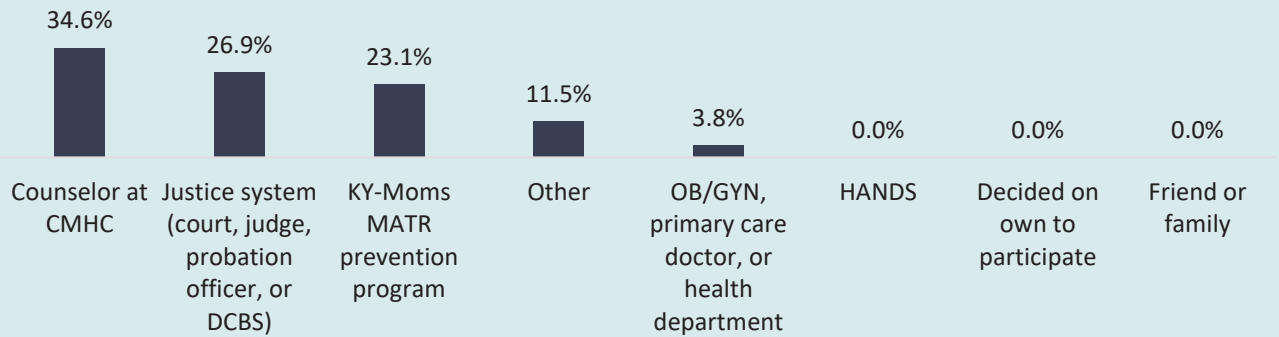
FIGURE II.B.2. CURRENT EMPLOYMENT STATUS AT BASELINE (N = 26)



Self-reported Referral Status

Figure II.B.3 shows the self-reported referral source for KY-Moms MATR clients who entered the program after the birth of their baby. Over one-third of clients were referred by a counselor at one of the community mental health centers (34.6%), and over one-quarter of clients were referred by the justice system (e.g., judge, court, probation officer, or DCBS; 26.9%). About 23% of clients were referred to the KY-Moms MATR program by the prevention program. Over one in 10 clients reported they were referred to the KY-Moms MATR program by other sources such as a substance use disorder treatment facility. A minority of clients (3.8%) were referred by a health care provider.

FIGURE II.B.3. SELF-REPORTED REFERRAL SOURCE FOR KY-MOMS MATR CLIENTS WHO ENTERED THE PROGRAM AFTER THE BIRTH OF THEIR BABY (N = 26)



Information About the Pregnancy/Baby

Clients reported they were an average of 37.0 weeks pregnant when the baby was born. At the time of post-birth baseline, 96.2% of clients had a regular OB/GYN and had been to an average of 13.9 visits (range of 1-50 visits) with their prenatal health care provider during pregnancy and an average of 2.0 times (range of 0-8 visits) since the birth of the baby (see Table II.B.2). About 42% of clients reported they had breastfed and, of those clients (n = 11), 72.7% were still breastfeeding. Less than half of clients (46.2%) reported that they had been told by a doctor that there were special health care needs that directly impacted their pregnancy or the baby while pregnant such as neonatal abstinence syndrome, hepatitis C, and incompatible blood types. Since the baby was born, 23.1% of clients reported that they had been told by a doctor of any special health care needs such as sensitivity to sounds, developmental issues, and weight. Overall, 96.2% of clients reported they had been pregnant before.

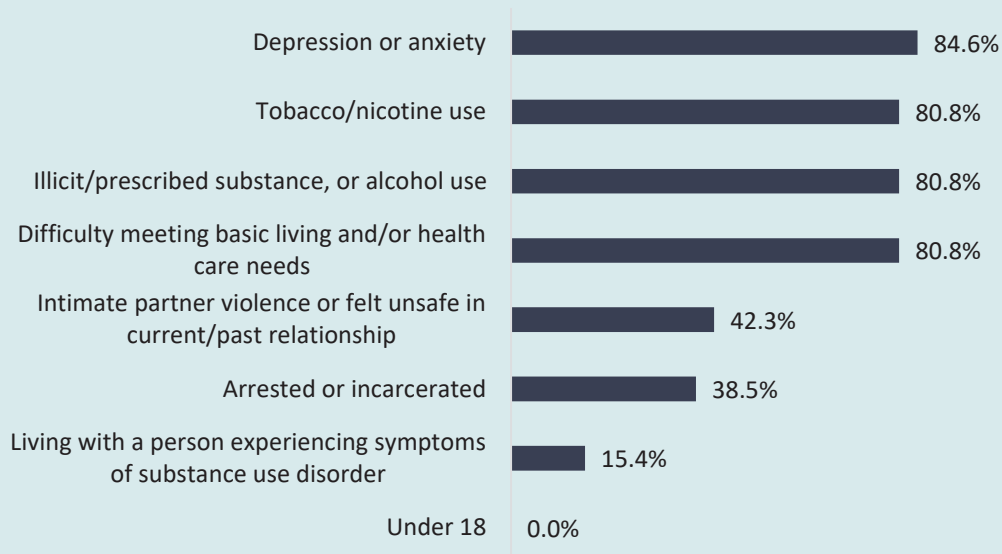
TABLE II.B.2. PREGNANCY STATUS AT BASELINE FOR KY-MOMS MATR CLIENTS WHO ENTERED THE PROGRAM AFTER THE BIRTH OF THEIR BABY (N = 26)

Average weeks pregnancy when the baby was born.....	37.0 (range 11 – 40)
Have a regular OB/GYN	96.2%
Average number of visits with a healthcare professional during pregnancy.....	13.9 (range 1-50)
Average number of visits with a healthcare professional since baby was born	2.0 (range 0-8)
Have breastfed baby.....	42.3%
Of those clients who reported breastfeeding	(n = 11)
Still breastfeeding.....	72.7%
Been pregnant previously.....	96.2%
Been told by a doctor of any special health care needs that directly impacted pregnancy or baby while pregnant	46.2%
Been told by a doctor of any special health care needs since the baby was born .	23.1%
Been to the ER for your baby since the baby was born	23.0%

Risk Status

Figure II.B.4 shows that all clients who completed a KY-Moms MATR post-birth baseline fit into at least one of the major risk factor categories assessed in the baseline interview. Overall, 84.6% of clients reported they had symptoms of depression or anxiety for at least two weeks in a row at baseline (in the 6 months before pregnancy, during pregnancy, or in the past 30 days). Almost 81% of clients reported tobacco/nicotine use (cigarettes, e-cigarettes, or smokeless tobacco), substance or alcohol use at baseline (in the 6 months before pregnancy, during pregnancy, or in the past 30 days), and reported difficulty meeting basic living and/or health care needs. About 42% of clients reported intimate partner violence and/or feeling unsafe in either their current relationship or because of a partner from a previous relationship in the 6 months before pregnancy, during pregnancy, or in the past 30 days. Close to 40% of clients reported having been arrested and/or incarcerated in the 6 months before entering the program. Approximately 15% of clients reported currently living with someone experiencing symptoms of substance use disorder, and none were under the age of 18 at the time of the baseline interview.

FIGURE II.B.4. PERCENT OF CLIENTS FALLING INTO AT LEAST ONE TARGETED RISK FACTOR AT BASELINE (N = 26)



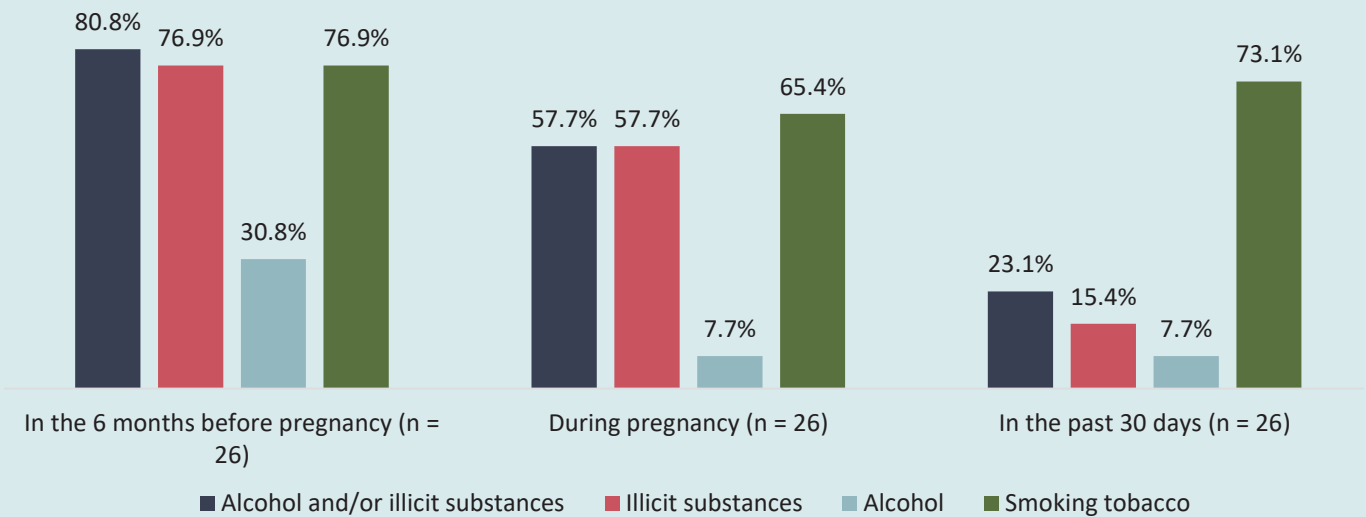
Substance Use

The majority reported using alcohol and/or illicit substances (80.8%) in the 6 months before pregnancy. Overall, a higher percentage of individuals reported using illicit substances (76.9%) compared to the percent of individuals who reported using alcohol (30.8%) in the 6 months before pregnancy. The majority of clients reported smoking tobacco (76.9%) in the 6 months before pregnancy.

Almost 58% of clients reported using alcohol and/or illicit substances during pregnancy. Specifically, 57.7% reported they used illicit substances and 7.7% reported alcohol use during pregnancy. The majority of clients (65.4%) reported smoking tobacco during pregnancy.

In the 30 days before baseline, 23.1% reported using alcohol and/or illicit substances.⁴⁶ Specifically, 15.4% reported illicit substance use and 7.7% reported alcohol use. Also, 73.1% reported smoking tobacco in the 30 days before baseline (see Figure II.B.5).

FIGURE II.B.5. PERCENT OF CLIENTS REPORTING ILLICIT SUBSTANCES, ALCOHOL, AND SMOKING TOBACCO AT BASELINE⁴⁷



Of those clients who reported using illicit substances during pregnancy (n = 15), 60.0% reported marijuana use, 33.3% reported stimulant use, and 13.3% reported cocaine use.

Adverse Childhood Experiences and Experiences with Violence

Figure II.B.6 shows that the majority of clients who entered the program after the birth of their baby reported at least one type of ACE included in the assessment. Specifically, 26.9% reported experiencing 1 to 3 ACE, 30.8% reported experiencing 4 – 6 ACE, and 19.2% reported experiencing 7 – 9 ACE. About 15% of clients reported experiencing all 10 types of adverse childhood experiences. Overall, clients reported an average of 5.4 adverse childhood experiences.

⁴⁶ This period includes while they may or may not have still been pregnant.

⁴⁷ Because being in a controlled environment (one where the client was not able to come and go as they pleased including a hospital, jail, or residential treatment) decreases opportunities for substance use, individuals who were in a controlled environment all 180 days in the 6 months before entering the program, or in incarcerated all 30 days before entering the program are not included in the analysis of substance use for the corresponding period. This year, no clients were in a controlled environment all 180 days in the 6 months before entering the program, or in incarcerated all 30 days before entering the program.

FIGURE II.B.6. NUMBER OF TYPES OF ADVERSE CHILDHOOD EXPERIENCES REPORTED AT BASELINE (N = 26)

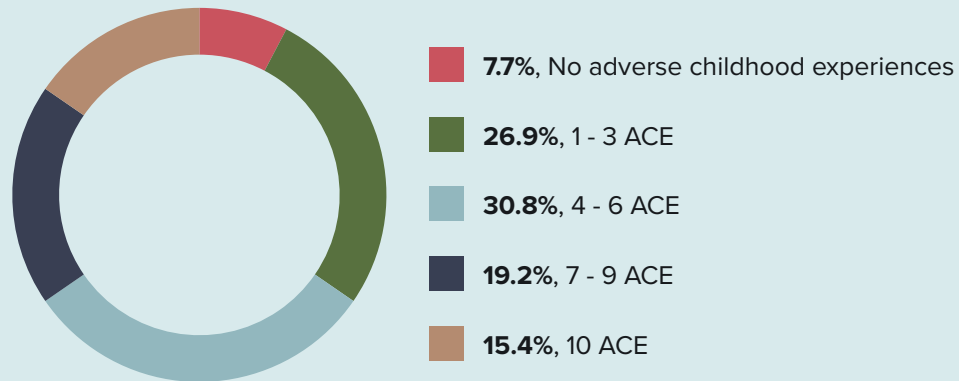
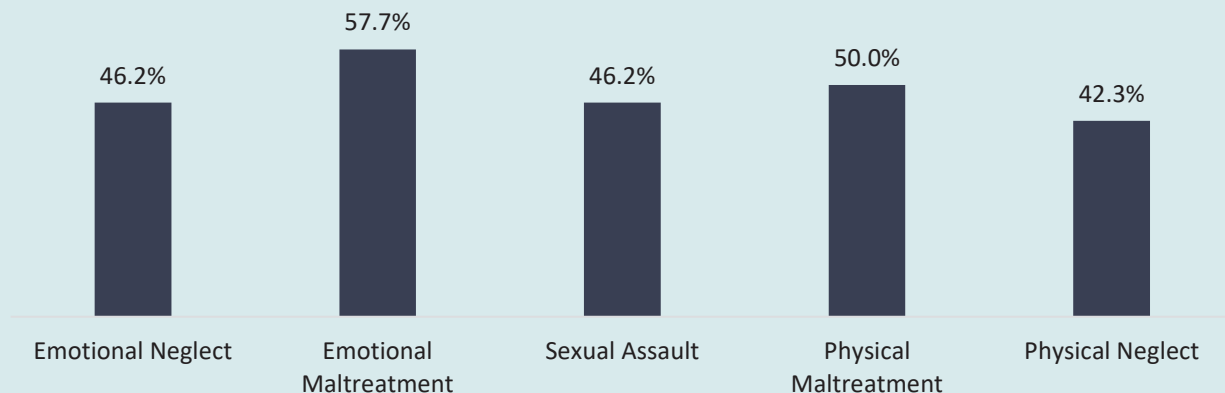


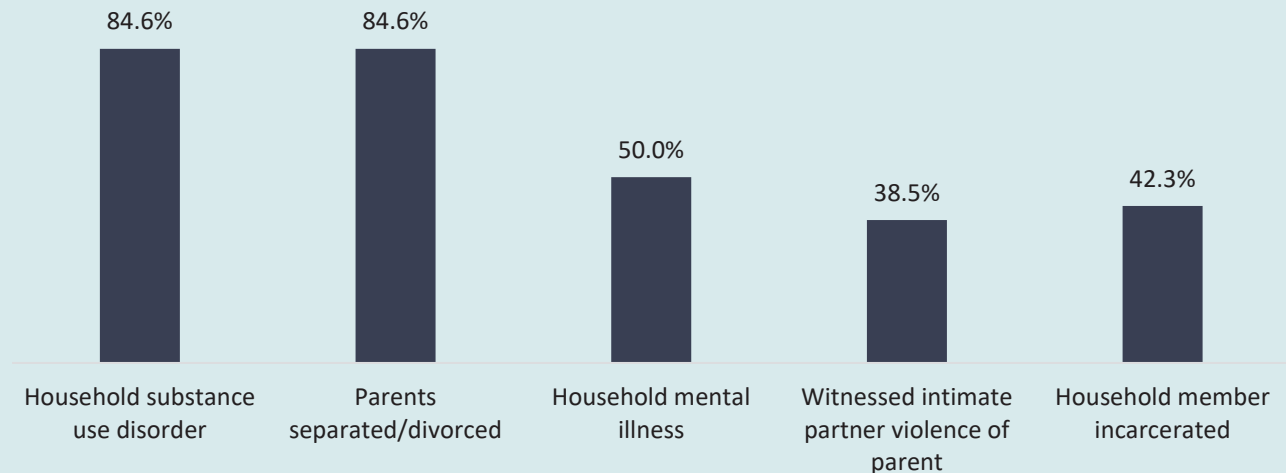
Figure II.B.7 shows that 46.2% of clients reported that they had experienced emotional neglect (e.g., felt that no one in the family loved them, or they weren't special/important, or did not feel close to each other or supported) and 57.7% experienced emotional maltreatment (e.g., insults, put down, humiliation, parent acted in a way that made the child believe they would be physically hurt). Half of clients reported experiencing physical maltreatment (e.g., being pushed/grabbed/slapped, or being hit so hard that it left marks) and 42.3% experienced physical neglect (e.g., didn't have enough to eat as a child, had no one to protect them, parents too high/drunk to take care of them) before the age of 18. About 46% of clients reported sexual assault as a child (e.g., touched inappropriately by someone at least 5 years or older, or someone 5 years or older tried to or actually had sex with client).

FIGURE II.B.7. SPECIFIC MALTREATMENT AND VIOLENT EXPERIENCES IN CHILDHOOD (N = 26)



The majority of clients (84.6%) had a household member who experienced symptoms of substance use disorder and reported that their parents were divorced or lived separately and (see Figure II.B.8). Half of clients reported they had a household member with a mental illness or had attempted suicide, 38.5% witnessed intimate partner violence of a parent before the age of 18, and 42.3% reported a household member had been incarcerated.

FIGURE II.B.8. HOUSEHOLD RISKS IN CHILDHOOD (N = 26)

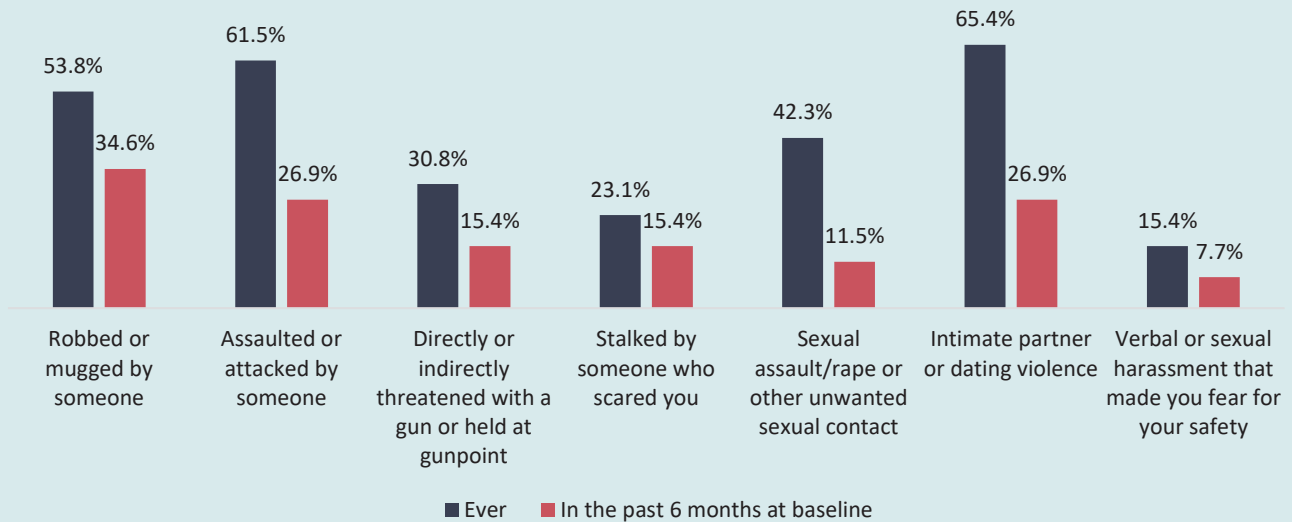


Experiences with Violence

At post-birth baseline, clients were also asked about situations in which they may have experienced violence, harmed by someone else, or made to feel unsafe by someone other than a parent or guardian in their lifetime. Overall, 84.6% of clients reported ever experiencing any type of violence. Figure II.B.9 shows that, specifically, 53.8% of clients reported having ever been robbed or mugged. Less than two-thirds of clients (61.5%) reported having ever been assaulted or attacked by someone and 30.8% of clients reported they had been directly or indirectly threatened with a gun or held at gunpoint. Less than one-quarter of clients (23.1%) reported having ever been stalked by someone who scared them. Less than half (42.3%) reported having ever experienced sexual assault, rape, or other unwanted sexual contact and 65.4% reported having ever experienced dating or intimate violence (partner physically assaulted, controlled, or emotionally assaulted the client). About 15% of clients reported they were ever verbally, sexually, or otherwise harassed in some way that made them afraid for their safety.

In the past 6 months, 46.2% reported any experience with violence. Specifically, 34.6% reported having been robbed or mugged by someone, 26.9% reported being assaulted or attacked by someone, and 26.9% of clients reported experiencing intimate partner violence

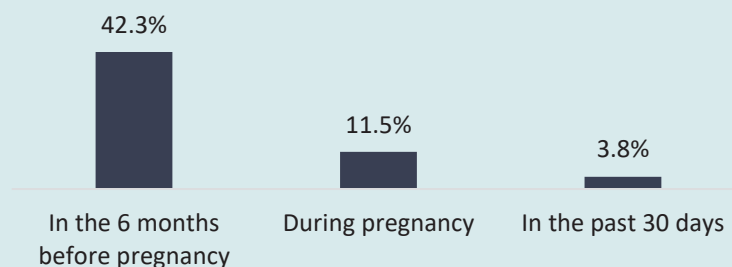
FIGURE II.B.9. PERCENT OF CLIENTS REPORTING EXPERIENCES WITH VIOLENCE (N = 26)



Any Intimate Partner Violence

Figure II.B.10 shows that in the 6 months before pregnancy, 42.3% of clients reported experiencing any type of specific intimate partner violence (including psychological violence, control, physical assault, and sexual violence)⁴⁸ perpetrated by a current or ex-partner, 11.5% of clients reported experiencing intimate partner violence during pregnancy, and 3.8% of clients reported experiencing intimate partner violence in the past 30 days.

FIGURE II.B.10. ANY TYPE OF INTIMATE PARTNER VIOLENCE IN THE 6 MONTHS BEFORE PREGNANCY AND IN THE PAST 30 DAYS (N = 26)



Mental Health

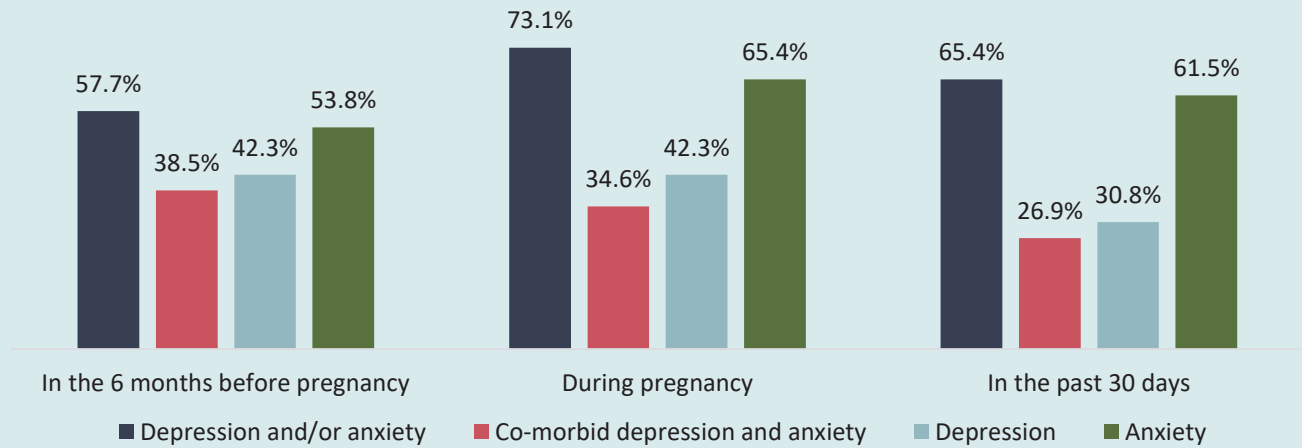
In the 6 months before pregnancy, 57.7% of clients who entered the program after the birth of their baby met study criteria for depression and/or anxiety and 38.5% of clients met criteria for co-morbid depression and anxiety. About 42% of clients met study criteria for depression and 53.8% met criteria for anxiety (see Figure II.B.11).

During pregnancy, over half of clients (73.1%) met study criteria for depression and/or anxiety and 34.6% of clients met criteria for co-morbid depression and anxiety. About 42% of clients met study criteria for depression and 65.4% met criteria for anxiety.

⁴⁸ Any intimate partner violence was defined in this study as a client indicating “yes” to any of the intimate partner violence questions asked in the survey (e.g., verbal and psychological violence, extreme jealousy and control, threats of violence towards client and others close to them, physical violence, stalking, partner purposely damaging or destroying property, sexual assault/ threats of assault) at each period.

In the past 30 days at baseline, 65.4% of clients met criteria for depression and/or anxiety and 26.9% met criteria for both depression and anxiety.

FIGURE II.B.11. PERCENT OF CLIENTS MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY AT BASELINE (N = 26)



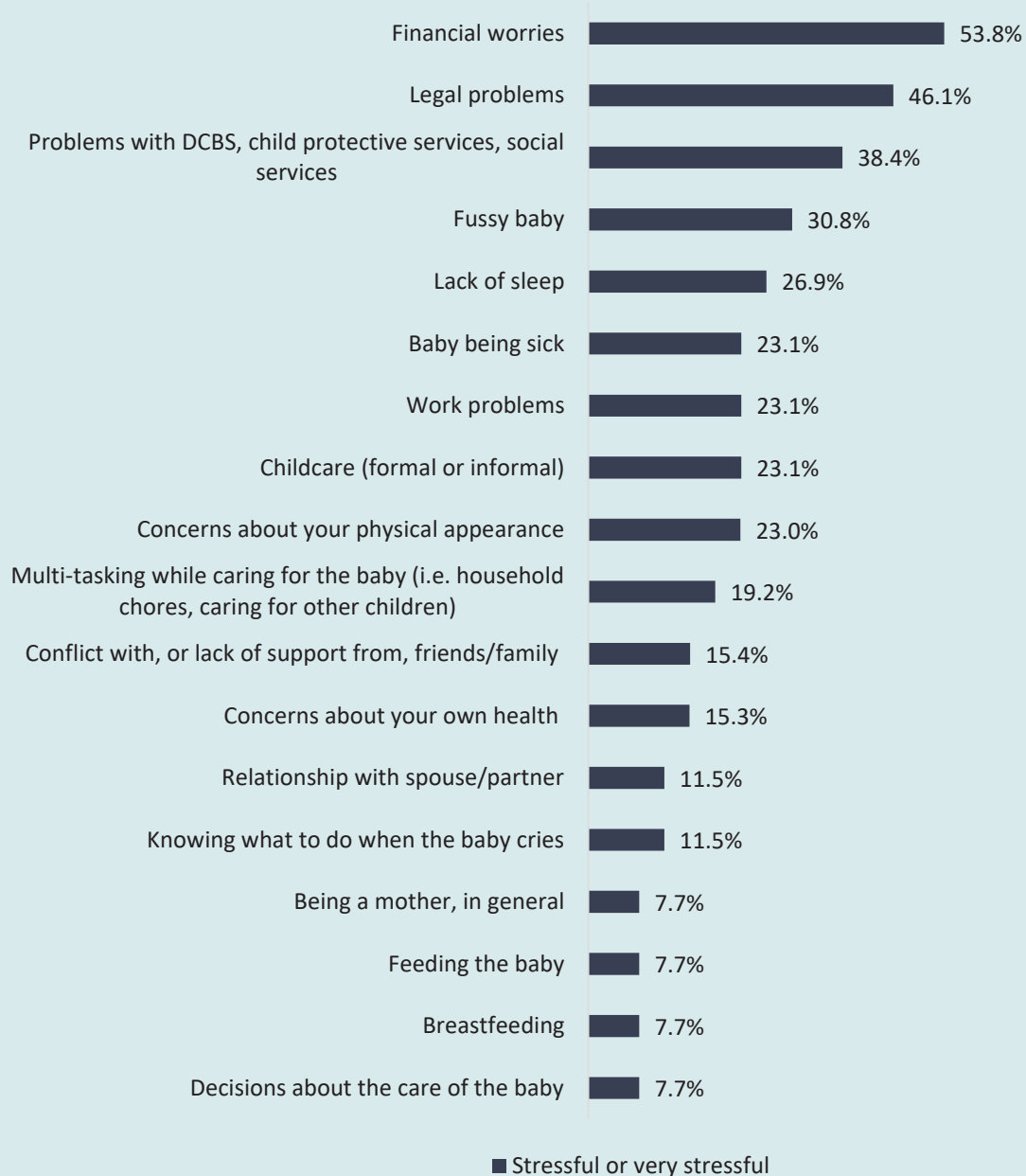
About 19% of clients met study criteria for post-traumatic stress disorder (PTSD) in the past 6 months (not represented in a figure).

Stress

At postnatal baseline, clients were asked a series of questions regarding how stressful certain events have been in the past 6 months.⁴⁹ Responses ranged from a score of 1 (not at all stressful) to 4 (very stressful). The top three most mentioned items as stressful were: financial worries (53.8%), legal problems (46.1%), and problems with DCBS, child protective services, or social services (38.4%).

⁴⁹ Questions regarding stress are adapted from the Postpartum Stressor Scale which includes a 9-item scale highlighting baby care, well-being, and work problems. Park, E. R., Psaros, C., Traeger, L., Stagg, A., Jacquart, J., Willett, J., Alert, M. D., LaRoche, K. L., & Ecker, J. L. (2015). Development of a postpartum stressor measure. *Maternal and Child Health Journal*, 19(10), 2094–2101. <https://doi.org/10.1007/s10995-015-1731-0>.

FIGURE II.B.12. RATING OF EVENTS AFTER THE BIRTH OF THE BABY AS STRESSFUL/VERY STRESSFUL (N = 26)

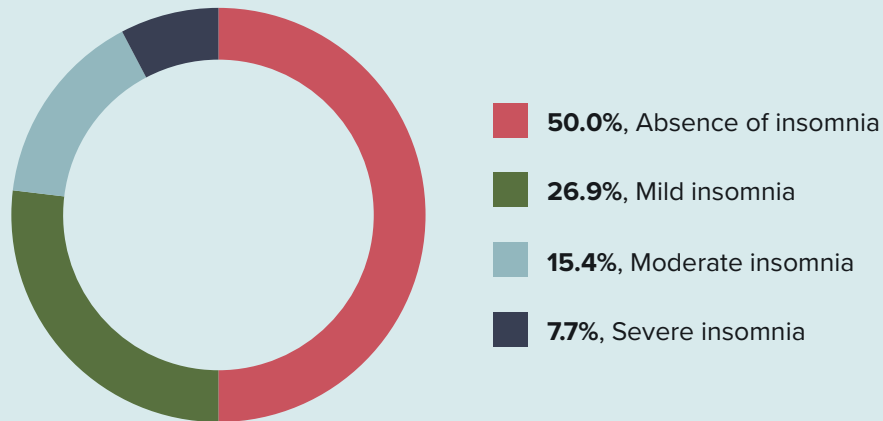


Fifteen percent of clients reported that, in the past 30 days at baseline, they used alcohol, prescribed substances, or illicit substances to reduce stress, anxiety, worry, sadness, or fear.

Sleep Difficulty

Figure II.B.12 shows that 50.0% of clients were classified as no insomnia symptoms at post-birth baseline. In addition, 26.9% of clients were classified as having mild insomnia and 15.4% of clients were classified as having moderate insomnia. Only 7.7% of clients (two clients) were classified as having severe insomnia. Overall, clients scored an average of 8.6 on the ISI.

FIGURE II.B.13. NUMBER OF TYPES SLEEP DIFFICULTIES REPORTED AT POST-BIRTH BASELINE (N = 26)



Close to 12.5% of post-birth clients reported at intake that they took something (including prescribed, over the counter, or other) to help them sleep in the past 7 days.

Summary

Clients who had already had their baby when they entered the program and completed a postnatal baseline (n = 26) reported an average of 13.9 visits with a healthcare professional during pregnancy and 2.0 visits since the baby was born. Close to 42% of clients reported they had breastfed their baby and 23.1% had been told by a doctor of any special health care needs since the baby was born. The majority of clients reported illicit substance use (57.7%) and tobacco use (65.4%) during pregnancy. In addition, the majority of clients reported at least one type of adverse childhood experience and many of the clients reported experiencing emotional maltreatment (57.7%), physical maltreatment (50.0%), and sexual violence in childhood (46.2%). Less than three-quarters of clients (73.1%) who already had their baby met study criteria for depression and/or anxiety during pregnancy and 19% met study criteria for PTSD in the past 6 months. About 42% of clients in the 6 months before pregnancy and 11.5% of clients during pregnancy reported experiencing any type of intimate partner violence.

Section III. Birth Events and Outcomes

This section uses the Kentucky Vital Statistics birth data to examine: (1) maternal behavior and health characteristics, and (2) infant health characteristics for 19⁵⁰ KY-Moms MATR case management clients who entered the KY-Moms MATR program prior to the birth of their baby.⁵¹ Birth event data for clients who entered the case management program after the birth of their baby (n = 9)⁵² are described separately.

Maternal Behavior and Health Characteristics

Medical and Public Services Utilization

According to the birth event data, KY-Moms MATR women reported an average of 12.1 prenatal visits during their pregnancy (see Table III.1). In addition, the majority of clients (89.5%) reported that they received the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) during pregnancy. The majority of clients (89.5%) reported that the source of payment for delivery of the baby was Medicaid, 5.3% of clients reported they had private insurance, and 5.3% had other government insurance to pay for the delivery. Close to 1 in 10 of clients reported any labor and delivery complications such as premature rupture of membranes, short and fast labor, or prolonged labor.

TABLE III.1. MEDICAL AND PUBLIC UTILIZATION (N = 19)

Average number of prenatal visits.....	12.1 (range 0-20)
WIC food during pregnancy	89.5%
Payment source for delivery	
Medicaid	89.5%
Private insurance	5.3%
Other government (Federal, State, Local).....	5.3%
Any labor and delivery complication.....	10.5%

Maternal Health Risk Factors

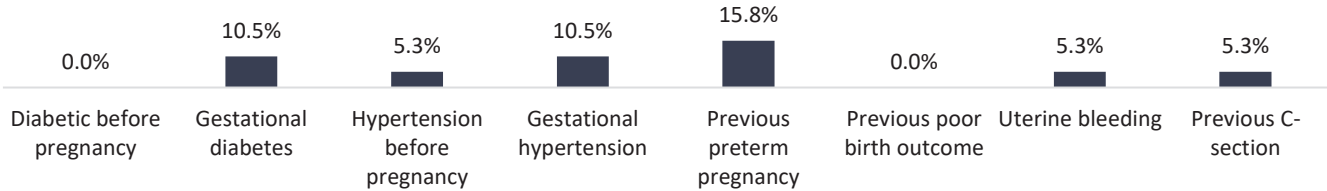
General health conditions of pregnancy that could cause harm to the baby or the mother were collected from the Kentucky Vital Statistics data set. Less than half of KY-Moms MATR mothers (42.1%) reported experiencing at least one maternal health condition such as gestational diabetes (10.5%), gestational hypertension (10.5%), uterine bleeding (5.3%), previous preterm pregnancy (15.8%), or a previous C-section (5.3%; see Figure III.1).

⁵⁰ Of the 31 women who completed a follow-up assessment, 11 women did not give permission to access their birth data and one client who completed a follow-up could not be matched to the birth event data set.

⁵¹ Clients gave birth between February 2022 and December 2022.

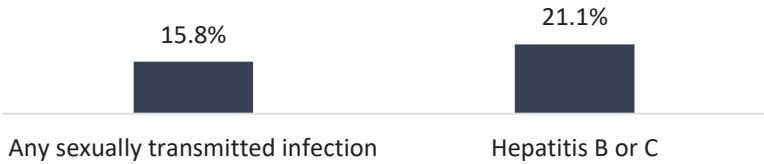
⁵² Of the 10 post-birth women who completed a follow-up assessment, one could not be match to the birth even data set.

FIGURE III.1. OTHER MATERNAL HEALTH RISK FACTOR (n = 19)



About 16% of KY-Moms MATR clients reported having a sexually transmitted infection such as gonorrhea, syphilis, herpes, or chlamydia and 21.1% of clients reported they had hepatitis B or C (see Figure III.2).

FIGURE III.2. PERCENT OF WOMEN REPORTING A SEXUALLY TRANSMITTED INFECTION AND HEPATITIS B OR C (N = 19)

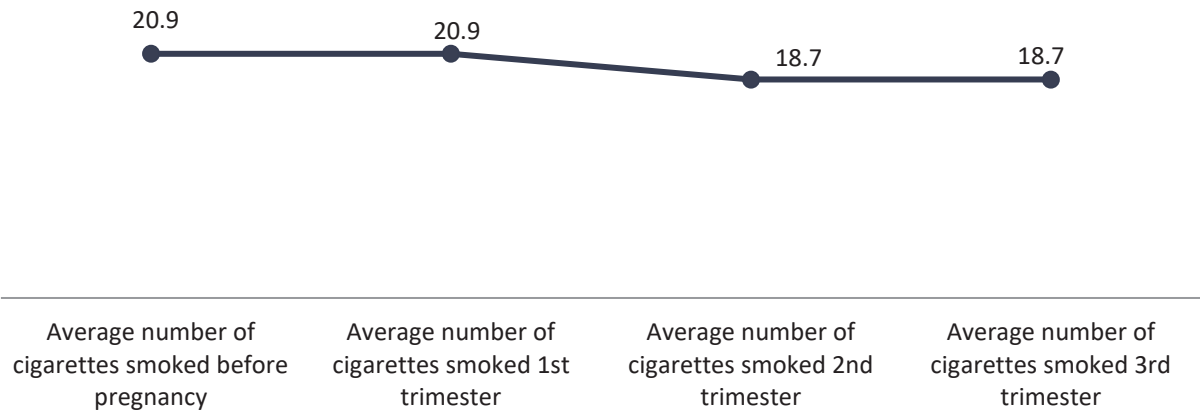


Smoking Patterns and Alcohol Use

In the Kentucky Vital Statistics data, 50.0% of KY-Moms MATR mothers reported smoking tobacco⁵³ and among those mothers (n = 9), clients reported an average of 20.9 cigarettes per day before pregnancy and in the first trimester. In second and third trimesters, clients reported an average of 18.7 cigarettes.

One of the clients reported drinking alcohol during their pregnancy (not depicted in a figure).

FIGURE III.3. AVERAGE NUMBER OF CIGARETTES SMOKED PER TRIMESTER, AMONG WOMEN WHO SMOKE (n = 9)



a, b, c, d – Values sharing the same subscript differ at p < .05.

⁵³ One client’s smoking status was unknown in the birth event data set.

Infant Health Characteristics

The average weeks of gestation was 37.8 for the women with data in the Kentucky Vital Statistics dataset. In addition, 19.0% of the babies were born prematurely (see Table III.2). Over one-quarter of babies (28.6%) were born with low birthweight (less than 5lbs, 8oz), but on average, babies born to KY-Moms MATR clients weighed 6lbs, 13oz. Babies were born with an average APGAR score of 8.7. None of the clients had babies with birth defects or anomalies (such as Down's syndrome, cleft palates, anencephaly, congenital heart failure, spina bifida, etc.). About 14% of babies were taken to NICU and 19.0% of babies were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit). According to the birth event data set, 30.0% of KY-Moms MATR clients either did or intended to breastfeed their baby during the period from birth to hospital discharge.

TABLE III.2 INFANT HEALTH CHARACTERISTICS (N = 21)⁵⁴

Percent of babies born premature	19.0%
Average weeks gestation	37.8 (Range 34-40)
Baby born with low birth weight.....	28.6%
Average weight of baby	6lbs, 13oz (Range 3lbs, 9oz – 9lbs, 5oz)
Highest average APGAR score	8.7
Babies born with birth defects or anomalies	0.0%
Baby taken to NICU	14.3%
Any problems for baby during birth (<i>not including NICU</i>)...	19.0%
Mother breastfed baby	30.0%

Summary

Clients reported an average of 12.1 prenatal visits during their pregnancy and the majority of clients (89.5%) reported that they received the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) during pregnancy and that the source of payment for delivery of the baby was Medicaid. Less than half of KY-Moms MATR mothers (42.1%) reported experiencing at least one maternal health conditions at birth and 15.8% reported having a sexually transmitted infection. In the Kentucky Vital Statistics data, 50.0% of KY-Moms MATR mothers reported smoking tobacco and among those mothers (n = 9), clients reported an average of 20.9 cigarettes per day before pregnancy and in the first trimester. In second and third trimesters, clients reported an average of 18.7 cigarettes. Nineteen percent of babies were born prematurely and over one-quarter of babies (28.6%) were born with low birthweight (less than 5lbs, 8oz). About 14% of babies were taken to NICU and 19.0% of babies were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit).

⁵⁴ One client's breastfeeding status was unknown in the birth event data set.

Birth Events and Outcomes for Post-birth KY-Moms MATR Clients

All women who entered the KY-Moms MATR program after the birth of the baby and completed a follow-up interview (n = 10) gave permission to access their Vital Statistics birth data; however, a match to the data was only found for 9 clients. Post-birth clients in the birth event data reported an average of 10.8 prenatal visits during their pregnancy. The majority of clients (66.7%) reported that they received the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) during pregnancy and all clients had Medicaid as the source of payment for delivery of the baby. About 56% of KY-Moms MATR mothers reported experiencing at least one maternal health conditions at birth, none reported having a sexually transmitted infection, and two clients reported having Hepatitis B or C. In the Kentucky Vital Statistics data, 66.7% of KY-Moms MATR mothers reported smoking tobacco and among those mothers (n = 6), clients reported an average of 14.0 cigarettes per day before pregnancy and in each trimester. None of the babies were born prematurely and 11.1% of babies were born with low birthweight (less than 5lbs, 8oz). Specifically, the average birth weight of babies born to post-birth mothers was 6lbs, 14oz. Three babies were taken to NICU, but none were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit).

Section IV: Change in Targeted Factors from Pre-birth Baseline to Follow-up for Clients in the Postnatal Follow-up Sample

This section examines change from baseline to follow-up for clients who entered the KY-Moms MATR program before the birth of their baby and who completed a postnatal follow-up (n = 31) for: (1) information about the baby, (2) substance use, (3) mental health, (4) intimate partner violence, (5) economic and living circumstances, economic hardship, and criminal justice involvement, (6) physical health, and (7) stress, quality-of-life, and emotional support. Past-30-day and past-6-month measures are examined separately where applicable. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

It is important to keep in mind that because this section includes only those who completed a postnatal follow-up, the sample size is small and should be considered when interpreting the findings. To increase the statistical power to detect change in this small sample size, the alpha for statistical tests was increased to $p < .10$, instead of $p < .05$.

A. Information on the Pregnancy/Baby

When followed-up clients completed a prenatal baseline they were an average of 23.9 weeks pregnant (Min. = 6 weeks, Max. = 35 weeks).⁵⁵ At follow-up, clients reported being very involved in the KY-Moms MATR program an average of 6.7 months (Min. = 1, Max. = 18). Clients also reported being in the program for 2.1 months after the birth of their baby (Min. = 0, Max. = 6).

My case worker was really nice, we talked about everything we wanted to talk about. It was really easy to talk to her and I would always reach out to her for everything. And resources were great.

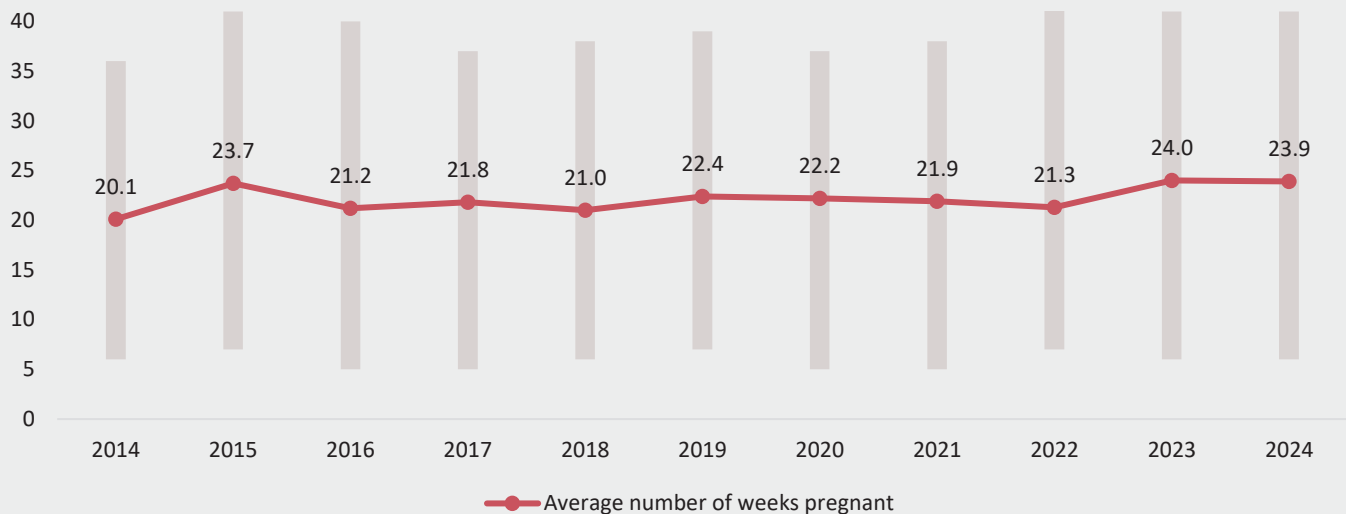
KY-MOMS MATR FOLLOW-UP CLIENT

⁵⁵ To be included in the analysis, there must be at least 30 days between the date of program entry and the birth of the baby. The average number of days between program entry and baseline completion was 15.3 (Min. = 0 and Max. = 104). Therefore, even though a client was at 35 weeks in her pregnancy when the baseline was completed, she entered the program more than 30 days before the due date.

Trends in Average Number of Weeks Pregnant at Baseline by Report Year

The average number of weeks in pregnancy when a client completed a prenatal baseline assessment was relatively stable over the past eleven years. In report year 2014, clients were an average of 20.1 weeks into their pregnancies and in 2023 clients were an average of 23.9 weeks into their pregnancies when they completed a prenatal baseline.

FIGURE IV.A.1. AVERAGE NUMBER OF WEEKS CLIENT WAS PREGNANT AT BASELINE AMONG CLIENTS IN THE FOLLOW-UP SAMPLE, REPORT YEARS 2014-2024



General Information Regarding the Pregnancy/Baby

Clients were asked how their baby was doing at postnatal follow-up and all the mothers indicated the baby was “great” or “good.”

At prenatal baseline, KY-Moms MATR clients reported an average of 6.9 doctor visits about the pregnancy and at postnatal follow-up clients reported an average of 7.0 visits to the pediatrician or nurse since giving birth.⁵⁶ More than one-quarter of clients (26.73%) at baseline indicated they were told by a doctor that there were special health care needs that would directly impact the pregnancy or the baby at baseline.⁵⁷ At postnatal follow-up, 3 clients (9.7% of the postnatal follow-up sample) reported their doctor told them their baby had special health care needs. More specifically, two clients reported their babies had reflux and one client reported heart problems. In comparison, 19% of children in the United States and 23% of children in Kentucky are considered to have special health care needs as defined by the federal Maternal and Child Health Bureau’s definition.⁵⁸

⁵⁶ Four clients were missing the number of doctor visits at postnatal.

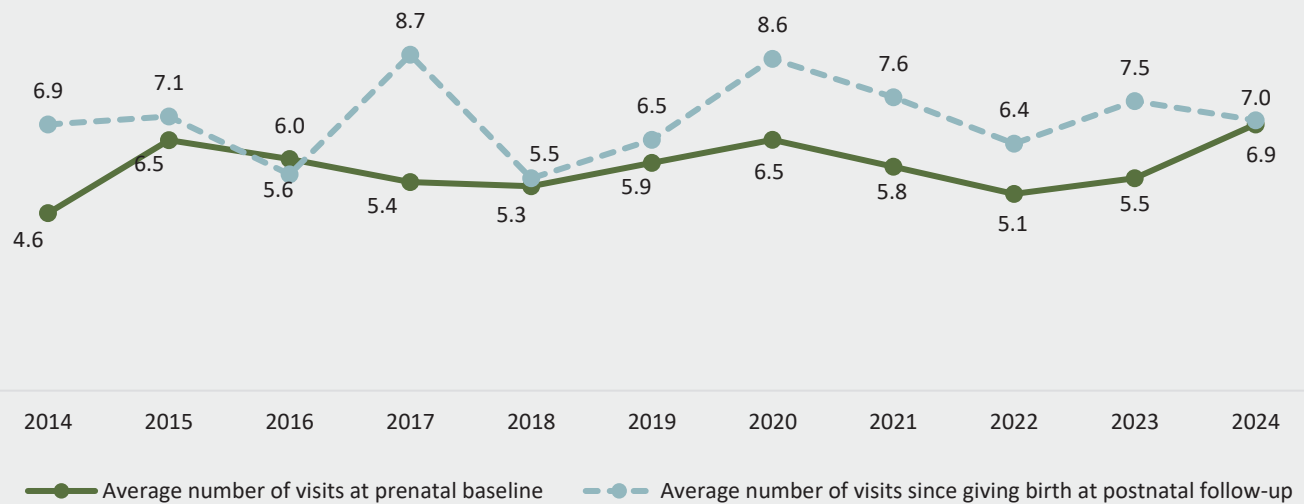
⁵⁷ One client responded that they did not know if they had been told of any special health care needs.

⁵⁸ *Children with special health care needs in the United States 2018-2019*. Retrieved from <https://datacenter.kidscount.org/data/tables/9703-children-with-special-health-care-needs#detailed/1/any/false/1696,1648,1603/any/18949,18950> on August 12, 2022.

Trends in Average Number of Visits with a Health Care Provider at Baseline and Follow-up

In 2014, clients reported an average of 4.6 doctor visits about the pregnancy and at postnatal follow-up clients reported an average of 6.9 visits to the pediatrician or nurse since giving birth. In the 2017 outcomes report, clients reported an average of 5.4 prenatal visits, but an average of 8.7 doctor visits after the baby was born. In 2024, clients reported 6.9 doctor visits at prenatal baseline and 7.0 visits at postnatal follow-up.

FIGURE IV.A.2. AVERAGE NUMBER OF DOCTORS VISITS AT BASELINE AND FOLLOW-UP AMONG CLIENTS IN THE FOLLOW-UP SAMPLE, REPORT YEARS 2014-2024



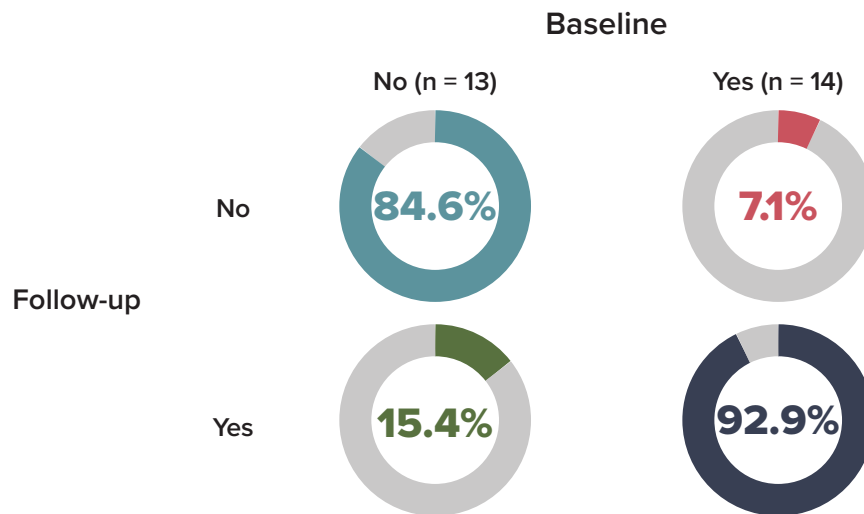
Emergency Room Visits for the Baby at Postnatal

At postnatal follow-up, 48.1% of clients reported they had taken their baby to the emergency room since giving birth (not depicted in a figure).⁵⁹ Of those clients (n = 13), they reported taking their baby to the emergency room an average of 1.5 times (range of 1 to 3 times).

Breastfeeding

In general, clients followed through with their prenatal plans to breastfeed or not to breastfeed once the baby arrived. About 52% of clients reported at prenatal baseline that they planned on breastfeeding their baby and at postnatal follow-up, 55.6% of clients reported having breastfed their baby for any period. Of the 14 women who reported planning on breastfeeding at prenatal baseline, 92.9% (n = 13) reported having breastfed their baby at postnatal follow-up and of those, 4 reported still breastfeeding. Of the 13 clients who reported at prenatal baseline they were not planning on breastfeeding or had not decided yet, 15.4% (or 2 clients) reported having breastfed at follow-up and none were still breastfeeding.

⁵⁹ Four clients were missing the number of times the baby has been to the emergency room at follow-up.

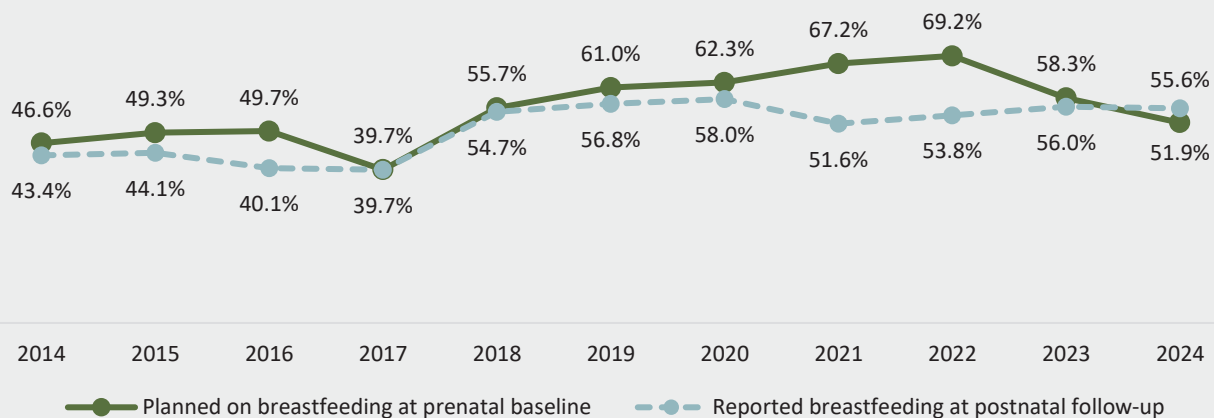
FIGURE IV.A.3. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING BREASTFEEDING PLANS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP⁶⁰

Additional analysis was examined between clients who planned on breastfeeding and clients who did not plan on breastfeeding or were unsure on baseline measures such as: chronic health problems, chronic pain, substance use, mental health, experiences with violence, employment, fetal attachment, adverse childhood experiences, and highest level of education. There were no significant differences between clients who planned on breastfeeding and clients who did not plan on breastfeeding on the baseline measures.

Trends in Breastfeeding at Prenatal Baseline and Postnatal Follow-up

Overall, the percent of KY-Moms MATR clients who reported at prenatal baseline that they were planning on breastfeeding was fairly similar to the percent of clients at postnatal follow-up who reported that they had breastfed their babies. In 2014, 46.6% of clients reported at prenatal baseline they planned on breastfeeding their babies and, at follow-up, 43.4% of clients reported that they had breastfed. In 2024, 51.9% of clients planned at baseline on breastfeeding their babies and 55.6% of clients reported actually breastfeeding their babies at follow-up.

FIGURE IV.A.4. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING PLANNING ON BREASTFEEDING AT PRENATAL BASELINE AND ACTUALLY BREASTFED AFTER BABY WAS BORN, REPORT YEARS 2014-2024



⁶⁰ Four clients were missing data for this question at follow-up.

Summary

Clients were a little over halfway through their pregnancies when they completed a prenatal baseline interview and reported at follow-up that they had been very involved in the program almost 7 months. Clients remained in the program, on average, about 2 months after the baby was born. All the mothers in the follow-up sample reported their babies were “great” or “good” and had taken their babies to see a doctor an average of 7.0 times since the baby had been born, which is an average of a little over once per month. In addition, at baseline 51.9% of clients reported they were planning on breastfeeding their babies and 55.6% of mothers reported at postnatal follow-up they had breastfed their babies. Most women (92.9%) who indicated they planned to breastfeed their baby actually did breastfeed their baby.

Information on Pregnancy/baby for Post-birth KY-Moms MATR Clients

Clients who gave birth to their baby prior to entering the KY-Moms program and completed a follow-up (n = 10) reported they were an average of 38.5 weeks pregnant when they had their babies (min. = 37, max. = 40). At follow-up, clients reported being very involved in the KY-Moms MATR program an average of 5.4 months (Min. = 0, Max. = 11). At post-birth baseline, KY-Moms MATR clients reported an average of 14.7 doctor visits about the pregnancy and at post-birth follow-up clients reported an average of 8.0 visits to the pediatrician or nurse since giving birth. At post-birth baseline, 30.0% of clients reported their doctor told them of any special health care needs since the baby was born and at follow-up, 10% of clients reported their doctor had told them their baby has any special needs. Fifty percent of post-birth clients reported at baseline that they had breastfed their baby and of those (n = 5), 80.0% reported breastfeeding their baby at follow-up.

B. Substance Use

This section examines change from baseline to follow-up for clients who entered the KY-Moms MATR program before the birth of their baby (n = 31) for: (1) overall substance use (illicit substance and alcohol use), (2) use of illicit substances, alcohol, and smoking tobacco, (3) experienced symptoms of substance use disorder, (4) readiness for substance use disorder treatment, (5) substance disorder treatment and self-help meetings, and (6) medication-assisted treatment. Past-30-day and past-6-month illicit substance use are examined separately where applicable. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Change in targeted risk factors was examined for two different periods over time:⁶¹

Six-month periods⁶²

- **6 months before pregnancy.** Information collected from the client at prenatal baseline regarding the six months before she found out she was pregnant.
- **6 months since the birth of the baby.** Information collected at postnatal follow-up regarding the 6 months since the baby was born.

30-day periods⁶³

- **30 days before pregnancy.** Information collected from the client at prenatal baseline regarding the 30 days before she found out she was pregnant.
- **30 days at prenatal baseline.** Information collected from the client at prenatal baseline regarding the past 30 days she has been pregnant.
- **30 days before the baby was born.** Information collected from the client at postnatal follow-up regarding the 30 days before giving birth while she was involved in KY-Moms MATR case management services.
- **30 days at postnatal follow-up.** Information collected at postnatal follow-up regarding the past 30 days.

⁶¹ Significance was determined by McNemar's test for substance use, mental health problems and intimate partner violence unless otherwise indicated.

⁶² Because opportunities to use alcohol and illicit substances are severely reduced while incarcerated this client was not included in this analysis; none of the clients in this reporting year, however, reported being in a controlled environment all 180 days before pregnancy.

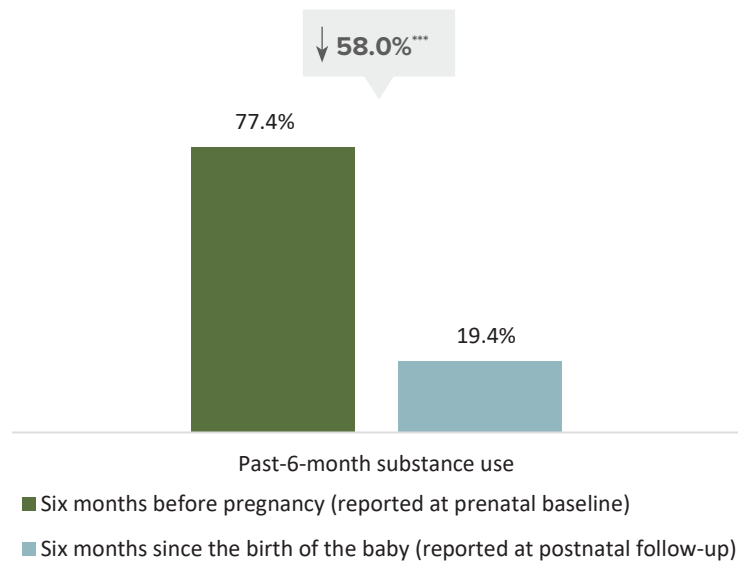
⁶³ Because some clients were in a controlled environment (e.g., prison, jail, or residential facility) all 30 days before prenatal baseline changes in illicit substance, alcohol, and tobacco use from baseline to follow-up were analyzed for only clients who were not in a controlled environment all 30 days before prenatal baseline. The assumption for excluding clients who were in a controlled environment all 30 days before entering treatment (n = 1) or all 30 days before the follow-up (n = 0 this year) from the change in past-30-day substance use analysis is that being in a controlled environment inhibits opportunities for alcohol and substance use. As a result, n = 30 for past-30-day use.

Overall Substance Use (Illicit Substance and Alcohol Use)

Past-6-month Illicit Substance and/or Alcohol Use

In the 6 months before pregnancy, 77.4% of clients reported using illicit substances and/or alcohol. In the 6 months before the follow-up interview, 19.4% of clients reported using illicit substances and/or alcohol (a significant decrease of 58.0%; see Figure IV.B.1).

FIGURE IV.B.1. PAST-6-MONTH SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 31)



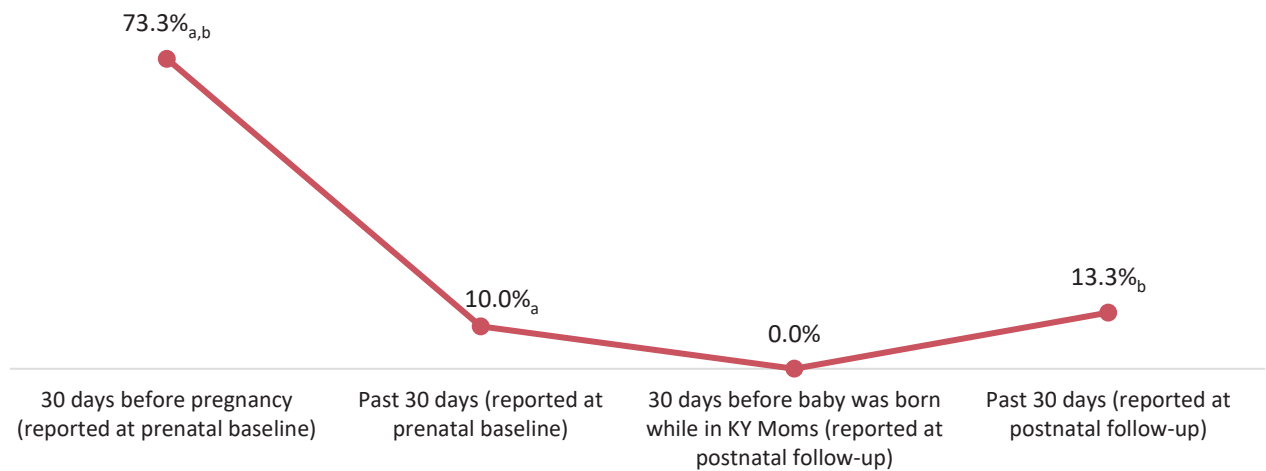
*** $p < .01$.

Past-30-day Illicit Substance and/or Alcohol Use

Figure IV.B.2 shows the results for overall illicit substance and/or alcohol use across all four past-30-day periods. In the 30 days before pregnancy, 73.3% of clients reported using illicit substances and/or alcohol. In the past 30 days at baseline, 10.0% of clients reported using illicit substances and/or alcohol which was a significant decrease.

At postnatal follow-up, none of clients reported using illicit substances and/or alcohol in the 30 days before the baby was born compared to 73.3% of clients in the 30 days before pregnancy and 10.0% in the past 30 days at prenatal baseline. Finally, 13.3% of clients reported illicit substance and/or alcohol use in the past 30 days at postnatal follow-up. Thus, the period when the smallest percentage of women reported using illicit substances and/or alcohol was the 30 days before the baby was born (i.e., while the clients were pregnant and involved in KY-Moms MATR).

FIGURE IV.B.2. PAST-30-DAY SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 30)



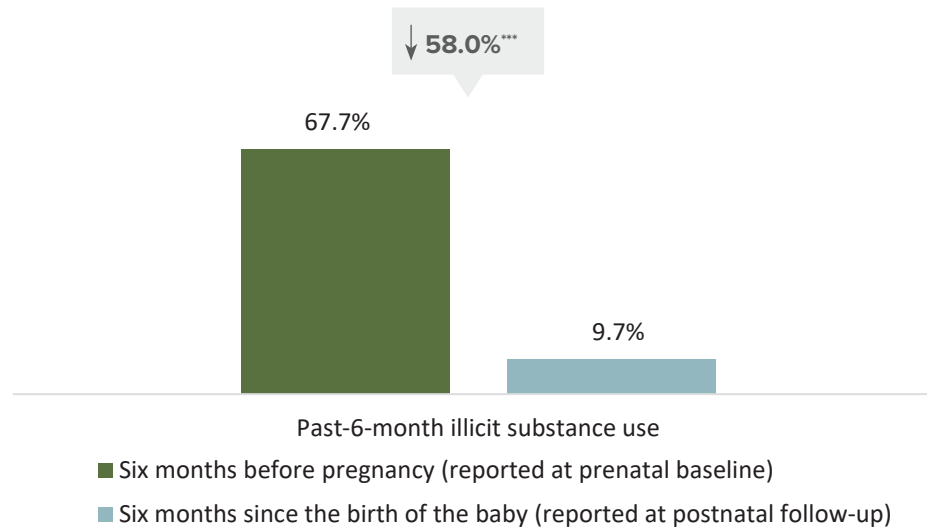
a, b— Values sharing the same subscript differ at $p < .01$.

Illicit Substance Use

Past-6-month Illicit Substance Use

Figure IV.B.3 shows that in the 6 months before pregnancy, 67.7% of clients reported using illicit substances⁶⁴ and in the past 6 months at follow-up 9.7% of clients reported illicit substance use (a significant decrease of 58.0%). Of those clients who reported illicit substance use at follow-up ($n = 3$), 66.7% reported using marijuana, and 66.7% reported using stimulants or cocaine.

FIGURE IV.B.3. PAST-6-MONTH ILLICIT SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 31)



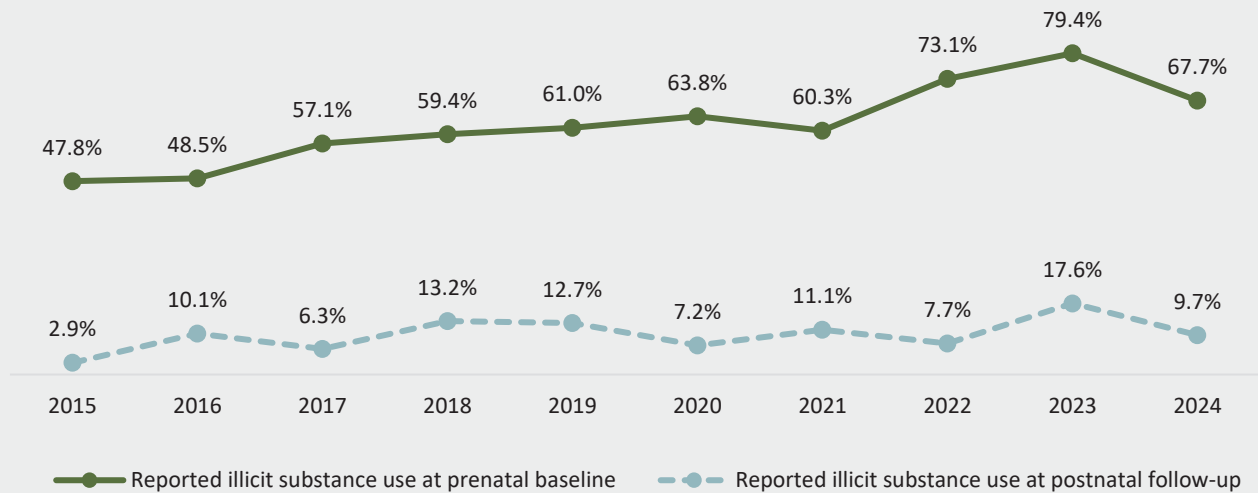
*** $p < .01$.

⁶⁴ Illicit substance use includes marijuana, sedatives, barbiturates, non-prescribed prescription opiates, cocaine, stimulants, heroin, hallucinogens, inhalants, non-prescribed methadone, and non-prescribed buprenorphine.

Trends in Past-6-month Illicit Substance Use at Prenatal Baseline and Postnatal Follow-up

Among clients who were in the follow-up sample each report year, the percent of women who reported illicit substance use in the 6 months before pregnancy has increased since 2015 from 47.8% to 79.4% in 2023. The percent of women who reported illicit substance use in the past 6 months at postnatal follow-up generally increased from 2.9% in 2015 to 12.7% in 2019 before decreasing to 7.2% in 2020. In 2024, 9.7% of clients reported illicit substance use in the past 6 months at postnatal follow-up.

FIGURE IV.B.4. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING PAST-6-MONTH ILLICIT SUBSTANCE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Past-30-day Illicit Substance Use

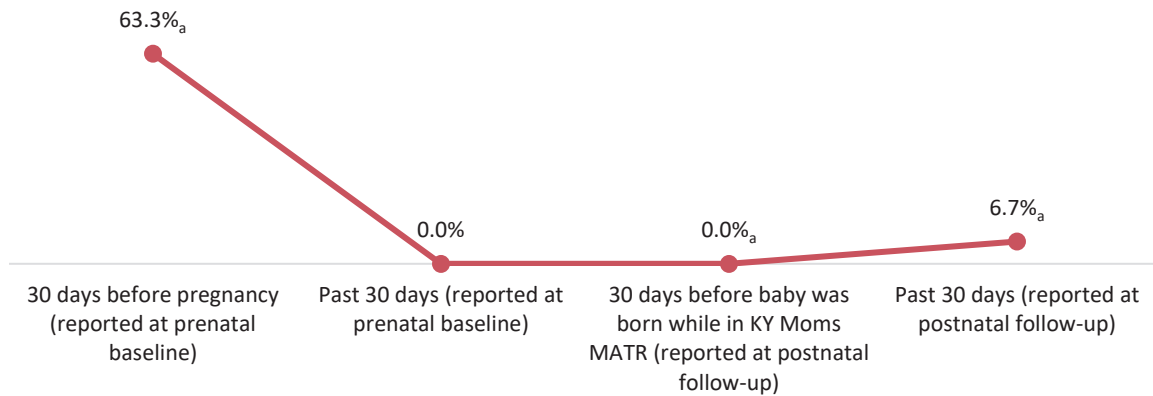
A national survey of women indicated that in 2021, 16.6% of non-pregnant women age 15 to 44 reported using illicit substances in the past month.⁶⁵ Less than two-thirds of KY Moms-MATR clients (63.3%) reported illicit substance use in the 30 days prior to becoming pregnant (see Figure IV.B.5). None of the KY Moms-MATR clients reported using illicit substances in the past 30 days at baseline. In comparison, nationally, 7.7% of pregnant women aged 15-44 reported using illicit substances in the past month.⁶⁶

At postnatal follow-up, none of the clients reported using illicit substances in the 30 days before the baby was born and 6.7% reported using illicit substances 30 days before the follow-up assessment.

⁶⁵ SAMHSA, Center for Behavioral Health Statistics and Quality. 2021 National Survey on Drug Use and Health. Table 8.25B—Types of illicit drug, tobacco product, and alcohol use in past month: among females aged 15 to 44; by pregnancy status, percentages, 2021. Retrieved from <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b>.

⁶⁶ SAMHSA, Center for Behavioral Health Statistics and Quality. 2021 National Survey on Drug Use and Health. Table 8.25B—Types of illicit drug, tobacco product, and alcohol use in past month: among females aged 15 to 44; by pregnancy status, percentages, 2021. Retrieved <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b>.

FIGURE IV.B.5. PAST-30-DAY ILLICIT SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 30)



a – Values sharing the same subscript differ at $p < .01$.

Injection Substance Use

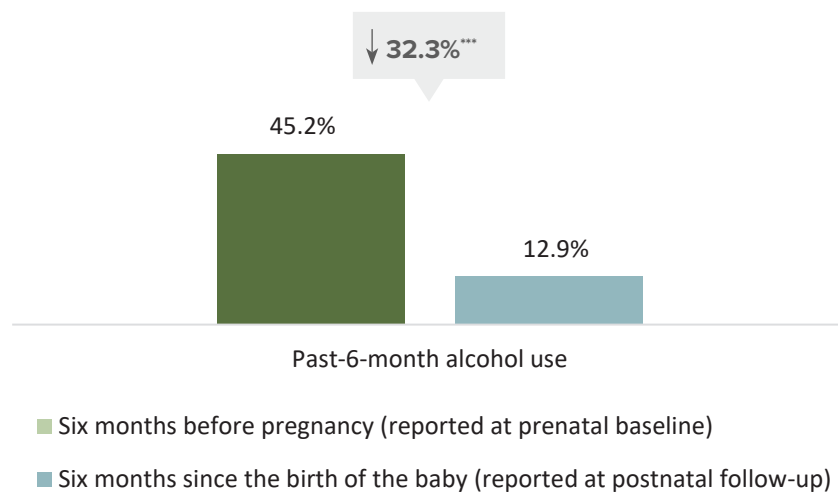
At prenatal baseline, 30.0% of clients reported ever injecting any substances and none of the clients reported injecting a substance in the past 30 days. At postnatal follow-up, one client reported injecting substances since they began KY-Moms MATR and in the past 30 days.

Alcohol Use

Past-6-month Alcohol Use

Figure IV.B.6 shows that in the six months before pregnancy 45.2% of clients reported alcohol use, and after the baby was born, 12.9% of clients reported alcohol use in the past 6 months (a significant decrease of 32.3% from the six months before pregnancy).

FIGURE IV.B.6. PAST-6-MONTH ALCOHOL USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 31)

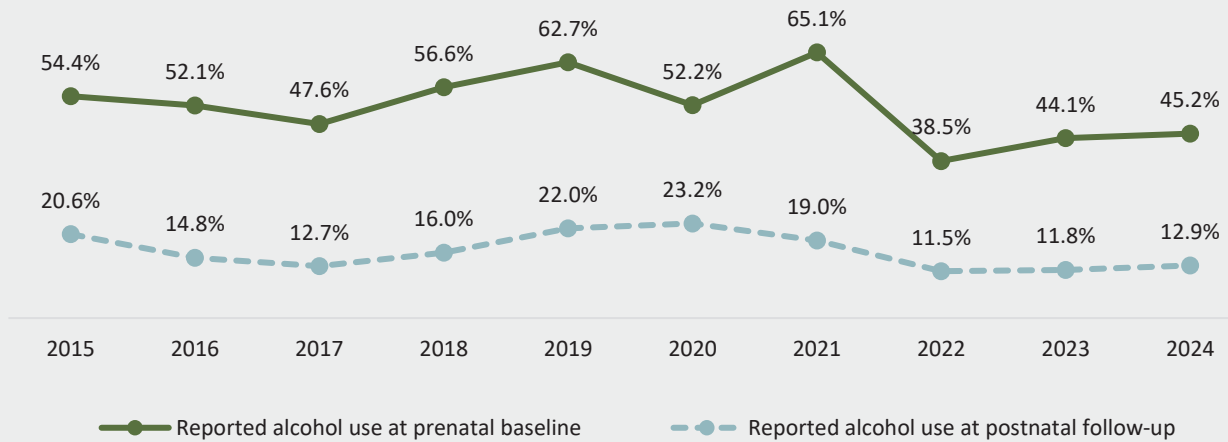


*** $p < .01$.

Trends in Past-6-month Alcohol Use at Prenatal Baseline and Postnatal Follow-up

For the majority of the past 10 years, around half of clients reported alcohol use in the 6 months before pregnancy. In 2019 and 2021, however, around two-thirds of clients reported alcohol use at prenatal baseline, and in 2024, 45.2% reported past-6-month alcohol use. In addition, alcohol use at follow-up was between 12% and 23%.

FIGURE IV.B.7. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING PAST-6-MONTH ALCOHOL USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024⁶⁷



Past-30-day Alcohol Use

Figure IV.B.8 shows that 40.0% of clients reported alcohol use in the 30 days prior to becoming pregnant. At the national level, 51.5% of non-pregnant women aged 15-44 reported drinking alcohol in the past 30 days.⁶⁸ In the past 30 days at prenatal baseline, 10.0% of clients reported using alcohol. Nationally, 9.8% of women aged 15-44 reported using alcohol during pregnancy.⁶⁹

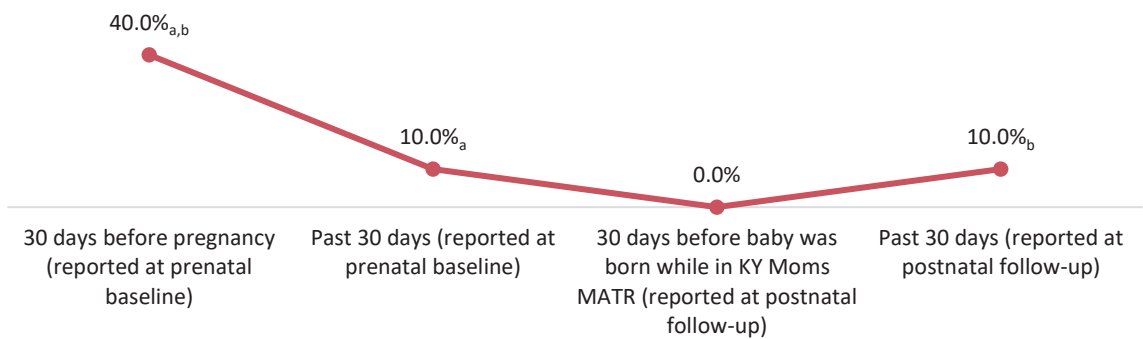
At postnatal follow-up, none of the clients reported using alcohol in the 30 days before the baby was born while they were involved in KY-Moms MATR and 10.0% of clients reported using alcohol in the past 30 days at follow-up.

⁶⁷ The small sample size in 2022 to 2024 could be affecting the decrease in alcohol use at baseline.

⁶⁸ SAMHSA, Center for Behavioral Health Statistics and Quality. 2021 National Survey on Drug Use and Health. Table 8.25B—Types of illicit drug, tobacco product, and alcohol use in past month: among females aged 15 to 44; by pregnancy status, percentages, 2021. Retrieved from [https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b](https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b).

⁶⁹ SAMHSA, Center for Behavioral Health Statistics and Quality. 2021 National Survey on Drug Use and Health. Table 8.25B—Types of illicit drug, tobacco product, and alcohol use in past month: among females aged 15 to 44; by pregnancy status, percentages, 2021. Retrieved from <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b>.

FIGURE IV.B.8. PAST-30-DAY ALCOHOL USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 30)

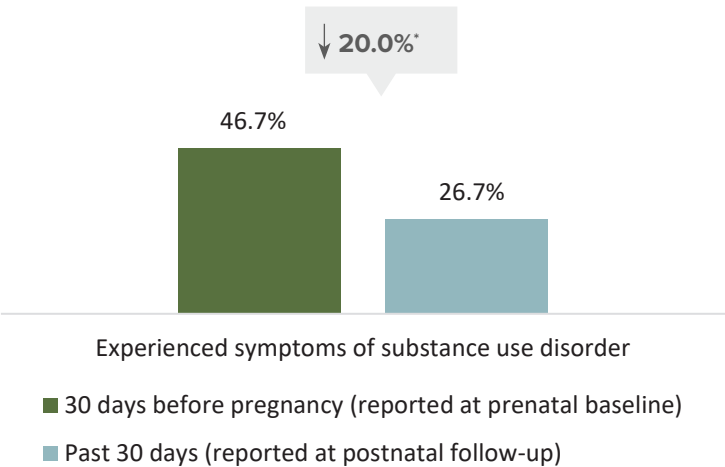


a, b— Values sharing the same subscript differ at $p < .01$.

Experienced Symptoms of Substance Use Disorder

In the 30 days before pregnancy, 46.7% of clients reported they experienced symptoms of substance use disorder such as craving, withdrawal, wanting to quit but being unable, or worrying about return to use (see Figure IV.B.9). In the past 30 days at follow-up, 26.7% of clients reported they experienced symptoms of substance use disorder (a significant decrease of 20.0%).

FIGURE IV.B.9. CLIENTS EXPERIENCING SYMPTOMS OF SUBSTANCE USE DISORDER IN THE 30 DAYS BEFORE PREGNANCY AND PAST-30-DAYS AT POSTNATAL FOLLOW-UP (N = 30)

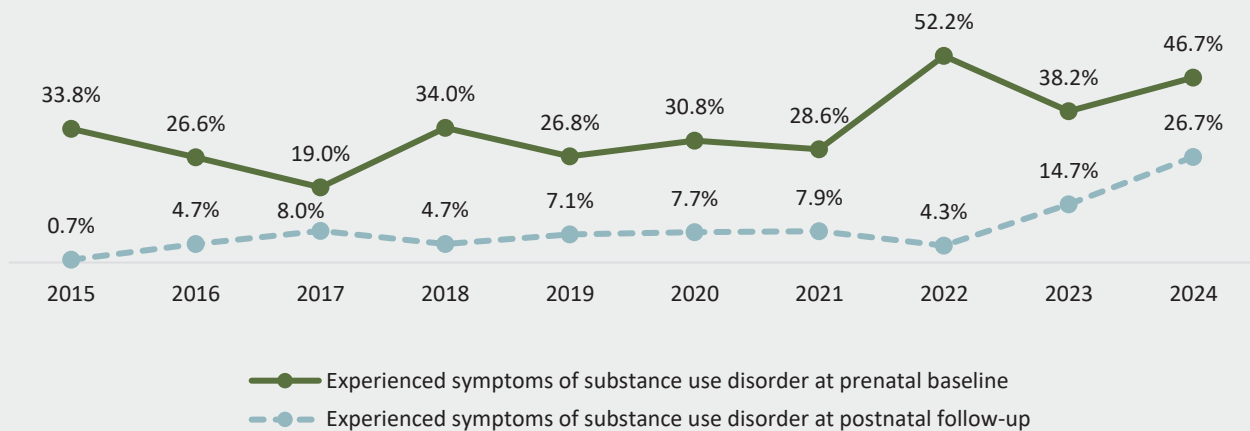


* $p < .10$.

Trends in Experiencing Symptoms of Substance Use Disorder at Prenatal Baseline and Postnatal Follow-up

In report year 2015, 33.8% of clients reported they experienced symptoms of substance use disorder in the 30 days before pregnancy and in the past 30 days at follow-up, 0.7% of clients experienced symptoms of substance use disorder. In report year 2024, almost half of clients (46.7%) experienced symptoms of substance use disorder in the 30 days before pregnancy compared to 26.7% of clients in the past 30 days at the postnatal follow-up.

FIGURE IV.B.10. CLIENTS IN THE FOLLOW-UP SAMPLE EXPERIENCING SYMPTOMS OF SUBSTANCE USE DISORDER IN THE PAST 30 DAYS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024⁷⁰



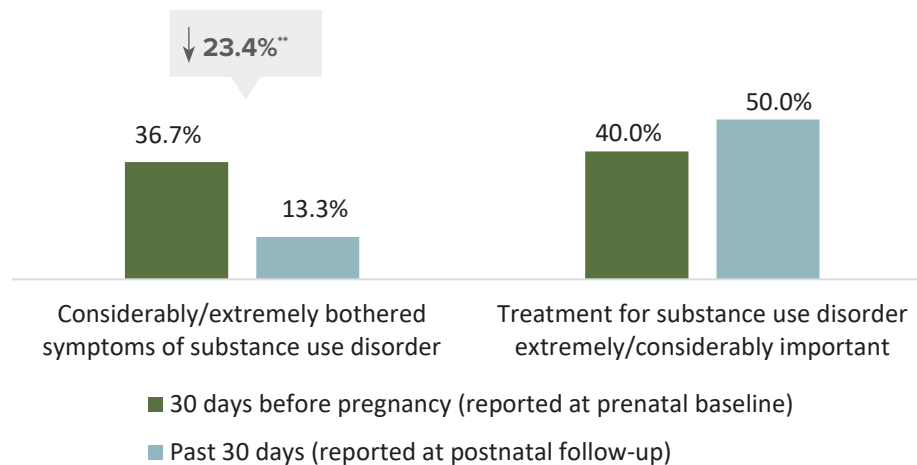
Readiness for Substance Use Disorder Treatment

Figure IV.B.11 shows that 36.7% of clients reported they were considerably or extremely troubled or bothered by symptoms of substance use disorder in the 30 days before pregnancy. In the past 30 days at postnatal follow-up, 13.3% of clients reported that they were considerably or extremely troubled or bothered by symptoms of substance use disorder (a significant decrease of 23.4%).

The figure below also shows that 40.0% of clients in the 30 days before pregnancy and 50.0% of clients in the past 30 days at postnatal follow-up reported that treatment for substance use disorder symptoms was considerably or extremely important, which was not a significant increase.

⁷⁰ The small sample size in 2022 to 2024 could be affecting the percent of clients reporting substance disorder symptoms at baseline.

FIGURE IV.B.11. READINESS FOR SUBSTANCE USE DISORDER TREATMENT IN THE 30 DAYS BEFORE PREGNANCY AND PAST-30-DAYS AT POSTNATAL FOLLOW-UP (N = 30)

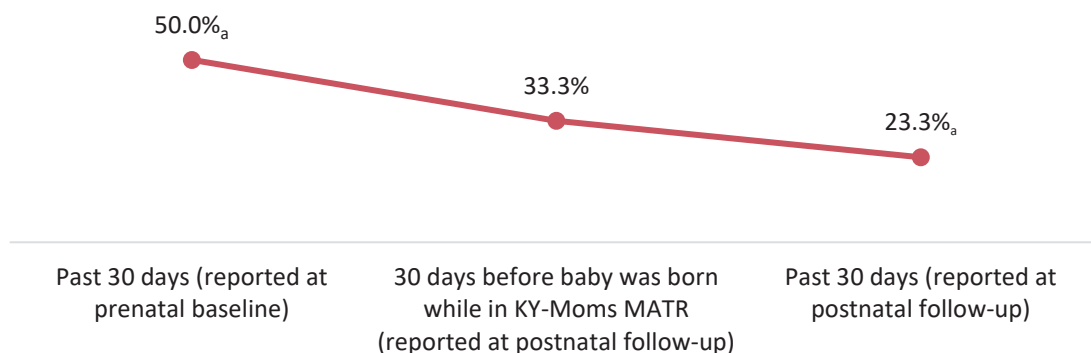


**p < .05.

Treatment for Substance Use Disorder Symptoms

Figure IV.B.12 shows that in the past 30 days at baseline, 50.0% of clients reported participating in treatment for their substance use disorder symptoms. At postnatal follow-up, 33.3% of clients reported participating in treatment for their substance use disorder symptoms in the 30 days before the baby was born and 23.3% of clients reported participating in treatment for their substance use disorder symptoms in the past 30 days (a significant decrease compared to the past 30 days at baseline).

FIGURE IV.B.12. CLIENTS REPORTING TREATMENT FOR SUBSTANCE USE DISORDER SYMPTOMS IN THE PAST 30 DAYS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 30)



a— Values sharing the same subscript differ at p < .10.

Self-help Meetings

In the six months before pregnancy, 41.9% of women reported attending AA, NA, MA or other mutual help recovery group meetings. At postnatal follow-up, 26.7% of clients reported participating in mutual help recovery group meetings in the 30 days before the baby was born and 10.0% of clients reported participating in mutual help recovery group meetings in the past 30 days at follow-up (not shown in a figure).

Medication-assisted Treatment

At baseline, over one-third of clients (35.5%) reported having ever received buprenorphine/naloxone, naltrexone, or methadone as part of medication-assisted treatment for their substance use disorder symptoms and 22.6% of clients reported participating in medication-assisted treatment (MAT) in the 6 months before pregnancy. Of those clients who reported participating in MAT in the past 6 months before pregnancy (n = 7), 57.1% (n = 4) reported receiving Suboxone/Subutex (buprenorphine-naloxone), and 42.9% (n = 3) reported Vivitrol. In addition, 57.1% of clients reported obtaining the medication from a doctor in a specialty clinic, 26.7% of clients obtained the medication from a doctor in a general medical practice, and 14.3% were dispensed the medication in a methadone clinic. On average, these clients reported using these medications an average of 3.4 out of the 6 months before pregnancy, and for an average of 12.9 days in the last 30 days at baseline. Less than half of these clients at baseline (42.9%) reported they had used the prescribed medication within the past 48 hours and all clients reported that the MAT helped treat their substance use disorder symptoms.

At follow-up, 25.8% of clients reported participating in medication-assisted treatment (MAT) in the past 6 months. Of those clients who reported participating in MAT in the past 6 months (n = 8)⁷¹, 71.4% (n = 5) reported receiving Suboxone/Subutex (buprenorphine-naloxone), 14.3% (n = 1) reported methadone, and 14.3% (n = 1) reported Vivitrol. On average, these clients reported using these medications 5.4 out of the past 6 months, and for 22.6 days in the past 30 days. The majority of these clients at follow-up (87.5%) reported the MAT helped treat their substance use disorder symptoms.

Also, at follow-up, clients were asked what the single biggest barrier to receiving MAT.⁷² Less than three-quarters clients (72.0%) reported that they had no issues with receiving MAT for their substance use disorder symptoms and 16.0% reported that they never thought about receiving MAT. Eight percent of KY-Moms MATR clients didn't believe it would help them or that they didn't need MAT and 4.0% of KY-Moms MATR clients reported that they didn't want to take medications for their substance use disorder symptoms.

Tobacco Use

Past-6-month Tobacco Use

At prenatal baseline, 83.9% of clients reported smoking tobacco in the 6 months prior to pregnancy (Figure IV.B.13). At postnatal follow-up, 71.0% of clients reported smoking tobacco in the past 6 months.

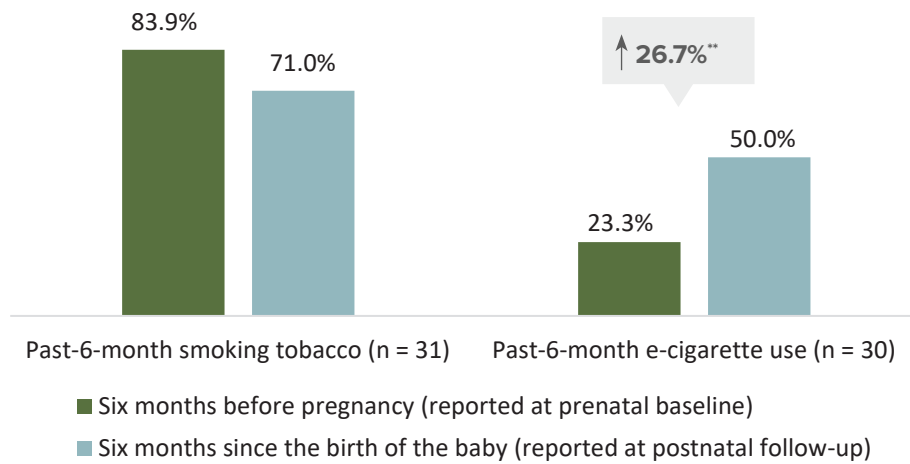
Less than one-quarter of clients (23.3%) reported using e-cigarettes (e.g., battery-powered nicotine delivery devices that vaporize a liquid mixture consisting of propylene glycol, glycerin, flavorings, nicotine, and other chemicals) compared to 50.0% of clients in the past 6 months at follow-up (which was a significant increase of 26.7%).

None of the clients reported smokeless tobacco use in the 6 months prior to pregnancy or in the past 6 months at postnatal follow-up (not depicted in a figure).

⁷¹ One client was missing data for the type of medication used.

⁷² Six clients did not have an answer for the biggest issue for getting on MAT.

FIGURE IV.B.13. PAST-6-MONTH SMOKING TOBACCO AND E-CIGARETTE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP⁷³

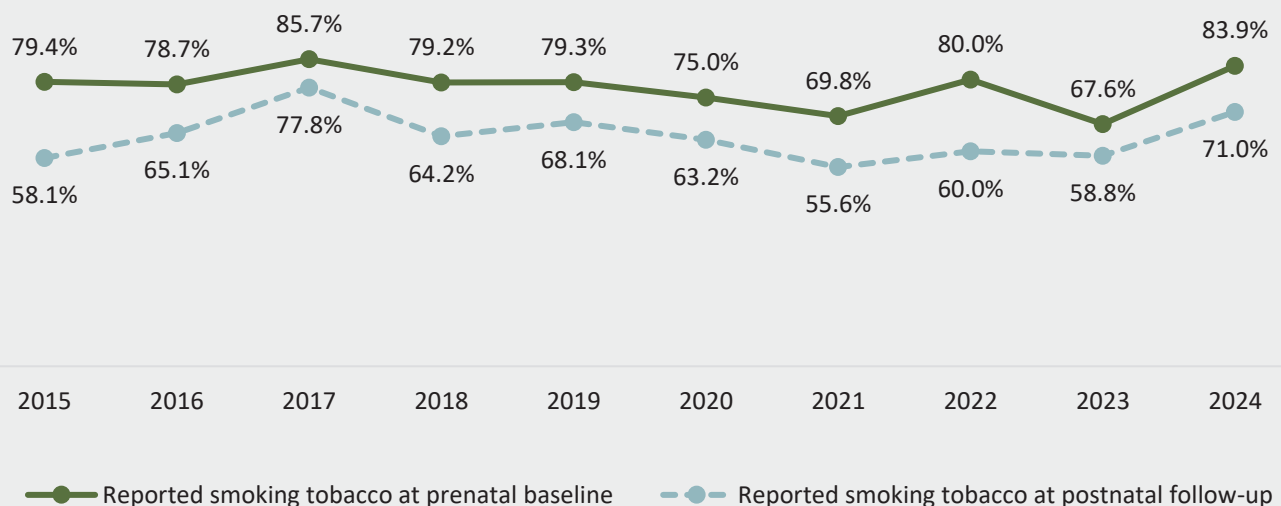


**p < .05.

Trends in Past-6-month Smoking Tobacco Use at Prenatal Baseline and Postnatal Follow-up

Smoking tobacco use was high at prenatal baseline each year with well over three-quarters of women reporting smoking tobacco in the six months before pregnancy from 2015 to 2020. In 2021, the percent of women reporting smoking tobacco appeared to decrease slightly to 69.8%. At follow-up, many of the women continued to smoke tobacco. From 2015 to 2017, the percent of women reporting smoking tobacco at baseline and follow-up increased overall; however, from 2018 to 2020 the percent of women reporting smoking tobacco was relatively stable at both baseline and follow-up before increasing in 2022.

FIGURE IV.B.14. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CIGARETTE USE IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



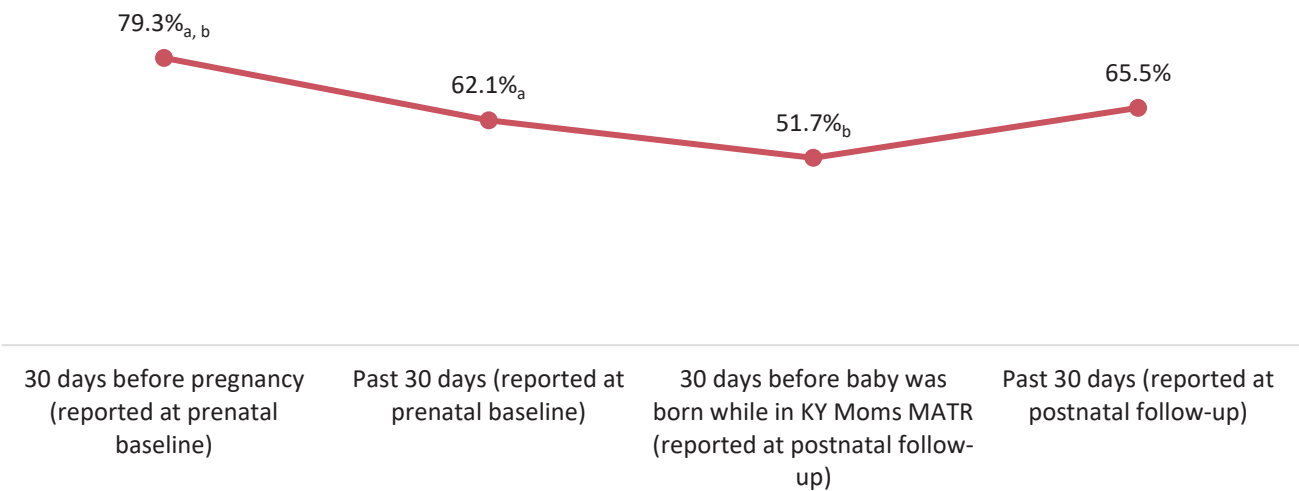
⁷³ One client was missing data for e-cigarette use at follow-up.

Past-30-day Tobacco Use

At prenatal baseline, 79.3% of clients reported smoking tobacco products in the 30 days prior to pregnancy (Figure IV.B.15). In addition, 62.1% of clients reported smoking tobacco in the past 30 days at prenatal baseline compared to 12.7% of pregnant women in Kentucky who reported smoking tobacco and 4.6%, nationally.⁷⁴

At postnatal follow-up, in the 30 days before the baby was born, 51.7% of clients reported smoking tobacco products. The percent of women who reported smoking tobacco in the past 30 days at postnatal follow-up increased slightly to 65.5%.

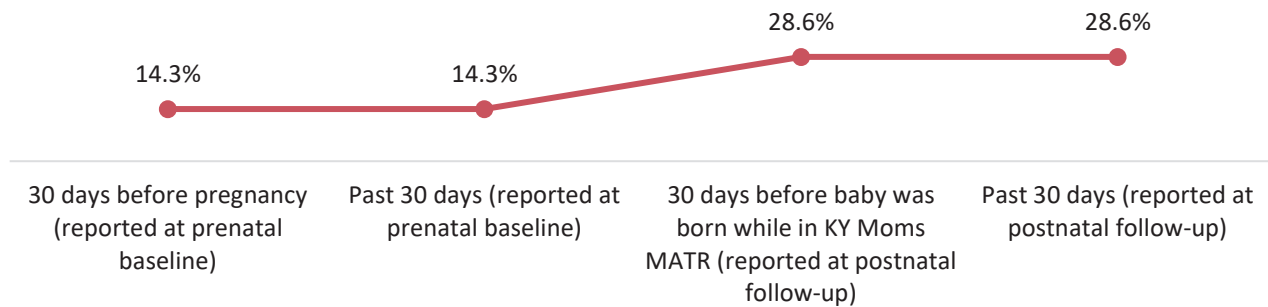
FIGURE IV.B.15. 30-DAY SMOKING TOBACCO AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 29)⁷⁴



a– Values sharing the same subscript differ at $p < .10$.
b– Values sharing the same subscript differ at $p < .01$.

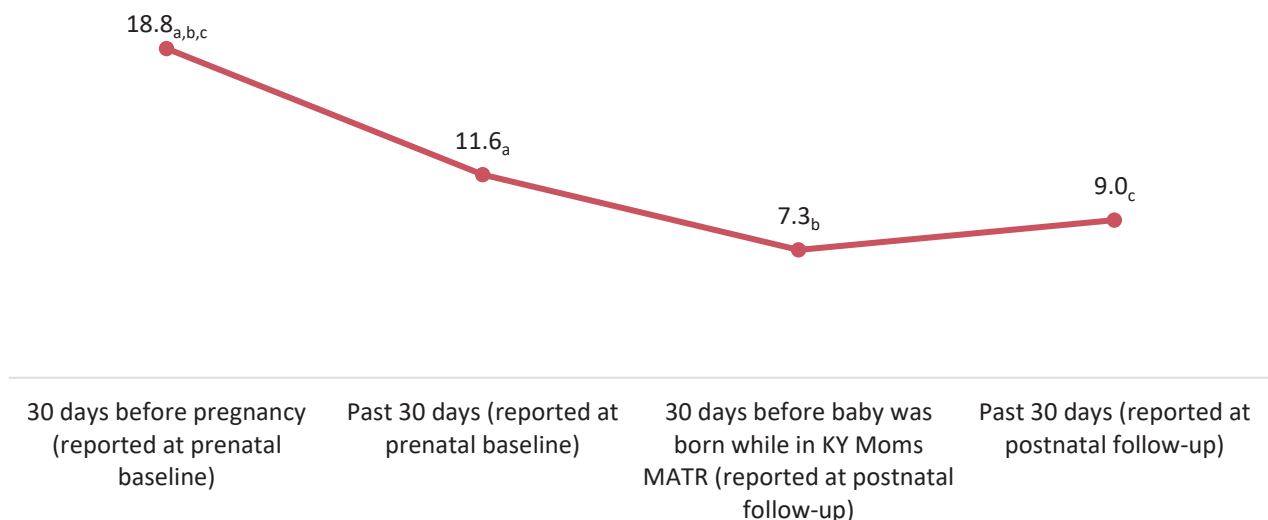
Close to 14% of women reported using e-cigarettes in the 30 days before pregnancy and in the past 30 days at baseline. This percent is lower than either the national estimate of 8.8% of women who reported e-cigarette use, or the estimate of Kentucky women who report e-cigarette use (15.5%).⁷⁴ At postnatal follow-up, 28.6% of women reported e-cigarette use in the 30 days before the baby was born and in the past 30 days (see Figure IV.B.16). This percent is higher than the percent of women in Kentucky (12.6%; without regard to pregnancy status) who reported e-cigarette use.

⁷⁴ One client was missing data for tobacco use in the 30 days before the baby was born.

FIGURE IV.B.16. 30-DAY E-CIGARETTE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 21)⁷⁵

Average Number of Cigarettes Smoked in the Past 30 Days

Figure IV.B.17 shows that for women who reported smoking tobacco in the 30 days prior to pregnancy (n = 23), the average number of cigarettes smoked declined from prior to pregnancy to after the client became involved in KY-Moms MATR and remained low after the birth of the baby. At prenatal baseline, women who smoked reported that in the 30 days before they found out they were pregnant they smoked an average of 18.8 cigarettes per day (less than one pack) and an average of 11.6 cigarettes per day in the past 30 days at prenatal baseline. At postnatal follow-up, in the 30 days before the baby was born when the client was in the KY-Moms MATR program, the average number of cigarettes decreased further to 7.3. Clients reported smoking an average of 9.0 cigarettes in the past 30 days at postnatal follow-up, suggesting positive changes in smoking habits.

FIGURE IV.B.17. AVERAGE NUMBER OF CIGARETTES SMOKED AMONG WOMEN REPORTING CIGARETTE USE IN THE 30 DAYS PRIOR TO PREGNANCY (N = 23)⁷⁶

a, b, c— Values sharing the same subscript differ at $p < .01$.

⁷⁵ Nine clients were missing data on e-cigarette use at follow-up.

⁷⁶ One client was missing data for tobacco use in the 30 days before the baby was born.

Summary

KY-Moms MATR clients reported significant reductions in substance use in the past 30 days of pregnancy at prenatal baseline and further reductions after beginning participation in KY-Moms MATR. Specifically, 63.3% of clients reported illicit substance use in the 30 days before pregnancy compared to none in the 30 days before the baby was born and 6.7% of clients in the past 30 days at postnatal follow-up. While 40.0% of clients reported alcohol use in the 30 days before pregnancy, none of the clients reported alcohol use in the 30 days before the baby was born. In addition, in the past 30 days at postnatal follow-up, significantly fewer clients experienced or were bothered by substance use symptoms (such as craving, withdrawal, wanting to quit but being unable, or worrying about return to use).

The number of women who reported smoking tobacco in the 30 days before the baby was born decreased significantly compared to the 30 days prior to pregnancy. Compared to national rates, more KY-Moms MATR mothers smoke tobacco before, during and after pregnancy. The average number of cigarettes clients reported smoking, decreased significantly from the 30 days before pregnancy (18.8) to the 30 days before the baby was born (7.3) and remained low in the past 30 days at follow-up.

Substance Use for Post-birth KY-Moms MATR Clients

In the 6 months before pregnancy, 90.0% of post-birth clients reported using illicit substances and/or alcohol and when they were pregnant 70.0% of post-birth clients reported using illicit substances and/or alcohol. In the 6 months before the post-birth follow-up interview, 10.0% of clients reported using illicit substances and/or alcohol. At post-birth baseline, 20.0% of clients reported ever injecting any substances and none of the clients reported injecting a substance in the past 30 days. At post-birth follow-up, none of the clients reported injecting substances in the past 6 months. Seventy percent of clients reported they had ever received buprenorphine/naloxone, naltrexone, or methadone as part of a medication-assisted treatment for their substance use symptoms at post-birth baseline and of these clients ($n = 7$), 28.6% participated in medication-assisted treatment in the past 6 months. Three clients reported receiving medication-assisted treatment in the past 6 months at follow-up. Seventy percent of post-birth clients reported they used tobacco in the 6 months before pregnancy, 60.0% of clients reported using tobacco during pregnancy, at post-birth follow-up, 40.0% of clients reported tobacco use.

C. Mental Health, Sleep Difficulty, and Stress

This subsection examines mental health change in the follow-up sample (n = 31) for the following factors: (1) depression, (2) generalized anxiety, (3) comorbid depression and anxiety, (4) post-traumatic stress disorder. Past-6-month and past-30-day mental health symptoms are examined separately where applicable. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Depression Symptoms

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

“Did you have two weeks in a row (or more) when you were consistently depressed or down, most of the day, nearly every day?” and

“Did you have two weeks in a row (or more) when you were much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?”

Study Criteria for Depression

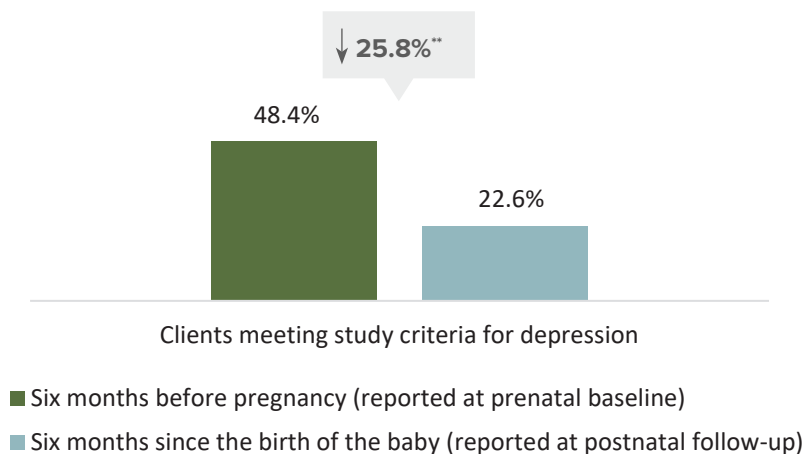
To meet study criteria for depression, clients had to say “yes” to at least one of the two screening questions and at least 4 of the 7 symptoms. Thus, the minimum score to meet study criteria: 5 out of 9.

If participants answered “yes” to at least one of these two screening questions, then they were asked seven additional questions about symptoms of depression (e.g., sleep problems, weight loss or gain, feelings of hopelessness or worthlessness).

Clients Meeting Study Criteria for Depression in the Past 6 Months

In the 6 months before they became pregnant, 48.4% of the women met study criteria for depression. In the past 6 months at postnatal follow-up, 22.6% of KY-Moms MATR clients met study criteria for depression, which was a significant decrease of 25.8% from baseline.

FIGURE IV.C.1. MEETING STUDY CRITERIA FOR DEPRESSION IN 6 MONTHS BEFORE PREGNANCY AND PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 31)

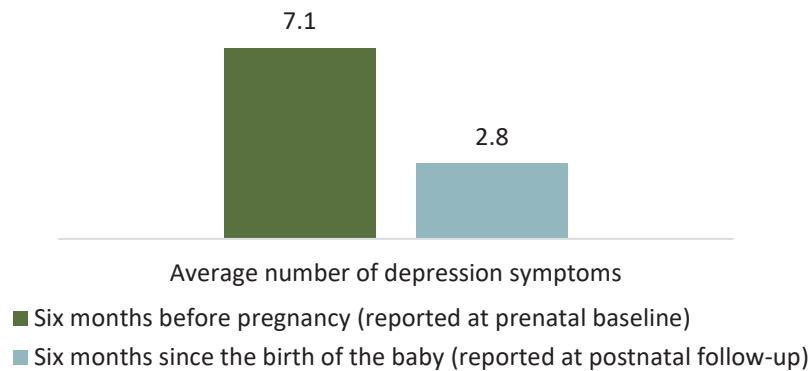


**p < .05.

Average Number of Depression Symptoms in the Past 6 Months

Of the clients who met study criteria for depression in the 6 months before pregnancy (n = 15), they reported an average of 7.1 symptoms. In the past 6 months at postnatal follow-up, these same clients reported significantly fewer symptoms (average of 2.8 symptoms) indicating that the reduction in depressive symptoms was sustained after KY-Moms MATR participation.

FIGURE IV.C.2. AVERAGE NUMBER OF DEPRESSION SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR DEPRESSION IN THE 6 MONTHS BEFORE PREGNANCY AT PRENATAL BASELINE (N = 15)***

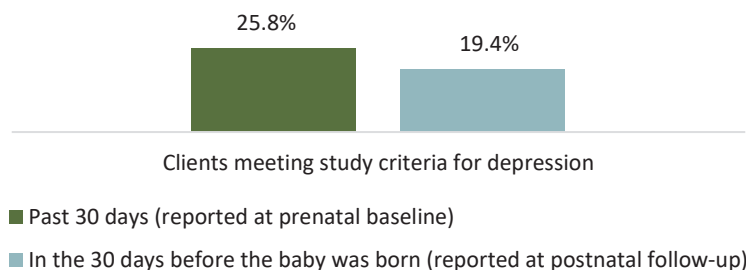


*** p < .01; Significance tested with paired sample t-test.

Clients Meeting Study Criteria for Depression in the Past 30 Days

In the past 30 days at prenatal baseline, 25.8% of the women met study criteria for depression (see Figure IV.C.3). At postnatal follow-up, 19.4% of clients met study criteria for depression in the 30 days before the baby was born, which was not a significant decrease.

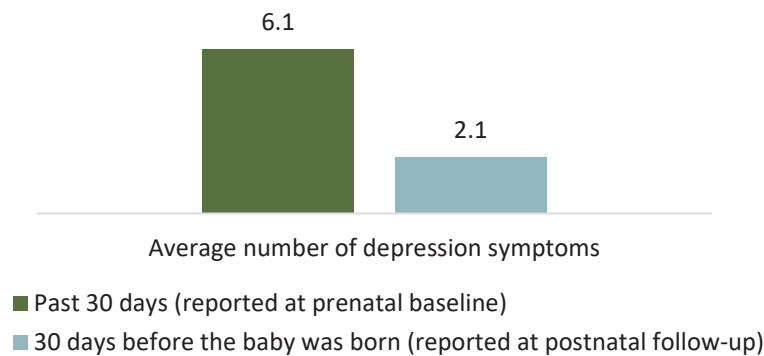
FIGURE IV.C.3. MEETING STUDY CRITERIA FOR DEPRESSION IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 31)



Average Number of Depression Symptoms in the Past 30 Days

Of the clients who met study criteria for depression in the past 30 days at prenatal baseline (n = 8), they reported an average of 6.1 symptoms. In the past 30 days before the baby was born, these same clients reported significantly fewer symptoms (average of 2.1 symptoms) indicating that the reduction in depressive symptoms was sustained after KY-Moms MATR participation.

FIGURE IV.C.4. AVERAGE NUMBER OF DEPRESSION SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR DEPRESSION IN THE past 30 days AT PRENATAL BASELINE (N = 8)*



* $p < .10$; Significance tested with paired sample t-test.

Generalized Anxiety Symptoms

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

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

Participants who answered “yes” were then asked 6 additional questions about anxiety symptoms (e.g., felt restless, keyed up or on edge, have difficulty concentrating, feel irritable).

Study Criteria for Generalized Anxiety

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

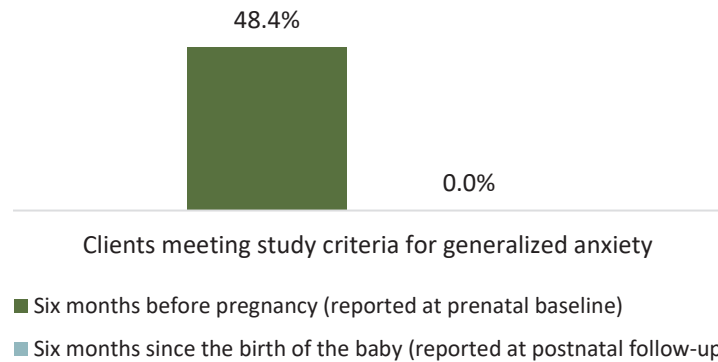
Clients Meeting Study Criteria for Generalized Anxiety in the Past 6 Months

In the 6 months before pregnancy, 48.4% of clients reported symptoms that met study criteria for generalized anxiety (see Figure IV.C.5). In the past 6 months at postnatal follow-up, none of the clients met study criteria for generalized anxiety. Among clients who met study criteria for generalized anxiety in the 6 months before pregnancy ($n = 15$), they reported an average of 5.3 symptoms (not presented in a figure).

They helped me a lot while I was pregnant, very open with them.

KY-MOMS MATR FOLLOW-UP CLIENT

FIGURE IV.C.5. MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY IN 6 MONTHS BEFORE PREGNANCY AND PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 31)^a

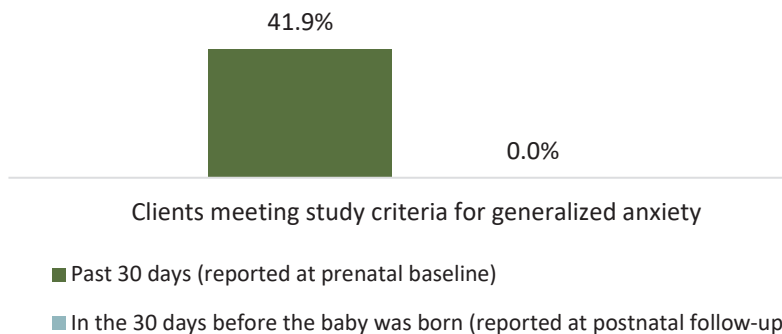


a—No test of statistical association could be computed for generalized anxiety in the past 6 months at postnatal follow-up because one of the cell values was 0.

Clients Meeting Study Criteria for Anxiety in the Past 30 Days

At prenatal baseline, 41.9% of clients reported symptoms that met study criteria for generalized anxiety in the past 30 days (see Figure IV.C.6). In the 30 days before the baby was born, none of the KY-Moms MATR clients met criteria for generalized anxiety. Clients who met criteria for generalized anxiety in the past 30 days at prenatal baseline (n = 13), clients reported an average of 4.9 symptoms.

FIGURE IV.C.6. MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 31)^a



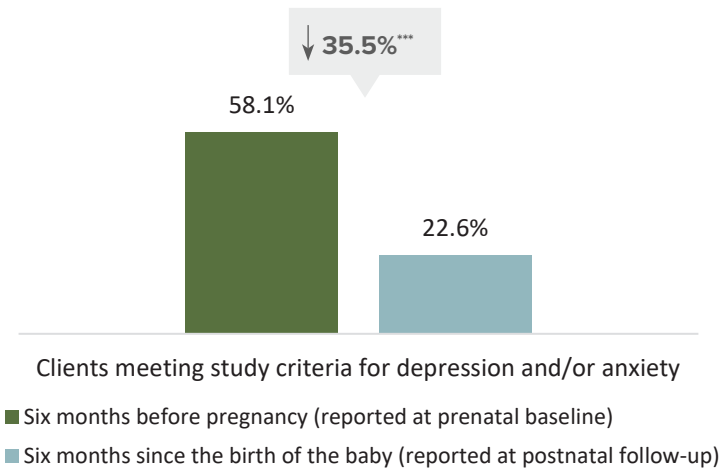
a—No test of statistical association could be computed for generalized anxiety in the past 30 days at postnatal follow-up because one of the cell values was 0.

Depression and Anxiety Symptoms

Clients Meeting Study Criteria for Depression And/or Anxiety in the Past 6 Months

Figure IV.C.7 shows that 58.1% met study criteria for either depression or anxiety (or both) in the 6 months before pregnancy. In the past 6 months at postnatal follow-up, 22.6% of clients met criteria for depression and/or anxiety, which was a significant decrease of 35.5%.

FIGURE IV.C.7. MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)



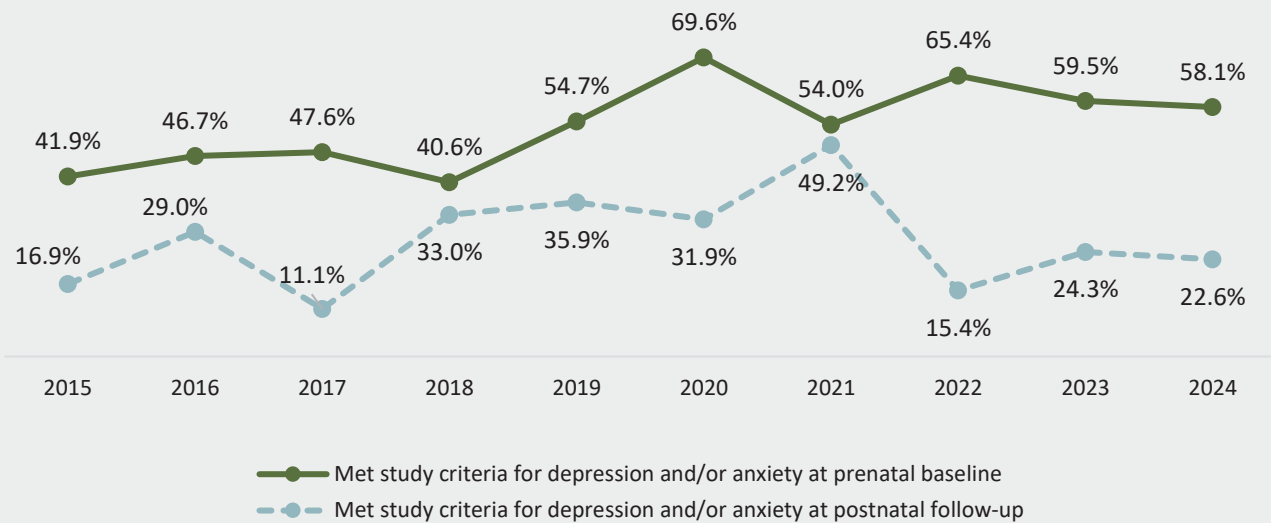
***p < .01.

Trends in Depression And/or Anxiety at Prenatal Baseline and Postnatal Follow-up

The percent of clients who met study criteria for depression and/or anxiety at prenatal baseline was fairly consistent from 2015 to 2018. After 2018, the percent of clients who met study criteria for depression and/or anxiety at prenatal baseline increased. In 2021, the percent of women reporting depression and/or anxiety at prenatal baseline appeared to decrease compared to the previous year, and then was higher in 2022 and 2023.

At follow-up, while the percent of women who met study criteria for depression and/or anxiety decreased compared to baseline, the degree to which the percent decreased fluctuated from 2015 to 2018. In 2021, the percent of women who met study criteria for depression and/or anxiety was higher compared to previous years and was similar to baseline. In 2022 and 2023, with smaller sample sizes than in previous years, small percentages of clients met study criteria for depression and/or anxiety.

FIGURE IV.C.8. CLIENTS IN THE FOLLOW-UP SAMPLE WHO MET STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024⁷⁷

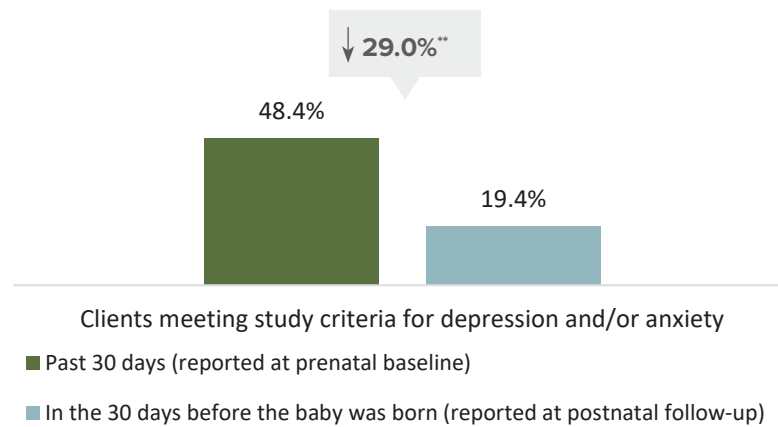


Clients Meeting Study Criteria for Depression And/or Anxiety in the Past 30 Days

In the past 30 days at prenatal baseline, 48.4% of clients met study criteria for either depression or anxiety (or both), and in the 30 days before the baby was born, 19.4% of the women met study criteria for depression and/or anxiety, which was a significant decrease of 29.0%.

⁷⁷ The small sample size in report years 2022 through 2024 may be affecting the number of clients who met study criteria for depression and/or anxiety.

FIGURE IV.C.9. MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 31)

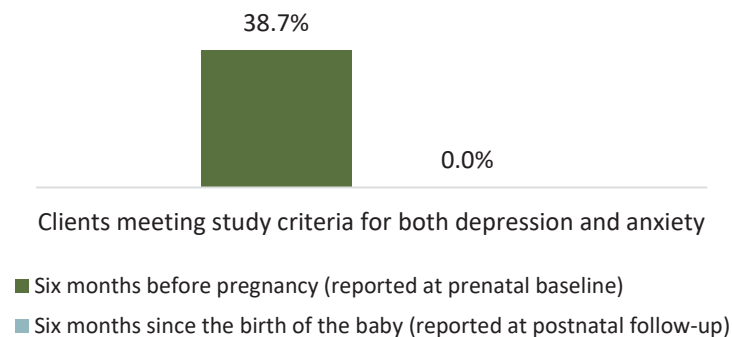


**p < .05.

Clients Meeting Study Criteria for Comorbid Depression and Anxiety in the Past 6 Months

More than one-third of clients (38.7%) met criteria for comorbid depression and anxiety in the 6 months before they became pregnant, and at postnatal follow-up, none of the clients reported comorbid depression and anxiety (see Figure IV.C.10).

FIGURE IV.C.10. MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)^a

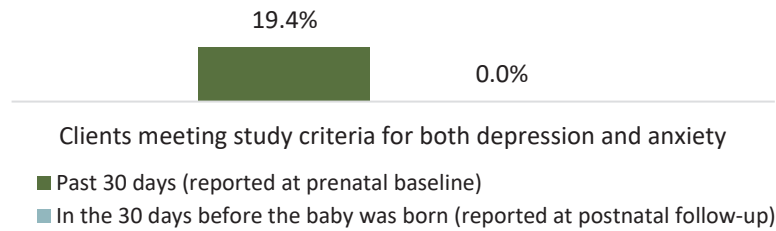


a—No test of statistical association could be computed for comorbid depression and generalized anxiety in the past 30 days at postnatal follow-up because one of the cell values was 0.

Clients Meeting Study Criteria for Comorbid Depression and Anxiety in the Past 30 Days

About 19% of clients in the past 30 days at prenatal baseline and none of the clients in the 30 days before the baby was born met study criteria for both depression and anxiety (see Figure IV.C.11).

FIGURE IV.C.11. MEETING STUDY CRITERIA FOR COMORBID DEPRESSION AND GENERALIZED ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 31)^a

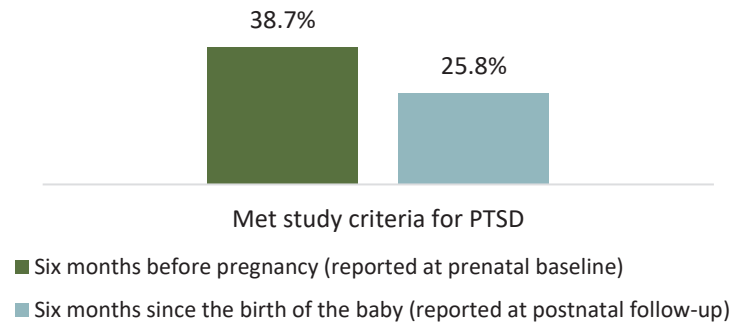


a—No test of statistical association could be computed for comorbid depression and generalized anxiety in the past 6 months at postnatal follow-up because one of the cell values was 0.

Post-traumatic Stress Disorder

Over one-third of clients (38.7%) met study criteria for post-traumatic stress disorder (PTSD)⁷⁸ in the six months before pregnancy. At follow-up, 25.8% of clients met study criteria for PTSD (see Figure IV.C.12).

FIGURE IV.C.12. CLIENTS WHO MET STUDY CRITERIA FOR POST-TRAUMATIC STRESS DISORDER IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)

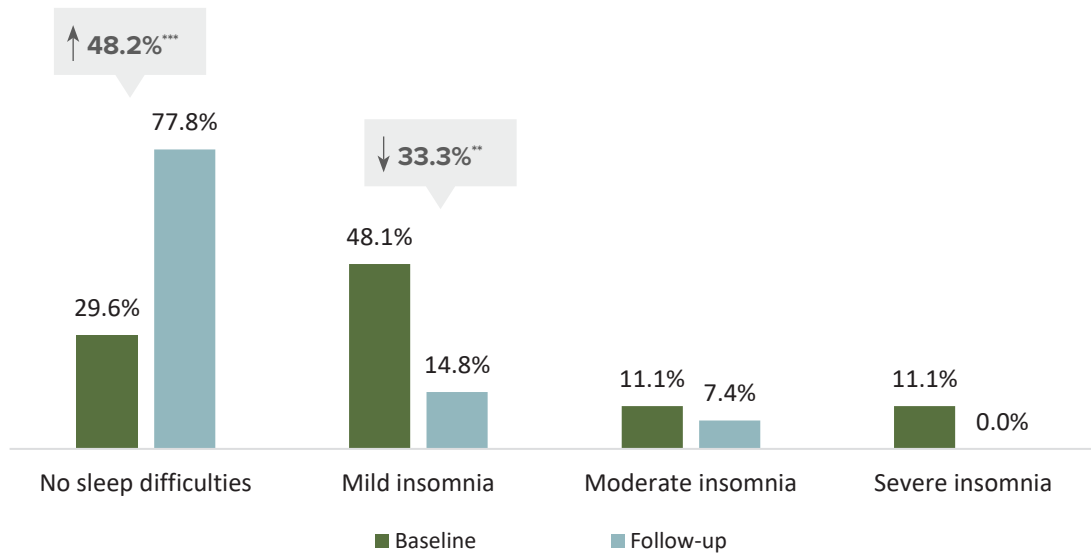


Sleep Difficulty

A 5-point Likert scale is used to rate each question on a scale of 0 (no problem) to 4 (very severe problem) where the total score can range from 0 to 28. A total score of 0-7 indicates no sleep difficulties, 8-14 indicates mild insomnia, 15-21 indicates moderate insomnia, and a score total of 22-28 indicates severe insomnia. Figure IV.C.13 shows that, at baseline, 29.6% of clients had scores indicating no sleep difficulties and, at follow-up, 77.8% of clients had scores indicating no sleep difficulties. There was a significant decrease in the average scores on the Insomnia Severity Index, with average of 10.9 at baseline and 5.2 at postnatal follow-up (not shown in a figure).

⁷⁸ 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.

FIGURE IV.C.13. CLIENTS' DEGREES OF SLEEP DIFFICULTIES REPORTED AT BASELINE AND AT FOLLOW-UP
(N = 27)⁷⁹



p < .05, *p < .01.

Summary

The number of pre-birth clients who met study criteria for depression and/or for anxiety decreased significantly from prenatal baseline to postnatal follow-up. Further, the average number of depression symptoms decreased significantly from before pregnancy to 6 months after the birth of the baby. The number of clients who met study criteria for comorbid depression and anxiety in the past 6 months decreased from 38.7% at prenatal baseline to 0.0% at postnatal follow-up. The number of clients who met study criteria for PTSD decreased, but not significantly, from the 6 months before pregnancy to the 6 months since the birth of the baby. Finally, significantly fewer clients reported they had symptoms of insomnia at follow-up compared to baseline.

Mental Health for Post-birth KY-Moms MATR Clients

Eighty percent of post-birth KY-Moms MATR clients in the 6 months before pregnancy and 40.0% of clients in the past 6 months at post-birth follow-up met study criteria for comorbid depression and anxiety. Thirty percent of post-birth women met study criteria for post-traumatic stress disorder at baseline and 10.0% met study criteria at follow-up. Ten percent of clients at baseline and follow-up reported they used substances to reduce stress. At both post-birth baseline and follow-up, 20.0% of clients were classified as having severe insomnia.

⁷⁹ Four clients were missing sleep difficulty data at follow-up

D. Intimate Partner Violence and Other Experiences with Violence

This subsection examines intimate partner violence and other experiences with violence in the follow-up sample (n = 31) such as: (1) felt unsafe, (2) any form of intimate partner violence, (3) psychological violence, (4) coercive control, (5) physical assault, (6) sexual assault, and (7) other experiences with violence. These are examined from prenatal baseline to postnatal follow-up. Past 6-month and past 30-day intimate partner violence measures are examined separately where applicable. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Felt Unsafe Because of Fear of Current or Ex-partner

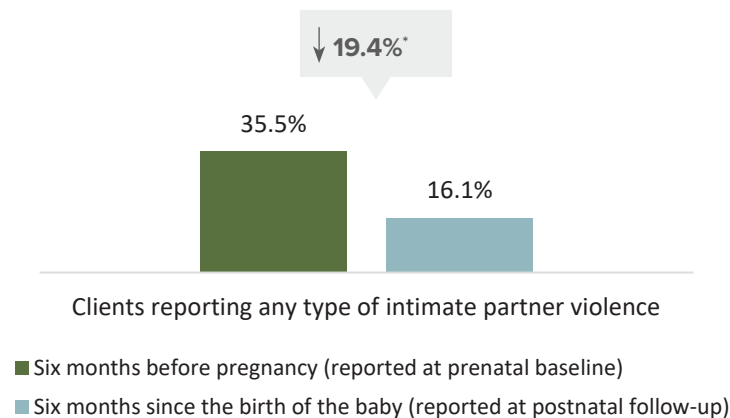
Including fear of a current or ex-partner, 6.5% of the clients reported they felt unsafe at baseline and at follow-up.

Any Intimate Partner Violence

Any Form of Intimate Partner Violence in the Past 6 Months

Figure IV.D.1 shows that in the 6 months before pregnancy, 35.5% of clients reported experiencing any form of intimate partner violence (including psychological violence, control, physical assault, and sexual violence)⁸⁰ perpetrated by a current or ex-partner and 16.1% of clients reported experiencing partner violence in the 6 months before the postnatal follow-up (significant decrease of 19.4%).

FIGURE IV.D.1. ANY TYPE OF INTIMATE PARTNER VIOLENCE IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 37)



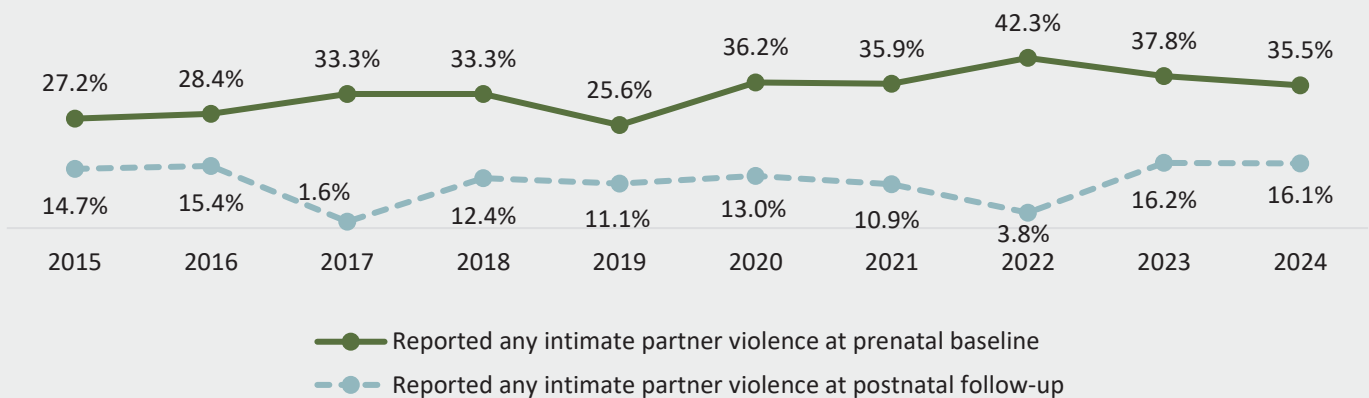
* p < .10.

⁸⁰ Any intimate partner violence was defined in this study as a client indicating “yes” to any of the partner violence questions asked in the survey (e.g., verbal and psychological violence, extreme jealousy and control, threats of violence towards client and others close to them, physical violence, stalking, partner purposely damaging or destroying property, sexual assault/threats of assault) at each period.

Trends in Any Past-6-month Intimate Partner Violence at Prenatal Baseline and Postnatal Follow-up

The percent of clients who reported any intimate partner violence at prenatal baseline was fairly consistent from 2015 to 2019. Since 2019, however, the number of clients who reported any intimate partner violence at baseline has increased. Overall, the percent of clients who reported intimate partner violence at follow-up was also fairly consistent with about 11% to 16% of clients reporting intimate partner violence in the 6 months since the birth of the baby (with the exception of 2017 at 1.6% and 2022 at 3.8%). In 2023, the percent of clients who reported intimate partner violence at follow-up was higher than in previous years and remained high in 2024.

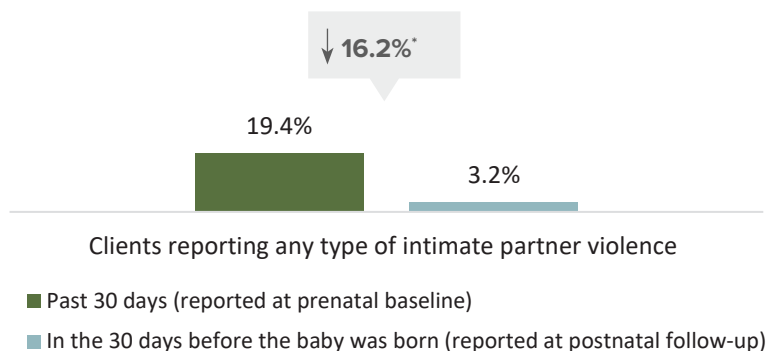
FIGURE IV.D.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING ANY INTIMATE PARTNER VIOLENCE IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Any Intimate Partner Violence in the Past 30 Days

Close to 20% of KY-Moms MATR clients in the past 30 days at prenatal baseline and 3.2% of clients in the 30 days before the baby was born clients reported experiencing any type of intimate partner violence which was a significant decrease of 16.2% (see Figure IV.D.3).

FIGURE IV.D.3. ANY TYPE OF INTIMATE PARTNER VIOLENCE IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 31)



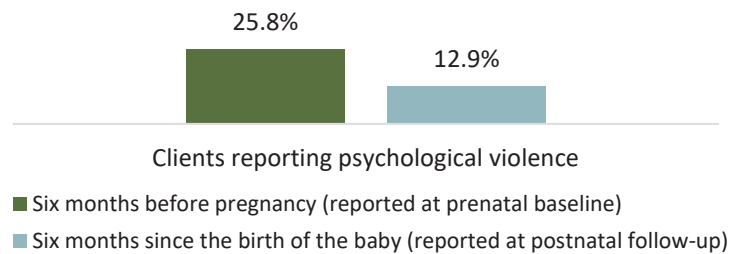
*p < .10.

Psychological Violence

Psychological Violence in the Past 6 Months

Slightly more than one-quarter of clients (25.8%) reported at prenatal baseline that a partner was psychologically violent towards them (e.g., insulted the client, shouted, criticized them, criticized them in front of others, treated them like an inferior, tried to make them feel crazy, or told them their feelings were irrational or crazy) in the 6 months before pregnancy and 12.9% of clients reported psychological violence in the past 6 months at postnatal follow-up. Compared to the 6 months before they were pregnant, there was not a significant decrease in reports of psychological violence in the 6 months after clients had their baby (see Figure IV.D.4).

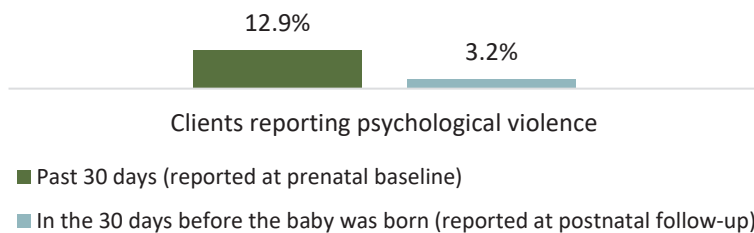
FIGURE IV.D.4. PSYCHOLOGICAL VIOLENCE IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 31)



Psychological Violence in the Past 30 Days

About 13% of clients in the past 30 days at prenatal baseline and in the 30 days before the baby was born 3.2% of clients reported psychological violence, which was not a significant decrease.

FIGURE IV.D.5. PSYCHOLOGICAL VIOLENCE IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 35)



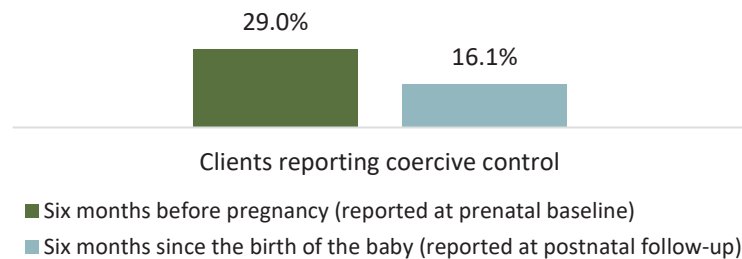
Coercive Control

Coercive Control in the Past 6 Months

For this study, coercive control is described as violence by a partner wherein the partner threatened the client or a family member in order to frighten her, was extremely jealous and controlling, interfered with other relationships, stalked her, or purposely destroyed property that belonged to her or a close friend/family member. In the 6 months before becoming pregnant,

29.0% of clients reported experiencing coercive control and 16.1% of clients in the past 6 months at postnatal follow-up reported experiencing coercive control from their partner, which was not a significant decrease (see Figure IV.D.6).

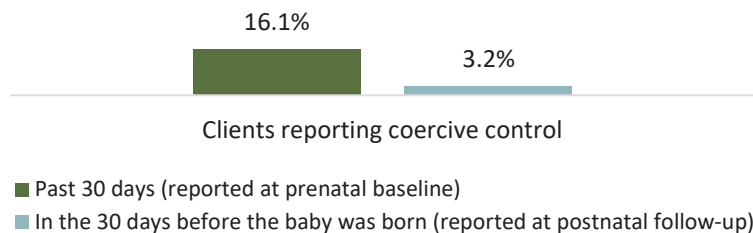
FIGURE IV.D.6. COERCIVE CONTROL BY A PARTNER IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 31)



Coercive Control in the Past 30 Days

In the past 30 days at prenatal baseline 16.1% of clients reported coercive control and in the 30 days before the baby was born, 3.2% reported coercive control occurred while they were pregnant (see Figure IV.D.7).

FIGURE IV.D.7. COERCIVE CONTROL BY A PARTNER IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 31)

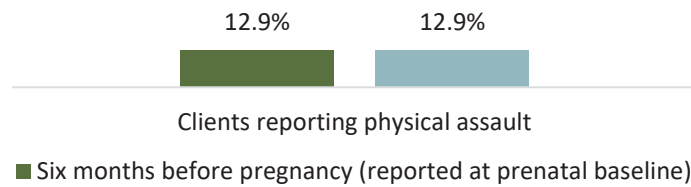


Physical Assault

Physical Assault in the Past 6 Months

About 13% of women reported that a partner physically assaulted them (e.g., pushing, shoving, kicking, beating up, strangling, burning, attacking with a weapon) in the 6 months before they became pregnant and in the past 6 months at postnatal follow-up.

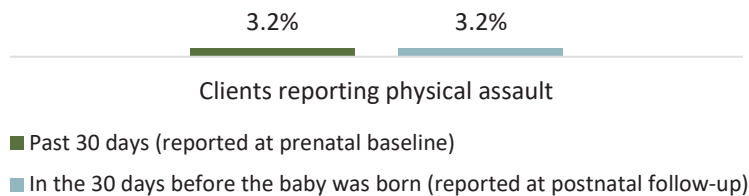
FIGURE IV.D.8. PHYSICAL ASSAULT IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 31)



Physical Assault in the Past 30 Days

A small number of the women (3.2%) in the past 30 days at prenatal baseline and in the 30 days before the birth of the baby reported experiencing physically assaulted by a partner (see Figure IV.D.9).

FIGURE IV.D.9. PHYSICAL ASSAULT IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 31)

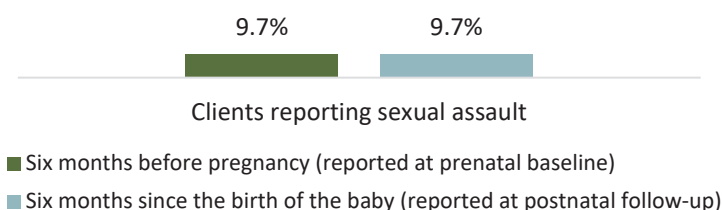


Sexual Assault

Sexual Assault in the Past 6 Months

Less than 10% of clients (9.7%) reported at prenatal baseline that they had been sexually assaulted by a partner (e.g., partner made them do sexually degrading things, caused them to have sex because they were afraid of what would happen if they didn't, made the client have sex by threatening to harm them or someone close to them, or physically forcing them to have sex) in the 6 months before pregnancy and in the past 6 months at postnatal follow-up (see Figure IV.D.10).

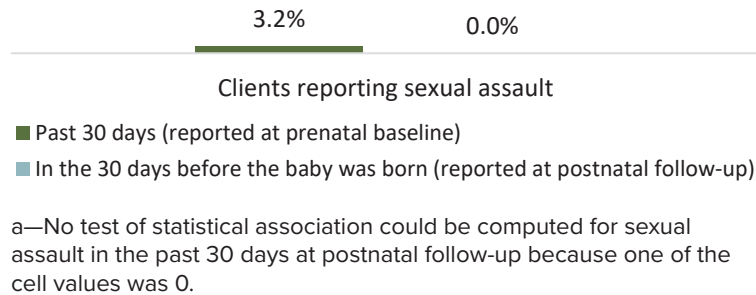
FIGURE IV.D.10. PARTNER SEXUALLY ASSAULTED CLIENT IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 31)



Sexual Assault in the Past 30 Days

Only 3.2% of the clients reported being sexually assaulted by a partner in the past 30 days at prenatal baseline and none of the clients reported being sexually assaulted by a partner in the 30 days before the baby was born.

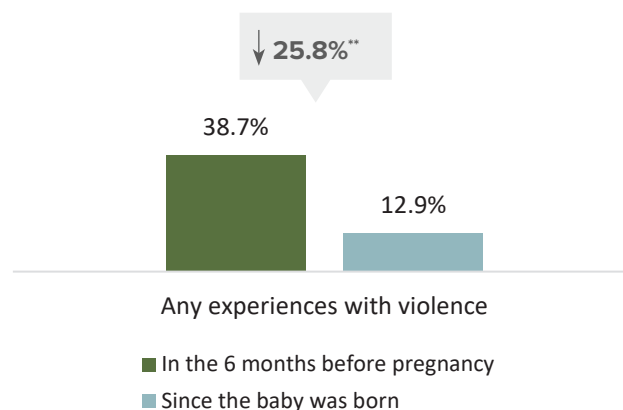
FIGURE IV.D.11. PARTNER SEXUALLY ASSAULTED CLIENT IN THE 30 DAYS BEFORE PREGNANCY AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 31)



Any Experiences with Violence

Clients were asked about situations in which they may have experienced violence, been harmed by someone else, or made to feel unsafe by someone in the past 6 months at baseline and follow-up. Because relatively small percentages of clients reported each type of experience with violence in the 6-month periods, the items were collapsed. The percent of clients who reported experiencing any violence (i.e., any harassment or any assault) in the past 6 months decreased 25.8% from 38.7% the 6 months before pregnancy to 12.9% the past 6 months at follow-up (see Figure IV.D.12).

FIGURE IV.D.12. PERCENT OF CLIENTS WHO EXPERIENCED VIOLENCE (N = 31)



** p < .05.

Summary

Clients' experiences of several forms of partner violence were examined from prenatal baseline to postnatal follow-up. Over one-third of KY-Moms MATR clients (35.5%) reported experiencing

some type of intimate partner violence in the 6 months before pregnancy. At postnatal follow-up, 16.1% of clients reported experiencing some type of intimate partner violence in the past 6 months since the baby was born, which was a significant decrease. Less than 20% of KY-Moms MATR clients (19.4%) in the past 30 days at prenatal baseline and 3.2% of clients in the 30 days before the baby was born clients reported experiencing any type of intimate partner violence. The number of clients who reported experiencing any violence decreased significantly from the six months before pregnancy (38.7%) to the past 6 months at follow-up (12.9%).

Intimate Partner Violence for Post-birth KY-Moms MATR Clients

Including fear of a current or ex-partner, 10% of the clients who had their babies prior to entering KY-Moms MATR reported they felt unsafe at baseline and at follow-up. In addition, 30% of post-birth clients in the 6 months before pregnancy and 10.0% of post-birth clients during pregnancy, reported experiencing any form of intimate partner violence. None of the clients reported any form of violence at follow-up.

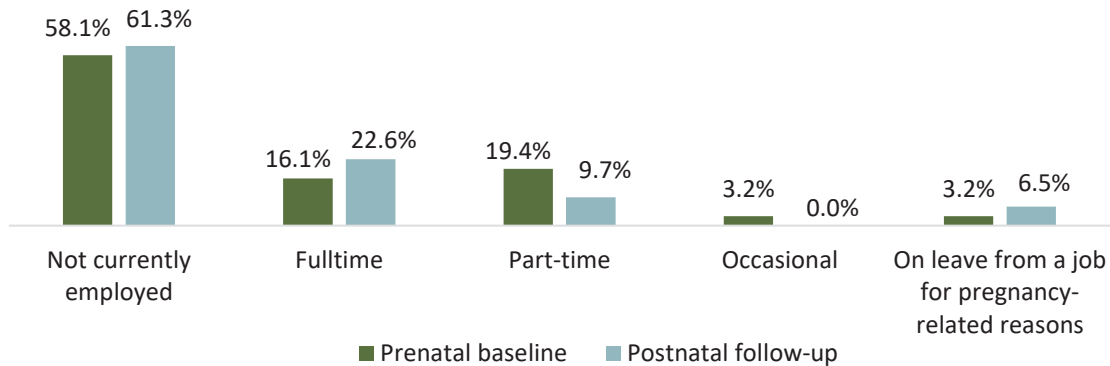
E. Economic and Living Circumstances, Economic Hardship, and Criminal Justice Involvement

This subsection examines employment, economic hardship, living situation, and criminal justice involvement in the follow-up sample (n = 31) from baseline to follow-up. Specifically, this section examines: (1) current employment status, (2) hourly wage, among employed individuals, (3) public assistance, (4) economic hardship, (5) living situation, and (6) criminal justice involvement. Past-6-month and past-30-day measures are examined separately where applicable. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Current Employment Status

Clients' current employment status changed significantly from prenatal baseline to postnatal follow-up. Over one-third clients (41.9%) were employed in some capacity (full-time, part-time, occasional, or on leave) at prenatal baseline and 38.7% of clients at follow-up (not represented in a figure). About 58% of clients at prenatal baseline and 61.3% of clients at postnatal follow-up reported being unemployed, which was not a significant increase (see Figure IV.E.1).

FIGURE IV.E.1. CURRENT EMPLOYMENT STATUS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)^a

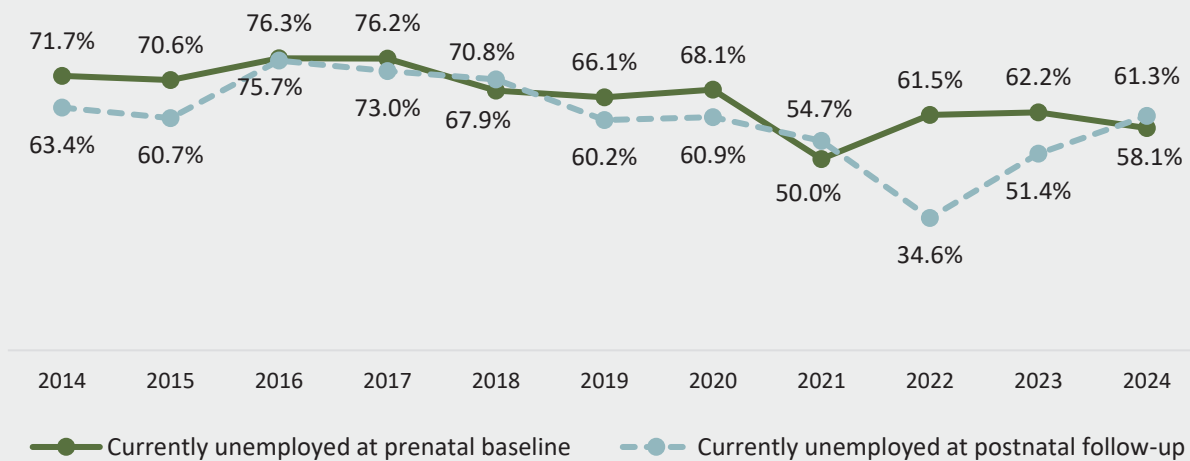


a – Significance tested with the Stuart-Maxwell Test for Marginal Homogeneity.

Trends in Current Unemployment Status at Prenatal Baseline and Postnatal Follow-up

The majority of women at both prenatal baseline and postnatal follow-up were unemployed from 2014 until 2020 and then again in 2022 and 2023 report years. Furthermore, from 2016 to 2018, the percent of clients who reported being unemployed changed only minimally from baseline to follow-up. In fact, in 2018, the percent of clients reporting being unemployed at follow-up was slightly greater than the percent of clients reporting being unemployed at baseline. In 2019 and 2020, the percent of clients who reported being unemployed was slightly greater at baseline compared to follow-up. In 2022, however, 61.5% clients were unemployed at baseline and 34.6% of clients were unemployed at follow-up.

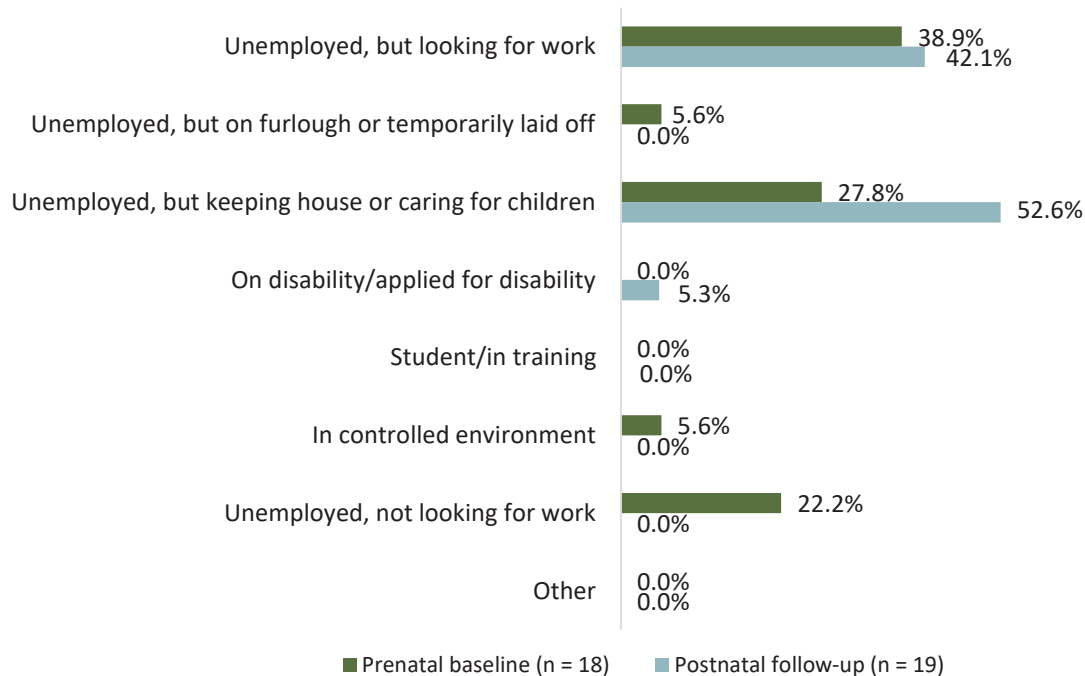
FIGURE IV.E.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CURRENT UNEMPLOYMENT STATUS AT PRENATAL BASELINE, REPORT YEARS 2014-2024



For clients who were employed (full- or part-time) at each point, the average hourly wage clients reported was \$10.68 at prenatal baseline (n = 11) and \$13.51 at postnatal follow-up (n = 10; not depicted in a figure). About 17% of clients who were employed at baseline (including clients on leave for pregnancy-related reasons) and none of the clients who were employed at follow-up reported they were also in school or receiving additional vocational training (not depicted in a figure).

Of the clients who reported they were not currently employed at each point, the majority of clients (52.6%) who were unemployed at follow-up reported they were keeping house or caring for children full-time compared to 27.8% of clients at prenatal baseline (see Figure IV.E.3). At baseline, 38.9% of clients reported they were looking for work and, at follow-up, 42.1% of clients reported looking for work.

FIGURE IV.E.3. REASON FOR UNEMPLOYMENT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP



The majority of clients at prenatal baseline (64.5%) and postnatal follow-up (67.7%) expected to be employed in the next 12 months.

Public Assistance

Clients were asked at postnatal follow-up what type of public assistance they received during their pregnancy. The vast majority of clients (90.3%) reported receiving public assistance while they were pregnant and involved in KY-Moms MATR and 71.0% reported currently receiving public assistance at postnatal follow-up (not depicted in a figure).

The majority of clients reported receiving Women, Infants and Children (WIC; 78.6% during pregnancy and 81.8% after the birth of their baby) and Supplement Nutrition Assistance Program (SNAP; 75.0% during pregnancy and 50.0% after the birth of their baby).

Economic Hardship

Economic hardship may be a better indicator of the actual day-to-day stressors clients face than a measure of income. Therefore, the prenatal baseline and postnatal follow-up surveys included several questions about clients' difficulty meeting expenses for basic needs and food insecurity.

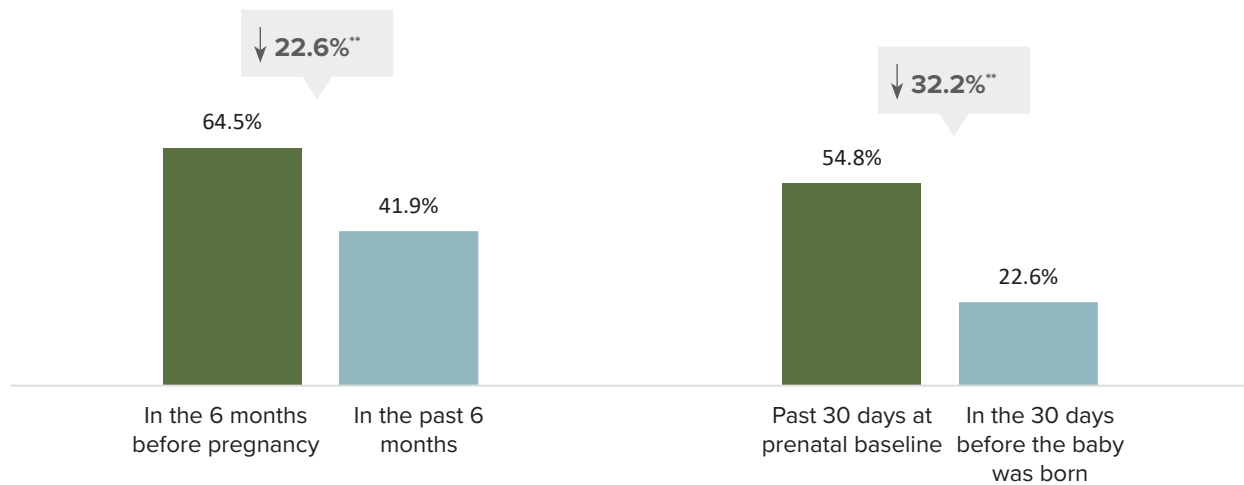
⁸¹ Clients were asked eight items, five of which asked about difficulty meeting basic living needs such as food, shelter, utilities, and telephone, and three items asked about difficulty receiving medical care for financial reasons.

⁸¹ SIPP; She, P., & Livermore, G. (2007). Material hardship, poverty, and disability among working-age adults. *Social Science Quarterly*, 88(4), 970-989.

In the 6 months before becoming pregnant, 64.5% of clients reported they had difficulty meeting at least one of the basic living needs for financial reasons and 41.9% of clients reported difficulty meeting basic living needs in the past 6 months at postnatal follow-up (since the baby was born), which was a 22.6% significant decrease (see Figure IV.E.4).

Over half of clients (54.8%) reported having difficulty meeting basic living needs in the past 30 days at prenatal baseline. In the 30 days before the baby was born, 22.6% of clients had difficulty meeting basic needs such as food, shelter or utilities, which was a significant decrease of 32.2%.

FIGURE IV.E.4. DIFFICULTY IN MEETING BASIC LIVING NEEDS FOR FINANCIAL REASONS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (n = 37)



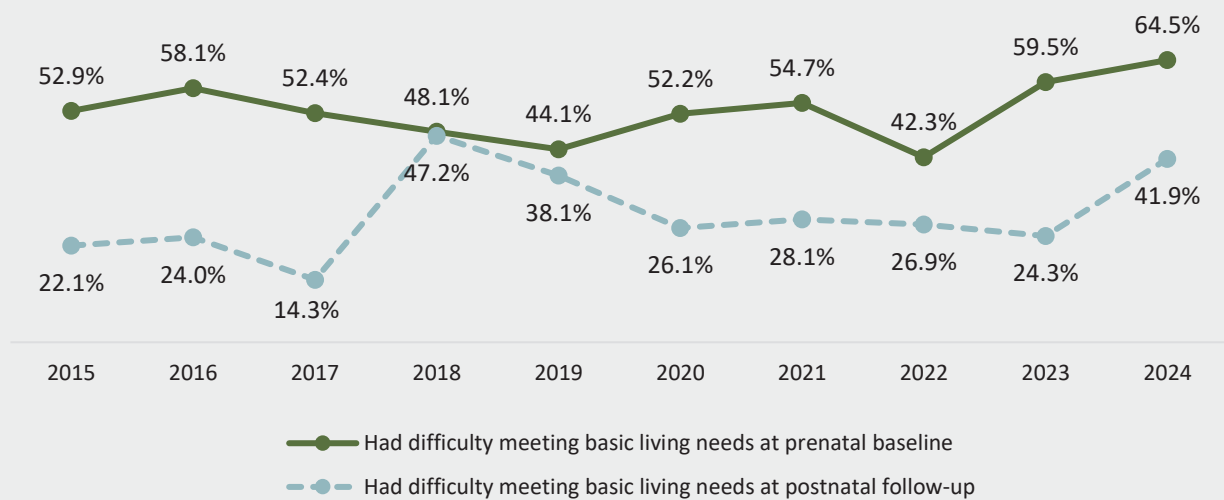
**p < .05.

In the past 6 months at follow-up, 29.0% of clients reported they were unable to pay their gas/electric bill, 25.8% of KY-Moms MATR clients reported having difficulty paying rent/mortgage, 16.1% were unable to pay phone/cell phone bill, and 16.1% said there was a time when there was not enough food to eat.

Trends in Difficulty Meeting Basic Living Needs at Prenatal Baseline and Postnatal Follow-up

The percent of clients who reported having difficulty meeting basic living needs in the six months before pregnancy remained between 42% and 60% over the past 10 years at baseline. In 2018 and 2019, the percent of clients who reported difficulty meeting basic living needs did not decrease significantly from baseline to follow-up. In 2024, the percent of clients who reported having difficulty meeting basic living needs at follow-up increased compared to previous years.

FIGURE IV.E.5. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING DIFFICULTY MEETING BASIC HOUSEHOLD NEEDS IN THE 6 MONTHS BEFORE PREGNANCY AT PRENATAL BASELINE AND IN THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Less than one-quarter of clients (22.6%) reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy (see Figure IV.E.6). At follow-up, 12.9% of clients reported they had difficulty meeting health care needs in the 6 months since the baby was born.

In the past 30 days at prenatal baseline, 12.9% of clients reported their household had difficulty meeting health care needs because of financial reasons. In the 30 days before the baby was born, 3.2% of clients reported difficulty meeting health care needs.

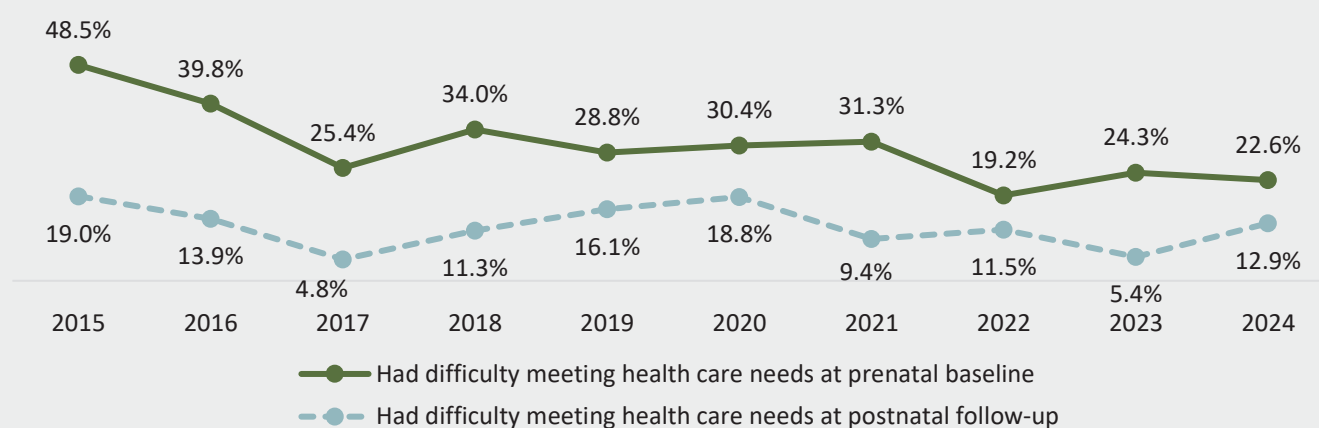
FIGURE IV.E.6. DIFFICULTY IN MEETING HEALTH CARE NEEDS FOR FINANCIAL REASONS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 37)



Trends in Difficulty Meeting Basic Health Care Needs at Prenatal Baseline and Postnatal Follow-up

Overall, at baseline, the percent of clients reporting that they had difficulty meeting health care needs steadily declined from 2015 to 2017. In 2015, almost half of clients reported having difficulty meeting health care needs in the 6 months before pregnancy and in 2018, one-fourth of clients (25.4%). Since 2018 the percent of clients who have reported having difficulty meeting basic health care needs has fluctuated from a high of 34.0% in 2018 to a low of 19.2% in 2022. At postnatal follow-up, on average, less than one-fifth of clients reported struggling to meet health care needs. In 2024, 12.9% of clients reported difficulty meeting basic health care needs at postnatal follow-up.

FIGURE IV.E.7. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING DIFFICULTY MEETING HEALTH CARE NEEDS IN THE 6 MONTHS BEFORE PREGNANCY AT PRENATAL BASELINE AND IN THE PAST 6 MONTHS POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Living Situation

Homelessness

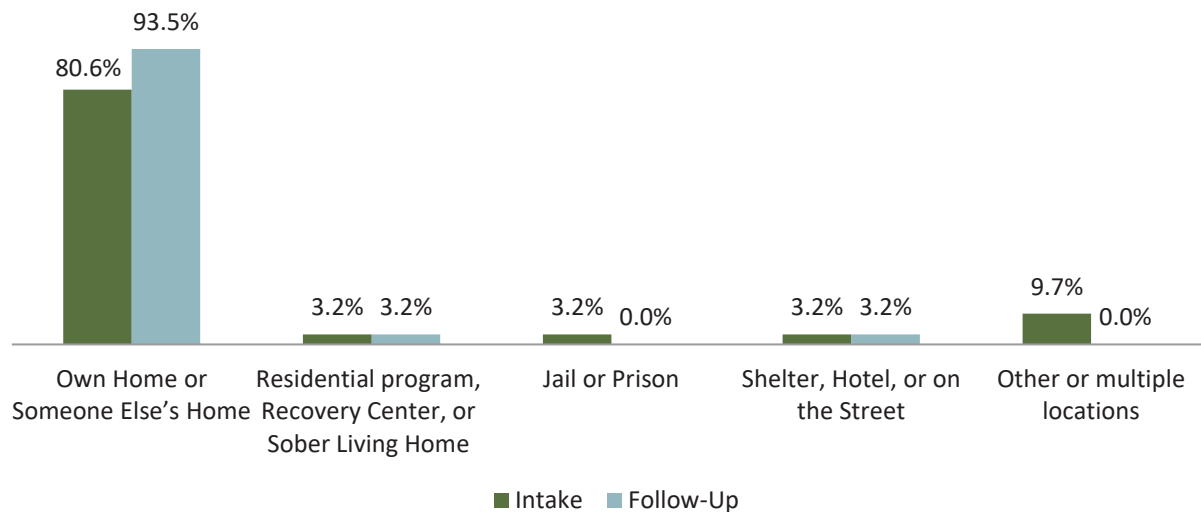
About 10% of the KY-Moms MATR clients reported being homeless at prenatal baseline and 12.9% of clients reported being homeless at postnatal follow-up (not depicted in a figure).

At prenatal baseline, of clients who reported being homeless ($n = 3$), one client considered herself homeless because she was staying temporarily with family/friends, one because she was staying in the street/car, and one for another reason. At postnatal follow-up, of clients who reported being homeless ($n = 4$)⁸², 66.7% were staying in a shelter, and 33.3% reported they were staying temporarily with family/friends before the birth of their baby.

Usual Living Situation

Clients were asked about where they lived most of the time in the past 30 days at prenatal baseline and in the past 30 days at postnatal follow-up. The majority of clients reported living in their own home or someone else's home for most of the past 30 days at baseline (80.6%) and follow-up (93.5%). Only a small percentage of women reported their usual living situation was in a residential program, Recovery Center, or Sober Living Home at baseline (3.2%) and at follow-up (3.2%). In addition, a very small percentage of clients reported living in a shelter or on the street at baseline and follow-up (3.2%) and jail or prison at baseline (3.2%).

FIGURE IV.E.8. USUAL LIVING SITUATION AT INTAKE AND FOLLOW-UP (N = 31)



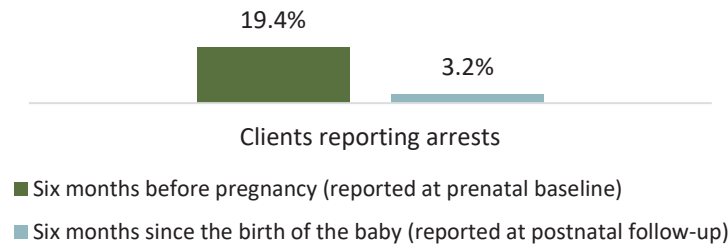
Criminal Justice Involvement

Arrests

Clients were asked about their arrests in the 6 months before pregnancy (at baseline) and since the baby was born (at postnatal follow-up). In the 6 months before pregnancy, 19.4% of clients reported an arrest (see Figure IV.E.9). Among those clients who reported being arrested in the 6 months before pregnancy ($n = 6$), the average number of times clients reported being arrested was 2.3 (not depicted in a figure). At follow-up, this percent had decreased, but not significantly, to 3.2% (1 client).

⁸² One client declined to answer why they considered themselves homeless at follow-up.

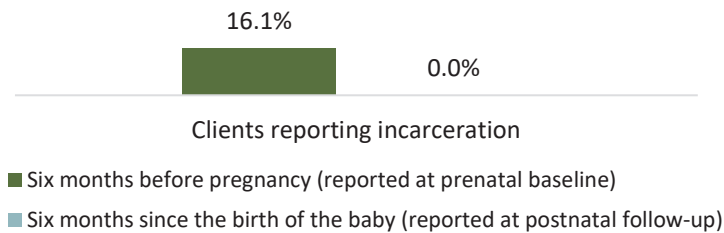
FIGURE IV.E.9. CLIENTS REPORTING ARRESTS IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 31)



Incarceration

At baseline, 16.1% of clients reported spending at least one night in jail or prison in the 6 months before pregnancy (Figure IV.E.10). Among those clients who reported being incarcerated in the 6 months before pregnancy (n = 5), the average number of nights incarcerated was 45.2 (not depicted in a figure). At follow-up, none of the clients reported spending at least one night in jail or prison since the baby was born.

FIGURE IV.E.10. CLIENTS REPORTING BEING INCARCERATED IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 31)

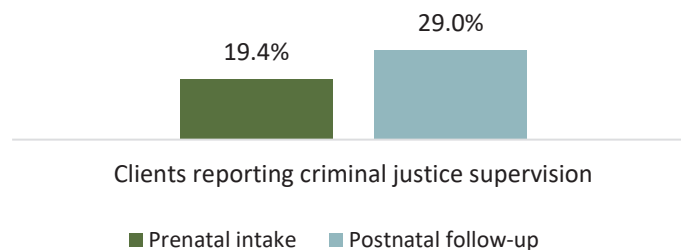


a—No test of statistical association could be computed for incarceration in the past 6 months at postnatal follow-up because one of the cell values was 0.

Criminal Justice Supervision

At prenatal baseline, 19.4% of clients reported they were currently under criminal justice system supervision (e.g., probation, or parole; Figure IV.E.11). At follow-up, 29.0% were currently under criminal justice system supervision.

FIGURE IV.E.11. CLIENTS REPORTING BEING CURRENTLY UNDER SUPERVISION BY THE CRIMINAL JUSTICE SYSTEM AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)



Summary

The percent of clients who reported full-time employment did not change significantly at postnatal follow-up. Of the clients who reported they were not currently employed at each point, over half of clients (52.6%) who were unemployed at follow-up reported they were keeping house or caring for children full-time compared to 27.8% of clients at prenatal baseline. The majority of clients were able to receive public assistance (mainly SNAP and WIC) while pregnant and in KY-Moms MATR and after the birth of the baby. The percent of clients who reported having difficulty meeting basic living needs for financial reasons decreased significantly in the past 6 months at follow-up compared to the past 6 months before pregnancy. There were also decreases, but not significant, in the percent of clients who reported being arrested and spending at least one night in jail or prison from the 6 months before pregnancy at prenatal baseline to the past 6 months at postnatal follow-up.

Economic and Living Circumstances, Economic Hardship, and Criminal Justice Involvement for Post-birth KY-Moms MATR Clients

At baseline, 10.0% of post-birth mothers (one mother) reported they were currently working full-time and at follow-up, 60% of post birth mothers reported they were currently working full-time. The majority of post-birth clients received public assistance at both baseline (90.0%) and follow-up (80.0%). In the 6 months before becoming pregnant, 80.0% of clients reported they had difficulty meeting at least one of the basic living needs for financial reasons and 50.0% of clients reported difficulty meeting basic living needs in the past 6 months at postnatal follow-up. In addition, 40.0% of post-birth clients reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy. At follow-up, 10.0% of clients (one client) reported they had difficulty meeting health care needs in the past 6 months at follow-up. Only 10% of clients who entered KY-Moms MATR after they had their babies considered themselves homeless. The majority of clients at both baseline (60.0%) and follow-up (80.0%) reported living in their own home or someone else's home for most of the past 30 days. Thirty percent of clients in the 6 months before pregnancy and 10.0% of clients in the past 6 months at follow-up spent at least one night incarcerated. Likewise, 30.0% of clients in the 6 months before pregnancy and 10.0% of clients in the past 6 months at follow-up reported having been arrested for any offense.

F. Physical Health

This subsection describes physical health problems reported at prenatal baseline and change in physical health status of clients from prenatal baseline to postnatal follow-up (n = 31) including: (1) chronic health problems at baseline, (2) current health, (3) chronic pain, and (4) perceptions of poor physical and mental health. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Chronic Health Problems Reported at Prenatal Baseline

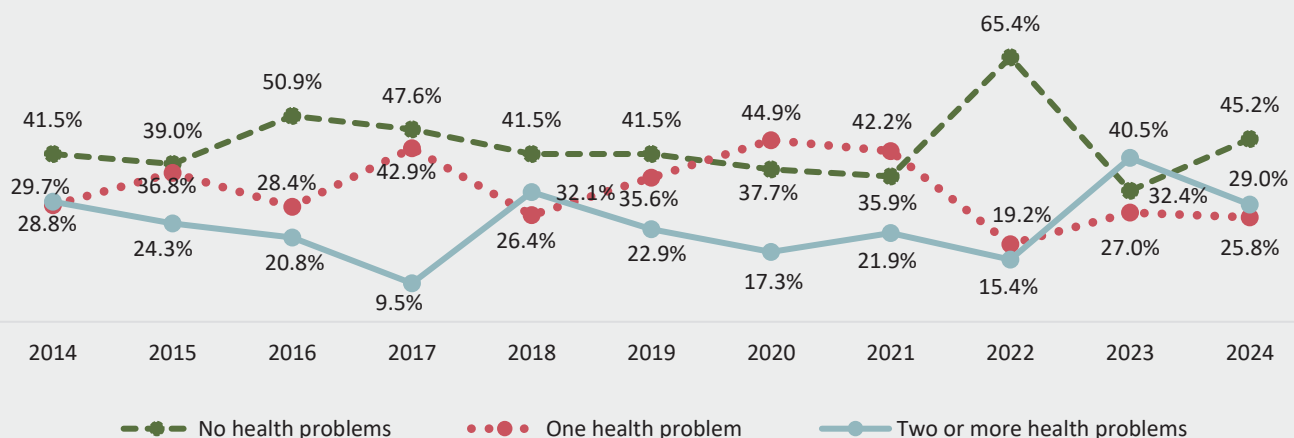
At prenatal baseline, 45.2% of postnatal follow-up clients reported no chronic health problems, 25.8% reported having one chronic health problem, and 29.0% of clients had two or more chronic health problems.

Among the clients who reported at least one physical health problem at prenatal baseline (n = 17), 29.4% of clients reported asthma, 23.5% reported a sexually transmitted infection (STI), cardiovascular/ heart disease, arthritis, and dental problems (not included in the figure).

Trends in Chronic Health Problems at Prenatal Baseline

In general, for each year, more clients reported having no chronic health problems at prenatal baseline compared to having one or two or more chronic health problems, with the exception of 2020 and 2021. In 2016, for example, a little over half of clients (50.9%) reported they had no chronic health problems. The percent of clients who reported one health problem and multiple health problems were similar over the first three years and in 2018 and in 2022. In 2020 and 2021, more clients reported having one chronic health problem compared to no health problems or multiple health problems. In 2022, almost two-thirds of clients reported they had no chronic health problems compared to 32.4% in 2023.

FIGURE IV.F.1. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CHRONIC HEALTH PROBLEMS AT PRENATAL BASELINE, REPORT YEARS 2014-2024⁸³



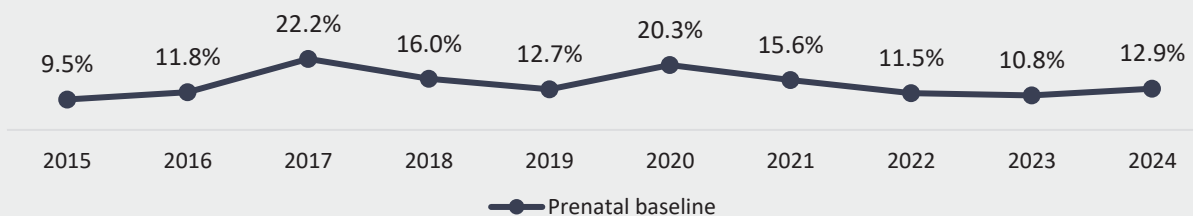
⁸³ The small sample sizes in 2022 through 2024 report years may be affecting the number of chronic health problems.

At prenatal baseline, 12.9% reported they had major health problems that were not currently being treated. Of those clients who indicated they had major health problems that were not being treated ($n = 4$), clients mentioned various responses such as autoimmune problems, anxiety, heartburn, and dental issues. At postnatal follow-up, 12.9% clients reported major health problems that were not currently being treated. Of those clients, they mentioned Hepatitis C, rheumatoid arthritis, and inflammatory bowel disease.

Trends in Health Problems Not Being Treated at Prenatal Baseline

A minority of clients each year reported having major health problems that were not currently being treated at baseline. In 2015, 9.5% of clients reported having a health problem that was not being treated and the highest percentage of clients reporting a major health problem that was not being treated was found in 2017 (22.2%). After 2017, the number of clients who reported having major health problems that were not currently being treated decreased to 12.7% in 2019 and increased to 20.3% in 2020. In 2024, the percent of clients who reported having a major health problem that was not being treated was 12.9%.

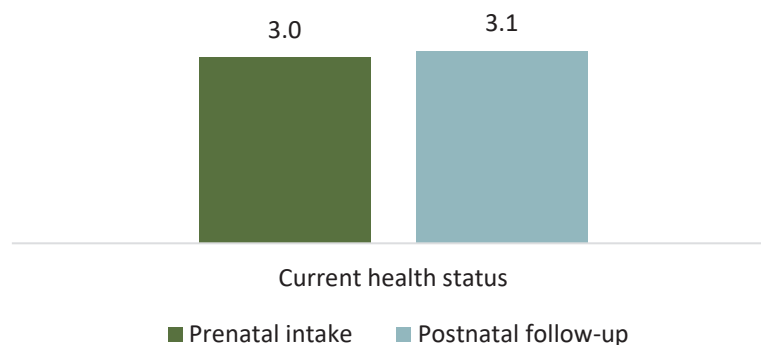
FIGURE IV.F.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING HEALTH PROBLEMS THAT WERE NOT BEING TREATED AT PRENATAL BASELINE, REPORT YEARS 2015-2024



Current Health Status

At prenatal baseline, clients reported their current health as an average of 3.0 on a scale of 1 – 5, with 1 being “poor” and 5 being “excellent.” At postnatal follow-up, clients reported that their current health was an average of 3.1, which was not a significant increase compared to prenatal baseline (see Figure IV.F.3).

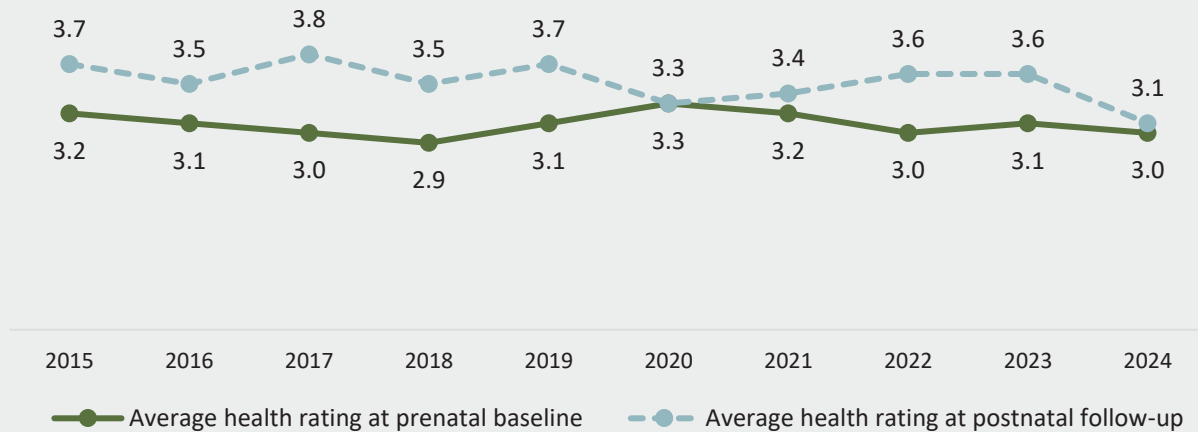
FIGURE IV.F.3. AVERAGE OVERALL HEALTH RATING FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 31)



Trends in Current Health Rating at Prenatal Baseline and Postnatal Follow-up

The average health rating was relatively stable at both baseline and postnatal follow-up. Overall, clients' average rating of their health was around 3 at baseline. At follow-up, clients' average health rating was 3.5 or higher except in 2020, 2021, and 2024 report years.

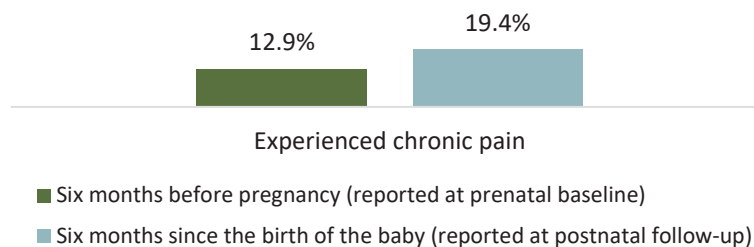
FIGURE IV.F.4. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING AVERAGE HEALTH RATING AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Chronic Pain

At prenatal baseline, 12.9% of women reported experiencing chronic pain in the 6 months before pregnancy and, of those clients ($n = 4$), they reported experiencing pain an average of 23.0 days in the 30 days before pregnancy. Two clients reported that this chronic pain continued into their pregnancy with those clients reporting experiencing 30 days of chronic pain in the past 30 days at prenatal baseline. Six clients reported experiencing chronic pain in the past 6 months at postnatal follow-up.

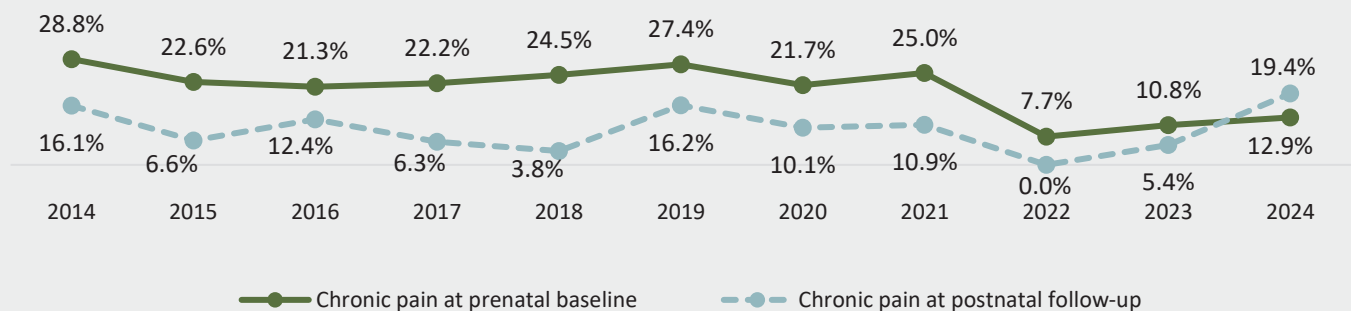
FIGURE IV.F.5. CHRONIC PAIN IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 31)



Trends in Past-6-month Chronic Pain at Prenatal Baseline and Postnatal Follow-up

Around one-quarter of clients each year reported having chronic pain at baseline until the 2022 report year. In 2014, 28.8% of clients at baseline and 16.1% of clients at follow-up reported having chronic pain. In 2021, 25.0% of clients reported experiencing chronic pain at baseline and 10.9% of clients reported chronic pain at postnatal follow-up. The 2022-2024 reports showed a large divergence from the other years, likely due to the smaller sample sizes, with 12.9% reporting chronic pain at baseline and 19.4% at follow-up.

FIGURE IV.F.6. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING PAST-6-MONTH CHRONIC PAIN AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2014-2024



Perceptions of Poor Physical or Mental Health Limiting Activities

Clients were asked how many days in the past 30 days their physical and mental health were not good at prenatal baseline and postnatal follow-up (see Figure IV.F.7). Clients reported an average of 4.5 days out of the past 30 days their physical health was not good at prenatal baseline and 1.3 days at follow-up with six clients at prenatal baseline (19.3%) and two clients at follow-up reporting 14 or more days of poor physical health which is considered frequent physical distress. In comparison, America's Health Rankings indicate that 11.0% of Kentucky women reported reporting frequent physical distress.⁸⁴ More KY-Moms MATR clients reported frequent physical distress at prenatal baseline but fewer client reported frequent physical distress at follow-up compared to other women surveyed in Kentucky.

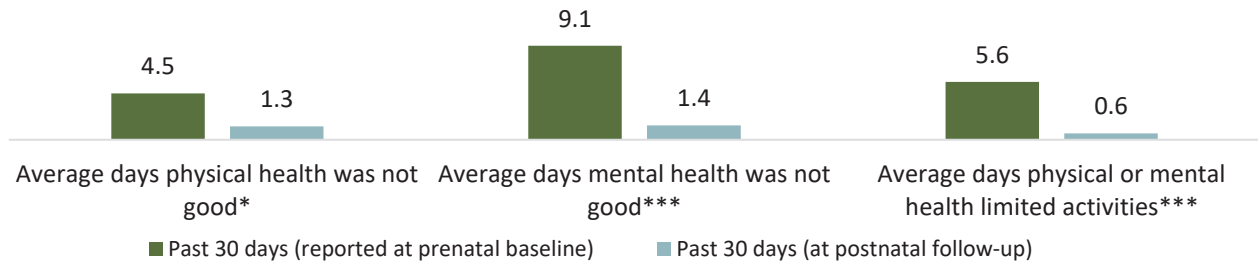
The average number of days clients reported their mental health was not good decreased significantly from 9.1 days at prenatal baseline to 1.4 days at postnatal follow-up. Specifically, 41.9% of clients reported 14 or more days of mental distress at prenatal baseline and only 3.2% of clients reported frequent mental distress in the past 30 days at follow-up. America's Health Rankings indicate that in the past 30 days 26.7% of Kentucky women reported frequent mental distress.⁸⁵ This indicates more KY-Moms MATR clients reported frequent mental distress at prenatal baseline and fewer at postnatal follow-up compared to women surveyed in Kentucky.

Clients were also asked to report the number of days in the past 30 days poor physical or

⁸⁴ United Health Foundation (2023). *America's Health Rankings 2023 Health of Women and Children Report*. <https://www.americashealthrankings.org/learn/reports/2023-health-of-women-and-children-report>

mental health had kept them from doing their usual activities. The number of days clients reported their physical or mental health kept them from doing their usual activities decreased significantly from 5.6 days at baseline to 0.6 days at follow-up.

FIGURE IV.F.7. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH LIMITING ACTIVITIES IN THE PAST 30 DAYS AT BASELINE AND FOLLOW-UP (N = 31)



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

Significance tested with paired sample t-test.

The program was really helpful and, my case manager helped me.

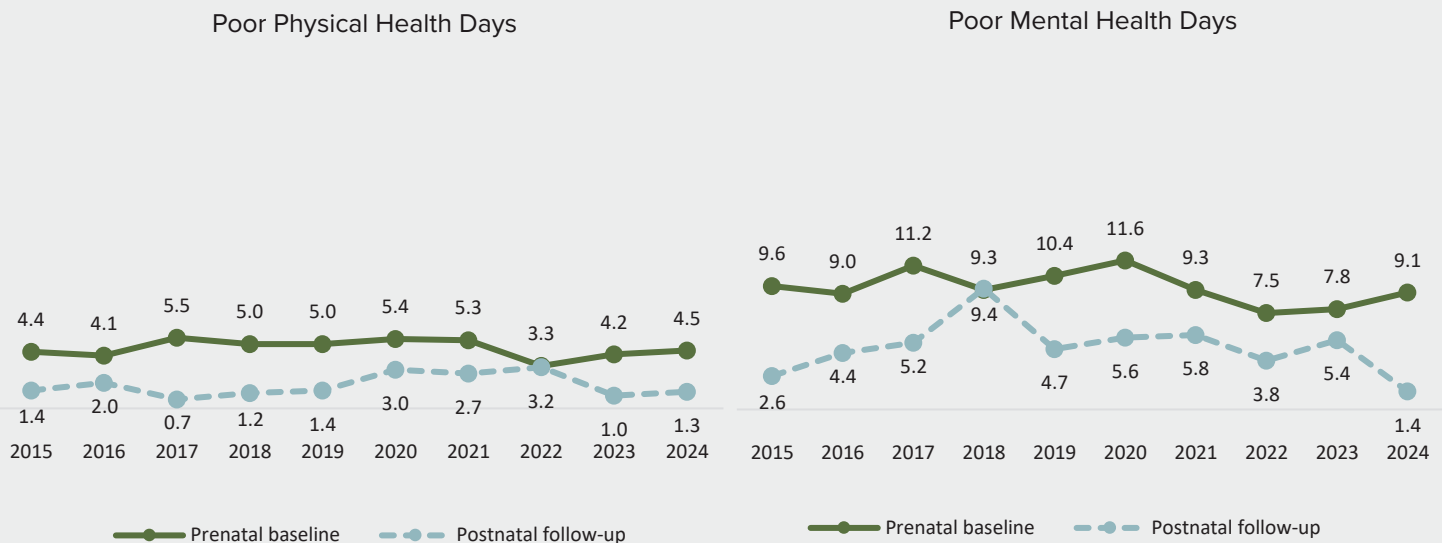
KY-MOMS MATR FOLLOW-UP CLIENT

Trends in Average Number of Days Physical and Mental Health Were Not Good at Prenatal Baseline and Postnatal Follow-up

At baseline and follow-up, clients are asked how many days in the past 30 days their physical health had not been good. Each year, the average number of days clients report their physical health was not good has significantly decreased from baseline to follow-up. In 2024, clients reported an average of 4.5 days their physical health was not good compared to 1.3 days at follow-up.

At baseline and follow-up, clients are also asked how many days in the past 30 days their mental health had not been good. While the average number of days of their mental health was not good at baseline has been relatively steady, the average number of days at follow-up has increased from 2015 to 2018, then decreased in 2019. In 2024, however, the average number of days their mental health was not good decreased compared to previous years to 1.4

FIGURE IV.F.8. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING AVERAGE NUMBER OF DAYS IN THE PAST 30 DAYS PHYSICAL AND MENTAL HEALTH WERE NOT GOOD AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Summary

At prenatal baseline, around 55% of clients reported having at least one chronic health problem such as asthma, Hepatitis C, and other sexually transmitted infection. About 13% of clients at prenatal baseline reported they had health problems that were not currently being treated. Clients' overall current health status rating did not improve significantly from 3.0 at prenatal baseline to 3.1 on a scale of 1 – 5 at postnatal follow-up. Close to 13% of clients in the 6 months before pregnancy and 19.4% of clients in the past 6 months at postnatal follow-up reported experiencing chronic pain. Clients also reported a significant decrease in the average number of days their physical or mental health was not good.

Physical Health for Post-birth KY-Moms MATR Clients

Only one post-birth client, at baseline and follow-up, reported having a major physical health problem that was not being currently treated. At baseline, 40% of clients reported their overall physical health was very good or excellent compared to 60.0% of clients at follow-up. Twenty percent of clients in the 6 months before pregnancy and none of the clients at follow-up reported experiencing chronic pain.

Clients reported an average of 6.2 days out of the past 30 days their physical health was not good at post-birth baseline and 2.6 days at follow-up. The average number of days clients reported their mental health was not good was 15.7 days at post-birth baseline and 5.6 days at postnatal follow-up.

Clients reported their physical or mental health kept them from doing their usual activities as an average of 8.3 days at post-birth baseline and 3.5 days at follow-up.

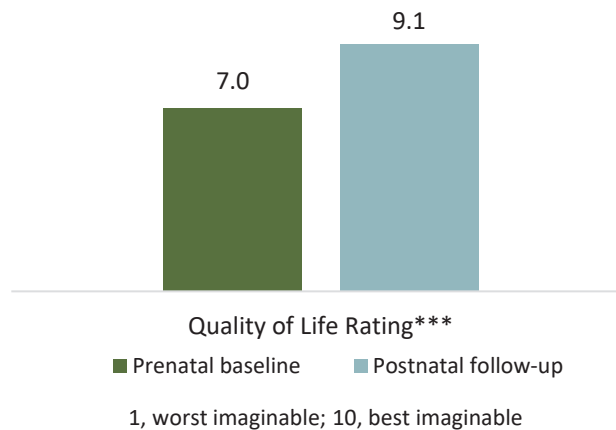
G. Quality-of-life and Emotional Support

This subsection examines changes in stress, quality-of-life, and emotional support for the follow-up sample (n = 31) including the following factors: (1) quality-of-life ratings, (2) the number of people clients said they could count on for emotional support, and (3) their satisfaction with the level of emotional support from others. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Quality-of-life

At both prenatal baseline and postnatal follow-up, clients were asked to rate their current quality-of-life using ratings ranging from 1 = 'Worst imaginable' to 10 = 'Best imaginable'. Clients rated their quality-of-life before entering the KY-Moms MATR program as a 7.0, on average (see Figure IV.G.1). The average rating of quality-of-life increased significantly to 9.1 at postnatal follow-up.

FIGURE IV.G.1. PERCEPTION OF QUALITY-OF-LIFE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP
(n = 27)⁸⁵



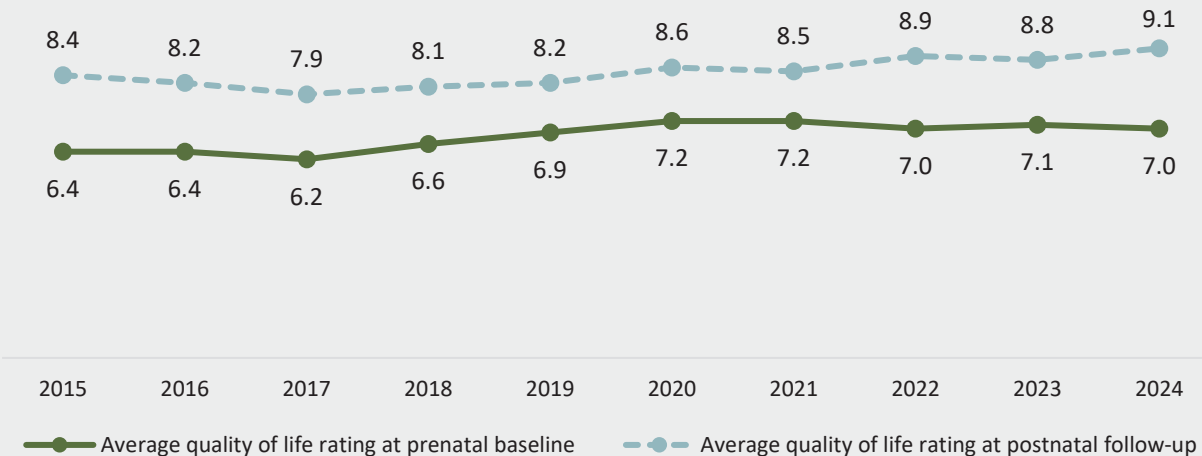
*** p < .01.

⁸⁵ Four clients were missing data for quality of life at follow-up.

Trends in Quality-of-life at Prenatal Baseline and Postnatal Follow-up

KY-Moms MATR clients are asked to rank their overall quality-of-life on a scale from 1 (worst imaginable) to 10 (best imaginable) at both baseline and follow-up. At baseline, clients have rated their quality-of-life, on average, from 6.2 to 7.2. At postnatal follow-up, that rating was an average of around 8 or higher. In 2024, the average quality-of-life rating was the highest across the past 10 years.

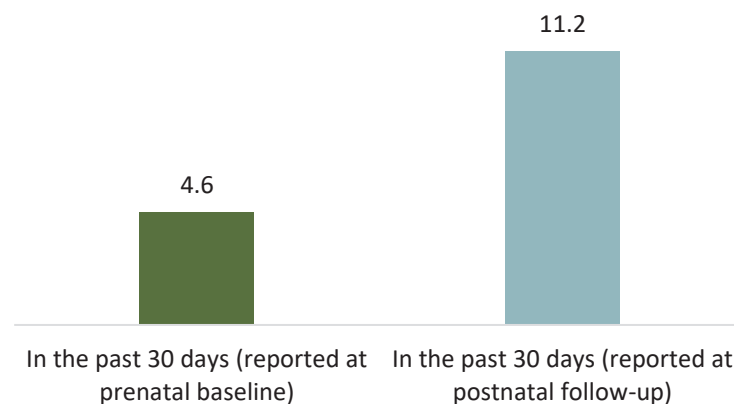
FIGURE IV.G.2. CLIENTS IN THE FOLLOW-UP SAMPLE RANKING THEIR QUALITY-OF-LIFE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



Emotional Support

In the past 30 days at baseline, clients reported they could count on an average of 4.6 people for emotional support. In the past 30 days at postnatal follow-up, clients reported that they could count on an average of 11.2 people for emotional support, which was a significant increase (see Figure IV.G.3).

FIGURE IV.G.3. AVERAGE NUMBER OF PEOPLE CLIENT COULD COUNT ON FOR EMOTIONAL SUPPORT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 31)*

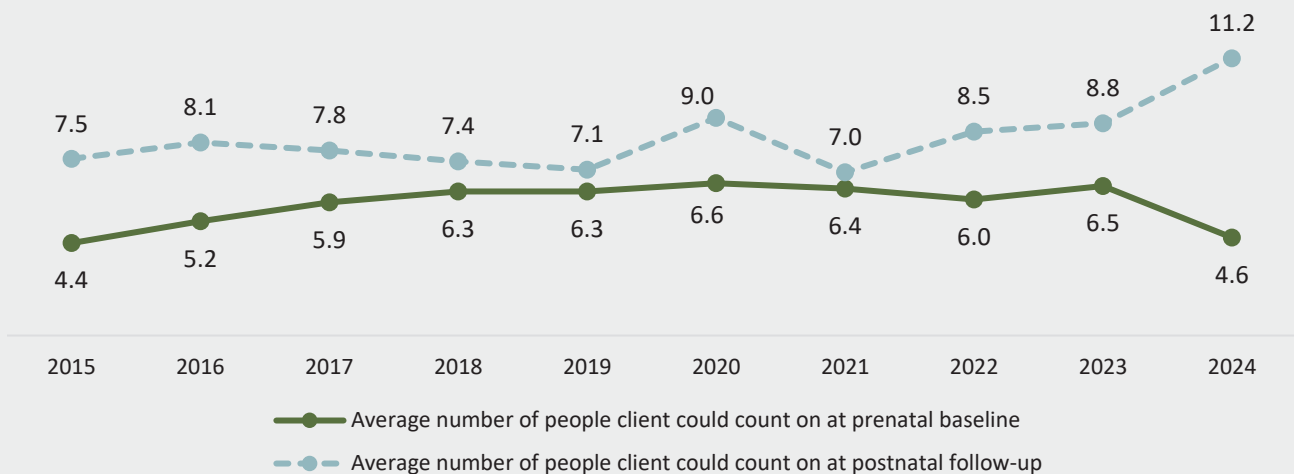


*p < .10.

Trends in the Average Number of People Clients Can Count on for Emotional Support in the Past 30 Days at Prenatal Baseline and Postnatal Follow-up

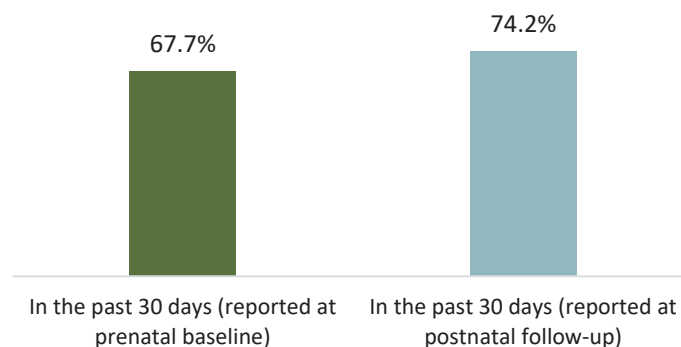
The average number of people clients reported they could count on for emotional support in the past 30 days appears to have steadily increased over time. In 2015, clients reported at baseline that they could count on 4.4 people with increases in the averages until 2020 (6.6 people). At follow-up, the average number of people clients could count on for emotional support decreased from 2016 to 2019, but increased in 2024 to a high of 11.2.

FIGURE IV.G.4. CLIENTS IN THE FOLLOW-UP SAMPLE ON THE AVERAGE NUMBER OF PEOPLE CLIENTS CAN COUNT ON FOR EMOTIONAL SUPPORT IN THE PAST 30 DAYS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, REPORT YEARS 2015-2024



The majority of clients were satisfied with the level of emotional support they received from others in the past 30 days. Over two-thirds of clients at prenatal baseline (67.7%) and 74.2% of clients at postnatal follow-up reported they were extremely or fairly satisfied with the level of emotional support they received from others (see Figure IV.G.5).

FIGURE IV.G.5. FAIRLY/EXTREMELY SATISFIED WITH THE OVERALL LEVEL OF SUPPORT IN LIFE (N = 31)



Summary

Clients reported a significantly greater quality-of-life at postnatal follow-up compared to prenatal baseline. Compared to baseline, clients reported a significantly more people they could count

on for emotional support at postnatal follow-up. Almost three-quarters of KY-Moms MATR clients at postnatal follow-up were satisfied with the level of support they received from others.

Quality-of-life and Emotional Support for Post-birth KY-Moms MATR Clients

Post-birth clients rated their current quality-of-life at baseline as a 7.3, on average. The average rating of quality-of-life at postnatal follow-up was an average of 8.1. In the past 30 days at baseline, client reported an average of 4.2 people they could on for emotional support, and in the past 30 days at follow-up, clients reported an average of 6.6 people they could on for emotional support. The majority of clients were satisfied with the level of emotional support they received from others in the past 30 days. The majority of post-birth clients in the past 30 days at baseline (80.0%) and 90.0% of clients at postnatal follow-up reported they were extremely or fairly satisfied with the level of emotional support they received from others.

H. Multidimensional Recovery Status

This subsection examines multidimensional recovery status for clients who reported alcohol and/or illicit substance use in the 6 months before pregnancy and had not had their baby before entering KY-Moms MAT client from the period before becoming pregnant to postnatal follow-up (n = 24). Data for clients who entered the case management program after the birth of their baby, who reported alcohol and/or illicit substance use in the 6 months before pregnancy, and completed a baseline and follow-up (n = 9) are described separately.

Recovery goes beyond return to occasional substance 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).”⁸⁶ The SAMHSA definition of recovery is similarly worded and encompasses health, having a stable and safe home, a sense of purpose through meaningful daily activities, and a sense of community.⁸⁷ In other words, recovery encompasses multiple dimensions of individuals’ lives and functioning. The multidimensional recovery measure uses items from the baseline and follow-up surveys to classify individuals who have all positive dimensions of recovery.

TABLE IV.H.1. COMPONENTS OF MULTIDIMENSIONAL RECOVERY STATUS

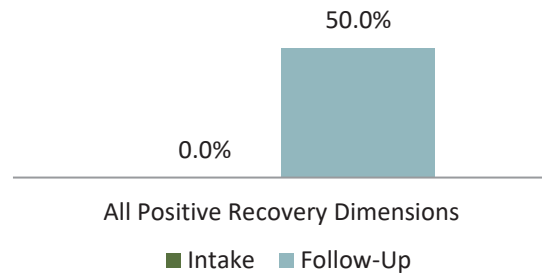
INDICATOR	POSITIVE RECOVERY DIMENSIONS	NEGATIVE RECOVERY DIMENSIONS
Employment.....	Employed at least part-time or in school	Unemployed (not on disability, not going to school, not a caregiver)
Homelessness.....	No reported homelessness	Reported homelessness
Criminal Justice System Involvement	No arrest or incarceration	Any arrest or incarceration
Depression and/or anxiety ..	No depression or anxiety	Depression or anxiety
Partner violence.....	No partner violence	Any partner violence
Overall health	Fair to excellent overall health	Poor overall health
Recovery support	Had at least one person she could count on for recovery support	Had no one she could count on for recovery support
Quality-of-life	Mid to high-level quality-of-life	Low-level quality-of-life

At prenatal baseline, none of clients who reported alcohol and/or illicit substance use in the 6 months before pregnancy were classified as having all positive dimensions of recovery (see Figure IV.H.1). At postnatal follow-up, 50.0% of clients were classified as all positive dimensions of recovery at follow-up.

⁸⁶ 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.

⁸⁷ 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/dbassessite/documents/webpage/dbasse_171025.pdf

FIGURE IV.H.1. MULTIDIMENSIONAL RECOVERY AT BASELINE AND FOLLOW-UP AMONG CLIENTS WHO REPORTED ALCOHOL AND/OR ILLICIT SUBSTANCE USE IN THE 6 MONTHS BEFORE PREGNANCY (N = 24)



a—No measure of association could be computed for the cross tabulation because there was a value of 0 for the multidimensional recovery variable at intake.

Table IV.H.2 presents the frequency of clients who reported each of the specific components of the multidimensional recovery measure at intake and follow-up. At intake, the positive factors with the lowest percent of individuals indicated was for not meeting study criteria for depression and/or anxiety. At follow-up, the factor with the lowest percent of individuals reporting the positive dimensions of recovery were for being employed full- or part-time, not meeting study criteria for depression and/or anxiety, and no partner violence. At both intake and follow-up, all clients reported having someone they could count on for recovery support.

TABLE IV.H.2. PERCENT OF CLIENTS WITH SPECIFIC POSITIVE DIMENSIONS OF RECOVERY AT BASELINE AND POSTNATAL FOLLOW-UP AMONG CLIENTS WHO REPORTED ALCOHOL AND/OR ILLICIT SUBSTANCE USE IN THE 6 MONTHS BEFORE PREGNANCY (N = 24)

Factor	Baseline Yes	Follow-up Yes
Usual employment was employed full-time or part-time in the past 6 months (or unemployed because a student, retired, home caregiver, on disability)	66.7%	79.2%
Reported <u>no</u> homelessness (or living in recovery center at follow-up)	87.5%	87.5%
Reported <u>not</u> being arrested and/or incarcerated in the past 6 months	75.0%	95.8%
Did <u>not</u> meet study criteria for depression and/or generalized anxiety in the past 6 months .	33.3%	79.2%
Reported <u>no</u> partner violence in the past 6 months	62.5%	79.2%
Self-rating of overall health in the past 6 months was fair, good, very good, or excellent.....	91.7%	95.8%
Reported having someone they could count on for recovery support.....	100%	100%
Reported a quality-of-life rating in the mid or higher range (rating of 5 or higher).....	95.8%	100%

Summary

An analysis of multidimensional recovery that considers employment, homelessness, criminal justice system involvement, depression and/or anxiety, partner violence, overall health, recovery support, and quality-of-life was computed for clients at prenatal baseline and postnatal follow-up. None of the clients were classified as having all positive dimensions of recovery at baseline, whereas 50.0% were classified as having all positive dimensions at follow-up.

Multidimensional Recovery Status for Post-birth KY-Moms MATR Clients

Of clients who reported alcohol and/or illicit substance use in the 6 months before pregnancy (n = 9), 22.2% of post-birth clients were classified as having all positive dimensions of recovery. At follow-up, 55.6% of post-birth clients were classified as all positive dimensions of recovery.

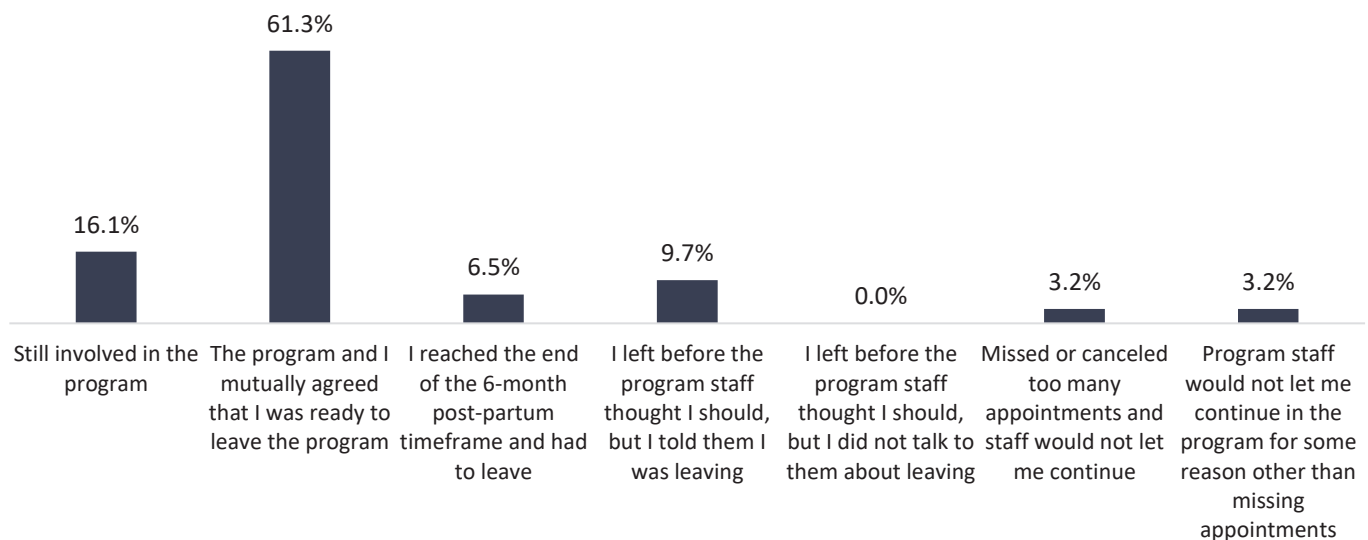
Section V. Client Experience with KY-Moms MATR Case Management

This section describes the experience of the KY-Moms MATR case management program assessed by clients who entered the KY-Moms MATR program before the birth of their baby and who completed a postnatal follow-up (n = 31): (1) manner in which the client left the program, and (2) satisfaction with KY-Moms MATR case management. Data for clients who entered the case management program after the birth of their baby and completed a baseline and follow-up (n = 10) are described separately.

Manner in Which the Client Left the Program

Clients reported they were very involved in the KY-Moms MATR program an average of 6.4 months (a range of 1 to 12 months).⁸⁸ About 16% of clients were still involved in the program at follow-up (see Figure V.1). Less than two-thirds of clients (61.3%) reported that the program and the client mutually agreed that the client was ready to leave the program. About 10% of the clients reported they left before the program staff thought they should, but told they staff they were leaving and 6.5% of clients reached the end of the 6-month postpartum timeframe and had to leave the program. One client reported leaving the KY-Moms program because of missing or canceling too many appointments reported and one client reported that program staff would not let them continue in the program for some reason other than missing appointments. None of the clients reported they left before the program staff thought they should, but did not talk to the staff about leaving.

FIGURE V.1. HOW DID THE CLIENT LEAVE THE KY-MOMS PROGRAM (N = 31)



⁸⁸ One client had invalid date for the number of months they were very involved in the program before the baby was born.

KY-Moms MATR Case Management Program Satisfaction and Experiences

Clients were asked questions about their satisfaction with the KY-Moms MATR case management services. The statements presented in Figure V.2 had different response options, with ratings ranging from 0 to 10. The higher values corresponded to the more positive responses and the lower values corresponded to the negative responses.

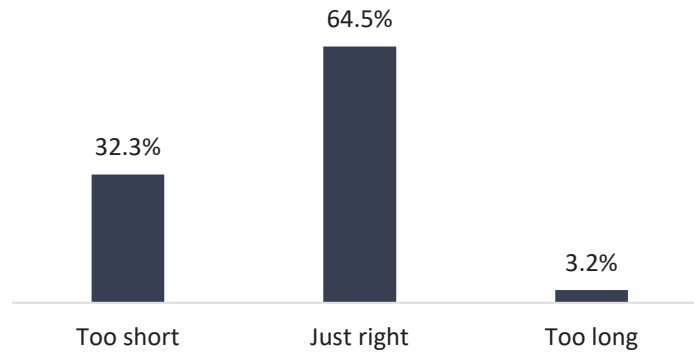
Figure V.2 shows the percent of clients who gave a rating between 8 and 10 for each item. Close to 94% of clients agreed that their expectations and hopes for the program were met. The majority of clients (90.4%) reported that the program approach and method were a good fit for them, they felt completely heard by their case manager when they told them about personal things, and they had a very strong connection with a counselor or staff person during the program. About 87% of clients reported they felt the program staff cared about them and their progress, that the program staff believed in them and that the program would work and that they had a lot of input into program goals, plans, and how they were progressing over time. In addition, 87.1% reported they worked on things that were most important to them and that they discussed everything with their case manager and held nothing back.

FIGURE V.2. RATINGS OF 8, 9, or 10 FOR PROGRAM EXPERIENCES WITH KY-MOMS (N = 31)



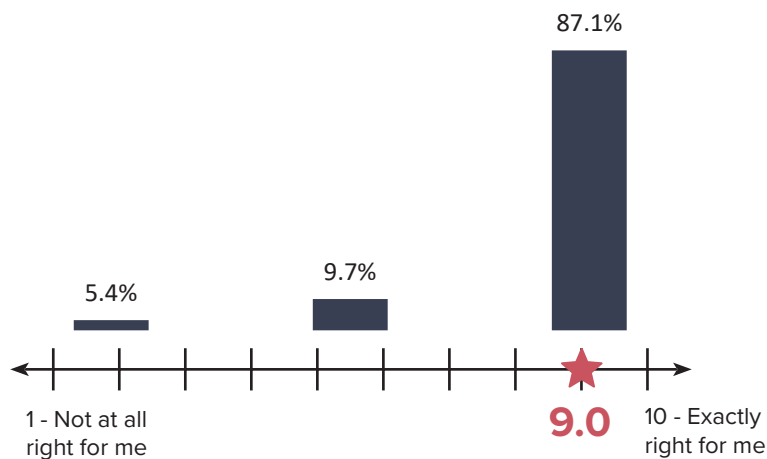
Clients were asked about their satisfaction with the length of the KY-Moms MATR program. Almost two-thirds of clients (64.5%) reported that the length of the program was just right (see Figure V.3). About one-third of clients (32.3%) reported that the length of the KY-Moms program was too short and 3.2% of clients reported the program was too long.

FIGURE V.3. CLIENTS' EVALUATION OF THE LENGTH OF THE KY-MOMS MATR PROGRAM (N = 31)



On a scale of 0 = “not at all right for me” to 10 = “exactly right for me”, clients rated their overall KY-Moms MATR experience, on average, as 9.0 (see Figure V.4). Overall, 87.1% gave a rating between 8 and 10, with 64.5% of clients giving the highest possible rating, 10.

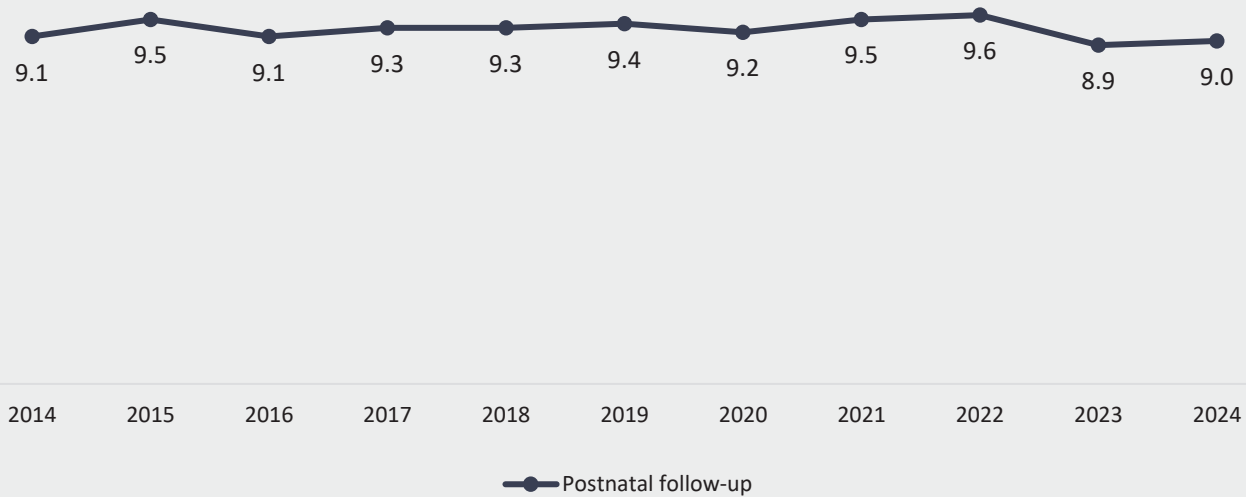
FIGURE V.4. RATING OF EXPERIENCE WITH KY-MOMS (N = 31)



Trends in Ratings of Experience with KY-Moms MATR at Postnatal Follow-up

KY-Moms MATR clients have consistently rated their experience with the program as an average of 9.1 or higher over the past 11 years, indicating that they are very satisfied with the KY-Moms MATR program. In 2023, however, the average experience rating decreased to 8.9.

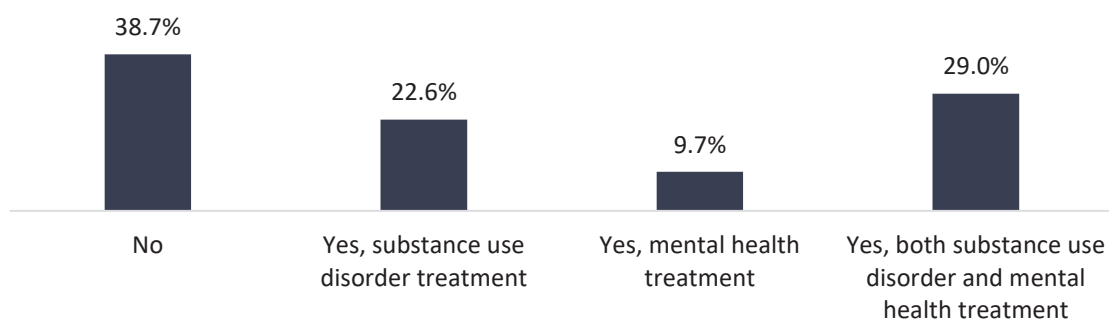
FIGURE V.5. AVERAGE SATISFACTION RATING OF THE KY-MOMS MATR PROGRAM AT POSTNATAL FOLLOW-UP, REPORT YEARS 2014-2024



Overall, the majority of clients (96.8%) reported that the KY-Moms program worked pretty well or extremely well for them. In addition, the majority of clients (93.5%) in the postnatal follow-up sample indicated they would refer a friend or family member to their treatment provider. Of the clients who reported they would refer a close friend or family member to the program ($n = 29$), 72.4% reported they would warn their friend or family member about certain things or tell them who to work with or who to avoid.

Close to 4 in 10 clients reported they did not receive either substance use disorder or mental health treatment while in the KY-Moms MATR program (see Figure V.6). Overall, 22.6% of clients reported they went to substance use disorder treatment, 9.7% went to mental health treatment, and 29.0% went to both substance use and mental health treatment.

FIGURE V.6. SUBSTANCE USE DISORDER TREATMENT OR MENTAL HEALTH COUNSELING WHILE IN KY-MOMS (N = 31)



About 19% of clients reported they had been in other treatment programs since ending their participation with the KY-Moms MATR program. Of those clients (n = 6), clients reported being involved in one other treatment program or episode.

Summary

At follow-up, clients were asked questions regarding their experiences with the KY-Moms MATR case management program. Overall, clients were involved in the program for almost 7 months and 16.1% were still involved in the program. Less than two-thirds of clients (61.3%) reported that the program and the client mutually agreed that the client was ready to leave the program and 9.7% reported they left before the program staff thought they should, but told they staff they were leaving. Almost two-thirds of clients (64.5%) reported that the length of the program was just right and on a scale of 0 to 10, clients rated their overall KY-Moms MATR experience, on average, as 9.0 with 64.5% of clients giving the highest possible rating, 10. The majority of clients (96.8%) reported that the KY-Moms program worked pretty well or extremely well for them and 93.5% indicated they would refer a friend or family member to their treatment provider. Close to 4 in 10 clients reported they did not receive either substance use disorder or mental health treatment while in the KY-Moms MATR program.

Client Experience with KY-Moms MATR Case Management for Post-birth KY-Moms MATR Clients

The majority of clients (80.0%) reported that the program and the client mutually agreed that the client was ready to leave the program and 20.0% of clients reported that program staff would not let them continue in the program for some reason other than missing appointments. On a scale of 1 to 10, clients rated the KY-Moms MATR program as an average of 9.7 with 80.0% of clients giving the highest possible rating of a 10. All of the post-birth clients agreed that the case management program worked pretty well or extremely well and would refer a close friend or family to the program. Only 2 clients would warn the friend or family member about certain things or tell them who to work with in the program or who to avoid.

Section VI. Conclusion

Areas of Success for Clients Who Had Not Given Birth to Their Babies Before Entering KY-Moms MATR (n = 31)

Substance Use

Close to two-thirds of pre-birth clients (63.3%) reported using illicit substances in the 30 days before becoming pregnant, compared to 16.6% of non-pregnant women age 15 and older reported using illicit substances in the past month in a national survey.⁸⁹ None of the clients reported illicit substance use in the past 30 days before the baseline or in the 30 days before the baby was born. This decrease in illicit substance use was sustained with only 6.7% using illicit substances in the 30 days before follow-up. Past-6-month illicit substance use decreased significantly at postnatal follow-up (9.7%) compared to the 6 months before clients found out about the pregnancy (67.7%).

A similar pattern was seen with reduction in alcohol use with clients reporting significantly less use while pregnant and in KY-Moms MATR and a sustained decrease after the birth of their baby. Forty percent of clients reported using alcohol in the 30 days before pregnancy. Further, 10.0% of KY-Moms MATR clients reported any alcohol use in the past 30 days at prenatal baseline and none reported alcohol use in the 30 days before the baby was born.

The percent of clients who reported smoking tobacco decreased slightly, but not significantly, from the 6 months before pregnancy to the past 6 months at follow-up. The number of clients who reported smoking decreased significantly from the 30 days before the client became pregnant to the 30 days before the baby was born. In addition, the average number of cigarettes clients smoked decreased from before the client found out about their pregnancy (18.8) to the past 30 days at prenatal baseline (11.6). The number of cigarettes decreased further in the 30 days before the baby was born (7.3) and in the past 30 days at follow-up (9.0). The percent of clients who gave birth to their babies before entering KY-Moms MATR also had lower rates of tobacco use at 6-month follow-up (40.0%) compared to before pregnancy (70.0%) and during pregnancy (60.0%).

Mental Health

Clients' mental health also showed significant improvements. Specifically, there were significant reductions in the number of women who met study criteria for depression and for anxiety in the six months since the birth of the baby. There was also a reduction in the average number of symptoms clients reported from baseline to follow-up among the clients who met criteria for depression or for anxiety at baseline.

⁸⁹ SAMHSA, Center for Behavioral Health Statistics and Quality. *2021 National Survey on Drug Use and Health. Table 8.25B—Types of illicit drug, tobacco product, and alcohol use in past month: among females aged 15 to 44; by pregnancy status, percentages, 2021*. Retrieved from <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.25b>.

Experiences with Violence and Trauma

Reported incidences of any intimate partner violence, such as psychological violence and coercive control, decreased significantly from the 6 months before clients found out they were pregnant (35.5%) to the past 6 months at postnatal follow-up (16.1%). Significantly fewer clients who completed a follow-up reported having experienced violence, been harmed by someone else, or made to feel unsafe by someone at postnatal follow-up (12.9%) compared to 38.7% in the 6 months before pregnancy. In addition, slightly fewer clients met study criteria for PTSD in the 6 months since the baby was born at postnatal follow-up (25.8%) compared to the six months before pregnancy (38.7%) though the increase was not significant.

Multidimensional Recovery Status

The multidimensional recovery status takes into account illicit substance use, employment, homelessness, criminal justice system involvement, depression and/or anxiety, partner violence, overall health, recovery support, and quality-of-life, and was computed at baseline and follow-up for clients who reported alcohol use and/or illicit substance use at prenatal baseline. At prenatal baseline, none of clients were classified as having all positive dimensions of recovery in the 6 months before pregnancy. At postnatal follow-up, 50.0% of clients were classified as all positive dimensions of recovery at follow-up.

Other Areas of Improvement

In addition to the improvement in targeted risk factors, there were improvements in other areas of the mothers' lives after becoming involved in the KY-Moms MATR program including significantly fewer average days in the past 30 days their physical health (4.5 vs. 1.3 days) and mental health (9.1 vs. 1.4 days) was not good at follow-up compared to baseline. Women also reported improved economic conditions with significantly fewer clients reporting they had difficulty meeting basic living needs as a result of financial problems in the past 6 months at follow-up (41.9%) compared to the past 6 months before pregnancy at prenatal baseline (64.5%).

Clients reported significantly higher quality-of-life at postnatal follow-up compared to prenatal baseline. Clients' level of satisfaction with the KY-Moms MATR was high. Specifically, the majority indicated that the program extremely well for them and, on a scale of 0 = "not at all right for me" to 10 = "exactly right for me", clients rated their overall KY-Moms MATR experience, on average, as 9.0. Additionally, the vast majority of clients reported agreed that their expectations and hopes for the program were perfectly met, the program approach and method were a good fit for them, they felt completely heard by their case manager when they told them about personal things, and they had a very strong connection with a counselor or staff person during treatment. In addition, the majority of clients (93.5%) indicated they would recommend the KY-Moms MATR program to a friend and reported that the KY-Moms program worked pretty well or extremely well for them (96.8%). Close to 19% of women reported they had been in other treatment programs since ending their participation with the KY-Moms MATR program.

Healthy Babies

In spite of significant risk factors (low income, high rates of unemployment, adverse childhood

experiences, experiences with violence, substance use, mental health problems and intimate partner violence) among clients who entered the KY-Moms MATR program before the birth of their baby, mothers had positive birth outcomes. Less than 20% of the babies born to KY-Moms MATR mothers were born premature and babies were an average gestation of 37.8 weeks. About 29% of babies were born with low birth weight (less than 5lbs, 8oz), but babies were an average of 6lbs, 13oz. In addition, babies were born with an average APGAR score of 8.7. None of the clients had babies with birth defects or anomalies (such as Down's syndrome, cleft palates, anencephaly, congenital heart failure, spina bifida, etc.). A little over 14% of babies were taken to NICU and 19.0% of babies were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit).

Areas of Concern for Clients Who Had Not Given Birth to Their Babies Before Entering KY-Moms MATR (N = 31)

Despite significant improvements in many areas of clients' lives, there was a minority of new mothers who had targeted risks such as tobacco use, mental health problems and PTSD, adverse childhood experiences, intimate partner violence, financial issues, and multidimensional recovery status at follow-up.

Tobacco Use

The majority of clients smoked during pregnancy (62.1% in the past 30 days at prenatal baseline and 51.7% in the 30 days before the baby was born), both of which are considerably higher than the 14.8% of pregnant women in Kentucky who reported smoking tobacco or the 10.1% of women in the U.S. Additionally, a high percentage of KY Moms-MATR mothers reported smoking tobacco in the 30 days before pregnancy (79.3%), and in the 30 days before postnatal follow-up (65.5%). These percentages were considerably higher than either the national estimate of 12.1% of women aged 15-44 who are self-reported smokers or the estimate of Kentucky women who report smoking (22.2%).⁹⁰ In addition, while fewer women who gave birth to their babies before entering the KY-Moms MATR program reported tobacco use at follow-up, 40.0% still reported use in the past 6 months.

Several studies have shown that childhood exposure to cigarette smoke contributes to the incidence of sudden infant death syndrome,^{91, 92} respiratory infections,⁹³ middle ear disease and

⁹⁰ United Health Foundation (2023). *America's Health Rankings 2023 Health of Women and Children Report*. <https://www.americashealthrankings.org/learn/reports/2023-health-of-women-and-children-report>

⁹¹ Anderson, H. R., & Cook, D. G. (1997). Passive smoking and sudden infant death syndrome: review of the epidemiological evidence. *Thorax*, 52(11), 1003–1009.

⁹² Zhang, K., & Wang, X. (2013). Maternal smoking and increased risk of sudden infant death syndrome: a meta-analysis. *Legal Medicine*, 15(3), 115-121.

⁹³ Strachan, D. P., & Cook, D. G. (1997). Health effects of passive smoking. 1. Parental smoking and lower respiratory illness in infancy and early childhood. *Thorax*, 52(10), 905–914.

adenotonsillectomy,⁹⁴ poor lung function and asthma,^{95, 96, 97} neurodevelopmental and behavioral problems,⁹⁸ and childhood cancer.^{99, 100, 101} As a result, there may be a need to increase postpartum support services for smoking cessation in the KY-Moms MATR program.

In addition, in the 6 months since the baby was born, 50.0% of clients reported e-cigarette use, which was a significant increase compared to the 6 months before pregnancy (23.3%). While many individuals may think that e-cigarette exposure to a child is less harmful than exposure to tobacco cigarettes, children exposed to the liquid nicotine were over 5 times more likely to be admitted to hospital and over 2.5 times greater odds of having a serious medical outcomes than children who were exposed to tobacco cigarettes.¹⁰² In addition, even after the implementation of the Child Nicotine Poisoning Prevention Act in 2016, there is an increased risk of children being exposed to liquid nicotine poisoning.¹⁰³

Mental Health, Intimate Partner Violence, and PTSD

Close to one-quarter of KY-Moms MATR pre-birth clients (22.6%) reported meeting study criteria for depression and/or anxiety in the 6 months after the baby was born. In addition, 40.0% of clients who already had their babies before entering the program met study criteria for comorbid depression and/or anxiety. Caring for a newborn and the typical new mother sleep deprivation may be especially difficult for women experiencing trauma, depression, and/or anxiety. Prior trauma and depression/anxiety may increase risk for, or exacerbate, postpartum depression. Postpartum depression is a common problem affecting millions of new mothers and though it usually presents itself around 4 weeks postpartum,¹⁰⁴ it can continue for as long as 14 months.¹⁰⁵ While it is mostly caused by the swing of hormones that occur after birth, a study by the Centers for Disease Control & Prevention found that postpartum depression was significantly associated with tobacco use in the last trimester, intimate partner violence,

⁹⁴ Strachan, D. P., & Cook, D. G. (1998). Health effects of passive smoking. 4. Parental smoking, middle ear disease and adenotonsillectomy in children. *Thorax*, 53(1), 50–56.

⁹⁵ Strachan, D. P., & Cook, D. G. (1998). Health effects of passive smoking. 9. Parental smoking and spirometric indices in children. *Thorax*, 53(1), 884–893.

⁹⁶ Von Mutius, E. (2002). Environmental factors influencing the development and progression of pediatric asthma. *Journal of Allergy and Immunology*, 109(6), 525–532.

⁹⁷ Burke, H., Leonardi-Bee, J., Hashim, A., Pine-Abata, H., Chen, Y., Cook, D. G., Britton, J., & McKeever, T. M. (2012). Prenatal and passive smoke exposure and incidence of asthma and wheeze: systematic review and meta-analysis. *Pediatrics*, 129(4), 735–744.

⁹⁸ Eskenazi, B., & Castorina, R. (1999). Association of prenatal maternal or postnatal child environmental tobacco smoke exposure and neurodevelopmental and behavioral problems in children. *Environmental Health Perspectives*, 107(12), 991–1000.

⁹⁹ John, E., Savitz, D., & Sandler, D. (1991). Prenatal exposure to parents' smoking and childhood cancer. *American Journal of Epidemiology*, 133(2), 123–132.

¹⁰⁰ Vasco, A. J., & Vainio, H. (1999). From in utero and childhood exposure to parental smoking to childhood cancer: a possible link and the need for action. *Human and Experimental Toxicology*, 18, 192–201.

¹⁰¹ Hofhuis, W., Jongste, J. C., & Merkus, P. (2003). Adverse health effects of prenatal and postnatal tobacco smoke exposure on children. *Archives of Disease in Childhood*, 88, 1086–1090.

¹⁰² Govindarajan, P., Spiller, H., Casavant, M., Chounthirath, T., & Smith, G. (2018). E-cigarette and liquid nicotine exposures among young children. *Pediatrics*, 141(5) e20173361; DOI: 10.1542/peds.2017-3361.

¹⁰³ Chang, J., Wang, B., Chang, C., & Ambrose, B. (2019). National estimates of poisoning events related to liquid nicotine in young children treated in US hospital emergency departments, 2013–2017. *Injury Epidemiology*, 59(5), 742–745.

¹⁰⁴ American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

¹⁰⁵ Wolkind S, Zajicek E, & Ghodsian J. (1990). Continuities in maternal depression. *International Journal of Family Psychiatry*, 1, 167–182.

and financial stress (including the use of Medicaid).^{106, 107} In addition, studies have found that marital status (being single), having a history of depression or anxiety as well as experiencing depression or anxiety during pregnancy can be risk factors for experiencing postpartum depression.^{108, 109} For women who have experienced mental health problems, targeted or adapted mental health services may be critical to preventing postpartum depression or reducing its severity.

At baseline, 35.5% of clients reported any form of intimate partner violence in the 6 months before they found out they were pregnant. At follow-up, 16.1% of KY-Moms MATR clients reported experiencing intimate partner violence in the past 6 months, which suggests that the intimate partner violence is an ongoing concern through the pregnancy and after the baby is born. Partner violence and trauma can contribute to mental health symptoms and can interfere with the parenting relationship.¹¹⁰ Infants can experience symptoms of trauma (eating problems, sleep disturbances, emotional developmental problems, poor health and irritability) as a result of witnessing or hearing intimate partner violence.¹¹¹ Thus, support and resources for trauma and partner violence is an issue that should be targeted during the pregnancy and postnatal period.

In addition, 25.8% of clients met study criteria for post-traumatic stress disorder in the six months since the baby was born. Research has found about 1 in 10 individuals with exposure to traumatic events developed PTSD at some point, with the highest risk of PTSD associated with assaultive violence (20.9%).¹¹² Individuals with PTSD have a high rate of alcohol/illicit substance use or dependence in their lifetime^{113, 114} and the overall prevalence of PTSD is high among individuals with substance use disorders.^{115, 116}

Adverse Childhood Experiences

At baseline, 97.1% of clients reported at least one adverse childhood experience such as neglect

¹⁰⁶ Centers for Disease Control and Prevention (2008). Prevalence of self-reported postpartum depressive symptoms — 17 states, 2004–2005. *MMWR*, 57(14), 361-366.

¹⁰⁷ Segre, L. S., O'Hara, M. W., Arndt, S., & Stuart, S. (2007). The prevalence of postpartum depression. *Social Psychiatry and Psychiatric Epidemiology*, 42(4), 316-321.

¹⁰⁸ O'Hara, M. & McCabe, J. (2013). Postpartum depression: current status and future directions. *Annual Review of Clinical Psychology*, 9, 379-407.

¹⁰⁹ Robertson, E., Grace, S., Wallington, T., & Stewart, D. E. (2004). Antenatal risk factors for postpartum depression: a synthesis of recent literature. *General Hospital Psychiatry*, 26(4), 289-295.

¹¹⁰ Dubowitz, H., Black, M. M., Kerr, M. A., Hussey, J. M., Morrel, T. M., Everson, M. D., & Starr, R. H. (2001). Type and timing of mothers' victimization: Effects on mothers and children. *Pediatrics*, 107, 728-735.

¹¹¹ Bogat, G. A., DeJonghe, E., Levendosky, A. A., Davidson, W. S., & von Eye, A. (2006). Trauma symptoms among infants exposed to intimate partner violence. *Child Abuse & Neglect*, 30(2), 109-125.

¹¹² Breslau, N., Kessler, R., Chilcoat, H., Schultz, L., Davis, G., & Andreski, P. (1998). Trauma and posttraumatic stress disorder in the community. The 1996 Detroit Area Survey of Trauma. *Archives of General Psychiatry*, 55(7), 626-632.

¹¹³ Kessler, R., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048-1060.

¹¹⁴ Regier, D., Farmer, M., Rae, D., Locke, B., Keith, S., & Judd, L. (1990). Comorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiologic Catchment Area (ECA) Study. *Journal of the American Medical Association*, 264, 2511-2518.

¹¹⁵ Cottler, L., Compton, W., Mager, D., Spitznagel, E., & Janca, A. (1992). Posttraumatic stress disorder among substance users from the general population. *American Journal of Psychiatry*, 149, 664-670.

¹¹⁶ Najavits, L., Runkel, R., Neuner, C., Frank, A., Thase, M., Crits-Christoph, P., & Blaine, J. (2003). Rates and symptoms of PTSD among cocaine-dependent patients. *Journal of Studies on Alcohol*, 64, 601-606.

or violence before the age of 18. The average number of ACE in the sample of KY Moms-MATR clients was 5.4, with 66.2% of women reporting 4 or more ACE. Of particular importance, prior research shows the risk of alcohol or illicit substance use increases as the number of adverse childhood experiences increases.^{117, 118, 119, 120} Higher ACE scores are associated with initiating alcohol use and smoking in adolescence.^{121, 122} Additionally, experiencing more types of childhood violence is associated with greater likelihood of experiencing an unintended first pregnancy among women.¹²³ Poor self-rated health as well as health problems such as ischemic heart disease, cancer, and liver disease were more prevalent in those who reported a higher number of ACEs.¹²⁴ Higher ACE scores have been linked to having a higher number of health risk factors for leading causes of death in adults and a higher rate of mortality in women.¹²⁵

Financial Issues

With 61.3% of KY-Moms MATR women reporting being currently unemployed and 41.9% of women reporting difficulty meeting basic needs because of financial reasons in the 6 months since the baby was born, economic hardship is a continuing problem for many of these new mothers.

As mentioned previously, financial stress has been linked to the risk for developing postpartum depression (and vice versa). Research suggests that financial stress has an adverse effect on parents' emotions and behaviors, which, in turn, may impact their parenting.¹²⁶ In addition, children born to parents with limited economic resources have less to invest in the development of the child because they must invest a larger proportion of their resources into basic living needs (e.g., food, shelter, utilities, medical needs).¹²⁷ Therefore, providing referrals and support to help new mothers with financial difficulties may improve basic living situations for many mothers and promote continued long-term positive results for both mother and infant.

¹¹⁷ Anda, R., Felitti, V., Walker, J., Whitfield, C., Bremner, J., Perry, B., Dube, S., & Giles, W. (2006). The enduring effects of abuse and related adverse experiences in childhood: a convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 56(3), 174–86.

¹¹⁸ Dube, S., Felitti, V., Dong, M., Giles, W., & Anda, R. (2003b). The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900. *Preventative Medicine*, 37, 268-277.

¹¹⁹ Dube, S., Felitti, V., Dong, M., Chapman, D., Giles, W., & Anda, R. (2003a). Childhood abuse neglect and household dysfunction and the risk of illicit drug use: The Adverse Childhood Experiences Study. *Pediatrics*, 111, 564–572.

¹²⁰ Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., & Marks, J. (1998). The relationship of adult health status to childhood abuse & household dysfunction. *American Journal of Preventative Medicine*, 14(4), 245-258.

¹²¹ Anda, R., Croft, J., Felitti, V., Nordenberg, D., Giles, W., Williamson, D., & Giovino, G. (1999). Adverse childhood experiences and smoking during adolescence and adulthood. *Journal of the American Medical Association*, 282, 1652–1658.

¹²² Dube, S., Miller, J., Brown, D., Giles, W., Felitti, V., Dong, M., & Anda, R. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*, 38(4), 444.e1-10.

¹²³ Dietz, P., Spitz, A., Anda, R., Williamson, D., McMahon, P., Santelli, J., Nordenberg, D., Felitti, V., & Kendrick, J. (1999). Unintended pregnancy among adult women exposed to abuse or household dysfunction during their childhood. *Journal of the American Medical Association*, 282, 1359–1364.

¹²⁴ Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., & Marks, J. (1998). The relationship of adult health status to childhood abuse & household dysfunction. *American Journal of Preventative Medicine*, 14(4), 245-258.

¹²⁵ Chen, E., Turiano, N., Mroczek, D., & Miller, G. (2016). Association of reports of childhood abuse and all-cause mortality rates in women. *Journal of the American Medical Association*, 73(9), 920-927.

¹²⁶ Bogat, G. A., DeJonghe, E., Levendosky, A. A., Davidson, W. S., & von Eye, A. (2006). Trauma symptoms among infants exposed to intimate partner violence. *Child Abuse & Neglect*, 30(2), 109-125.

¹²⁷ Conger, R. D., & Conger, K. J. (2008). Understanding the processes through which economic hardship influences families and children. *Handbook of Families and Poverty*, 64-81.

Multidimensional Recovery Status

Even though there were more clients who had all positive dimensions of recovery at follow-up when compared to baseline, half of KY-Moms MATR clients were still classified as not having all nine positive dimensions of recovery. At follow-up, the dimensions of recovery with the fewest percent of clients reporting were for being employed full- or part-time, not meeting study criteria for depression and/or anxiety, and no partner violence.

Program Issues

While pre-birth clients were largely satisfied with their program experience, 72.4% of follow-up clients reported that they would warn their friend or family member about certain things or tell them who to work with or who to avoid. Almost one-third of clients reported that the length of the program was too short and 3.2% of clients reported that the length of the program was too long. Less than 10% of clients reported they only received mental health treatment, and 29.0% received both substance use disorder and mental health treatment though 58.1% of clients met study criteria for either depression or anxiety (or both). Over three-quarters of clients reported using illicit substances and/or alcohol in the 6 months before pregnancy, but 48.4% reported they did not receive substance use treatment only. Likewise, 39% of clients reported they did not receive either substance use disorder or mental health treatment while in the KY-Moms MATR program and only 29% of clients received both substance use disorder or mental health treatment.

Trend Report Summary

Trend reports provided throughout this report on clients who were still pregnant when they entered KY-Moms MATR reflect the importance of annual data collection. These data trends can show consistency, improvement, or highlight areas that may need further attention in the KY-Moms MATR program. Trend analysis of substance use appears to show an overall steady increase in clients reporting past-6-month illicit substance use at prenatal baseline. While the percent of clients reporting illicit substance use decreased significantly each year at follow-up compared to baseline, in 2018 and 2019 the percent of clients reporting illicit substance use at follow-up increased slightly. In 2023, the percent of clients reporting past-6-month illicit substance use at follow-up increased again.

In addition, a ten-year trend analysis shows that rates of depression and/or anxiety has increased overall at prenatal baseline but have appeared to peak in 2020 before decreasing in 2021. Rates of depression and/or anxiety at follow-up have fluctuated at postnatal follow-up in the past; however, in 2021, the percent of women meeting criteria for depression and/or anxiety has higher compared to previous years. In 2022, however, the number of women who met study criteria for depression and/or anxiety decreased to 15.4% at postnatal which could be a result of the small sample size during this reporting year. Further, with trend analysis, findings show that the number of clients who have reported any intimate partner violence at prenatal baseline had been fairly consistent from 2015 to 2019, but decreased in 2022 and increased again in 2023.

The percent of clients reporting difficulty meeting basic household needs at follow-up increased briefly in 2018, but has decreased since. In 2024, however, the percent of clients who reported

having difficulty meeting basic living needs at follow-up increased compared to previous years. In addition, overall, the difference between prenatal baseline and postnatal follow-up for unemployment status was stable over the previous seven years. In 2022, however, more clients reported they were not currently employed at prenatal baseline compared to follow-up.

Clients' average ratings of their current health has remained fairly consistent at both baseline and follow-up from 2015 to 2019. However, in 2020, the average current health rating was the same at baseline and follow-up, and in 2022 and 2023, clients' average health rating returned to being higher at follow-up compared to baseline. In addition, for trends in the number of chronic health problems show in 2020 and 2021 there appear to be more clients that reported just one health problem compared to no health problems or multiple health problems. In 2022, nearly two thirds, of clients reported having no chronic health problems, which was considerably more compared to the previous 8 years.¹²⁸ In 2024, the percent of clients reporting no health problems was higher compared to having one problem or two or more health problems.

The number of clients who have reported chronic pain in the 6 months before pregnancy remained relatively constant at baseline (around one-quarter of clients) until 2022 when very few clients reported chronic pain. In 2023, the number of clients reporting chronic pain increased slightly compared to 2022. The percent of clients reporting chronic pain at follow-up increased further in 2024. In addition, the average number of poor physical health days in the past 30 days clients have reported were consistent at baseline but have appeared to slightly increase at follow-up beginning in 2020. In 2023, however, the number of poor physical health days decreased. In terms of the average number of days clients reported poor mental health, the difference in the number of days reported at baseline and at follow-up were relatively stable over the years with the exception of 2018 when the number of poor mental health days at follow-up was similar to baseline. In 2024, there was a decrease in the number of poor mental health days compared to previous years.

Further, clients' ranking of their quality-of-life has been consistent through the years for baseline and has appeared to increase slightly at follow-up. Trends also show that the average number of people clients can count on for emotional support has increased over the years at baseline but has fluctuated at follow-up since 2019.

Trend analysis also shows that KY-Moms MATR clients have been consistently and highly satisfied with their experiences in the program, with clients consistently ranking their experience with the program as an average of 9.3 (with 10 being the best possible rating) or higher over the past 11 years.

¹²⁸ This could be a result of the small follow-up sample size in the 2022 report year.

Areas of Success for Clients Who Had Given Birth to Their Babies Before Entering KY-Moms MATR (N = 10)

Substance Use

In the 6 months before pregnancy, 90.0% of post-birth clients reported using illicit substances and/or alcohol and when they were pregnant 70.0% of post-birth clients reported using illicit substances and/or alcohol. In the 6 months before the post-birth follow-up interview, 10.0% of clients reported using illicit substances and/or alcohol. At post-birth baseline, 20.0% of clients reported ever injecting any illicit substances and none of the clients reported injecting a substance in the past 30 days. At post-birth follow-up, none of the clients reported injecting illicit substances in the past 6 months. Seventy percent of clients reported they had ever received buprenorphine/naloxone, naltrexone, or methadone as part of a medication-assisted treatment for their symptoms of a substance use disorder at post-birth baseline and of these clients (n = 7), 28.6% participated in medication-assisted treatment in the past 6 months. Three clients reported receiving medication-assisted treatment in the past 6 months at follow-up. Seventy percent of post-birth clients reported they used tobacco in the 6 months before pregnancy, 60.0% of clients reported using tobacco during pregnancy, at post-birth follow-up, 40.0% of clients reported tobacco use.

Mental Health

Eighty percent of post-birth KY-Moms MATR clients 6 months before pregnancy and 40.0% of clients in the past 6 months at post-birth follow-up met study criteria for comorbid depression and/or anxiety. Thirty percent of post-birth women met study criteria for post-traumatic stress disorder at baseline and 10.0% met study criteria for post-traumatic stress disorder at follow-up. Ten percent of clients at baseline and follow-up reported they used substances to reduce stress. At both post-birth baseline and follow-up, 20.0% of clients were classified as having severe insomnia.

Intimate Partner Violence

Including fear of a current or ex-partner, 10% of the clients who had their babies prior to entering KY-Moms MATR reported they felt unsafe at baseline and at follow-up. In addition, 30% of post-birth clients in the 6 months before pregnancy and 10.0% of post-birth clients during pregnancy, reported experiencing any form of intimate partner violence. None of the clients reported any form of intimate partner violence at follow-up.

Multidimensional Recovery

At post-birth baseline, 22.2% of clients who reported alcohol and/or illicit substance use in the 6 months before pregnancy were classified as having all positive dimensions of recovery. At follow-up, 55.6% of clients were classified as all positive dimensions of recovery at follow-up. At follow-up, the factor with the lowest percent of individuals reporting the positive dimensions of recovery were for not meeting study criteria for depression and/or anxiety.

Other Areas of Improvement

At baseline, 10.0% of post-birth mothers (one mother) reported they were currently working full-time and at follow-up, 60% of post birth mothers reported they were currently working full-time. The majority of post-birth clients received public assistance at both baseline (90.0%) and follow-up (80.0%). In the 6 months before becoming pregnant, 80.0% of clients reported they had difficulty meeting at least one of the basic living needs for financial reasons and 50.0% of clients reported difficulty meeting basic living needs in the past 6 months at postnatal follow-up. In addition, 40.0% of post-birth clients reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy. At follow-up, 10.0% of clients (one client) reported they had difficulty meeting health care needs in the past 6 months at follow-up.

Only one post-birth client, at baseline and follow-up, reported having a major physical health problem that was not being currently treated. Twenty percent of clients in the 6 months before pregnancy and none of the clients at follow-up reported experiencing chronic pain. Clients reported an average of 6.2 days out of the past 30 days their physical health was not good at post-birth baseline and 2.6 days at follow-up. The average number of days clients reported their mental health was not good was 15.7 days at post-birth baseline and 5.6 days at postnatal follow-up.

Post-birth clients rated their current quality-of-life at baseline as a 7.3, on average. The average rating of quality-of-life at postnatal follow-up was an average of 8.1. The majority of post-birth clients in the past 30 days at baseline (80.0%) and 90.0% of clients at postnatal follow-up reported they were extremely or fairly satisfied with the level of emotional support they received from others.

Healthy Babies

None of the babies who were born to mothers entering KY-Moms MATR after birth were born prematurely and 12.5% of babies were born with low birthweight (less than 5lbs, 8oz). Specifically, the average birth weight of babies born to post-birth mothers was 7lbs. Two babies were taken to NICU, but none were born with a birthing problem such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (not including being admitted to the neonatal intensive care unit).

Areas of Concern for Clients Who Had Given Birth to Their Babies Before Entering KY-Moms MATR (N = 10)

Tobacco Use

Similar to pre-birth clients, a high percent of women who had their babies prior to entering KY-Moms MATR reported tobacco use during pregnancy (60.0%) and at follow-up (40.0%).

Mental Health and Adverse Childhood Experiences

While fewer clients met study criteria for co-morbid depression and anxiety at follow-up, compared to baseline, 40.0% of post-birth clients still met criteria for co-morbid depression and anxiety at follow-up. In addition, at follow-up, 20.0% of clients were classified as having insomnia. At baseline, 92.3% of clients reported at least one adverse childhood experience such as neglect or violence before the age of 18. The average number of ACE in the sample of KY Moms-MATR clients was 5.4, with 65.4% of women reporting 4 or more ACE.

Financial Issues

Though fewer clients who gave birth to their babies before entering the program reported difficulty meeting basic needs at follow-up compared to the 6 months becoming pregnant, 50.0% of these women still reported difficulty meeting basic living needs in the past 6 months at postnatal follow-up.

Limitations

There are several limitations to this outcome study. For this report year compared to previous years, a considerably smaller number of clients completed a baseline (n = 63 pre-birth ,and n = 26 post-birth) or a follow-up (n = 31 pre-birth, and n = 10 post-birth). A smaller number of clients at baseline means that there is a smaller pool of eligible follow-up clients. In addition to fewer clients completing a baseline assessment, the percent of baseline clients not agreeing to be contacted for follow-up has increased.

TABLE 1. NUMBER AND PERCENT OF CLIENTS CONSENTING TO FOLLOW-UP FOR EACH REPORT YEAR

Report year	Baseline sample size	Clients NOT consenting to follow-up
2018	181	16 (10.5%)
2019	177	0 (0.0%)
2020	158	10 (6.3%)
2021	131	7 (5.3%)
2022	73	12 (16.4%)
2023	80	17 (21.3%)
2024	68	13 (19.1%)

The sample size is small in this report should be considered when interpreting the findings. To increase the statistical power to detect change in this small sample size, the alpha for statistical tests was increased to $p < .10$, instead of $p < .05$.

In addition, this outcome study does not involve random assignment to the KY-Moms MATR program. Although it would be ethically and procedurally difficult to conduct a random assignment of pregnant women at risk for substance use to participate in a program such as KY-Moms MATR, random assignment could provide more confidence that the birth outcomes of

these mothers are directly due to interventions provided by KY-Moms MATR. Also, this study has no control group and no comparison group in the birth data file with which to compare KY-Moms MATR clients.

Also, the majority of data for this report is self-reported by KY-Moms MATR clients. Recent research has supported findings about the reliability and accuracy of individuals' reports of their substance use.^{129, 130, 131, 132} Skepticism about the validity of self-report data has prompted investigations of the concordance of self-report data on sensitive issues such as substance use with more objective measures, such as urinalysis or blood serum analysis of illicit substances and alcohol. In most of these studies the concordance or agreement is acceptable or high.^{133, 134, 135, 136} In several studies, when there were discrepant results, the majority were self-reported substance use that was not detected with urinalysis or blood serum analysis.^{137, 138, 139} Underreporting of substance use occurs less in certain conditions, such as, when assurances of confidentiality can be made and when positive results are not associated with negative consequences.¹⁴⁰ During the informed consent process at the beginning of the KY-Moms MATR follow-up survey, interviewers tell participants that the research team operates independently from the KY-Moms MATR program and individuals' responses will be reported in group format and will not be identifiable at the individual level. These assurances of confidentiality and lack of affiliation with the program staff may minimize individuals' concern about reporting stigmatizing behavior or conditions. In addition, studies of pregnant women and substance use indicate that

¹²⁹ Del Boca, F.K., & Noll, J.A. (2000). Truth or consequences: The validity of self-report data in health services research on addictions. *Addiction*, 95, 347-360.

¹³⁰ Harrison, L. D., Martin, S. S., Enev, T., & Harrington, D. (2007). *Comparing drug testing and self-report of drug use among youths and young adults in the general population* (DHHS Publication No. SMA 07-4249, Methodology Series M-7). Rockville, MD: Substance abuse and Mental Health Services Administration, Office of Applied Studies.

¹³¹ Rutherford, M.J., Cacciola, J.S., Alterman, A.I., McKay, J.R., & Cook, T.G. (2000). Contrasts between admitters and deniers of drug use. *Journal of Substance Abuse Treatment*, 18, 343-348.

¹³² Shannon, E.E., Mathias, C.W., Marsh, D.M., Dougherty, D.M., & Liguori, A. (2007). Teenagers do not always lie: Characteristics and correspondence of telephone and in-person reports of adolescent drug use. *Drug and Alcohol Dependence*, 8(90), 288-291.

¹³³ Buchan, B. J., Dennis, M. L., Tims, F. M., & Diamond, G. S. (2002). Cannabis use: Consistency and validity of self-report, on-site urine testing and laboratory testing. *Addiction*, 97(Suppl. 1), 98-108.

¹³⁴ Denis, C., Fatséas, M., Beltran, V., Bonnet, C., Picard, S., Combourieu, I., Daulouède, J., & Auriacombe, M. (2012). Validity of the self-reported drug use section of the Addiction Severity and associated factors used under naturalistic conditions. *Substance Use & Misuse*, 47, 356-363.

¹³⁵ Rowe, C., Vittinghoff, E., Colfax, G., Coffin, P. O., & Santos, G. M. (2018). Correlates of validity of self-reported methamphetamine use among a sample of dependent adults. *Substance Use & Misuse*, 53(10), 1742-1755.

¹³⁶ Rygaard Hjorthoj, C., Rygaard Hjorthoj, A., & Nordentoft, M. (2012). Validity of Timeline Follow-Back for self-reported use of cannabis and other illicit substances—Systematic review and meta-analysis. *Addictive Behaviors*, 37, 225-233.

¹³⁷ Babor, T. F., Steinberg, K., Anton, R., & Del Boca, F. (2000). Talk is cheap: Measuring drinking outcomes in clinical trials. *Journal of Studies on Alcohol*, 61, 53-63.

¹³⁸ Hilario, E. Y., Griffin, M. L., McHugh, R. K., McDermott, K. A., Connery, H. S., Fitzmaurice, G. M., & Weiss, R. D. (2015). Denial of urinalysis-confirmed opioid use in prescription opioid dependence. *Journal of Substance Abuse Treatment*, 48, 85-90.

¹³⁹ Weiss, R. D., Najavits, L. M., Greenfield, S. F., Soto, J. A., Shaw, S. R., & Wyner, D. (1998). Validity of substance use self-reports in dually diagnosed outpatients. *American Journal of Psychiatry*, 155(1), 127-128.

¹⁴⁰ Hilario, E. Y., Griffin, M. L., McHugh, R. K., McDermott, K. A., Connery, H. S., Fitzmaurice, G. M., & Weiss, R. D. (2015). Denial of urinalysis-confirmed opioid use in prescription opioid dependence. *Journal of Substance Abuse Treatment*, 48, 85-90.

self-report is as good as urine tests in identifying illicit substance use.^{141, 142}

Finally, clients are self-selected and voluntarily agree to participate in KY-Moms MATR case management rather than being randomly or mandated to participate. While these women report high risk factors such as substance use, mental health and experience with interpersonal violence, there is likely a segment of the pregnant population who are heavier substance users, have more severe mental health problems, or are at an even greater risk for safety compared to the women who voluntarily enter KY-Moms MATR. Women with more severe substance use may be more hesitant to seek or accept treatment because they either do not accept they have symptoms of substance use disorder, fear having the child removed from their custody, or fear being prosecuted.¹⁴³ On the other hand, the fact that this program is voluntary, but recruits and retains high risk women, is a strength of the program. High-risk pregnant mothers in other state-funded substance disorder programs in Kentucky are referred by the courts or the child protective service agency, the Department for Community Based Services. Recruiting and retaining clients who have no external motivating factor poses challenges to service providers who must rely on their interpersonal skills to engage clients in services.

Conclusion

This study provides support of the efforts by the Kentucky Division of Substance Use Disorder to address the rising statewide and national problem of illicit substance-exposed pregnancies given the positive changes in the clients' substance-using behavior once interventions were initiated. Overall, pregnant women participating in KY-Moms MATR services significantly improved on all three targeted areas of behavioral health and had birth outcomes similar to the general population of mothers. Further, clients were overwhelmingly positive about the program. They indicated they would refer their friends or others to the program and felt like what they gained from the program helped them have a healthier pregnancy, improved their birth outcomes, and provided valuable information about the risk of substance use during pregnancy.

One of the most important policy questions implicit in this study is about the months and early years of the child's life after the mother has given birth. Mothers who persist in or return to substance-using lifestyles are at great risk for child neglect and other forms of child maltreatment,^{144, 145} as well as for setting the stage for their children to use and misuse alcohol and illicit substances as adolescents and adults.^{146, 147} Thus, reducing risk during the early

¹⁴¹ Christmas, J., Nislely, J., Dawson, K., Dinsmoor, M., Weber, S., Schnoll, S. (1992). Comparison of questionnaire screening and urine toxicology for detection of pregnancy complicated by substance use. *Obstetrics & Gynecology*, 80, 750-754.

¹⁴² Yonkers, K. A., Howell, H. B., Gotman, N., & Rounsaville, B. J. (2011). Self-report of illicit substance use versus urine toxicology results from at-risk pregnant women. *Journal of Substance Use*, 16(5), 372-380.

¹⁴³ Tuchman, E. (2010). Women and addiction: The importance of gender issues in substance abuse research. *Journal of Addictive Diseases*, 29(2), 127-138.

¹⁴⁴ McKeganey, N., Barnard, M. & McIntosh, J. (2002) Paying the price for their parent's addiction: meeting the needs of the children of drug using parents. *Drugs: Education, Prevention and Policy*, 9, 233-246.

¹⁴⁵ Barnard, M., & McKeganey, N. (2004). The impact of parental problem drug use on children: what is the problem and what can be done to help? *Addiction*, 99(5), 552-559.

¹⁴⁶ Ireland, T. O., Smith, C. A., & Thornberry, T. P. (2002). Developmental issues in the impact of child maltreatment on later delinquency and drug use. *Criminology*, 40(2), 359-400.

¹⁴⁷ Biederman, J., Faraone, S. V., Monuteaux, M. C., & Feighner, J. A. (2000). Patterns of alcohol and drug use in adolescents can be predicted by parental substance use disorders. *Pediatrics*, 106(4), 792-797.

development of the child by supporting the mothers is in large part contingent on continued services and engagement with recovery and parenting supports. As Kentucky continues to work toward more integrated service provisions under the umbrella of behavioral health, the use of all possible resources will be important both for these mothers and their newborns. The KY-Moms MATR program plays a critical role toward this end.

Appendix A: Methods

This evaluation project collects data from pregnant women in Kentucky who are at high risk for substance use disorder and participate in KY-Moms MATR case management services. This year, thirteen community mental health centers participate in the program and collect baseline data on each client entering the KY-Moms MATR case management services program. Data analysis has three main phases: (1) change in behavior and risks over time, using the prenatal baseline information and the postnatal follow-up interviews among clients who gave birth, and (2) description of KY-Moms MATR clients' birth outcome information from the Vital Statistics birth outcome data set.

Baseline Assessment

The baseline assessment is an electronic, evidence-based interview developed by the University of Kentucky Center on Drug and Alcohol Research (UK CDAR) in collaboration with KY-Moms MATR program administrators. Baseline information is collected during face-to-face client interviews with case managers when the client enters the program and interview responses are electronically submitted to UK CDAR. At the end of the baseline interview, clients are told about the opportunity to participate in a follow-up telephone interview that is conducted independently from the program by the UK CDAR Behavioral Health Outcome Studies (BHOS) staff approximately 6 months after the birth of their baby. Clients who volunteer to participate in the follow-up interview provide locator information including phone numbers of two relatives or friends who could help UK CDAR locate the client for the postnatal follow-up interview. Overall, a total of 68 pre-birth baselines were completed between June 2021 and October 2022 with women who had due dates that would result in target months for a follow-up interview between July 2022 and June 2023. These women completed a KY-Moms MATR case management baseline when they were an average of 24 weeks into their pregnancy (minimum = 6 weeks, maximum = 39 weeks).¹⁴⁸

Twenty-six clients who already had their babies prior to entering KY-Moms MATR completed a post-birth baseline between January 2022 and December 2022 and were eligible for follow-up which was targeted six months after their baseline interview.¹⁴⁹

Method of Determining Follow-up Sample

Follow-up Assessment. KY-Moms MATR pre-birth clients are eligible for the follow-up assessment if: (1) the client consents to be contacted by UK CDAR BHOS staff, (2) the prenatal baseline is submitted to UK CDAR within 30 days of completion, (3) the client is in the program at least 30 days before the birth of the baby, and (4) adequate contact information is provided for follow-up staff to use to attempt to locate and contact them for the follow-up interview. These individuals are then included in the sample of women to be followed up. The target month for a

¹⁴⁸ The average number of days between when clients were admitted to the KY-Moms MATR program and when their baseline surveys were completed was 13.5 days, with a minimum of 0 days and a maximum of 104 days.

¹⁴⁹ Babies of clients born to mothers who entered KY-Moms MATR after their babies were born were an average of 53.4 days old (min. = 0, max. = 189).

follow-up assessment is computed by adding 6 months (180 days) to the self-reported due date the client provides at prenatal baseline. In reality, there was an average of 5.5 months between the due date and the date of the follow-up assessment (with a mode of 4 months). For women who had their babies before entering the program, the target month for a follow-up assessment is computed by adding 6 months (180 days) to the baseline date.

For clients who have given birth to their baby prior to entering the KY-Moms MATR program, eligibility is similar to the pre-birth clients with exception of being in the program at least 30 days. The target month for a post-birth follow-up assessment is computed by adding 6 months (180 days) to the completion date of the post-birth baseline. In reality, there was an average of 7.0 months between the intake date and the date of the follow-up assessment (with a mode of 5 months).

Follow-up interviews are conducted on the telephone by the UK CDAR BHOS research team and are independent of KY-Moms MATR case management services in order to confidentially examine changes in clients' behavior and risks. In addition, UK CDAR BHOS obtained a Federal Certificate of Confidentiality from the National Institute of Health, which states that BHOS researchers cannot be forced to disclose any information which may identify the client, even by court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings.¹⁵⁰ The follow-up interviews examine program satisfaction, current substance use, intimate partner violence, physical and mental health status, employment, and recovery supports.

The UK CDAR BHOS team begins their efforts to locate and conduct follow-up interviews with women pulled into the follow-up sample one month before the target month for their follow-up interview and continue their efforts until the women have completed the follow-up interview or for two months after the target month, whichever comes first. For example, if a woman has a targeted follow-up interview in August, the research team will begin their attempts to locate and contact her in July (i.e., one month before the targeted month for her follow-up interview). If the team is unable to locate this woman, they will continue their efforts until the end of October (i.e., two months after her target month for the follow-up interview).

When the follow-up team contacts women, they must determine additional eligibility criteria before completing the pre-birth follow-up interview such that women who are living in a controlled environment (e.g., jail, prison, residential treatment) are not eligible for completing the follow-up interview. As mentioned previously, 68 baseline surveys were completed between June 2021 and October 2022 and had a targeted month for follow-up in FY 2023 (July 2022 – June 2023). Of these clients who were in the targeted window to complete a postnatal follow-up, 13 did not agree to be contacted for the follow-up survey, and 21 clients were ineligible for follow-up staff to begin locating as a result of prenatal baseline data: 3 clients were in the program less than 30 days, 15 clients had invalid contact data, and 3 clients had their baseline submitted after the follow-up sample was pulled. Of the remaining eligible clients ($n = 34$), 3 clients (8.8%) had a final follow-up status of expired because interviewers were not able to complete a follow-up survey with them during the follow-up period. Overall, UK CDAR staff completed follow-up interviews with 31 clients, representing a follow-up rate of 91.2%.

¹⁵⁰ The exception to this is if harm to the client, harm to others, or child abuse is disclosed to the researchers.

The 26 post-birth baseline surveys completed between January 2022 and December 2022 had a targeted month for follow-up in FY 2023 (July 2022 – June 2023). Of these clients who were in the targeted window to complete a 6-month follow-up, 11 did not agree to be contacted for the follow-up survey, one client was ineligible for follow-up staff because she had invalid contact data, and 2 clients had their baseline submitted after the follow-up sample was pulled. Of the 12 post-birth clients eligible for follow-up, 2 clients had a final follow-up status of expired because interviewers were not able to complete a follow-up survey with them during the follow-up period. Overall, UK CDAR staff completed follow-up interviews with 10 post-birth clients, representing a follow-up rate of 83.3% (see Table AA.1).

Completing follow-up surveys continue to be a challenge in this fiscal year for three main reasons. First, although scam-related or robocalls decreased at the beginning of the pandemic they are back up. In fact, so far in 2023, approximately 42.2 billion robocalls were placed which is about 128.5 calls per person.¹⁵¹ This means people are less likely to answer the phone and more skeptical of providing us with information to confirm their identity. Second, there has been some staff turnover and it is time consuming to hire and train new staff. UK CDAR senior leadership have implemented several key changes and monitor the follow-up rates regularly to maintain improvements or to initiate changes to overcome challenges. A third reason is there is a smaller pool of individuals to include in the follow-up sample because of the lower number of completed baselines and percent who agree to be followed up.

TABLE AA.1. FOLLOW-UP SAMPLE AND EFFORTS

	Number of pre-birth baselines (n = 68)	Number of post-birth baselines (n = 26)
Did not consent to follow-up	13	11
	n = 55	n = 15
Not eligible for follow-up sample	21	1
Other reasons based upon prenatal baseline (<i>i.e., invalid locator data, client not in program long enough, baseline submission more than 30 days after completion</i>)	18	1
Data submitted after follow-up sample pulled for the month.....	3	2
Total number of baseline surveys eligible for follow-up	34	12
Expired cases (<i>i.e., never contacted, did not complete the survey during the follow-up period</i>).....	3	2
Expired rate ((the number of expired cases/eligible cases)*100)	8.8%	16.7%
Declined.....	0	0
Declined rate ((the number of refusal cases/eligible cases)*100) ...	0.0%	0.0%
Completed follow-up interviews	31	10
Follow-up rate	91.2%	83.3%

¹⁵¹ <https://robocallindex.com/history/time>

Obtaining the Birth Event Data. Before any analysis of the Vital Statistics birth data is conducted, a series of steps is performed to ensure data quality and integrity. Each step is described in the following paragraphs.

Kentucky Vital Statistics automatically moves each year of updated birth index text files to UK CDAR using the CHFS MoveIT Central FTP process. The data is then opened in Microsoft Access to create variables based upon a file layout codebook provided by Kentucky Vital Statistics. From Access, the data are transferred into SPSS and given variable names, values, and labels corresponding to the codebook. Births occurring within the time frame of the annual report are then saved to a separate file where they are cleaned. Because there were so few follow-ups in FY23, the usual comparison analysis with mothers who were not in the KY-Moms MATR program was not completed. Instead, birth event data was analyzed for only KY-Moms MATR clients.

Analysis. Once the data set was cleaned and internally certified according to UK CDAR BHOS quality standards, data analysis began. This included using the statistical software SPSS to complete Chi-square tests of independence, one-way ANOVAS, and McNemar tests. The statistical results were then placed in tables for review by the research team.

Birth Data Sample. As described in the section regarding obtaining the birth event data, based upon the range of dates that the KY-Moms MATR clients gave birth, which were from February 2022 to December 2022. Using mothers' social security numbers, KY-Moms MATR clients were matched to their respective birth outcome data. Out of the 31 clients who completed a follow-up, 11 clients did not give permission to access their birth event data, and one client who completed a follow-up could not be matched to the birth even data set. Two of the mothers had more than one child in the dataset in FY23. Out of the 10 post-birth clients who completed a follow-up, one client who completed a follow-up could not be matched to the birth even data set. None of the mothers who entered KY-Moms MATR after the birth of their baby had more than one child in the dataset in FY23.

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

Between June 2021 and October 2022, 68 pregnant mothers completed a prenatal baseline and were eligible for a six-month postnatal follow-up between July 2022 and June 2023. Individuals who completed a postnatal follow-up assessment during this time (n = 31) are compared in this section with 37 individuals who did not complete a postnatal follow-up interview but were in their 6-month follow-up window in FY 2023.

As mentioned in Appendix A, 37 clients did not complete a postnatal follow-up interview for a variety of reasons:

TABLE AB.1. REASONS WHY CLIENTS DID NOT COMPLETE A POSTNATAL FOLLOW-UP ASSESSMENT

Reason for not completing follow-up assessment	n
Ineligible as a result of prenatal baseline criteria:	
Client was not in the program long enough	3
Insufficient or incomplete locator information.....	15
Did not agree to follow-up.....	13
Client intake submitted after follow-up sample was pulled.....	3
Client was not located within the targeted window.....	3
TOTAL	37

Demographic Characteristics

There were a few significant differences between clients who were followed up and clients who were not followed up on demographic characteristics (see Table AB.2). Clients who did not complete a follow-up were significantly older (29.8) compared to clients who completed a follow-up (26.9). Clients who were not followed up were an average of 24.7 weeks into their pregnancies and clients who were followed up were an average of 23.9 weeks. Less than one-third of clients who did not complete a follow-up and less than one-quarter of clients who did complete a follow-up reported they were never married. Of those who were married or cohabiting, 95.2% of clients who completed a follow-up reported that the partner is the father of the baby compared to 73.3% clients who were not followed up which was a significant difference. In addition, the majority of clients in both groups were White.

TABLE AB.2. COMPARISON OF DEMOGRAPHICS FOR CLIENTS WHO WERE INCLUDED IN THE FOLLOW-UP SAMPLE AND CLIENTS WHO WERE NOT INCLUDED IN THE FOLLOW-UP SAMPLE

CHARACTERISTICS	FOLLOWED UP	
	NO n = 37	YES n = 31
Average Age**	29.8	26.9
Average Weeks Pregnant	24.7	23.9
Relationship Status		
Married.....	10.8%	25.8%
Cohabiting.....	29.7%	41.9%
Separated, divorced, or widowed.....	27.0%	9.7%
Never married.....	32.4%	22.6%
Of those married or cohabiting, percent that reported the partner is the father*	(n = 15) 73.3%	(n = 21) 95.2%
Race		
White.....	91.9%	93.5%
Black	2.7%	6.5%
Hispanic	2.7%	0.0%
Other or multiracial	2.7%	0.0%

*p < .10, **p < .05.

There were no significant differences for employment status between clients who were followed up and clients who were not followed up. Of those who completed a postnatal follow-up, 58.1% were currently unemployed compared to 48.6% of the clients who did not complete a follow-up. There were no significant differences between clients who were followed up and not followed up on whether they expected to be employed in the next 12 months (see Table AB.3).

TABLE AB.3. CURRENT EMPLOYMENT STATUS AT PRENATAL BASELINE BY FOLLOW-UP STATUS

	FOLLOWED UP	
	NO n = 37	YES n = 31
Employment		
Not currently employed.....	48.6%	58.1%
Full-time	24.3%	16.1%
Part-time.....	16.2%	19.4%
Occasional, from time-to-time seasonal work	5.4%	3.2%
On leave from a job for pregnancy related reasons.....	5.4%	3.2%
Expect to be employed in the next 12 months	78.4%	64.5%

There were no significant differences in usual living arrangement between those who completed a follow-up assessment and those who did not. About 81% of clients who were followed up reported that their usual living arrangement in the past 30 days at prenatal baseline was in a private residence (i.e., their own home or apartment or someone else's home or apartment; see Table AB.4) compared to clients who were not followed up (67.6%). About 3% of clients who did not complete a follow-up and 16.2% of clients who did complete a follow-up were living in a residential program, hospital, sober living home, or recovery center.

At baseline, significantly more clients who did not complete a follow-up than who did complete a follow-up considered themselves to be homeless. About 32% of clients who did not complete a follow-up and 9.7% of the clients who did complete a follow-up considered themselves homeless (see Table AB.4).

TABLE AB.4 LIVING SITUATION OF CLIENTS BEFORE ENTERING THE KY-MOMS MATR PROGRAM BY FOLLOW-UP STATUS

	FOLLOWED UP	
	NO n = 37	YES n = 31
Usual Living Arrangement in the Past 30 Days		
Own or someone else's home or apartment	67.6%	80.6%
Jail or prison	16.2%	3.2%
Residential program, hospital, recovery center, or sober living home....	0.0%	3.2%
Shelter or on the street.....	10.8%	3.2%
Other.....	5.4%	9.7%
Considers Self to Be Currently Homeless**	32.4%	9.7%
Why the individual considers himself/herself to be homeless	(n = 12)	(n = 3)
Staying in a shelter.....	8.3%	0.0%
Staying temporarily with friends or family.....	50.0%	33.3%
Staying on the street or living in a car	25.0%	33.3%
Other.....	16.7%	33.3%

**p < .05.

Physical Health

On a scale of 1 - 5, clients who completed a follow-up rated their health an average of 3.0 and clients who did not complete a follow-up rated their health an average of 2.9. There was no significant difference between clients who were followed up and clients who were not followed up on the average number of health problems. There were no significant differences between the groups on having chronic pain in the 6 months before pregnancy. The average number of doctor visits reported by clients was not significantly different with 6.8 visits for clients not followed up and 6.3 visits for clients who completed a follow-up.

TABLE AB.5. PHYSICAL HEALTH ISSUES OF CLIENTS BEFORE ENTERING THE KY-MOMS MATR PROGRAM BY FOLLOW-UP STATUS

	FOLLOWED UP	
	NO n = 37	YES n = 31
Number of health problems		
None	45.9%	45.2%
One health problem	32.4%	25.8%
Two or more health problems.....	21.6%	29.0%
Overall health rating (1 – poor, 5 – excellent).....	2.9	3.0
Chronic pain in the 6 months before pregnancy	10.8%	12.9%
Average number of doctor visits about pregnancy.....	6.8	6.3

Targeted Risk Factors

Substance Use

There were few significant differences for substance use at prenatal baseline between clients who did and clients who did not complete a postnatal follow-up and were not incarcerated all 180 days before they knew they were pregnant. The majority of clients in both groups reported illicit substances and/or alcohol use in the 6 months before pregnancy and in the 30 days before pregnancy. Significantly more clients who completed a follow-up reported illicit substances and/or alcohol in both the 30 days before pregnancy and the past 30 days. In addition, significantly more clients who completed a follow-up reported alcohol in the 30 days before pregnancy and the past 30 days.

TABLE AB.6 SUBSTANCE USE OF CLIENTS AT PRENATAL BASELINE BY FOLLOW-UP STATUS AMONG CLIENTS NOT INCARCERATED ALL 180 DAYS BEFORE PREGNANCY

	FOLLOWED UP	
	NO n = 37	YES n = 31
Substance use in the 6 months prior to pregnancy		
Illicit substances and/or alcohol	67.6%	77.4%
Illicit substances.....	59.5%	67.7%
Alcohol	27.0%	45.2%
Smoking tobacco	81.1%	83.9%
Substance use in the 30 days prior to pregnancy		
Illicit substances and/or alcohol**	45.9%	74.2%
Illicit substances*	43.2%	64.5%
Alcohol**	13.5%	38.7%
Smoking tobacco	78.4%	80.6%
Of clients who smoked	(n = 29)	(n = 25)
Average number of cigarettes per day	17.8	18.4
Substance use in the past 30 days		
Illicit substances and/or alcohol*	0.0%	9.7%
Illicit substances.....	0.0%	0.0%
Alcohol*	0.0%	9.7%
Smoking tobacco	70.3%	64.5%
Of clients who smoked	(n = 26)	(n = 20)
Average number of cigarettes per day	11.9	14.7
Participant was treated for substance use before pregnancy	73.0%	64.5%

*p < .10, **p < .05.

Mental Health

There was no significant difference between the two groups in the percent of clients who met study criteria for depression or anxiety in the 6 months before pregnancy or the 30 days before prenatal baseline (see Table AB.7). Almost half of clients in both groups met study criteria for depression in the 6 months before pregnancy. In addition, clients who did and did not complete a follow-up had a similar average number of depression symptoms in both the 6 months before pregnancy and in the past 30 days at baseline. Close to half of clients who were not followed up and clients who were followed up met study criteria for generalized anxiety in the 6 months before pregnancy. In the past 30 days, 41.9% of clients who completed a follow-up and 32.4% of clients who did not complete a follow-up met criteria for generalized anxiety. Both groups had a similar average number of anxiety symptoms in the 6 months before pregnancy and in the past 30 days.

TABLE AB.7 SELF-REPORTED MENTAL HEALTH SYMPTOMS OF CLIENTS AT PRENATAL BASELINE BY FOLLOW-UP STATUS

	FOLLOWED UP	
	NO n = 37	YES n = 31
Experienced symptoms of depression in the past 6 months before pregnancy.....	48.6%	48.4%
Average number of symptoms	(n = 18) 6.9	(n = 15) 7.1
Experienced symptoms of depression in the past 30 days at prenatal baseline.....	35.1%	25.8%
Average number of symptoms	(n = 13) 6.3	(n = 8) 6.1
Experienced symptoms of anxiety in the past 6 months before pregnancy.....	48.6%	48.4%
Average number of symptoms	(n = 18) 5.1	(n = 15) 5.3
Experienced symptoms of anxiety in the past 30 days at prenatal baseline.....	32.4%	41.9%
Average number of symptoms	(n = 12)	(n = 13)

Intimate partner violence

There were no significant differences between clients who completed a postnatal follow-up and clients that did not on intimate partner violence and violence measures. About 30% of clients who did not complete a follow-up and 35.5% of clients that completed a follow-up assessment reported some type of intimate partner violence or violence in the 6 months before pregnancy (see Table AB.8).

TABLE AB.8 INTIMATE PARTNER VIOLENCE AND SEXUAL VIOLENCE BY ANY TYPE OF PERPETRATOR REPORTED BY CLIENTS AT PRENATAL BASELINE BY FOLLOW-UP STATUS

	FOLLOWED UP	
	NO n = 37	YES n = 31
Any intimate partner violence		
6 Months before pregnancy.....	29.7%	35.5%
Past 30 days	13.5%	19.4%
Psychological violence		
6 Months before pregnancy.....	27.0%	25.8%
Past 30 days	13.5%	12.9%
Coercive control		
6 Months before pregnancy.....	27.0%	29.0%
Past 30 days	10.8%	16.1%
Physical assault		
6 Months before pregnancy.....	16.2%	12.9%
Past 30 days	5.4%	3.2%
Sexual violence		
6 Months before pregnancy.....	8.1%	9.7%
Past 30 days	0.0%	3.2%