

**KY-Moms: *Maternal Assistance
Towards Recovery (MATR)***

ANNUAL REPORT 2018



Executive Summary

KY-Moms: Maternal Assistance Towards Recovery (MATR) is a state-funded prevention, outreach, 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.

This report summarizes the KY-Moms MATR program evaluation results by examining birth and infant outcomes as well as changes in other targeted risk factors such as substance use, mental health, intimate partner violence, and quality of life. Specifically, this report describes outcomes for 106 pregnant KY-Moms MATR program clients who participated in the KY-Moms MATR program, completed a face-to-face evidence-based baseline interview with program staff, completed a 6-month follow-up (between July 2016 and June 2017) after the birth of their baby, and had a match to their

state vital statistics birth event data.

KY-Moms MATR clients reported behavioral health risks associated with negative birth outcomes before becoming involved in the program including high rates of smoking (79.2%), alcohol and illegal drug use (80.2%), depression or anxiety (53.8%), and intimate partner abuse (41.5%). Overall, clients were an average of 21 weeks pregnant when they completed a prenatal baseline assessment and were in the program an average of 19.6 weeks before the birth of their babies.

Clients were, on average, 27 years old (around 1% of whom were 18 and under) and about one-quarter had less than a high school diploma or GED.

Even with increased risk factors for negative birth outcomes the KY-Moms MATR mothers had before participating in the program, their birth outcomes were very positive overall, and were nearly identical to the overall general population of mothers and babies. After controlling for factors such as mother’s age, education, marital status, area of residence, and smoking status at birth, the two groups of mothers had similar birth outcomes for the percent of babies born premature, babies’ average birth weight, average APGAR scores, percent of mothers experiencing birthing problems, percent of babies taken to the neonatal intensive care unit, percent

Four core components of the KY-Moms MATR evidence-based assessment



Substance Use



Mental Health



Victimization and Trauma



Quality of Life

Four supplemental components of the KY-Moms MATR evidence-based assessment



Maternal-Fetal Attachment/Maternal-Infant Attachment



Health and Stress-Related Health Consequences



Economic and Living Conditions, and Criminal Justice Involvement



Recovery Supports

of women breastfeeding, and the number of prenatal visits with a health care provider. At postnatal follow-up, there were significant reductions in substance use as well as significant improvements in mental health symptoms, intimate partner abuse, physical health, economic and living conditions, and stress and quality of life.

SUBSTANCE USE

Fewer pregnant mothers reported substance use while in the program compared to before being pregnant. These reductions were sustained six months after the birth of their baby. A trend analysis from report year 2015 to now shows a steady increase in clients reporting illegal drug use at prenatal baseline. While the number of clients reporting illegal drug use decreased for each year at follow-up compared to baseline, over the years the number of clients reporting illegal drug use at follow-up has increased slightly. Smoking rates were also

reduced (from 79.2% of clients in the 6 months prior to pregnancy to 64.2% of clients in the past 6 months at follow-up) as was smoking frequency among those who did smoke. Specifically, clients who reported smoking prior to pregnancy reported an average of 5.1 cigarettes in the 30 days before their baby was born compared to 15.5 cigarettes the 30 days before their pregnancy.

MENTAL HEALTH

Among mothers with any mental health symptoms, there was a reduction in the number of reported depression and anxiety symptoms after participation in the KY-Moms MATR program. These improvements in mental health problems were sustained after the birth of the baby. A trend analysis shows that rates of depression and/or anxiety at baseline have been fairly consistent over 4 years.

INTIMATE PARTNER ABUSE

The number of mothers who reported intimate partner abuse significantly decreased after becoming involved in the KY-Moms MATR program. A four-year trend analysis shows that the number of clients who reported any partner abuse at prenatal baseline was fairly consistent. Around one-quarter to one-third of clients reported any type of intimate partner abuse in the six months before pregnancy.

PHYSICAL HEALTH

Overall, clients reported improved general health status at postnatal follow-up compared to prenatal baseline. Almost one-quarter of clients reported experiencing chronic pain at baseline compared to 3.8% at follow-up. In addition, the average number of days clients reported their physical health was not good in the past 30 days decreased from 5.0 days to 1.2 days.

STRESS AND QUALITY OF LIFE

Clients' reported stress-related health consequences decreased significantly from prenatal baseline (18.9) to postnatal follow-up (6.5) and the number of clients reporting they used substances to reduce or manage stress decreased from 16.0% at baseline to 3.8% at follow-up. Clients also reported significantly higher quality of life after the program and an overall greater satisfaction with life at postnatal follow-up compared to prenatal baseline.

ECONOMIC HARDSHIP, LIVING SITUATION, AND CRIMINAL JUSTICE INVOLVEMENT

Women in the KY-Moms MATR program reported improved economic conditions with significantly fewer clients reporting they had difficulty obtaining health care for financial reasons (e.g., doctor, dental, and prescription medications) in the past 6 months at follow-up compared to the 6 months before pregnancy. While

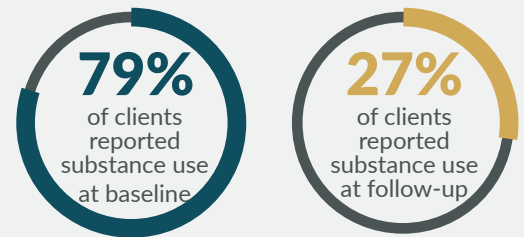
there was no significant change in living situation at follow-up, the majority of clients at prenatal baseline (94.3%) and postnatal follow-up (98.1%) reported living in a private residence (i.e., their own or someone else's home or apartment) before the birth of their baby and after. Though relatively few clients reported involvement with the criminal justice system, there was a significant decrease in the number of clients both reporting an arrest and clients who reported being incarcerated in the past 6 months at follow-up compared to baseline.

PROGRAM SATISFACTION

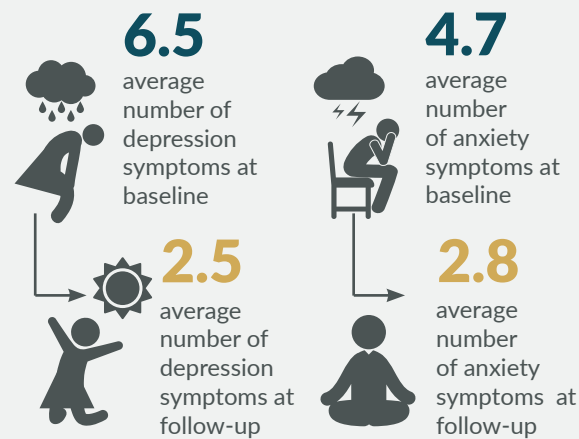
Program clients were overwhelmingly satisfied with the KY-Moms MATR case management services they received. In particular, clients reported they learned about their health and pregnancy, the staff was knowledgeable, they felt safe while in the program, and the location and

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

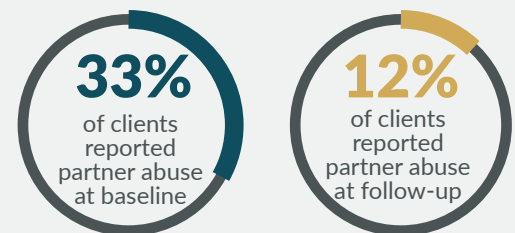
PAST-6-MONTH SUBSTANCE USE



PAST-6-MONTH MENTAL HEALTH



PAST-6-MONTH PARTNER ABUSE



“They taught me a lot of amazing things and it was easy to understand. They didn’t make you feel bad if you didn’t know the information.”

- KY-MOMS MATR FOLLOW-UP CLIENT

times of the services were convenient. In addition, clients reportedly felt comfortable telling staff about any safety concerns and they felt like staff believed they could grow, change, and recover. Also, almost all of the clients indicated they would recommend the program to a friend. All the mothers in the follow-up sample reported their babies were “great” or “good” and the majority of clients had someone to turn to for emotional support both during pregnancy and after the birth of the baby.

SUMMARY

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

“It helped a lot emotionally. Anything you needed to talk about they were there to talk to you.”

- KY-MOMS MATR FOLLOW-UP CLIENT

Positive birth outcomes for KY-Moms MATR clients compared to the general population of mothers



AVERAGE GESTATIONAL AGE



AVERAGE BIRTH WEIGHT



AVERAGE APGAR SCORE



AVERAGE NUMBER OF PRENATAL VISITS

KY-Moms MATR

38.2
weeks

7lbs, 4oz

8.8

11.7

General Population

38.3
weeks

7lbs, 3oz

8.8

11.7

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Postnatal assessments completed between July 2016 and June 2017 for women who gave birth between December 2015 and December 2016.

Suggested citation: Logan, TK, Scrivner, A., Cole, J. & Miller, J. (2018). *KY-Moms: Maternal Assistance Towards Recovery (MATR) 2018 Annual Outcome Report*. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research.

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) at the request of the Division of Behavioral Health in the Department for Behavioral Health, Developmental and Intellectual Disabilities. The evaluation results are organized into 12 main sections as outlined below.

Section 1: 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 2: Description of KY-Moms MATR program Clients at Baseline. Section 2 describes the KY-Moms MATR client characteristics for 106 clients who were included in the follow-up sample. Characteristics examined include targeted risk status, age, race, marital status, metropolitan/non-metropolitan status, and education.

Section 3: Pregnancy Status. Section 3 describes clients' pregnancy status at prenatal baseline as well as general information about the pregnancy/baby. Comparisons of client-level data are made from prenatal baseline to postnatal follow-up where applicable.

Section 4: Birth Events and Outcomes: KY-Moms MATR Case Management Clients Compared to the General Population of Mothers. This section uses the Kentucky Vital Statistics birth data to examine (1) general risk factors; (2) targeted risk factors available from the Vital Statistics data set; and (3) birth events and outcomes of 106 KY-Moms MATR case management clients and their babies compared to mothers in the state who had babies during the same period (between December 2015 and December 2016) but who did not participate in the KY-Moms MATR Case Management study (n = 57,375).¹

Section 5: Substance Use. This section examines change in: (1) overall substance use (illegal drug and alcohol use); (2) use of illegal drugs, alcohol, and cigarettes; (3) problems experienced with substance use; (4) readiness for substance abuse treatment; and (5) substance abuse treatment and self-help meetings. Past-30-day and past-6-month substance use are examined separately where applicable.

Section 6: Mental Health. This section examines changes in self-reported mental health for the following factors: (1) depression; (2) generalized anxiety; and (3) comorbid depression and anxiety. Past-30-day and past-6-month mental health symptoms are examined separately where applicable.

Section 7: Intimate Partner Abuse. This section examines changes in past-30-day and past-6-month intimate partner abuse and violence such as: (1) any abuse; (2) psychological abuse; (3)

¹ Section 4 compares birth events and outcomes of KY-Moms MATR mothers to the general population of mothers who also gave birth during the same time period. Appendix D compares birth events and outcomes for three mutually exclusive groups including: (1) mothers involved in KY-Moms MATR case management services; (2) a comparison group of mothers matched on selected characteristics (race, age, education, metropolitan/non-metropolitan residence, marital status, and smoking status); and (3) a randomly selected group of mothers from the general population.

coercive control; (4) physical abuse; and (5) sexual assault from prenatal baseline to postnatal follow-up.

Section 8: Employment, Economic Hardship, Living Situation, and Criminal Justice Involvement. This section examines changes in employment, economic hardship, living situation, and criminal justice involvement 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.

Section 9: Physical Health. Section 9 describes chronic health problems reported at prenatal baseline and change in physical health status of clients from prenatal baseline to postnatal follow-up including: (1) chronic health problems at baseline; (2) current health; (3) chronic pain; and (4) perceptions of poor physical and mental health.

Section 10: Stress, Quality of Life, and Emotional Support. This section focuses on stress, quality of life, and changes in emotional support including the following factors: (1) health consequences of stress; (2) quality of life ratings; (3) satisfaction with life; (4) the number of people mothers said they could count on for emotional support; and (5) their satisfaction with the level of emotional support from others.

Section 11: Client Satisfaction with KY-Moms MATR Case Management. This section describes three aspects of client satisfaction assessed by clients who completed a postnatal follow-up: (1) overall satisfaction with the program; (2) ratings of program experiences; and (3) if the client would recommend the program to a friend.

Section 12: Conclusion and Study Limitations. This section summarizes the report findings, discusses limitations, and describes implications of the main findings.

Section 1. Introduction and Evaluation Method

This section briefly describes the KY-Moms MATR program and how clients were selected into the outcome evaluation.

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 drug use during pregnancy have been shown to negatively influence fetal development (including significantly decreased birth weight and shorter gestational age) and women's health.^{2, 3, 4, 5, 6} In addition, substance use is often related to mental health problems and an increased risk of partner abuse and sexual assault.^{7, 8} All three of these interrelated risk factors increase the likelihood of negative birth outcomes.^{9, 10} Additionally, risks of negative birth outcomes are increased when women using alcohol and illegal drugs avoid obtaining prenatal care due to access, fear of losing custody of their babies, or fear of being arrested.¹¹

The overall goal of the KY-Moms MATR program is to increase positive birth outcomes for pregnant women in Kentucky who are at risk for negative birth outcomes by reducing risk of substance use, poor mental health status, and victimization that impact the health of the pregnant mother, fetal development, and birth outcomes. The program is part of the Governor's Office of Early Childhood's Kentucky Invests in Developing Success NOW (KIDS NOW) and is administered by the Division of Behavioral Health in the Department for Behavioral Health, Developmental and Intellectual Disabilities.¹² The program has two components including providing: 1) substance abuse prevention education to pregnant women at all risk levels, and

² 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.

³ 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.

⁴ 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.

⁵ 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.

⁶ 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.

⁷ Logan, T., Walker, R., Jordan, C. & Leukefeld, C. (2006). *Women and victimization: contributing factors, interventions, and implications*. Washington, DC: American Psychological Association Press.

⁸ 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.

⁹ 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.

¹⁰ 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.

¹¹ 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.

¹² Since 2015, all of Kentucky's regional community mental health centers except Bluegrass participate in the KY-Moms MATR program.

2) client-centered intensive case management services to women at risk for substance abuse during pregnancy (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) based on a client-centered format. This intervention focuses on meeting clients' needs as they evolve over time, as different risks manifest, and needs change as the pregnancy progresses.¹³ By focusing on clients' needs, client-centered intensive case management encourages continued engagement in clinical services and helps with a variety of practical needs.^{14, 15} KY-Moms MATR case managers use evidence-based practices, including Motivational Interviewing, to promote engagement in vital services such as substance abuse and mental health treatment, partner violence services, and to encourage consistent prenatal care.^{16, 17}

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 "Substance Use During Pregnancy Questionnaire" which assesses a variety of risks including substance use, mental health, and intimate partner violence, any of which make a woman 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 the eleven sites (shown above) 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.¹⁸ Overall, a total of 181 baselines were completed between June 2015 and December 2016 with women who had due dates that would result in target months for a follow-up interview between July 2016 and June 2017 (see appendix A for details on these clients at prenatal baseline).

At prenatal baseline, clients are offered the opportunity to be contacted for a postnatal follow-

¹³ 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.

¹⁴ 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.

¹⁵ 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.

¹⁶ Ingersoll, K. S., Ceperich, S. D., Hetteema, 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.

¹⁷ 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.

¹⁸ For more information, see: Scrivner, A., Logan, T., Cole, J., & Miller, J. (2016). *Evidence Base for the KY-Moms MATR Evaluation Assessment and Methods*. Lexington, KY: University of Kentucky, Center on Drug and Alcohol Research.

up interview. If the client gives consent to be contacted for a follow-up, an interviewer at UK CDAR contacts that client about 6 months after the birth of their baby (based upon estimated due date reported by the client at prenatal baseline). In addition to consent, KY-Moms MATR are eligible to be included in the sample to be followed up if: (1) the prenatal baseline is submitted to UK CDAR within 30 days of completion; (2) the client plans on keeping the baby; (3) the client is in the program at least 30 days before the birth of the baby; and (4) the minimal acceptable amount of contact information is provided so that the follow-up staff can locate the client to conduct the interview. If any of these criteria were not met, the client was not included in the sample to be followed up.¹⁹

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 birth 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, they must determine additional eligibility criteria before completing the follow-up interview: (1) the baby must be living with the client; and (2) the client must not be in a jail or controlled environment.²⁰ 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 and satisfaction with program services. During FY17, 110 postnatal follow-up assessments were completed (an 84.0% follow-up rate).²¹ See Appendix B for more details about follow-up methods and eligibility.

The clients who completed a follow-up (n = 110) during this fiscal year were compared, on selected factors, to 71 clients who did not complete a follow-up within the targeted window for a variety of reasons.²² When those with a postnatal follow-up interview were compared with those who did not have a postnatal follow-up interview on a variety of prenatal baseline variables, clients who were not included in the follow-up sample were significantly further along in their pregnancies at baseline. In addition, a greater number of clients who were not followed up expected to be employed in the next 12 months compared to clients who were followed up. A greater number of clients who were not followed-up reported living in a residential program, hospital, recovery center, or sober living home at baseline. More clients who did not complete a follow-up reported illegal drug use in the 6 months prior to pregnancy while more clients who did complete a follow-up reported alcohol use in the 30 days before pregnancy. More clients who were not followed up, however, reported smoking cigarettes in the past 30 days at baseline (see Appendix D).

To be included in the analysis for this outcome report clients had to have given permission to access and 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 110 clients

¹⁹ As a result of the prenatal baseline criteria, 18 clients were not eligible for the follow-up sample.

²⁰ 16 clients were not eligible for the follow-up sample based upon the postnatal follow-up criteria.

²¹ Clients who completed a postnatal follow-up assessment (n = 110) were admitted to the KY-Moms MATR program and completed baseline assessments between July 2015 and November 2016.

²² See Appendix D for details reasons why client did not complete a follow-up interview.

completed a postnatal follow-up assessment, 4 clients did not have a match in the birth event data set which could be due to an incorrect social security number, name, birth date, or out of state birth. This left a final follow-up sample of 106 women who met analysis criteria, gave birth between December 2015 and December 2016, and completed a postnatal follow-up assessment between July 2016 and June 2017 (an average of 5.0 months after giving birth).

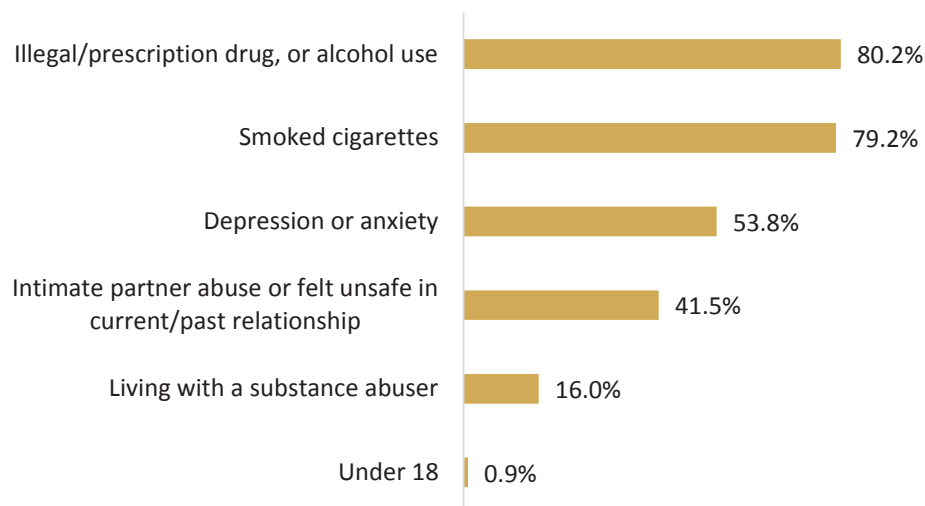
Section 2. Description of KY-Moms MATR Program Clients at Baseline

Section 2 describes baseline characteristics of KY-Moms MATR clients who were included in the follow-up sample. Characteristics examined include risk status, race, marital status, metropolitan/non-metropolitan status, and education.

Risk Status

Figure 2.1 shows that of the 106 clients who completed a six-month postnatal follow-up assessment and met criteria to be included in this report, 95.3% (n = 101 clients), fit into at least one of the major risk factor categories assessed in the baseline interview.²³ Overall, 80.2% reported drug or alcohol use at baseline, 79.2% of clients reported cigarette use, 53.8% reported depression or anxiety, 41.5% reported intimate partner abuse and/or feeling unsafe in either their current relationship or because of a partner from a previous relationship, 16.0% of clients reported currently living with someone who had drug or alcohol problems, and 0.9% were under the age of 18.

FIGURE 2.1. PERCENT OF CLIENTS FALLING INTO AT LEAST ONE TARGETED RISK FACTOR ASSESSED (N = 106)



Client Characteristics

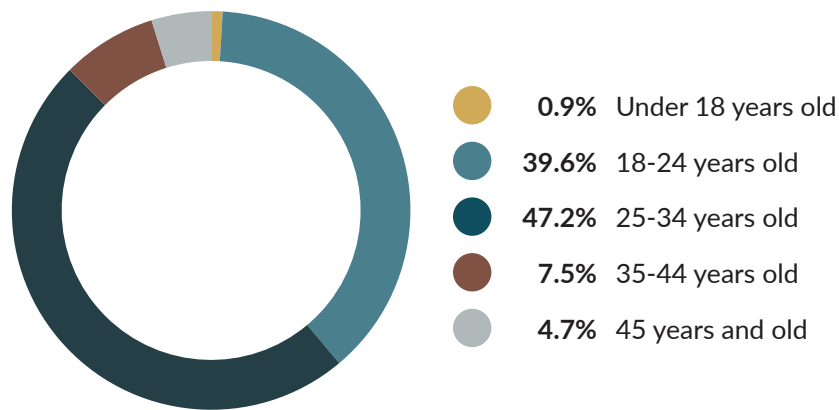
Age

Clients were, on average, about 27 years old. Most clients were between the ages of 18 and 24 (39.6%) or between the ages of 25 and 34 years old (47.2%). Around 1% of clients were under

²³ Calculation includes all baseline measures: 6 months and 30 days before pregnancy, and past 30 days at prenatal baseline.

the age of 18 and 7.5% were between 35 and 44 years old. Almost 5% of clients were 45 years and older (see Figure 2.2).

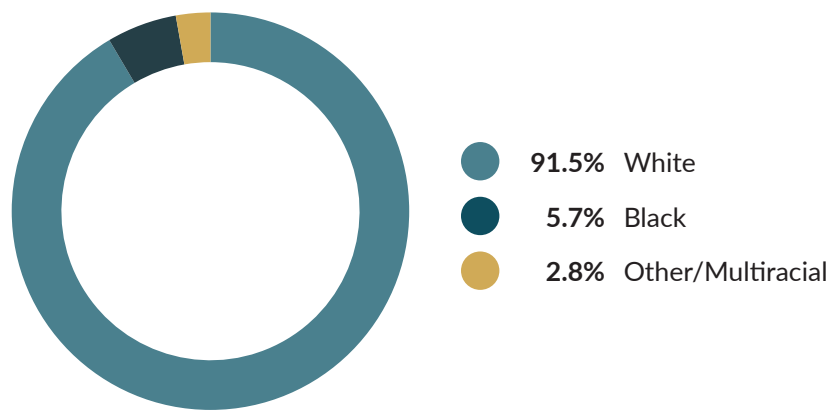
FIGURE 2.2. AGE CATEGORIES (N = 106)



Race

The vast majority of the follow-up sample was White (91.5%), with a minority (5.7%) reporting their race as Black (see Figure 2.3).

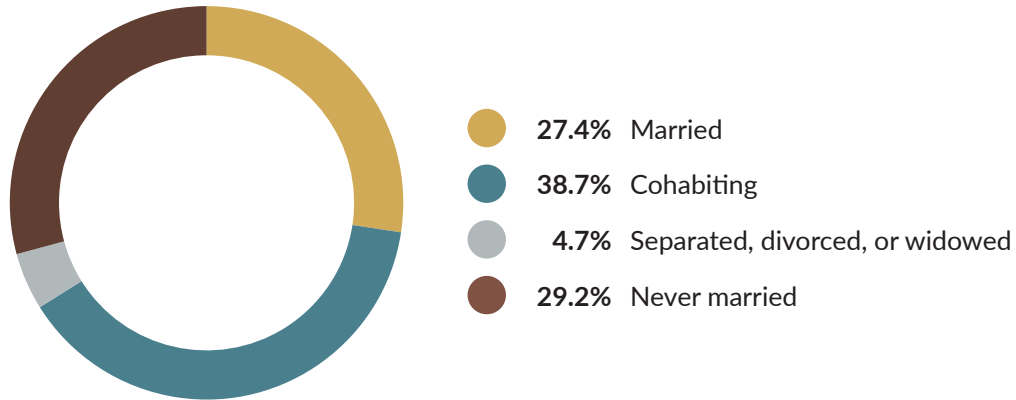
FIGURE 2.3. RACIAL MAKE-UP OF CLIENTS (N = 106)



Marital Status

Two-thirds of clients were either married (27.4%) or cohabiting (38.7%) at baseline. Of these clients (n = 70), 92.9% reported their partner was the father of the baby with whom they were pregnant. Almost 5% were either separated, divorced, or widowed, and 29.2% of clients had never been married at prenatal baseline (see Figure 2.4).

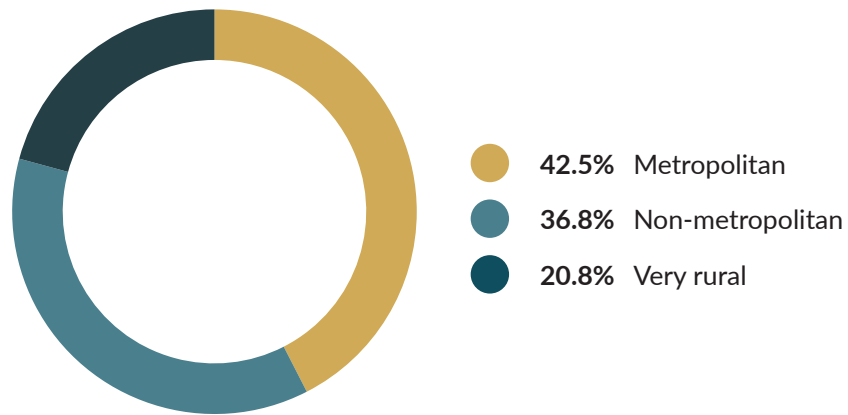
FIGURE 2.4. MARITAL STATUS AT PRENATAL BASELINE (N = 106)



Metropolitan/Non-Metropolitan Status

Rural-Urban Continuum Codes (or Beale codes) for the county in which the mother lived when she gave birth are obtained from the U.S. Department of Agriculture.²⁴ Counties are classified based upon population, socioeconomic indicators, commuting flow and adjacency to a metro area as derived from the U.S. Census Bureau. Figure 2.5 shows slightly more clients were from metropolitan areas (42.5%) than non-metropolitan areas (36.8%) while 20.8% were from very rural areas.

FIGURE 2.5. TYPE OF COMMUNITY CLIENTS LIVED IN (N = 106)



Note: Metropolitan/non-metropolitan status was based upon Beale codes assigned to the county in which the mother reported residing in the birth event data set

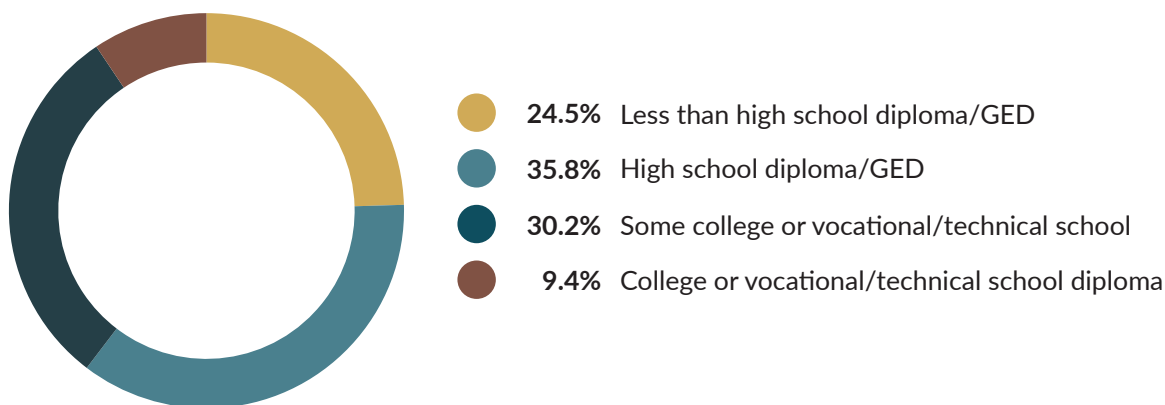
Education

Figure 2.6 shows that, at baseline, almost one-quarter (24.5%) of clients had less than a high school education or GED and 35.8% had a high school diploma or GED as their highest level of

²⁴ Rural-Urban Continuum Codes used to classify counties are obtained from the USDA found at <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx#.UxoE4YWwV8H>.

education. Three in 10 clients had some college or vocational/technical school and about one in ten clients had a college or vocational/technical school diploma.

FIGURE 2.6. LEVEL OF EDUCATION OF POSTNATAL FOLLOW-UP SAMPLE (N = 106)



Summary

Most clients in the postnatal follow-up sample (n = 106) were White and were an average of 27 years old. Over one-quarter of clients were married and almost 38% were cohabiting with a partner. About 43% of clients were living in a metropolitan area and over one-third were living in a non-metropolitan area. Over three-quarters of clients had at least a high school diploma or GED at baseline.

Section 3. Pregnancy Status

This section describes clients' pregnancy status at prenatal baseline as well as general information about the pregnancy/baby. Comparisons of client-level data are made from prenatal baseline to postnatal follow-up where applicable.

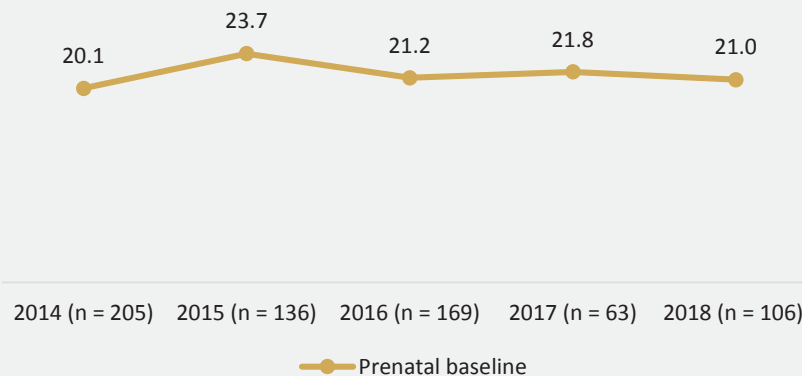
Pregnancy Status

When followed-up clients completed a prenatal baseline they were an average of 21.0 weeks pregnant (Min. = 6 weeks, Max. = 38 weeks)²⁵ and were in the program an average of 19.6 weeks (Min. = 2 weeks, Max. = 32 weeks). After the baby was born, clients reported remaining in the KY-Moms MATR program an average of 4.3 weeks (Min. = 0 weeks, Max. = 24 weeks).

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 5 years. In report year 2014, clients were an average of 20.1 weeks into their pregnancies and in 2018 clients were an average of 21.0 weeks into their pregnancies when they completed a prenatal baseline.

FIGURE 3.1. AVERAGE NUMBER OF WEEKS CLIENTS WERE PREGNANT AT BASELINE AMONG CLIENTS IN THE FOLLOW-UP SAMPLE, 2014-2018



²⁵ In order 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 20 (Min. = 0 and Max. = 148). Therefore, even though a client was at 40 weeks in her pregnancy when the baseline was completed, she entered the program more than 30 days before the due date.

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 5.3 doctor visits about the pregnancy and at postnatal follow-up clients reported an average of 5.5 visits to the pediatrician or nurse since giving birth. About one-third of clients (34.3%) 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.²⁶ At postnatal follow-up, 17.0% (18 clients) reported their doctor told them their baby has special health care needs. More specifically, 8 clients reported their babies had minor health care needs such as allergies or acid reflux. However, 10 mothers (or 9.4% of the postnatal follow-up sample) reported various and potentially serious problems such as lung disease, seizures, and kidney problems. In comparison, for all babies born in the United States, approximately 3.0% of babies are born with a birth defect (such as cleft palate, spina bifida, or neural tube defects)²⁷ and about 1.0% of babies will be born with a congenital heart defect.²⁸ In addition, 20% of children in the United States and 26% of children in Kentucky are considered to have special health care needs as defined by the federal Maternal and Child Health Bureau’s definition.²⁹

Emergency Room Visits for the Baby at Postnatal

At postnatal follow-up, 27.4% of clients reported they had taken their baby to the emergency room since giving birth (not depicted in a figure). Of those clients (n = 29), they reported taking their baby to the emergency room an average of 2 times (range of 1 to 6 times).

“They talked to me a lot and helped me work through my problems.”

- KY-MOMS MATR FOLLOW-UP CLIENT

²⁶ 4 clients indicated they had not seen a doctor yet.

²⁷ Centers for Disease Control and Prevention. Update on overall prevalence of major birth defects --- Atlanta, Georgia, 1978--2005. *Morbidity and Mortality Weekly Report* 2008, 57(1), 1-5.

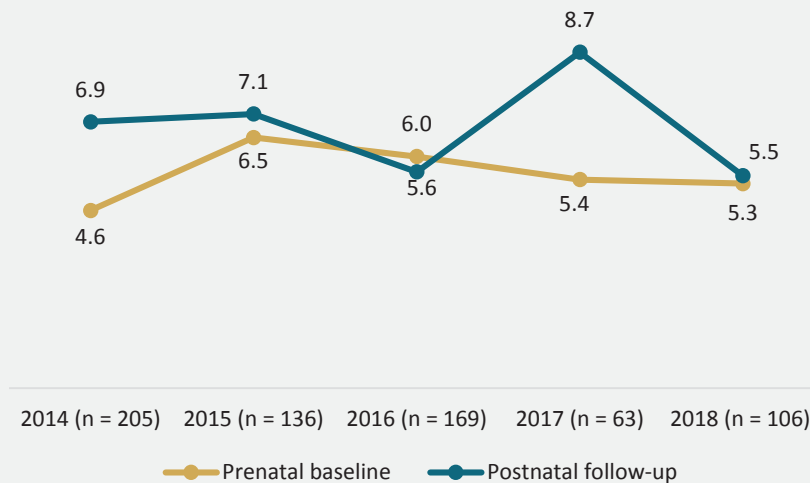
²⁸ <http://www.marchofdimess.com/baby/congenital-heart-defects.aspx#>

²⁹ KIDS COUNT Data Center. (2013). *Children with special health care needs 2011-2012*. Retrieved from <http://datacenter.kidscount.org/data/tables/29-children-with-special-health-care-needs?loc=19&loct=2#detailed/2/19/false/1021,18,19,12/any/298,299> and <http://datacenter.kidscount.org/data/tables/29-children-with-special-health-care-needs?loc=1&loct=1#detailed/1/any/false/1021,18,19,12/any/298,299> on November 28, 2016.

TRENDS³⁰ IN AVERAGE NUMBER OF VISITS WITH A HEALTH CARE PROVIDER AT BASELINE AND FOLLOW-UP

In 2014, clients report 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 2018, clients reported 5.3 doctor visits at prenatal baseline and 5.5 visits at postnatal follow-up.

FIGURE 3.2. AVERAGE NUMBER OF DOCTORS VISITS AT BASELINE AND FOLLOW-UP AMONG CLIENTS IN THE FOLLOW-UP SAMPLE, 2014-2018



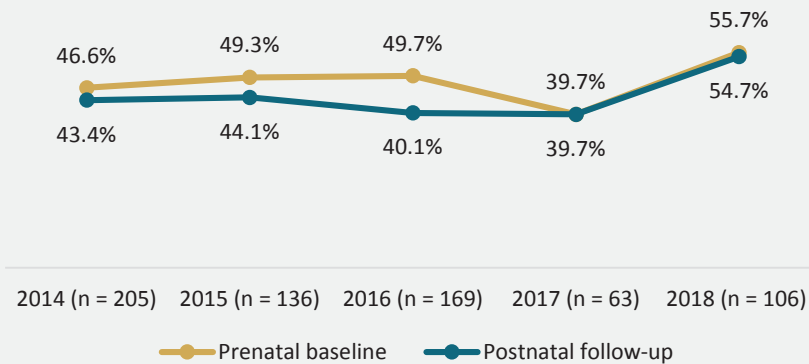
About 56% of clients reported at prenatal baseline that they planned on breastfeeding their baby and at postnatal follow-up, 54.7% of clients reported having breastfed their baby for any period. Of the 59 women who reported planning on breastfeeding at prenatal baseline, 73% (n = 43) reported having breastfed their baby at postnatal follow-up and of those 43, 14 reported still breastfeeding. Of the 47 clients who reported at prenatal baseline they were not planning on breastfeeding or had not decided yet, 31.9% (or 15 clients) reported having breastfed at follow-up and one was still breastfeeding.

³⁰ All trend analyses present only annual report data at baseline and follow-up and do not include between-year statistical analysis.

TRENDS IN BREASTFEEDING AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

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 2018, 55.7% of clients planned at baseline on breastfeeding their babies and 54.7% of clients reported breastfeeding their babies at follow-up.

FIGURE 3.3. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING BREASTFEEDING AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2014-2018



Summary

Clients were a little over halfway through their pregnancies when they completed a prenatal baseline interview and were in the program about 20 weeks. Clients remained in the program, on average, about 4 weeks 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 5.3 times since the baby had been born, which is an average of about once per month. In addition, at baseline over half of mothers reported they were planning on breastfeeding their babies and over half of mothers reported at postnatal follow-up they had breastfed their babies.

Section 4. Birth Events and Outcomes: KY-Moms MATR Case Management Clients Compared to the General Population of Mothers

This section uses the Kentucky Vital Statistics birth data³¹ to examine (1) general risk factors; (2) targeted risk factors available from the Vital Statistics data set; and (3) birth events and outcomes of 106 KY-Moms MATR case management clients and their babies compared to others in the state who had babies during the same time period (between December 2015 and December 2016) but who did not participate in the KY-Moms MATR Case Management study (n = 57,375).^{32, 33}

1,153 mothers from the general population and one mother in KY-Moms had more than one baby in the data set (i.e., twins, triplets, quadruplets, or siblings born in the same year of analysis). As a result, there were 107 babies born to 106 women in the KY-Moms MATR sample and 58,528 babies born to the 57,375 women in the general population sample.³⁴ The information in this section is limited to data from the Kentucky Vital Statistics data set for both groups and describes demographic information (age, race, and metropolitan/non-metropolitan area of residence), socio-economic status indicators (education and source of payment for birth of the baby), physical health status (average weight gained during pregnancy and maternal health problems), patterns of cigarette smoking, and birth outcomes.

General Risk Factors

Demographics

Table 4.1 shows the demographic differences between KY-Moms MATR mothers and mothers from the general population of Kentucky at the time of the baby's birth.

The average age of KY-Moms MATR clients and women in the general population sample were similar (26.4 vs. 27.2) as was the race of the mother. However, significantly more mothers in the general population lived in a metropolitan community (60.2%) compared to KY-Moms MATR clients (42.5%) and more mothers in the general population were married (58.2%) compared to the KY-Moms MATR mothers (35.8%).

³¹ In the Kentucky Vital Statistics birth event data set, each case is one baby paired with the mother's information collected at the time of the birth. There could potentially be multiple babies (cases) attached to one mother in the instance of multiple births or multiparous births in the same year. For that reason, the number of cases in the file does not equal the number of mothers in the file.

³² Out of the 60,451 cases in the Vital Statistics data set that remained in December 2015 to December 2016 after cleaning, 1,816 cases had the mother's residence as out-of-state or not entered, and 65 cases were removed because they corresponded to women in KY-Moms MATR that did not have a follow-up. A total of 58,635 cases, therefore, remained in the analysis.

³³ See Appendix D for further birth data comparisons between KY-Moms MATR clients and a sample of mothers with matching characteristics.

³⁴ More detailed description of the birth data methods can be found in Appendix B.

TABLE 4.1. DEMOGRAPHIC INFORMATION OF BIRTH DATA GROUPS^a

	KY-Moms MATR (n = 106)	General Population (n = 57,375)
Average age	26.4	27.2
Race		
White	91.5%	83.2%
Non-white	8.5%	16.6%
Type of community ^{***}		
Metropolitan	42.5%	60.2%
Non-metropolitan	36.8%	31.7%
Very rural	20.8%	8.2%
Married ^{***}	35.8%	58.2%

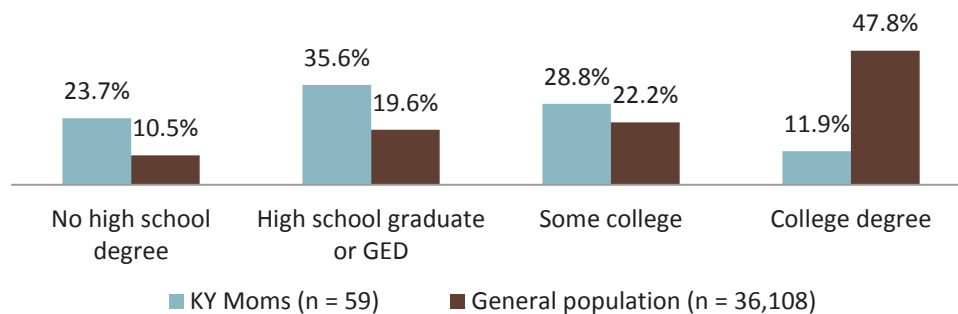
*** p < .001

a—Race was unknown for 110 women in the general population; type of community was missing for 24 women in the general population; marital status was missing for 46 women in the general population; and age was missing for 1,293 women in the general population and for 1 woman in KY-Moms MATR.

Socioeconomic Status Indicators

Because the KY-Moms MATR mothers were slightly younger than the general population it is important to compare education rates only for those who had sufficient time to finish high school or a GED. The 2011-2015 census estimates that of Kentuckians ages 25 and older, 86.7% had high school degrees.³⁵ Overall, among women 25 years of age and older, education differed significantly between the two groups. Less than one-quarter of KY-Moms MATR mothers (23.7%) and 10.5% of mothers in the general population had less than a high school degree. In addition, 47.8% of mothers in the general population, which was slightly older than the KY-Moms MATR mothers, received a college degree compared to 11.9% of mothers in KY-Moms MATR (see Figure 4.1).

FIGURE 4.1. LEVEL OF EDUCATION ACROSS GROUPS, AMONG WOMEN 25 YEARS OLD OR OLDER^{***}

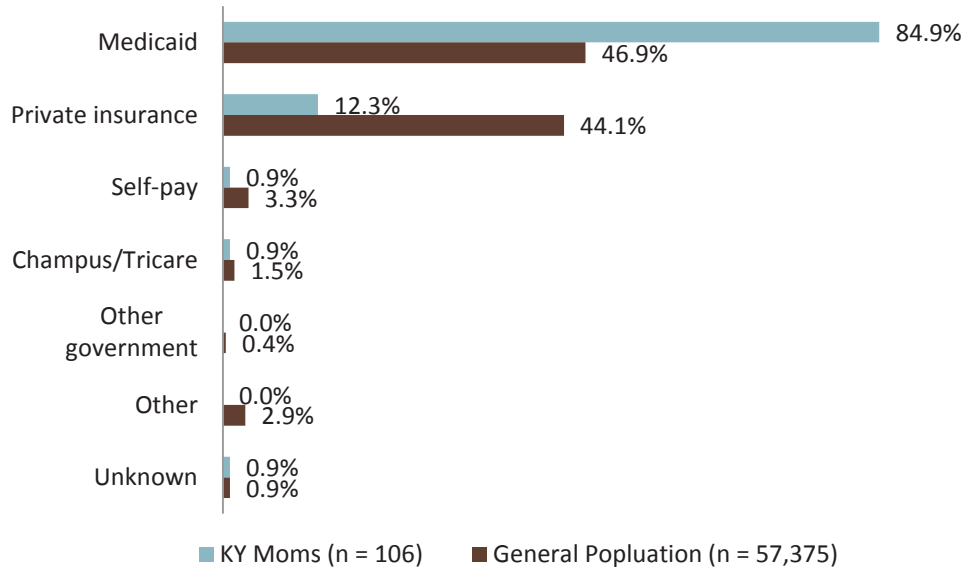


***p < .001

³⁵ <https://www.census.gov/quickfacts/fact/table/US/PST045216?>

Figure 4.2 shows that KY-Moms MATR clients were significantly more likely to have Medicaid as their source of payment for the birth of the baby (84.9%) whereas the general population was more likely to have private insurance (44.1%) compared to the KY-Moms MATR clients (12.3%).

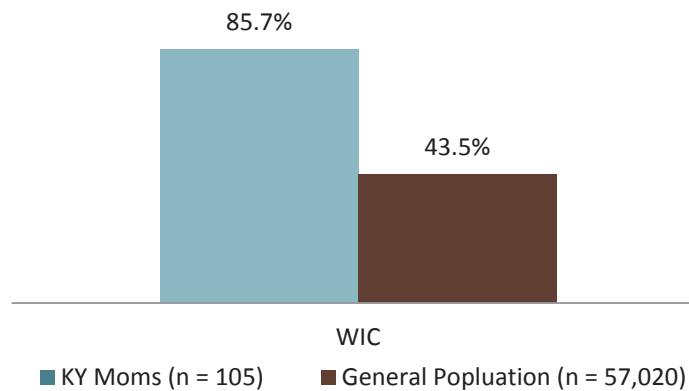
FIGURE 4.2. SOURCE OF PAYMENT FOR DELIVERY COSTS ACROSS GROUPS***



Significance tested with Chi-square test; ***p < .001

WIC provides nutrition education, breastfeeding promotion and education, a monthly food allotment to use toward nutritious foods, and access to maternal, prenatal and pediatric health-care services for high-risk women. The majority of KY-Moms MATR clients (85.7%) received support from WIC compared to 43.5% of mothers who were not in KY-Moms MATR which may suggest lower incomes and/or greater effort by KY-Moms MATR caseworkers to connect women with this service (see Figure 4.3).

FIGURE 4.3. PERCENT OF WOMEN ENROLLED IN WIC PROGRAM COMPARED TO THE GENERAL POPULATION OF MOTHERS^a***



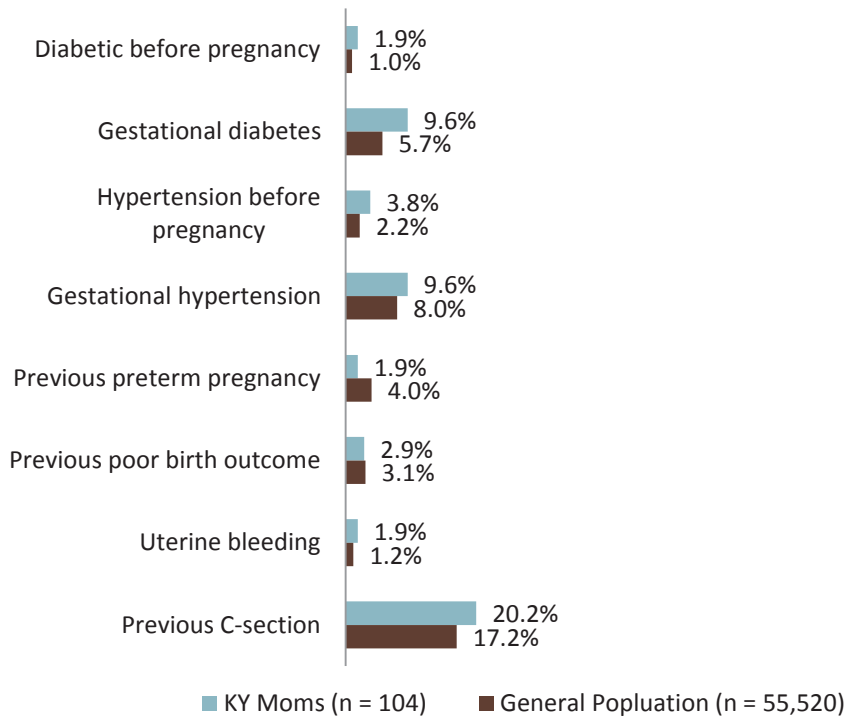
a - Information on WIC was missing for 1 mother and labeled “unknown” for 358 mothers in the general population and for 1 mother in KY-Moms MATR.

Significance tested with Chi-square test; *** p < .001

Physical Health Status

General health conditions of pregnancy that could cause harm to the baby or the mother were collected from the Kentucky Vital Statistics data set. KY-Moms MATR mothers were not significantly more or less likely than the general population of mothers to experience most of the maternal health conditions such as diabetes, gestational diabetes, hypertension, gestational hypertension, uterine bleeding, or a previous C-section (see Figure 4.4).

FIGURE 4.4. OTHER MATERNAL HEALTH FACTORS ACROSS GROUPS^a



a—2 KY-Moms MATR clients and 1,855 mothers in the general population had missing information on maternal health questions.

While not represented in a figure, KY-Moms MATR clients were not significantly more likely to have sexually transmitted infections such as gonorrhea, syphilis, herpes, or chlamydia compared to the general population (1.9% vs. 5.5%, respectively).³⁶ KY-Moms MATR clients were, however, significantly more likely to have hepatitis B or C (12.6%) compared to the general population of mothers (2.2%, not shown in a figure).

Targeted Risk Factors

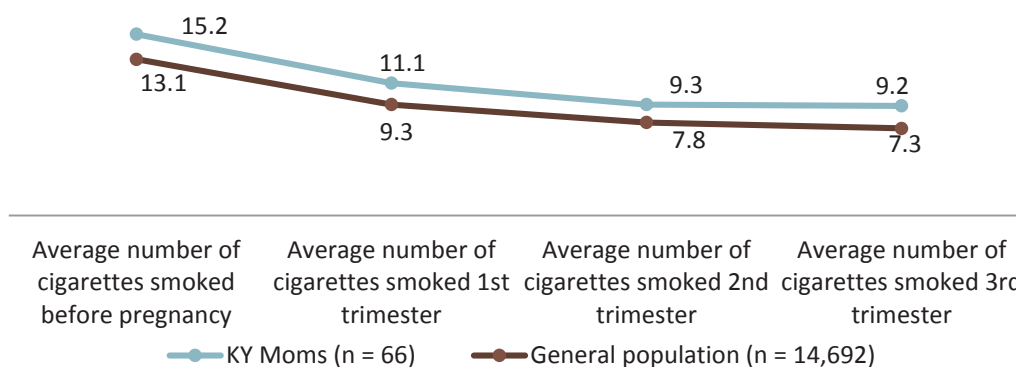
Smoking Patterns

A significantly greater percentage of KY-Moms MATR mothers (62.3%) reported smoking

³⁶ 2,851 mothers in the general population and three women in KY-Moms MATR were missing data on sexually transmitted infections.

compared to the general population of mothers (25.7%; not depicted in a figure).³⁷ However, among mothers who reported they smoked, KY-Moms MATR mothers reported, on average, smoking a similar number of cigarettes in each trimester compared to women in the general population (see Figure 4.5).

FIGURE 4.5. AVERAGE NUMBER OF CIGARETTES SMOKED PER TRIMESTER



a—From the general population, 37 mothers were missing information on the number of cigarettes before pregnancy, 33 were missing the number of cigarettes in the first trimester, 27 were missing the number of cigarettes in the second trimester and 18 were missing the number of cigarettes in the last trimester.

Alcohol Use

Significantly more KY-Moms MATR clients also reported alcohol use (1.9%) compared to the general population of mothers (0.3%; not depicted in a figure).

Birth Events and Outcomes

Multivariate Analysis of Birth Outcomes

Using the Kentucky Vital Statistics data, the birth outcomes of children born to mothers who participated in KY-Moms MATR program (n = 107) were compared to the outcomes of children born to mothers who did not participate in the KY-Moms MATR program (n = 58,635). Logistic regression models were used to examine the association between KY-Moms MATR participation and birth outcomes while adjusting for key factors.³⁸

Each birth outcome in Table 4.2 was entered as the dependent variable in a separate binary logistic regression model with KY-Moms MATR participation as the predictor variable and the covariates of mother’s age, education (i.e., less than high school diploma/high school diploma or higher), area of residence (metropolitan vs. non-metropolitan county), marital status (married vs. not married), and smoking at the time of the birth (Yes/No).³⁹

³⁷ 150 mothers in the general population were missing data about whether or not she was a smoker.

³⁸ The alpha level was set at $p < .01$.

³⁹ Because race was highly associated with metropolitan vs. non-metropolitan residence for KY-Moms MATR clients, such that only 2 non-White KY-Moms MATR clients lived in a non-metropolitan community, to avoid the problem of multicollinearity in the models, race was excluded as a covariate while mother’s residence in a metropolitan vs. non-metropolitan community was included.

Results of the analysis show that KY-Moms MATR clients had similar birth outcomes compared to the general population for: (1) giving birth to a baby prematurely (the adjusted average⁴⁰ weeks gestation of 38.2 to 38.3, respectively); (2) having a child with low birth weight (the adjusted average of 7lbs, 4oz and 7lbs, 3oz, respectively); (3) having birthing problems (12.1% and 13.7%, respectively); (4) having their baby taken to the neonatal intensive care unit (NICU; 6.7% and 9.4%, respectively); or (5) breastfeeding (55.1% and 70.6%, respectively).

TABLE 4.2. EFFECT OF KY-MOMS MATR PARTICIPATION ON BIRTH OUTCOMES^a

	<i>b</i>	Adj. Odds ratio	99% Confidence Intervals
Premature	.126	1.134	.552-2.332
Low birth weight	-.008	.980	.448-2.198
Any birthing problems (other than the baby being taken to the NICU)	-.178	.549	.389-1.800
Baby taken to NICU	-.494	.610	.222-1.678
Breastfeeding	-.105	.900	.528-1.536

Note: Categorical variables were coded in the following ways: KY-Moms MATR participation (0 = General population, 1 = KY-Moms MATR client); Type of community in which mother resided (0 = Non-metropolitan, 1 = Metropolitan); Mother's education (0= Less than a high school diploma/GED, 1 = High school diploma/GED or higher); Mother reported being a smoker (0=No, 1=Yes); Mother's marital status (0 = Not married, 1 = Married); Premature (0 = Fullterm, 1 = Premature); Any birthing problems other than the baby being taken to the NICU (0 = No, 1 = Yes); Baby taken to NICU (0 = No, 1 = Yes); Breastfeeding (0 = No, 1 = Yes).

a—The number of cases with missing values on at least one of the covariates or dependent variable for the 5 logistic models were: premature (n = 30), low birth weight (n = 9), any birth problems (n = 298), baby taken to NICU (n = 2,725), and breastfeeding (n = 250).

The highest APGAR score⁴¹ was entered as the dependent variable in a linear regression model with KY-Moms MATR participation as the predictor variable and the covariates of mother's age, education, area of residence, marital status, and smoking status at birth. As shown in Table 4.3, average APGAR scores were similar for KY-Moms MATR and the general population (adjusted average score of 8.8 for both groups), after adjusting for the selected covariates.

TABLE 4.3. EFFECT OF PARTICIPATION IN KY-MOMS MATR ON BABY'S HIGHEST APGAR SCORE (N = 56,556)^a

	β	t	df	p
Highest APGAR score	-.004	-1.033	6	.301

R2 = .002, R2adj. = .002, F(6, 56549) = 20.725, p < .001.

Note: Categorical variables were coded in the following ways: KY-Moms MATR participation (0 = General population, 1 = KY-Moms MATR client); Type of community in which mother resided (0=Non-metropolitan, 1=Metropolitan); Mother's education (0=Less than a high school diploma/GED, 1=High school diploma or higher); Mother reported being a smoker (0=No, 1=Yes); Mother's marital status (0 = Not married, 1 = Married).

a— 274 cases had missing values for the highest APGAR score and 1,805 cases had missing values on at least one of the covariates.

The number of prenatal visits was also entered as the dependent variable in a linear regression

⁴⁰ An ANCOVA was used to estimate adjusted means using the same covariates used in the multivariate models and included mother's age, education (i.e., high school diploma or higher), area of residence (metropolitan vs. non-metropolitan county), marital status, and smoking at the time of the birth.

⁴¹ Most babies had one APGAR (5-minute) recorded in the file, but for a smaller number of babies a 10-minute APGAR was recorded. A new variable was computed that took the highest value APGAR (if 2 scores were recorded) or the only score.

model with KY-Moms MATR participation as the predictor variable and the covariates of mother’s age, education, area of residence, marital status, and smoking status at birth (see Table 4.4). There was no significant difference in the number of prenatal visits for KY-Moms MATR mothers compared to mothers in the general population (adjusted average of 11.7 visits for both group), after adjusting for the selected covariates.

TABLE 4.4. EFFECT OF PARTICIPATION IN KY-MOMS MATR ON THE NUMBER OF PRENATAL VISITS (N = 59,914)^a

	β	t	df	p
Average number of prenatal visits	.000	-.040	6	.968

R² = .036, R²adj. = .036, F(6, 54796) = 340.332, p < .001.

Note: Categorical variables were coded in the following ways: KY-Moms MATR participation (0 = General population, 1 = KY-Moms MATR client); Type of community in which mother resided (0 = Non-metropolitan, 1 = Metropolitan); Mother’s education (0 = Less than a high school diploma/ GED, 1 = High school diploma or higher); Mother reported being a smoker (0 = No, 1 = Yes); Mother’s marital status (0 = Not married, 1 = Married).

a—2,177 cases had missing values for the number of prenatal visits and 1,655 cases had missing values on at least one of the covariates.

Summary

Compared to the general population of mothers in Kentucky who gave birth during the same period of time as KY-Moms MATR clients, KY-Moms MATR clients were more likely to live in non-metropolitan or rural areas, were less likely to be married, and had less education. In addition, KY-Moms MATR mothers were more likely to have Medicaid as their source of payment for the birth of the baby and receive support from WIC compared to the general population of mothers. While they were not more likely to have maternal health problems such as gestational diabetes and hypertension, they were more likely to have Hepatitis B and/or C. Significantly more KY-Moms MATR mothers were also smokers compared to the general population of mothers. Despite these characteristics, multivariate analysis showed that birth events and outcomes were very similar between groups.

A CLOSER LOOK AT BIRTH EVENT OUTCOMES

Further analysis of birth data outcomes can be found in Appendix D in which KY-Moms MATR clients were compared to a sample of mothers matched on selected factors (i.e., age, race, education, marital status, metropolitan/non-metropolitan residence, and smoking status) along with a randomly selected comparison group from the general population. Overall, results of the comparison analysis parallel the results of the multivariate analysis with KY-Moms MATR birth events and outcomes being very similar to the general population.

Section 5. Substance Use

This section of targeted risk factors examines change in: (1) overall substance use (illegal drug and/or alcohol use); (2) use of illegal drugs, alcohol, and cigarettes; (3) problems experienced with substance use; (4) readiness for substance abuse treatment; and (5) substance abuse treatment and self-help meetings. Past-6-month and past-30-day substance use are examined separately where applicable.

Change in targeted risk factors were examined for two different trends over time:⁴²

1. Six month trends

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

2. 30 day trends⁴³

- a. **30 days before pregnancy.** Information collected from the client at prenatal baseline regarding the 30 days before she found out she was pregnant.
- b. **30 days at prenatal baseline.** Information collected from the client at prenatal baseline regarding the past 30 days she has been pregnant.
- c. **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.
- d. **30 days at postnatal follow-up.** Information collected at postnatal follow-up regarding the past 30 days.

Overall Substance Use (Illegal Drug and Alcohol Use)

Past-6-Month Illegal Drugs and/or Alcohol Use

In the 6 months before pregnancy, over three-quarters of clients (79.2%) reported using illegal drugs and/or alcohol. In the 6 months before the follow-up interview, over one-quarter (27.4%) of clients reported using illegal drugs and/or alcohol (a significant decrease of 51.9%; see Figure 5.1).

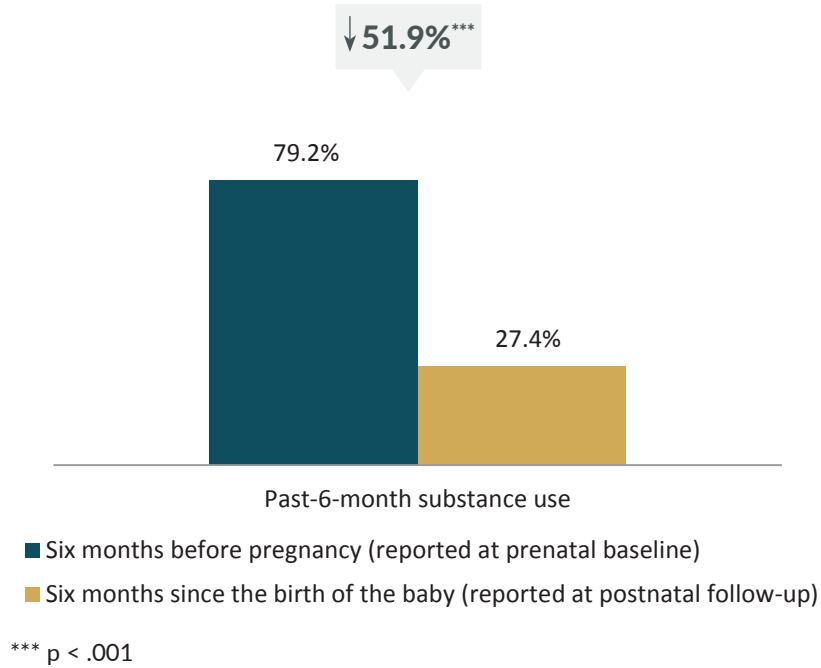
“I loved it, it was very useful. It gave me information I didn’t know before and great advice.”

- KY-MOMS MATR FOLLOW-UP CLIENT

⁴² Significance was determined by McNemar’s test for substance use, mental health problems and intimate partner violence unless otherwise indicated.

⁴³ Because some clients were in a controlled environment (e.g., prison, jail, or residential facility) all 30 days before prenatal baseline (n = 6), changes in drug, alcohol, and tobacco use from baseline to follow-up was analyzed for only clients who were not in a controlled environment all 30 days before prenatal baseline (n = 100). The assumption for excluding clients who were in a controlled environment all 30 days is that being in a controlled environment inhibits opportunities for alcohol and drug use.

FIGURE 5.1. PAST-6-MONTH SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 106)

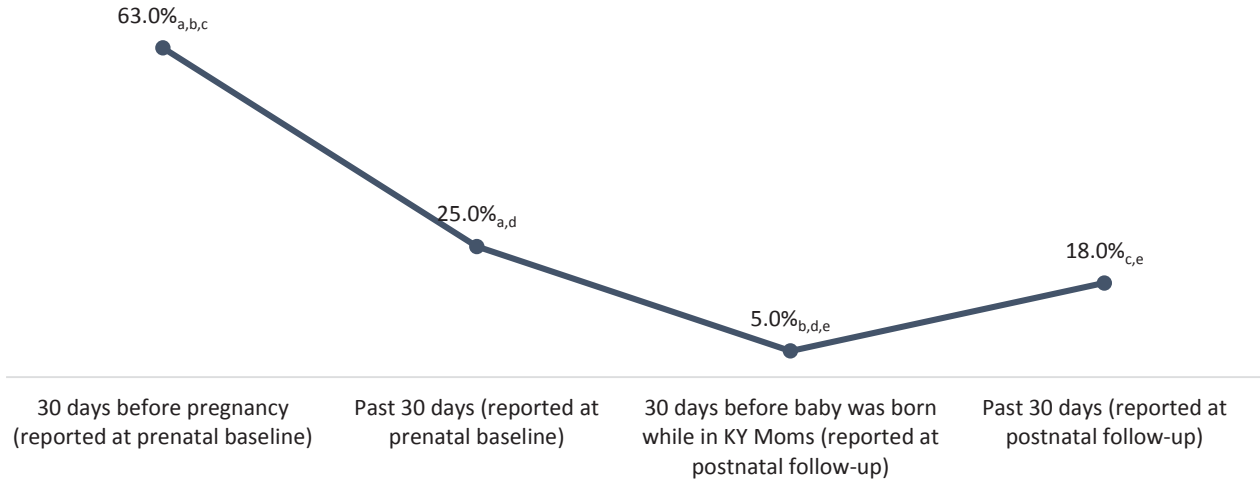


Past-30-Day Illegal Drugs and/or Alcohol Use

Figure 5.2 shows the results for overall illegal drug and/or alcohol use across all four past-30-day periods. In the 30 days before pregnancy, 63.0% of clients reported using illegal drugs and/or alcohol. In the past 30 days at baseline, 25.0% of clients reported using illegal drugs and/or alcohol.

At postnatal follow-up, 5.0% of clients reported using illegal drugs and/or alcohol in the 30 days before the baby was born compared to 63.0% of clients in the 30 days before pregnancy and 25.0% in the past 30 days at prenatal baseline. Finally, 18.0% of clients reported illegal drug and/or alcohol use in the past 30 days at postnatal follow-up. Thus, the period when the smallest percentage of women reported using illegal drugs and/or alcohol was the 30 days before the baby was born while the clients were involved in KY-Moms MATR.

FIGURE 5.2. PAST-30-DAY SUBSTANCE USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 100)



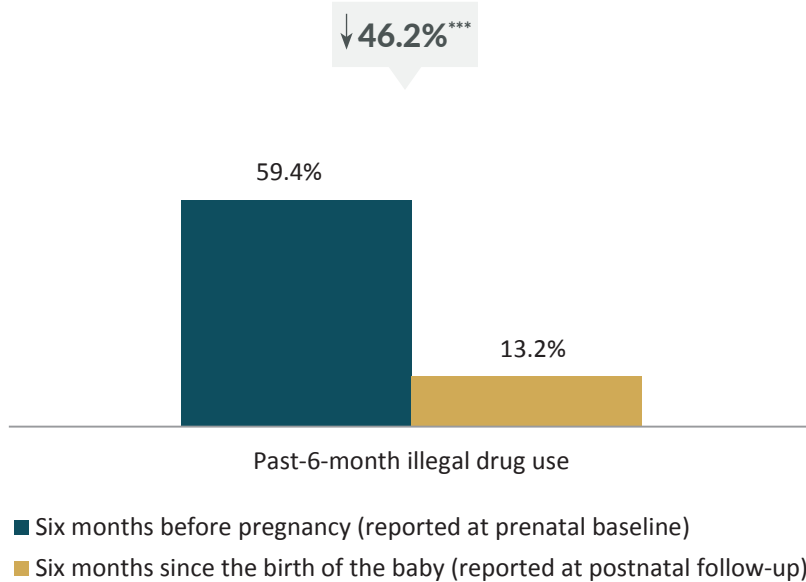
a, b, c, d, e- Values sharing the same subscript differ at $p < .01$

Illegal Drug Use

Past-6-Month Illegal Drug Use

Figure 5.3 shows that in the 6 months before pregnancy, 59.4% of clients reported using illegal drugs and in the past 6 months at follow-up 13.2% of clients reported illegal drug use (a significant decrease of 46.2%). Clients reported being an average of 16.4 years of age when they first began using illicit drugs.⁴⁴

FIGURE 5.3. PAST-6-MONTH ILLEGAL DRUG USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 106)



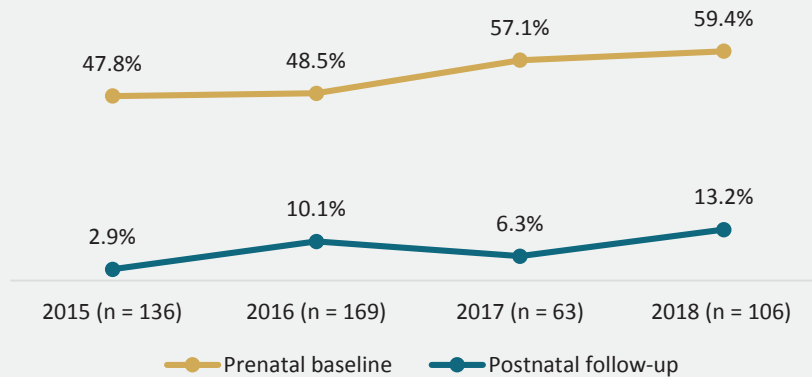
*** $p < .001$

⁴⁴ Among the clients who reported an age of first use greater than 0, $n = 90$.

TRENDS IN ILLEGAL DRUG 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 illegal drug use in the 6 months before pregnancy has increased since 2015 from 47.8% to 59.4% in 2018. The percent of women who reported illegal drug use in the past 6 months at postnatal follow-up generally increased as well.

FIGURE 5.4. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING ILLEGAL DRUG USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Past-30-Day Illegal Drug Use

Close to one-half (47.0%) of clients reported illegal drug use⁴⁵ in the 30 days prior to becoming pregnant (see Figure 5.5). **A national survey of women indicated that 11.4% of non-pregnant women age 15-44 reported using illegal drugs in the past month.**⁴⁶ Twenty-two percent of clients reported using illegal drugs in the past 30 days at baseline. **In comparison, nationally, 5.4% of pregnant women aged 15-44 reported using illegal drugs in the past month.**

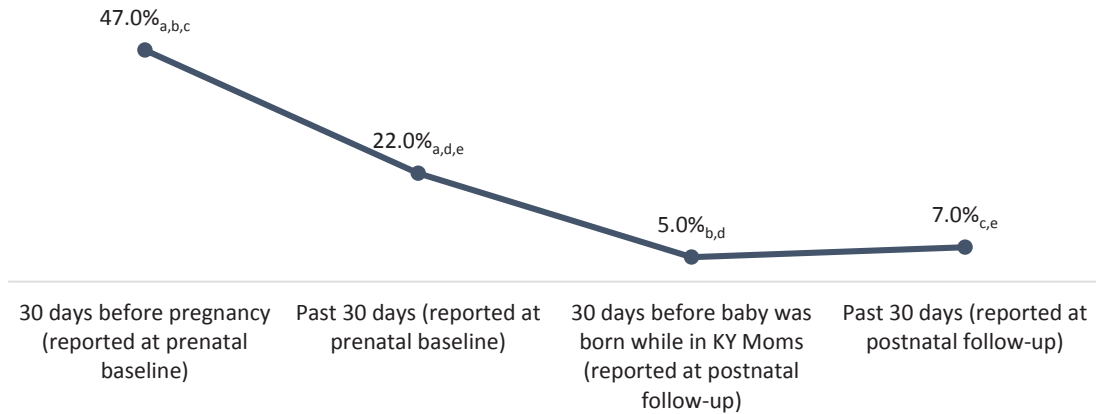
The number of clients who reported illegal drug use decreased significantly in the past 30 days at prenatal baseline and again in the 30 days before the baby was born

At postnatal follow-up, 5.0% of clients reported using illegal drugs in the 30 days before the baby was born and 7.0% reported using illegal drugs 30 days before the follow-up assessment.

⁴⁵ Illegal drug use includes marijuana, sedatives, barbiturates, prescription opiates, cocaine, heroin, hallucinogens, inhalants, methadone, and non-prescribed buprenorphine.

⁴⁶ Substance Abuse and Mental Health Services Administration. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014.

FIGURE 5.5. PAST-30-DAY ILLEGAL DRUG USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 100)



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

Injection Drug Use

At prenatal baseline, 22.6% of clients reported ever injecting any drugs and 2.0% of clients reported injecting a drug in the past 30 days. At postnatal follow-up, none of the clients reported injecting drugs since they began KY-Moms MATR or in the past 30 days.

Alcohol Use

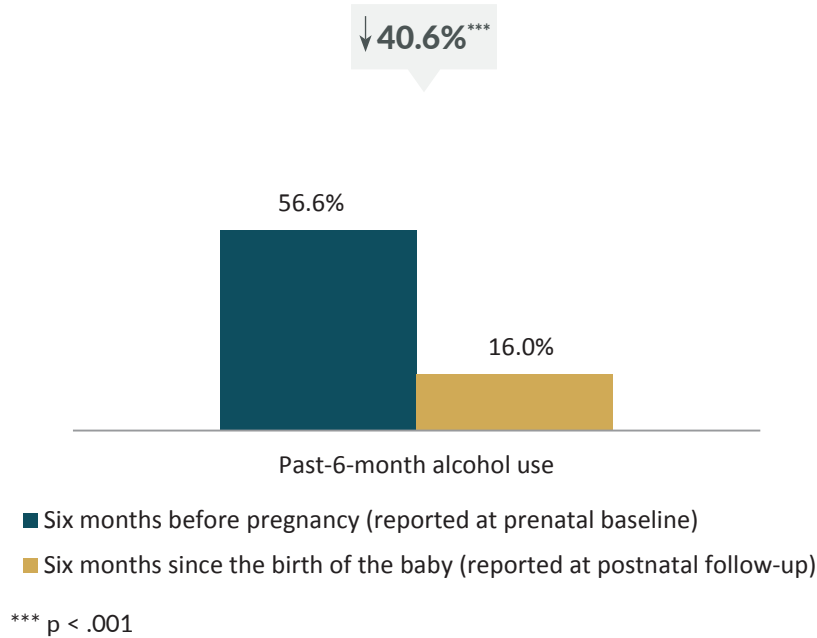
Past-6-Month Alcohol Use

Figure 5.6 shows that in the six months before pregnancy 56.6% of clients reported alcohol use and after the baby was born, 16.0% of clients reported alcohol use in the past 6 months (a significant decrease of 40.6% from the six months before pregnancy). Clients reported being an average of 16.2 years of age when they had their first alcoholic drink (other than a few sips).⁴⁷

The number of clients who reported alcohol use decreased 41% from the six months before pregnancy to the six months since the baby was born

⁴⁷ Among the clients who reported an age of first use greater than 0, n = 100.

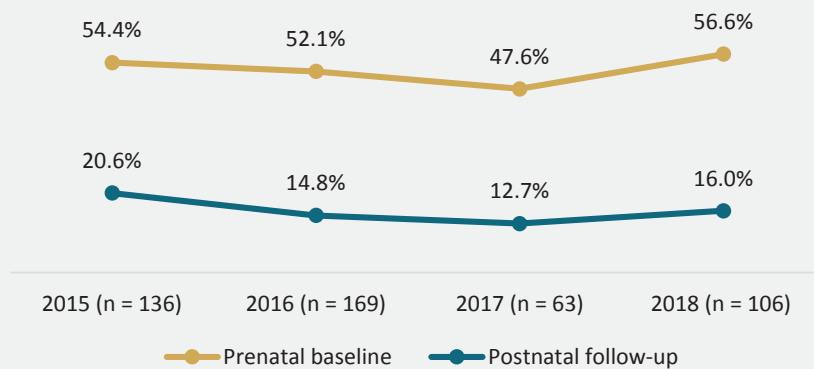
FIGURE 5.6. PAST-6-MONTH ALCOHOL USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 106)



TRENDS IN ALCOHOL USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Each year, around half of the follow-up sample reported alcohol use in the six months before pregnancy. In addition, the percent of women who reported alcohol use in the past 6 months at postnatal follow-up has generally decreased although 2018 shows a slight increase in the percent of women reporting alcohol use.

FIGURE 5.7. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING ALCOHOL USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



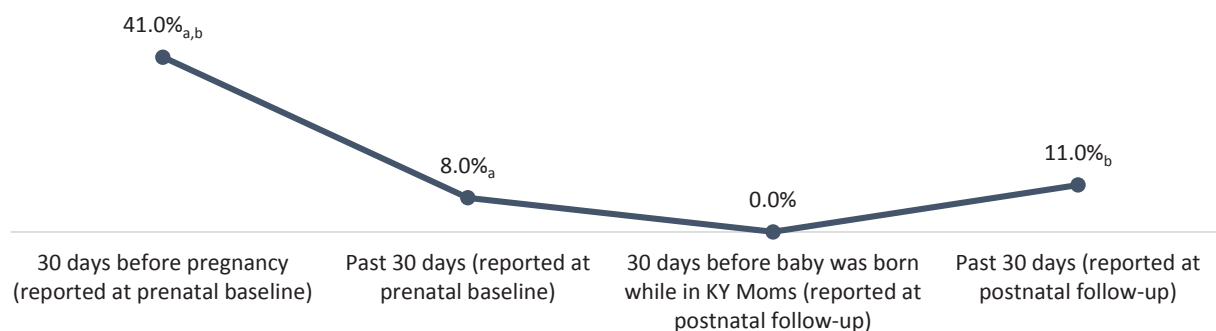
Past-30-Day Alcohol Use

Figure 5.8 shows that 41.0% of clients reported alcohol use in the 30 days prior to becoming pregnant. **At the national level, 55.4% of non-pregnant women aged 15-44 reported drinking alcohol in the past 30 days.** In the past 30 days at prenatal baseline, 8.0% of clients reported using alcohol. **Nationally, 9.4% of women aged 15-44 reported using alcohol during pregnancy.**

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. Six months after the baby was born, 11.0% of clients reported alcohol use in the past 30 days.

None of the KY-Moms MATR clients reported any alcohol use in the 30 days before the baby was born

FIGURE 5.8. PAST-30-DAY ALCOHOL USE FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 100)



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

Problems Experienced With Substance Use

In the 30 days before pregnancy, 34.0% of clients reported they experienced problems with drugs or alcohol such as craving, withdrawal, wanting to quit but being unable, or worrying about relapse (see Figure 5.9). In the past 30 days at follow-up, 4.7% of clients reported experiencing problems with drugs or alcohol (a significant decrease of 29.3%).

“I liked everything. My case manager was awesome. She was easy to talk to and I felt like she listened to me.”

- KY-MOMS MATR FOLLOW-UP CLIENT

FIGURE 5.9. CLIENTS EXPERIENCING PROBLEMS WITH ILLEGAL DRUGS OR ALCOHOL AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)

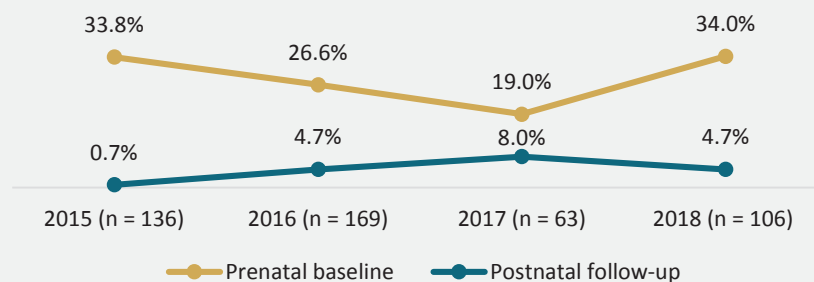


*** p < .001

TRENDS IN EXPERIENCING PROBLEMS WITH SUBSTANCE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

In report year 2015, 33.8% of clients reported they experienced problems with drugs or alcohol in the 30 days before pregnancy and in the past 30 days at follow-up, 0.7% of clients experienced problems. In 2017, 19.0% of clients experienced problems with drugs or alcohol in the 30 days before pregnancy compared to 8.0% in the past 30 days at follow-up. In report year 2018, a little more than one-third of clients experienced problems with drugs or alcohol in the 30 days before pregnancy compared to 4.7% of clients in the past 30 days at the postnatal follow-up.

FIGURE 5.10. CLIENTS IN THE FOLLOW-UP SAMPLE EXPERIENCING PROBLEMS WITH SUBSTANCE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



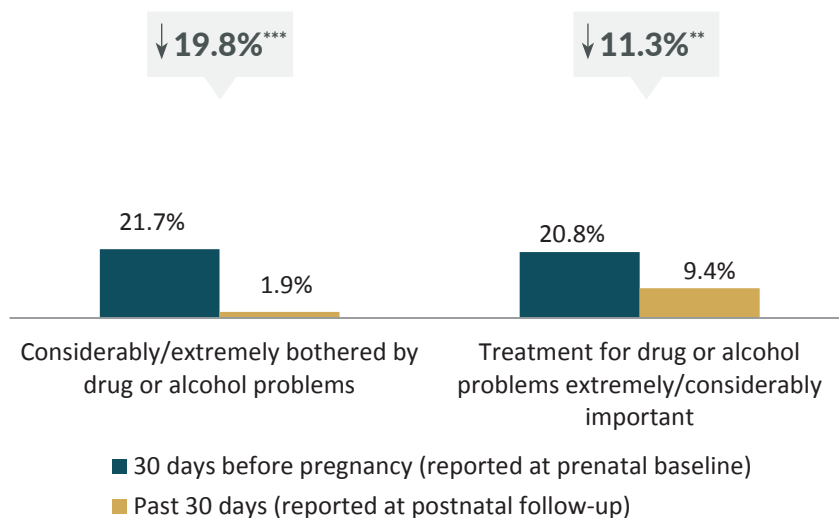
Readiness For Substance Abuse Treatment

Figure 5.11 shows that 21.7% of clients reported they were considerably or extremely troubled or bothered by drug or alcohol problems in the 30 days before pregnancy. In the past 30 days at

postnatal follow-up 1.9% of clients reported that they were considerably or extremely troubled or bothered by drug or alcohol problems.

The figure below also shows that 20.8% of clients in the 30 days before pregnancy and 9.4% of clients in the past 30 days at postnatal follow-up reported that treatment for drug or alcohol problems was considerably or extremely important.

FIGURE 5.11. READINESS FOR TREATMENT FOR ILLEGAL DRUG OR ALCOHOL USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)

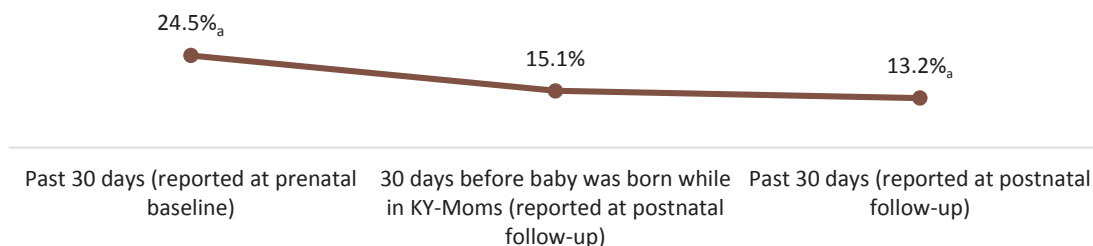


*** p < .001, ** p < .01

Substance Abuse Treatment

Figure 5.12 shows that in the past 30 days at baseline, 24.5% of clients reported being treated for substance abuse (including detox, drug court, and recovery programs). At postnatal follow-up, 15.1% of clients reported being treated for substance abuse in the 30 days before the baby was born and 13.2% of clients reported being treated for substance abuse in the past 30 days.

FIGURE 5.12. CLIENTS REPORTING SUBSTANCE ABUSE TREATMENT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)

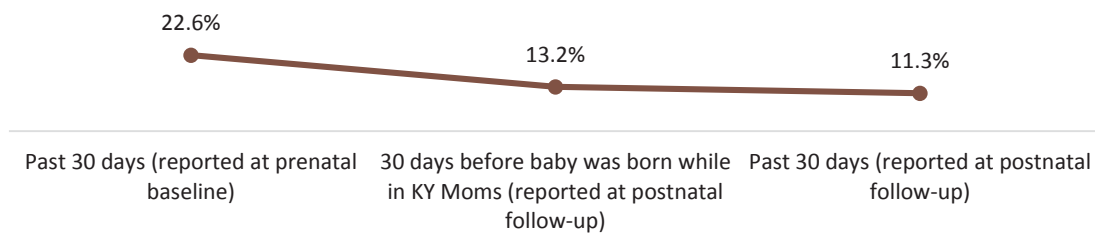


a- Values sharing the same subscript differ at p < .01

Self-Help Meetings

At prenatal baseline, 15.1% of clients reported attending a self-help recovery meeting (such as AA, NA, or MA) in the 6 months before pregnancy (not depicted in a figure). The number of clients who reported attending a self-help recovery meeting declined slightly from the past 30 days at prenatal baseline to the past 30 days at follow-up. In the past 30 days at prenatal baseline, 22.6% of clients reported attending a self-help meeting (see Figure 5.13). At follow-up, 13.2% of clients reported attending a self-help meeting in the 30 days before the baby was born and 11.3% of clients reported attending a self-help meeting in the past 30 days at follow-up.

FIGURE 5.13. CLIENTS REPORTING ATTENDING A SELF-HELP GROUP AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



Tobacco Use

Past-6-Month Tobacco Use

At prenatal baseline, 79.2% of clients reported smoking tobacco in the 6 months prior to pregnancy (Figure 5.14). At postnatal follow-up, 64.2% of clients reported smoking tobacco in the past 6 months. Clients reported being an average of 16 years of age when they began smoking regularly (on a daily basis).⁴⁸

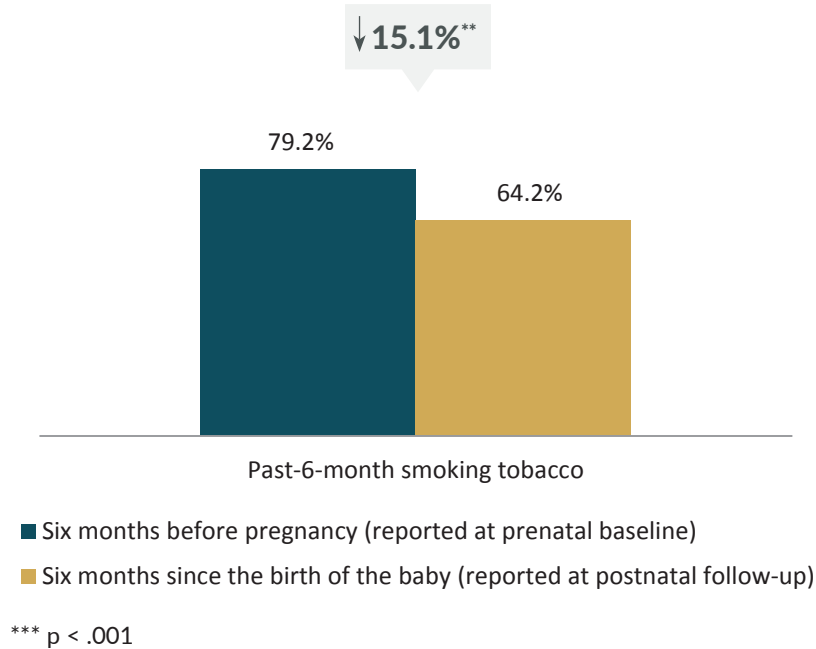
The number of clients who reported smoking tobacco decreased 15% from the six months before pregnancy to the past six months at follow-up

“My caseworker was there to help me. And she kept me interested and I trusted her.”

- KY-MOMS MATR FOLLOW-UP CLIENT

⁴⁸ Among the clients who reported an age of first use greater than 0, n = 83.

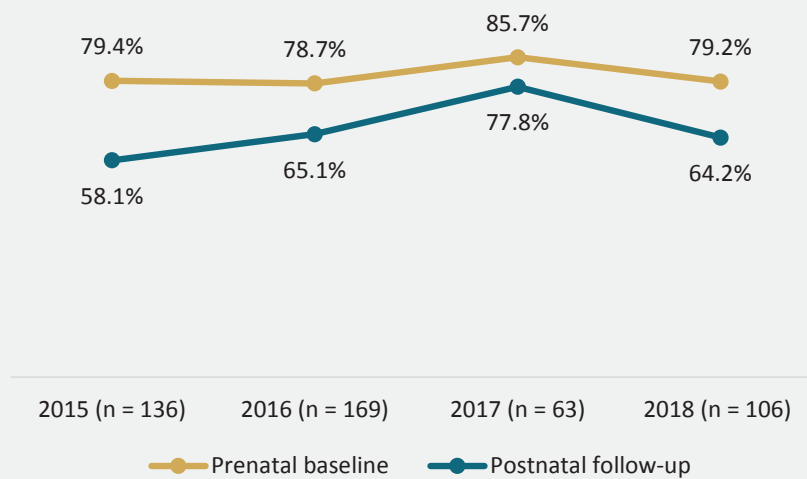
FIGURE 5.14. PAST-6-MONTH SMOKING TOBACCO USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP



TRENDS IN CIGARETTE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Cigarette use was high at prenatal baseline for each year with well over three-quarters of women reporting smoking cigarettes in the six months before pregnancy. At follow-up, a large number of women continued to smoke cigarettes. From 2015 to 2017, the number of women reporting smoking cigarettes at follow-up increased and in 2018 the number of women reporting cigarette use decreased slightly.

FIGURE 5.15. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CIGARETTE USE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018

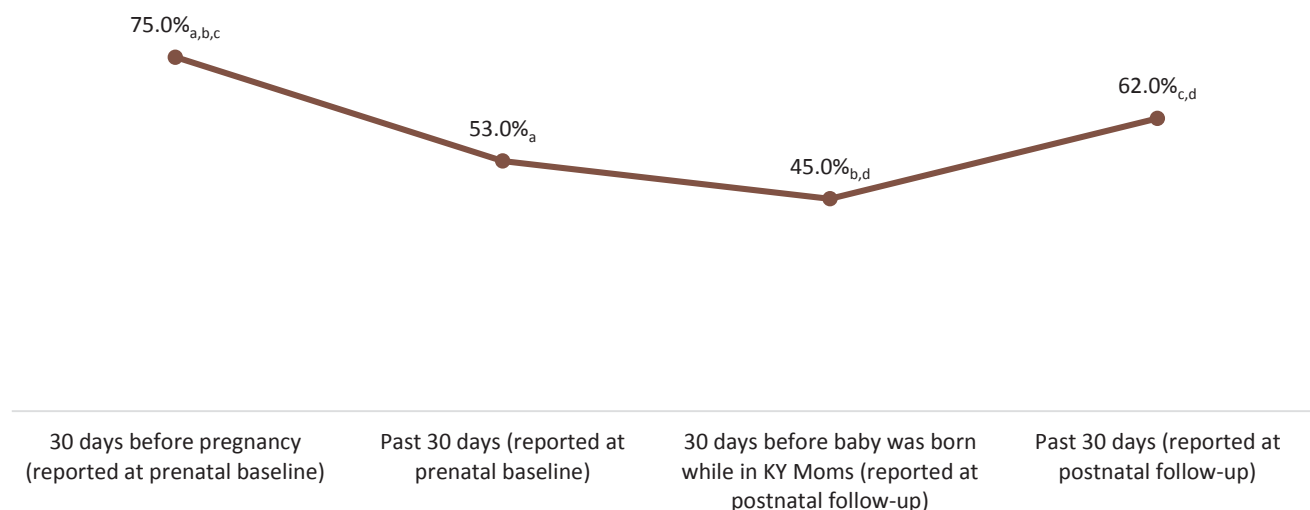


Past-30-Day Tobacco Use

At prenatal baseline, 75.0% of clients reported smoking tobacco products in the 30 days prior to pregnancy (Figure 5.16). **This percent is considerably higher than the national estimate of 29.0% of non-pregnant women aged 18-44 who are self-reported smokers.**⁴⁹ Over half of clients (53.0%) also reported smoking tobacco in the past 30 days at prenatal baseline compared to **almost 15% of pregnant women in Kentucky who reported smoking cigarettes and 10.5%, nationally.**⁴⁵

At postnatal follow-up, in the 30 days before the baby was born, 45.0% of clients reported smoking tobacco products. The percent of women who reported cigarette use in the past 30 days at postnatal follow-up increased slightly with 62.0% of clients reporting cigarette use (still a decrease from prior to pregnancy).

FIGURE 5.16. PAST-30-DAY SMOKING TOBACCO AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 100)



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

AVERAGE NUMBER OF CIGARETTES SMOKED IN THE PAST 30 DAYS

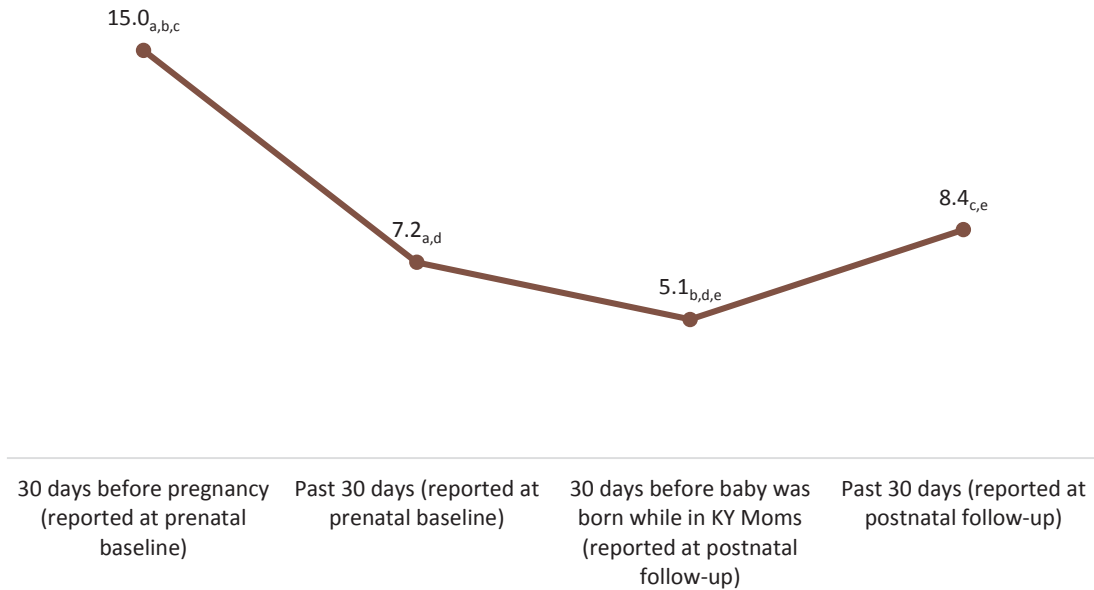
Figure 5.17 shows that for women who reported smoking tobacco in the 30 days prior to pregnancy (n = 75), the average number of cigarettes smoked declined from prior to pregnancy to after the client became involved in KY-Moms MATR and remained low after the birth of the baby. At prenatal baseline, women who smoked reported that in the 30 days before they found out they were pregnant they smoked an average of 15.0 cigarettes per day (less than one pack) and an average of 7.2 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 5.1. While there was an increase to 8.4

KY-Moms MATR clients sustained a decrease in the average number of cigarettes smoked after the baby was born compared to before pregnancy

⁴⁹ America's Health Rankings Health of Women and Children Report found at https://assets.americashealthrankings.org/app/uploads/hwc-fullreport_v2.pdf

cigarettes after the baby was born compared to the 30 days before the baby was born, they still smoked significantly fewer cigarettes compared to before pregnancy suggesting positive changes in smoking.

FIGURE 5.17. AVERAGE NUMBER OF CIGARETTES SMOKED AMONG WOMEN REPORTING CIGARETTE USE IN THE 30 DAYS PRIOR TO PREGNANCY (N = 75)



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

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, 47.0% of clients reported illegal drug use in the 30 days before pregnancy compared to 5.0% of clients in the 30 days before the baby was born and 7.0% of clients in the past 30 days at postnatal follow-up. While 41.0% 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 30 days before the baby was born, significantly fewer clients experienced or were bothered by substance use problems (such as craving, withdrawal, wanting to quit but being unable, or worrying about relapse).

The number of women who reported smoking cigarettes in the 30 days before the baby was born decreased significantly compared to the 30 days prior to pregnancy as did the average number of cigarettes clients reported smoking. These decreases in smoking, compared to before pregnancy, were sustained even after the baby was born. Compared to pregnant women, nationally, however, more KY-Moms MATR mothers smoked cigarettes before, during and after pregnancy.

Section 6. Mental Health

This section examines changes in self-reported mental health for the following factors: (1) depression; (2) generalized anxiety; (3) comorbid depression and anxiety; and (4) number of days physical and mental health were poor. Past-6-month and past-30-day mental health symptoms are examined separately where applicable.

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?”

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

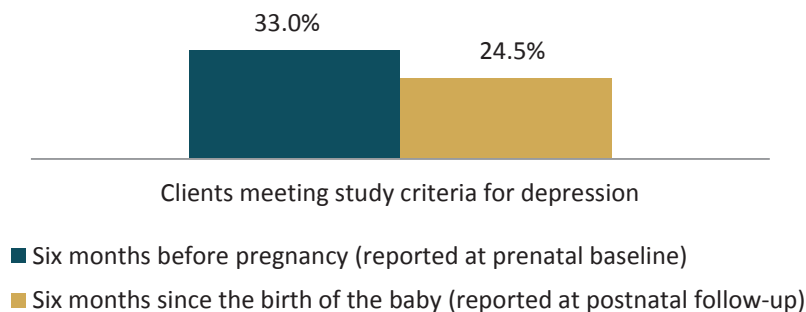
STUDY CRITERIA FOR DEPRESSION

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.

Clients Meeting Study Criteria for Depression in the Past 6 Months

In the 6 months before they became pregnant, 33.0% of the women met study criteria for depression. In the past 6 months at postnatal follow-up, 24.5% of KY-Moms MATR clients met study criteria for depression.

FIGURE 6.1. MEETING STUDY CRITERIA FOR DEPRESSION IN 6 MONTHS BEFORE PREGNANCY AND PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 106)

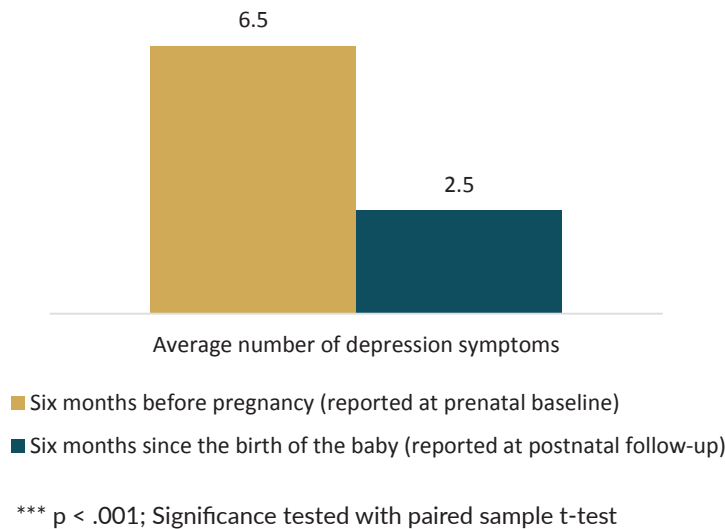


AVERAGE NUMBER OF DEPRESSION SYMPTOMS IN THE PAST 6 MONTHS

Of the clients who met study criteria for depression in the 6 months before pregnancy (n = 35), they reported an average of 6.5 symptoms. In the past 6 months at postnatal follow-up, these same clients reported significantly fewer symptoms (average of 2.5 symptoms) indicating that the reduction in depressive symptoms was sustained after KY-Moms MATR participation.

The average number of depression symptoms clients reported decreased significantly from baseline to follow-up

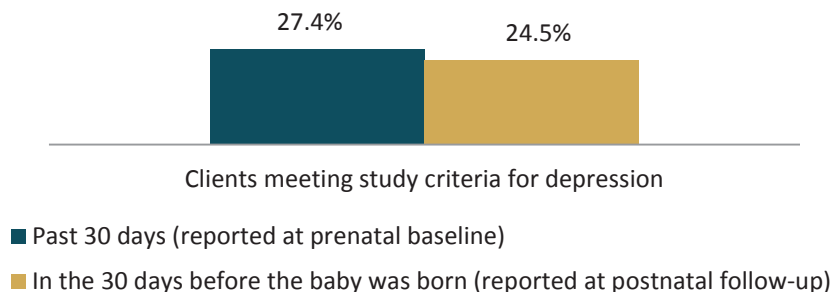
FIGURE 6.2. AVERAGE NUMBER OF DEPRESSION SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR DEPRESSION IN THE 6 MONTHS BEFORE PREGNANCY AT PRENATAL BASELINE (N = 35)***



Clients Meeting Study Criteria for Depression in the Past 30 Days

In the past 30 days at prenatal baseline, 27.4% of the women met study criteria for depression (see Figure 6.3). At postnatal follow-up, 24.5% of clients met study criteria for depression in the 30 days before the baby was born.

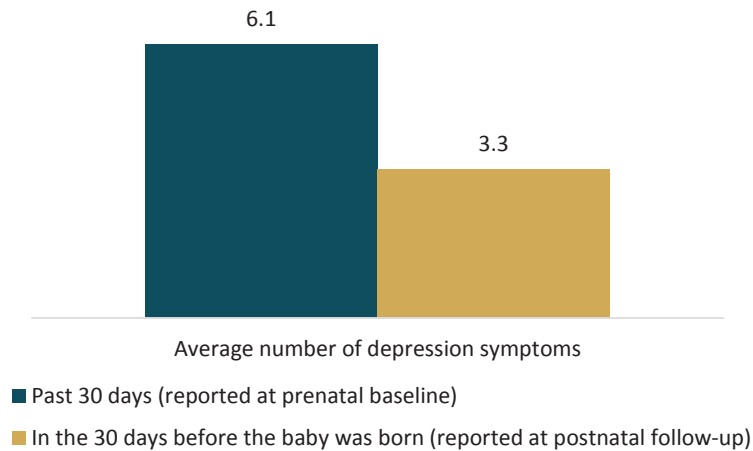
FIGURE 6.3. MEETING STUDY CRITERIA FOR DEPRESSION IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 106)



AVERAGE NUMBER OF DEPRESSION SYMPTOMS IN THE PAST 30 DAYS

Clients who met study criteria for depression in the past 30 days at baseline (n = 29) reported an average of 6.1 symptoms in the past 30 days at prenatal baseline and an average of 3.3 symptoms in the 30 days before the baby was born (a significant decrease).

FIGURE 6.4. AVERAGE NUMBER OF DEPRESSION SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR DEPRESSION IN THE PAST 30 DAYS AT PRENATAL BASELINE (N = 29)**



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

Generalized Anxiety Symptoms

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

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

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).

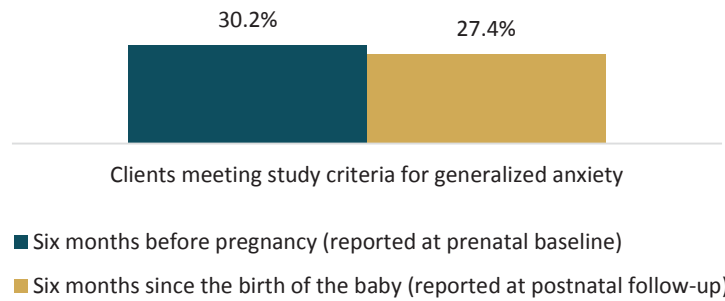
STUDY CRITERIA FOR GENERALIZED ANXIETY

To meet study criteria for depression, 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, 30.2% of clients reported symptoms that met study criteria for generalized anxiety (see Figure 6.5). In the past 6 months at postnatal follow-up, 27.4% of clients met study criteria for generalized anxiety.

FIGURE 6.5. MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY IN 6 MONTHS BEFORE PREGNANCY AND PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 106)

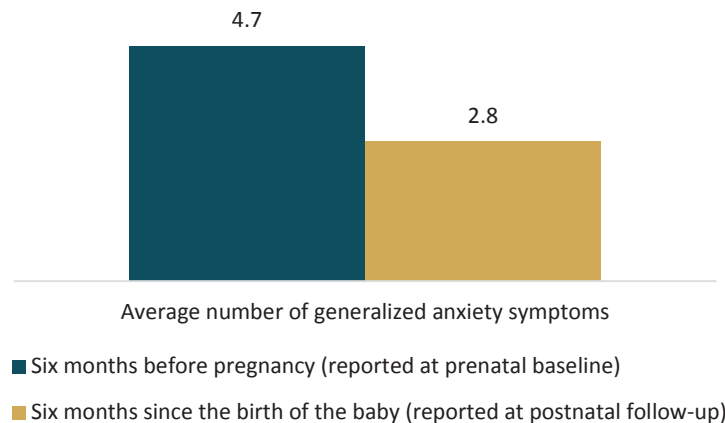


AVERAGE NUMBER OF GENERALIZED ANXIETY SYMPTOMS IN THE PAST 6 MONTHS

Of the clients who met study criteria for generalized anxiety in the 6 months before pregnancy (n = 32), they reported an average of 4.7 symptoms. In the past 6 months at postnatal follow-up, clients reported an average of 2.8 symptoms which is a significant decrease compared to before pregnancy.

The average number of anxiety symptoms clients reported decreased significantly from baseline to follow-up

FIGURE 6.6. AVERAGE NUMBER OF ANXIETY SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR GENERALIZED ANXIETY IN THE 6 MONTHS BEFORE PREGNANCY AT PRENATAL BASELINE (N = 32)**

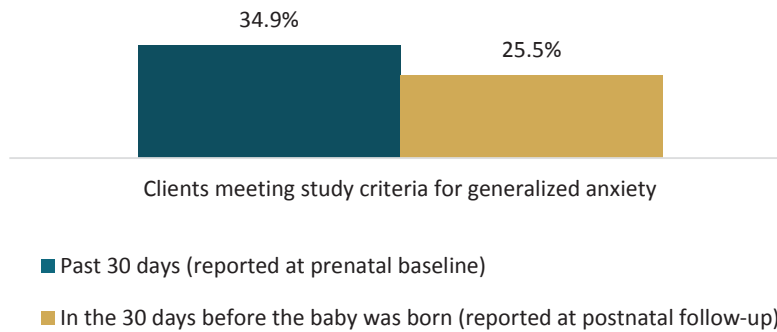


** p < .01; Significance tested with paired sample t-test

Clients Meeting Study Criteria for Anxiety in the Past 30 Days

At prenatal baseline, 34.9% of clients reported symptoms that met study criteria for generalized anxiety in the past 30 days (see Figure 6.7). In the 30 days before the baby was born, 25.5% of KY-Moms MATR clients met criteria for generalized anxiety.

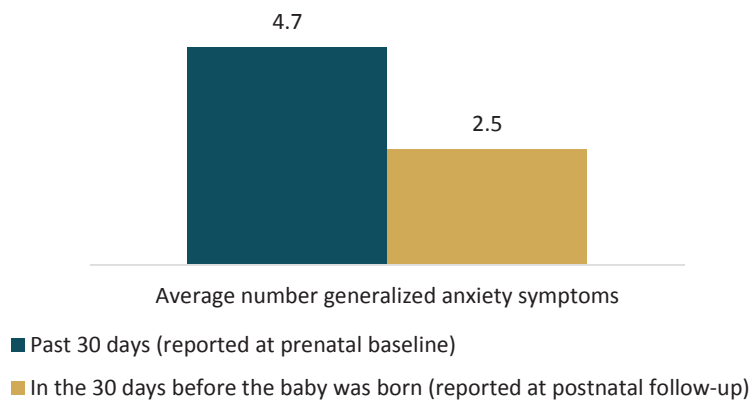
FIGURE 6.7. MEETING STUDY CRITERIA FOR GENERALIZED ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 106)



AVERAGE NUMBER OF ANXIETY SYMPTOMS IN THE PAST 30 DAYS

Clients who met study criteria for anxiety in the past 30 days at baseline (n = 37) reported an average of 4.7 symptoms in the past 30 days at prenatal baseline and an average of 2.5 symptoms in the 30 days before the baby was born.

FIGURE 6.8. AVERAGE NUMBER OF ANXIETY SYMPTOMS AMONG THOSE CLIENTS WHO MET STUDY CRITERIA FOR GENERALIZED ANXIETY IN THE PAST 30 DAYS AT PRENATAL BASELINE (N = 37)***



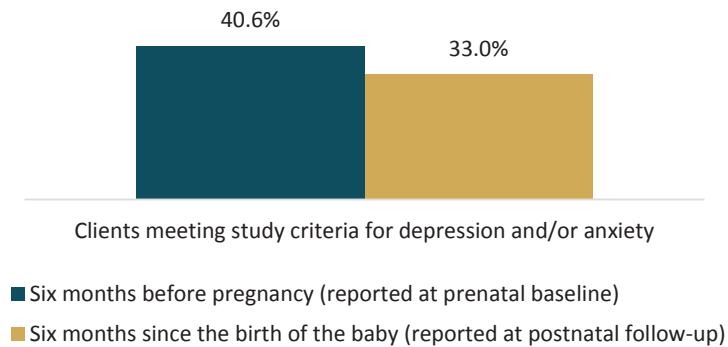
*** p < .001; Significance tested with paired sample t-test

Depression and Anxiety Symptoms

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

Figure 6.9 shows that 40.6% 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, 33.0% of clients met criteria for depression and/or anxiety.

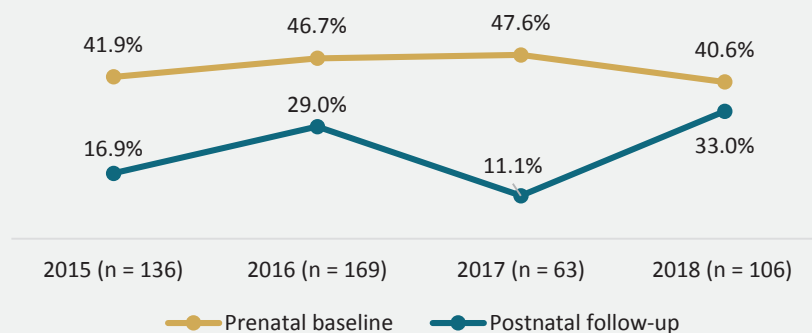
FIGURE 6.9. MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



TRENDS IN DEPRESSION AND/OR ANXIETY AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Clients who met study criteria for depression and/or anxiety at prenatal baseline was fairly constant over the past 4 years. At follow-up, however, while the number of women who met study criteria for depression and/or anxiety decreased compared to baseline, the degree to which the number decreases fluctuates between the years. In 2015, for example, 16.9% of clients met criteria for depression and/or anxiety compared to 29.0% in 2016. Unlike previous years, there was no significant difference in the number of women who met criteria for depression and/or anxiety from baseline and follow-up for report year 2018.

FIGURE 6.10. CLIENTS IN THE FOLLOW-UP SAMPLE WHO MET STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018

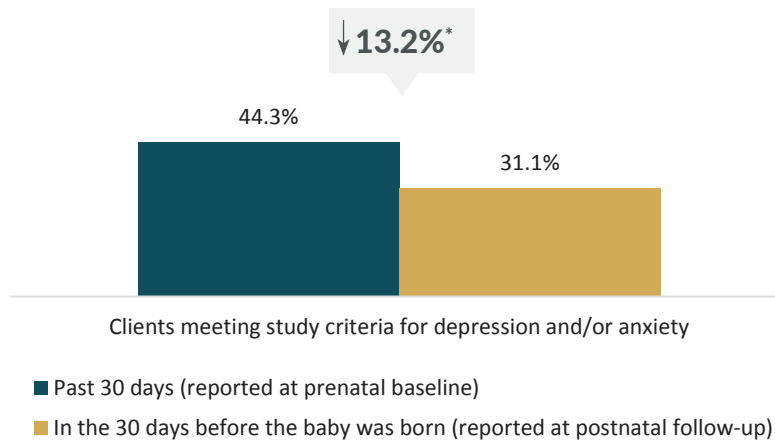


Clients Meeting Study Criteria For Depression and/or Anxiety in the Past 30 Days

In the past 30 days at prenatal baseline, 44.3% of clients met study criteria for either depression or anxiety (or both) and in the 30 days before the baby was born, 31.1% of the women met

study criteria for depression and/or anxiety (a significant decrease of 13.2% from the past 30 days at prenatal baseline).

FIGURE 6.11. MEETING STUDY CRITERIA FOR DEPRESSION AND/OR ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND 30 DAYS BEFORE THE BABY WAS BORN (N = 106)

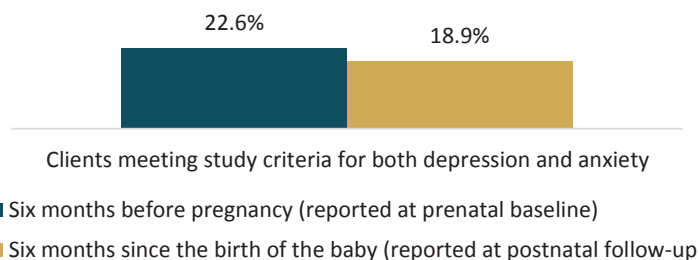


* p < .05

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

Less than one-quarter of clients (22.6%) met criteria for both anxiety and depression in the 6 months before they became pregnant and at postnatal follow-up, 18.9% of clients reported both anxiety and depression (see Figure 6.12).

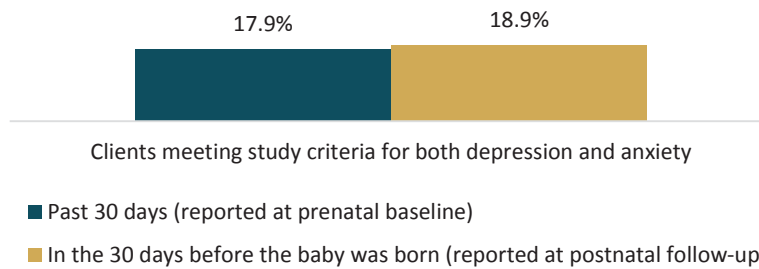
FIGURE 6.12. MEETING STUDY CRITERIA FOR BOTH DEPRESSION AND GENERALIZED ANXIETY IN THE PAST 6 MONTHS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



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

Almost 18.0% of clients in the past 30 days at prenatal baseline and 18.9% of clients in the 30 days before the baby was born met study criteria for both depression and anxiety (see Figure 6.13).

FIGURE 6.13. MEETING STUDY CRITERIA FOR BOTH DEPRESSION AND GENERALIZED ANXIETY IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 106)



Summary

The number of clients who met study criteria for depression or the number of clients who met study criteria for anxiety did not decrease significantly from prenatal baseline to postnatal follow-up. However, the number of depression symptoms and the number of anxiety symptoms clients reported decreased significantly from before pregnancy to 6 months after the birth of the baby and in the past 30 days. In the past 6 months at follow-up, one-third of clients still reported depression and/or anxiety.

“They were really involved. They taught me new things since my first baby 12 years ago.”

- KY-MOMS MATR FOLLOW-UP CLIENT

Section 7. Intimate Partner Abuse

This section examines changes in intimate partner abuse and violence such as: (1) any abuse; (2) psychological abuse; (3) coercive control; (4) physical abuse; and (5) sexual assault from prenatal baseline to postnatal follow-up. Past 6-month and past 30-day partner abuse measures are examined separately where applicable.

Felt Unsafe in Current or Past Relationship

Including fear of a current or ex-partner, 10.4% (n = 11) of clients reported they felt unsafe at baseline and 2.8% reported they felt unsafe at follow-up. Of the 11 clients that reported at prenatal baseline that they felt unsafe, only 1 also felt unsafe at follow-up.

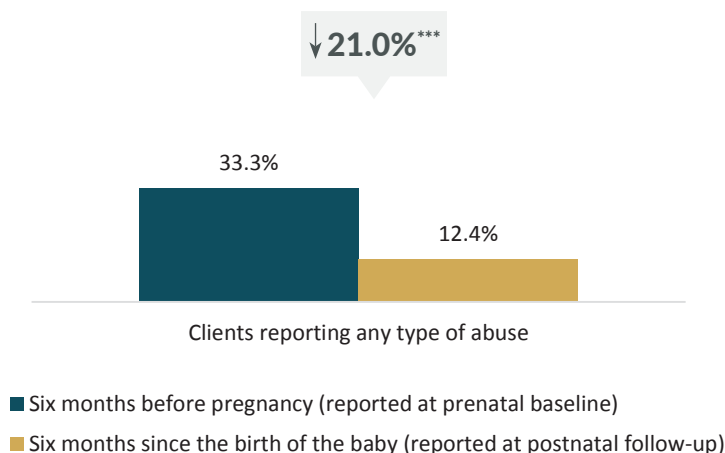
Any Abuse

Any Abuse in the Past 6 Months

Figure 7.1 shows that in the 6 months before pregnancy, 33.3% of clients reported experiencing any type of abuse⁵⁰ (including psychological abuse, control, physical abuse, and sexual abuse) perpetrated by a current or ex-partner and 12.4% of clients reported experiencing abuse in the past 6 months at postnatal follow-up (significant decrease of 21.0%). **In comparison to KY-Moms MATR in a 6-month period, 37.5% of women in Kentucky and 35.6% of women nationally have reported intimate partner violence in their lifetime.**⁴⁵

The number of KY-Moms MATR clients who reported any type of abuse decreased 21% from baseline to follow-up

FIGURE 7.1. ANY TYPE OF ABUSE IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 105)⁵¹



*** p > .001

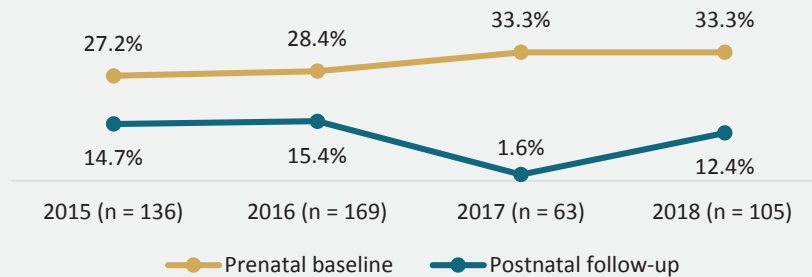
⁵⁰ Any abuse was defined in this study as a client indicating “yes” to any of the partner abuse questions asked in the survey (e.g., verbal and psychological abuse, extreme jealousy and control, threats of violence towards client and others close to them, physical violence, stalking, partner purposely damaging or destroying property, sexual assault/threats of assault) at each period.

⁵¹ One client refused to answer both 6-month and 30-day intimate partner abuse questions at follow-up.

TRENDS IN ANY PARTNER ABUSE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

The number of clients who reported any partner abuse at prenatal baseline was fairly consistent over the past 4 years. Overall, the number of clients who reported partner abuse at follow-up was also fairly consistent with 14.7% to 12.4% of clients reporting partner abuse in the 6 months since the birth of the baby.

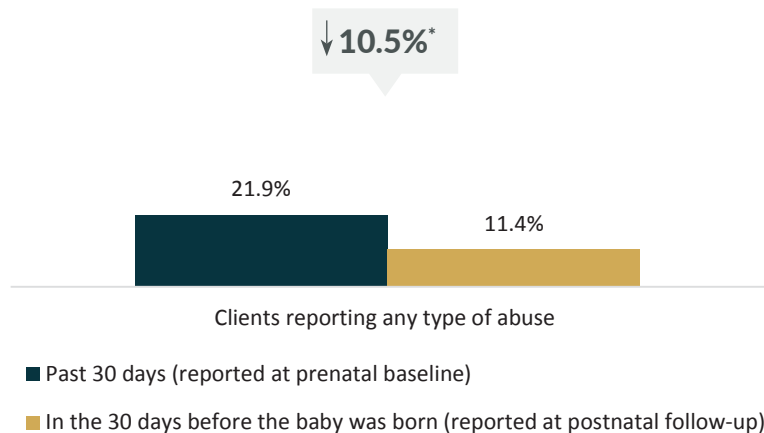
FIGURE 7.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING ANY PARTNER ABUSE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Any Abuse in the Past 30 Days

In the past 30 days at prenatal baseline, 21.9% of KY-Moms MATR clients reported experiencing any type of abuse. In the 30 days before the baby was born, 11.4% of clients reported any type of partner abuse (a significant decrease of 10.5%; see Figure 7.3).

FIGURE 7.3. ANY TYPE OF ABUSE IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 105)



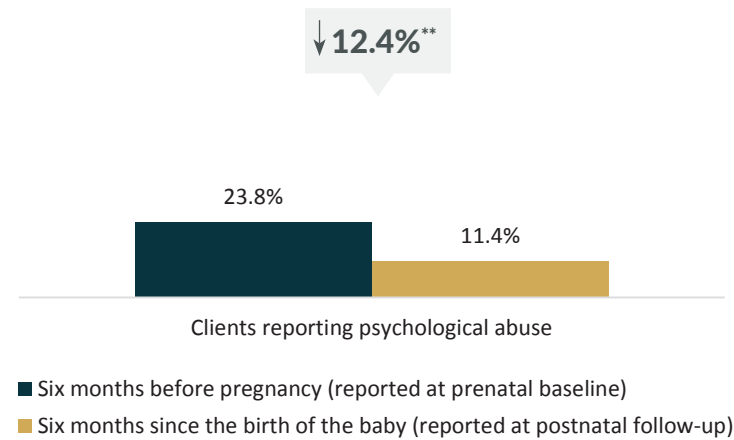
* p > .05

Psychological Abuse

Psychological Abuse in the Past 6 Months

A little more than one-fifth of clients (23.8%) reported at prenatal baseline that a partner psychologically abused 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 11.4% of clients reported psychological abuse in the past 6 months at postnatal follow-up. Compared to the 6 months before they were pregnant, there was a significant 12.4% decrease in reports of psychological abuse in the 6 months after clients had their baby (see Figure 7.4).

FIGURE 7.4. PSYCHOLOGICAL ABUSE IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 105)

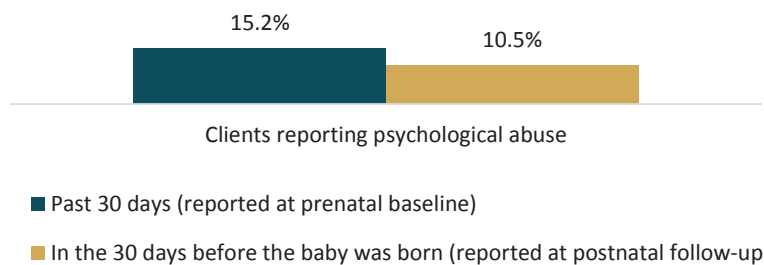


** p > .01

Psychological Abuse in the Past 30 Days

About 15% of clients in the past 30 days at prenatal baseline and 10.5% of clients in the 30 days before the baby was born reported psychological abuse.

FIGURE 7.5. PSYCHOLOGICAL ABUSE IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 105)

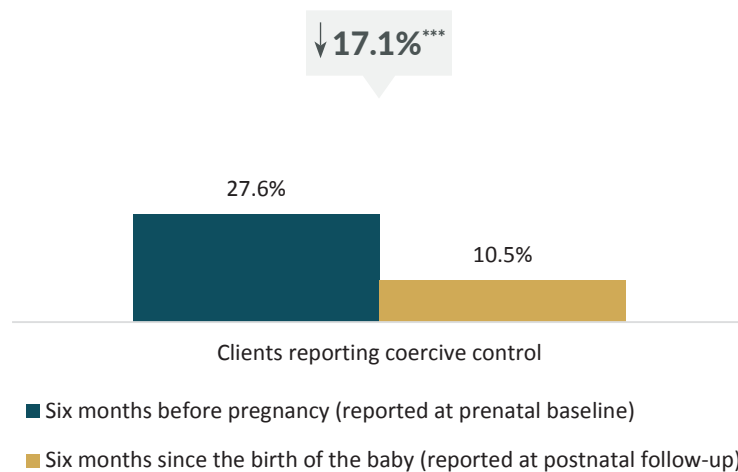


Coercive Control

Coercive Control in the Past 6 Months

For this study, coercive control is described as abuse 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, 27.6% of clients reported being a victim of coercive control and 10.5% of clients in the past 6 months at postnatal follow-up reported experiencing coercive control from their partner (a significant decrease of 17.1%; see Figure 7.6).

FIGURE 7.6. COERCIVE CONTROL BY A PARTNER IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 105)

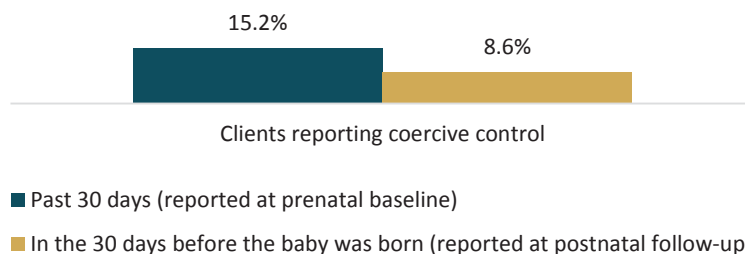


*** p > .001

Coercive Control in the Past 30 Days

In the past 30 days at prenatal baseline, 15.2% reported coercive control occurred while they were pregnant and involved in KY-Moms MATR. Almost 9% reported experiencing coercive control from their partner in the 30 days before the baby was born (see Figure 7.7).

FIGURE 7.7. COERCIVE CONTROL BY A PARTNER IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 105)

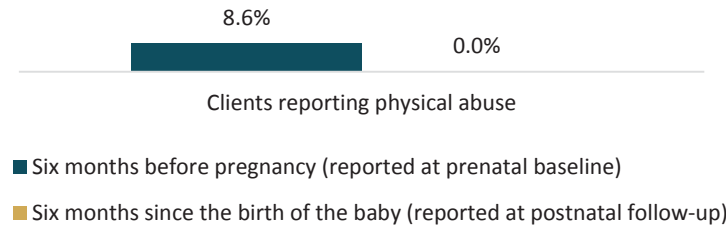


Physical Abuse

Physical Abuse in the Past 6 Months

Almost 9% of women reported that a partner physically abused them (e.g., pushing, shoving, kicking, beating up, choking, burning, attacking with a weapon) in the 6 months before they became pregnant (see Figure 7.8). In the past 6 months at postnatal follow-up, none of the clients reported physical abuse by a partner.

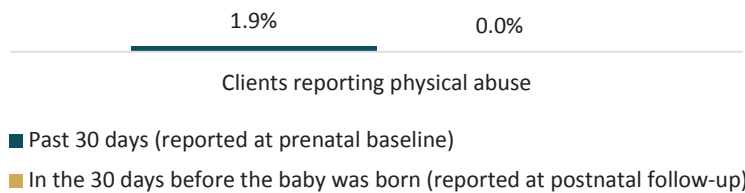
FIGURE 7.8. PHYSICAL ABUSE IN THE 6 MONTHS BEFORE PREGNANCY AND THE PAST 6 MONTHS AT POSTNATAL FOLLOW-UP (N = 105)



Physical Abuse in the Past 30 Days

About 2% of clients in the past 30 days at prenatal baseline and none of the clients in the 30 days before the birth of the baby reported a partner physically abused them (see Figure 7.9).

FIGURE 7.9. PHYSICAL ABUSE IN THE 30 DAYS BEFORE PRENATAL BASELINE AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 105)



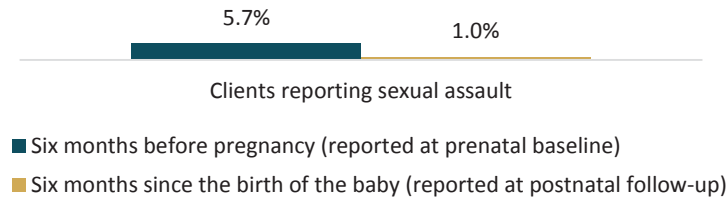
Sexual Assault

Sexual Assault in the Past 6 Months

About 6% of clients 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. In the past 6 months at postnatal follow-up, 1.0% of clients indicated they had been sexually assaulted by a partner (see Figure 7.10).

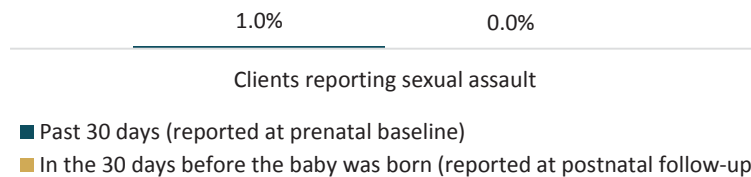
FIGURE 7.10. PARTNER SEXUALLY ASSAULTED CLIENT IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 105)



Sexual Assault in the Past 30 Days

In the past 30 days at prenatal baseline, one client reported being a victim of sexual assault by a partner and in the 30 days before the baby was born, none of the clients reported sexual assault by a partner.

FIGURE 7.11. PARTNER SEXUALLY ASSAULTED CLIENT IN THE 30 DAYS BEFORE PREGNANCY AND THE 30 DAYS BEFORE THE BABY WAS BORN (N = 105)



Summary

Several forms of partner violence were examined from prenatal baseline to postnatal follow-up. One-third of KY-Moms MATR clients reported experiencing some type of abuse in the 6 months before pregnancy. At postnatal follow-up, over 12% of clients reported experiencing some type of abuse in the past 6 months since the baby was born. Almost 22% of clients reported experiencing at least one of the types of abuse asked about on the survey in the past 30 days at prenatal baseline and 11.4% of clients reported some type of abuse from an intimate partner in the 30 days before the baby was born. The number of clients reporting psychological abuse and coercive control decreased significantly from before pregnancy to the past 6 months at postnatal follow-up. Very few clients reported experiencing a sexual assault by a partner or other type of perpetrator at any period.

Section 8. Economic and Living Circumstances, Economic Hardship, and Criminal Justice Involvement

This section examines changes in employment, economic hardship, living situation, and criminal justice involvement 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.

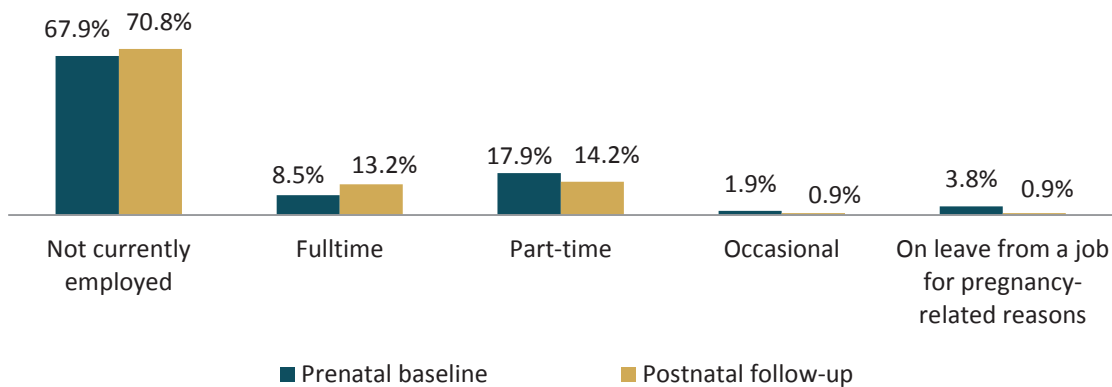
Current Employment Status

Overall, clients' current employment status did not change significantly from prenatal baseline to postnatal follow-up. About 32% of clients were employed in some capacity (full-time, part-time, occasional, or on leave) at prenatal baseline and 29% were employed at follow-up (not represented in a figure). At prenatal baseline, 67.9% of clients reported being unemployed and at postnatal follow-up, this percent was 70.8% (see Figure 8.1). In addition, the percent of women who reported being employed full-time increased slightly, but not significantly, from 8.5% at prenatal baseline to 13.2% at postnatal follow-up.

“It was very helpful for me. It educated me about substance abuse. I accomplished goals while I was there like getting my driver license.”

- KY-MOMS MATR FOLLOW-UP CLIENT

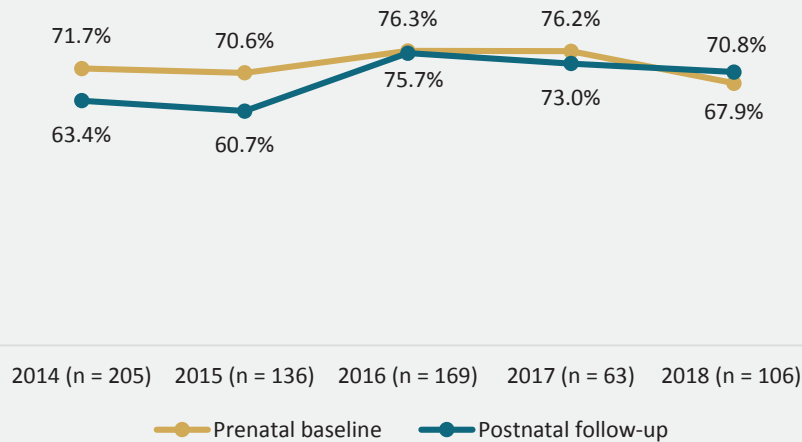
FIGURE 8.1. CURRENT EMPLOYMENT STATUS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



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. Furthermore, from 2016 to 2018, the number of clients who reported being unemployed changed only minimally from baseline to follow-up. In fact, in 2018, the number of clients reporting being unemployed at follow-up is slightly greater than the number of clients reporting being unemployed at baseline.

FIGURE 8.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CURRENT UNEMPLOYMENT STATUS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2014-2018

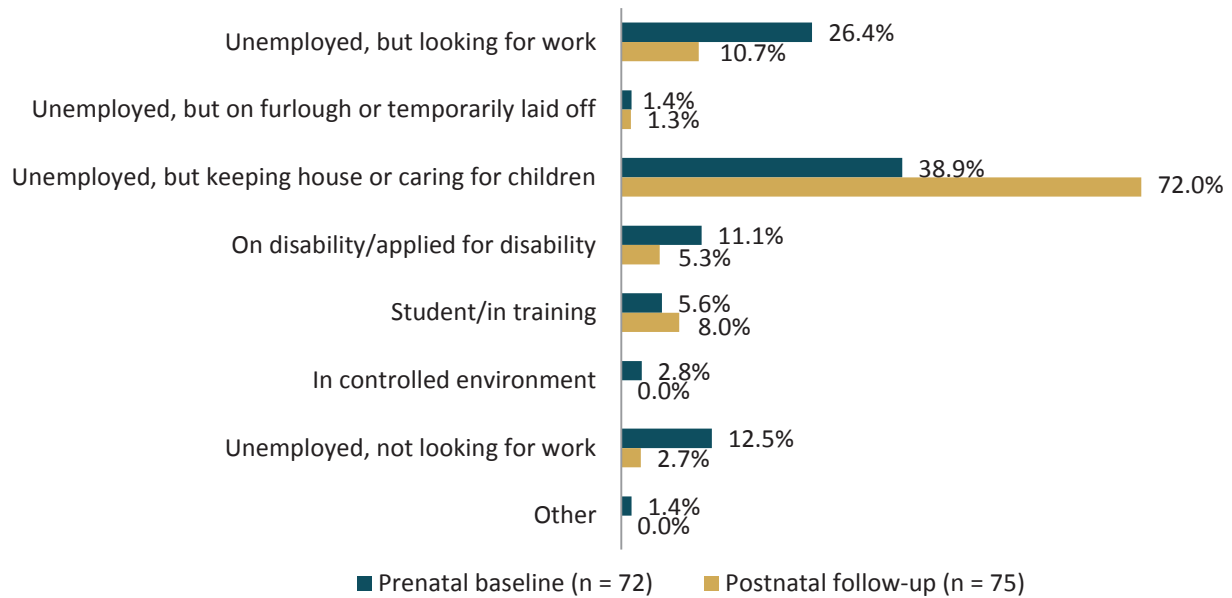


For clients who were employed (full- or part-time) at each point, the average hourly wage clients reported increased slightly from \$8.42 at prenatal baseline (n = 28) to \$8.93 at postnatal follow-up (n = 27⁵²; not depicted in a figure). About 6% of clients who were employed at baseline and 4% of clients who were employed at follow-up reported they were also in school or receiving additional vocational training.

Of the clients who reported they were not currently employed at each point, fewer clients indicated they were looking for work at postnatal follow-up compared to prenatal baseline (see Figure 8.3). In addition, 72.0% reported they were keeping house or caring for children full-time compared to 38.9% of clients at prenatal baseline.

⁵² Two clients reported they didn't know what their hourly wage was.

FIGURE 8.3. REASON FOR UNEMPLOYMENT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP



Over two-thirds (68.9%) of clients at prenatal baseline and 77.4% of clients at postnatal follow-up 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 (88.7%) reported receiving public assistance while they were pregnant and involved in KY-Moms MATR and 92.5% reported currently receiving public assistance at postnatal follow-up (not depicted in a figure).

The majority of clients who received public assistance reported receiving Supplement Nutrition Assistance Program (SNAP; 57.5% during pregnancy and 61.2% after the birth of their baby) and Women, Infants and Children (WIC; 73.6% during pregnancy and 98.0% 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.⁵³ 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.

⁵³ SIPP; She, P., & Livermore, G. (2007). Material hardship, poverty, and disability among working-age adults. *Social Science Quarterly*, 88(4), 970-989.

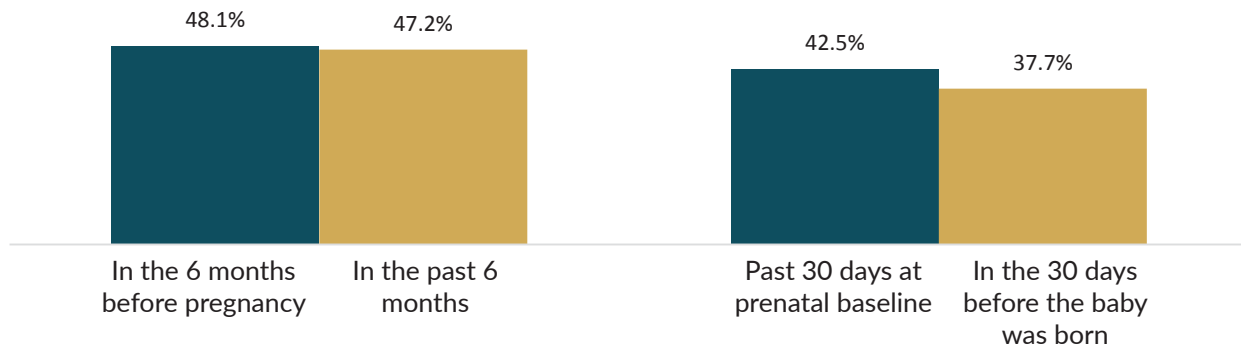
In the 6 months before becoming pregnant, almost half (48.1%) of clients reported they had difficulty meeting at least one of the basic living needs for financial reasons and 47.2% of clients reported difficulty meeting basic needs in the past 6 months at postnatal follow-up (see Figure 8.4).

About 43% of clients reported having difficulty meeting basic living needs in the past 30 days at prenatal baseline. In the 30 days before the baby was born, 37.7% of clients had difficulty meeting basic needs such as food, shelter or utilities.

**A CLOSER LOOK AT CLIENTS
DIFFICULTY MEETING BASIC
NEEDS AT FOLLOW-UP**

At follow-up, 40.6% of KY-Moms MATR clients reported having difficulty paying rent/mortgage, 28.3% of clients reported they were unable to pay their gas/electric bill, and 23.6% were unable to pay their phone bills.

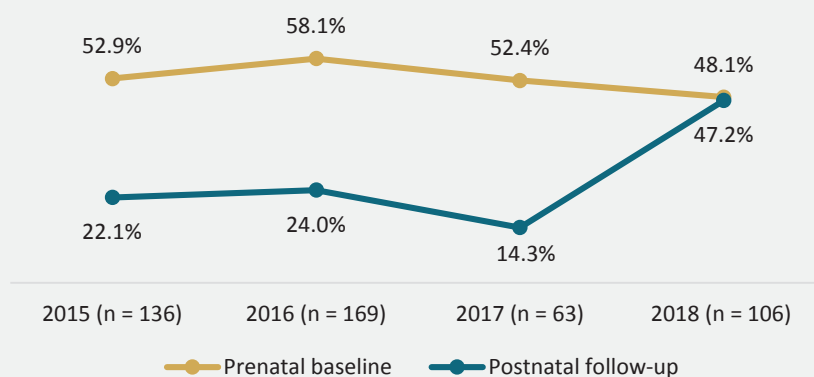
FIGURE 8.4. DIFFICULTY IN MEETING BASIC LIVING NEEDS FOR FINANCIAL REASONS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



TRENDS IN DIFFICULTY MEETING BASIC HOUSEHOLD NEEDS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

The number of clients who reported having difficulty meeting basic living needs in the six months before pregnancy remained fairly consistent over the past 4 years at baseline. From 2015 to 2017, the number of clients who reported difficulty meeting basic living needs at follow-up significantly decreased from baseline. In 2018, however, the number of clients who reported difficulty sharply increased from 2017 and there was very little change from baseline to follow-up.

FIGURE 8.5. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING DIFFICULTY MEETING BASIC HOUSEHOLD NEEDS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018

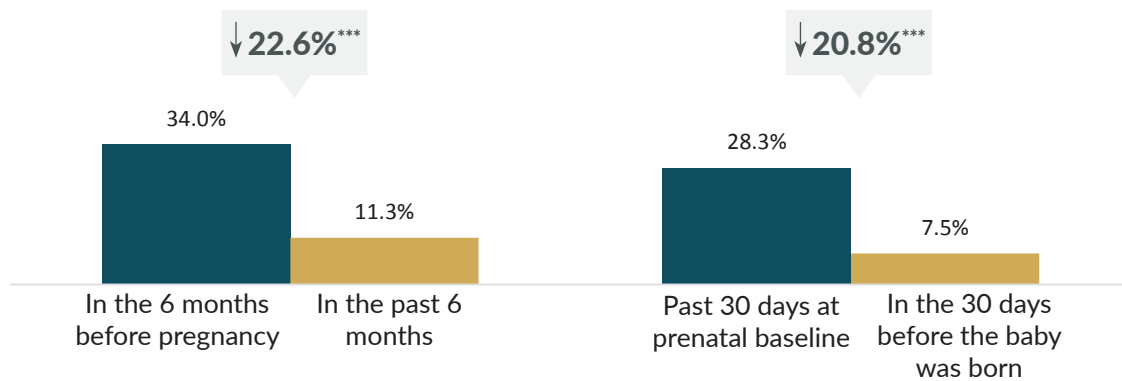


Over one-third of clients (34.0%) reported their household had difficulty meeting health care needs (such as not going to the doctor, not having a prescription filled, or not going to the dentist because of financial reasons) in the 6 months before pregnancy (see Figure 8.6). About 11% of clients reported they had difficulty meeting health care needs in the past 6 months at follow-up (a 22.6% significant decrease compared to the 6 months before the client was pregnant).

In the past 30 days at prenatal baseline, 28.3% of clients reported their household had difficulty meeting health care needs because of financial reasons. In the 30 days before the baby was born, 7.5% of clients reported difficulty meeting health care needs, which is a 20.8% significant decrease compared to the past 30 days at prenatal baseline.

The number of KY-Moms MATR clients who reported having difficulty meeting health care needs for financial reasons decreased 21% from the six months before pregnancy to the six months since the baby was born

FIGURE 8.6. DIFFICULTY IN MEETING HEALTH CARE NEEDS FOR FINANCIAL REASONS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)

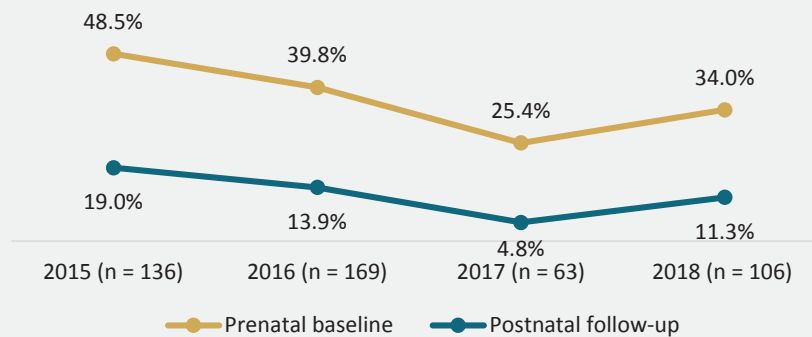


*** p < .001

TRENDS IN DIFFICULTY MEETING BASIC HEALTH CARE NEEDS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

From 2015 to 2017, the number of clients who reported difficulty meeting basic health care needs in the six months before pregnancy and in the past 6 months at follow-up decreased. In 2018, however, the number of clients reporting difficulty increased at both baseline and follow-up compared to the prior years.

FIGURE 8.7. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING DIFFICULTY MEETING HEALTH CARE NEEDS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Living Situation

The number of clients reporting being homeless declined from 8.5% at prenatal baseline to 2.8% at postnatal follow-up (not depicted in a figure). Of those clients who considered themselves homeless at baseline (n = 9), 88.9% reported they were staying temporarily with family or friends while 11.1% reported they were staying in a shelter.

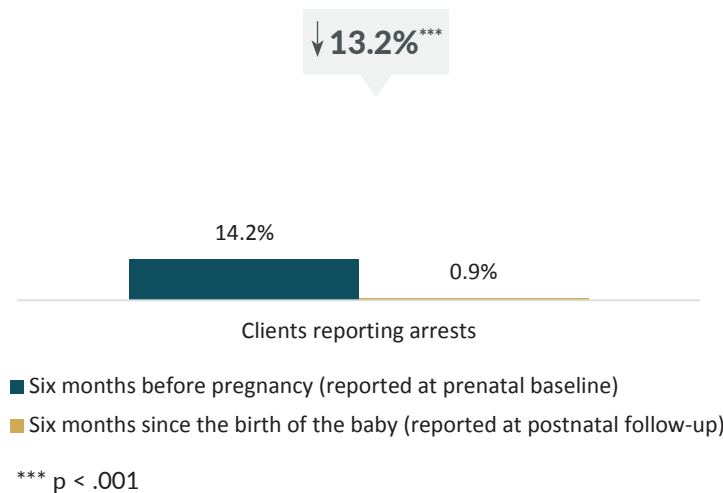
There were no significant changes in the type of situation clients reported living, with the majority of clients at prenatal baseline (94.3%) and postnatal follow-up (98.1%) living in a private residence (i.e., their own or someone else’s home or apartment) before the birth of their baby and after.

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, 14.2% of clients reported an arrest (see Figure 8.8). At follow-up, this percent had decreased significantly by 13.2% to 0.9%.

FIGURE 8.8. CLIENTS REPORTING ARRESTS IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 106)



Among those clients who reported being arrested in the 6 months before pregnancy, the average number of times clients reported being arrested was 1.5 (not depicted in a figure). Because only one person reported an arrest at follow-up, the average number of arrests is not presented.

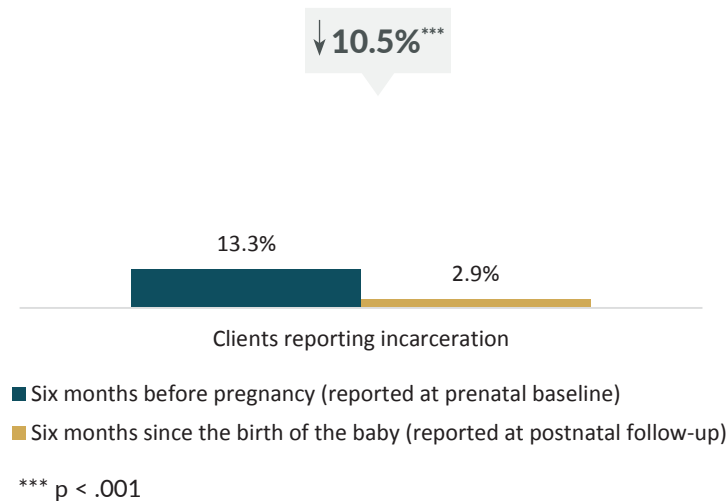
Incarceration

At baseline, 13.3% of clients reported spending at least one day in jail or prison in the 6 months before pregnancy (Figure 8.9). At follow-up, 2.9% of clients reported spending at least one day in jail or prison since the baby was born.

“The program had good incentives and I learned a lot. It made me more confident in being a mom.”

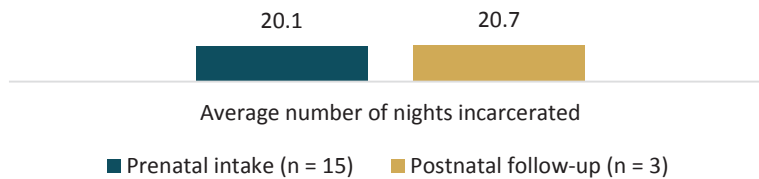
- KY-MOMS MATR FOLLOW-UP CLIENT

FIGURE 8.9. CLIENTS REPORTING BEING INCARCERATED IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 105)⁵⁴



Among those clients who reported being incarcerated in the 6 months before pregnancy, the average number of nights incarcerated was 20.1 (see Figure 8.10). Among those clients who reported being incarcerated since the baby was born, the average number of nights incarcerated was 20.7.

FIGURE 8.10. AVERAGE NUMBER OF NIGHTS SPENT INCARCERATED AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

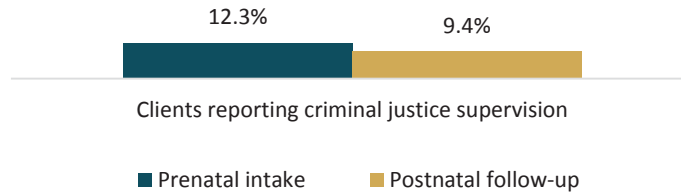


Criminal Justice Supervision

At prenatal baseline, 12.3% of clients reported they were currently under criminal justice system supervision (e.g., probation, or parole; Figure 8.11). At follow-up, 9.4% were currently under criminal justice system supervision.

⁵⁴ One client had missing data for incarceration at follow-up.

FIGURE 8.11. CLIENTS REPORTING SUPERVISION BY THE CRIMINAL JUSTICE SYSTEM AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



Summary

While the percent of clients who reported employment did not increase significantly at postnatal follow-up, the number of clients who reported being unemployed, but caring for their children at home increased to 72% at follow-up. Most 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 number of clients who reported having difficulty meeting health care needs for financial reasons decreased significantly compared to prenatal baseline, both in the past 6 months at postnatal follow-up and in the 30 days before the baby was born. There were also significant decreases in the number of clients reporting both arrests and incarceration from prenatal baseline to postnatal follow-up.

Section 9. Physical Health

Section 9 describes chronic health problems reported at prenatal baseline and change in physical health status of clients from prenatal baseline to postnatal follow-up including: (1) chronic health problems at baseline; (2) current health; (3) chronic pain; and (4) perceptions of poor physical and mental health.

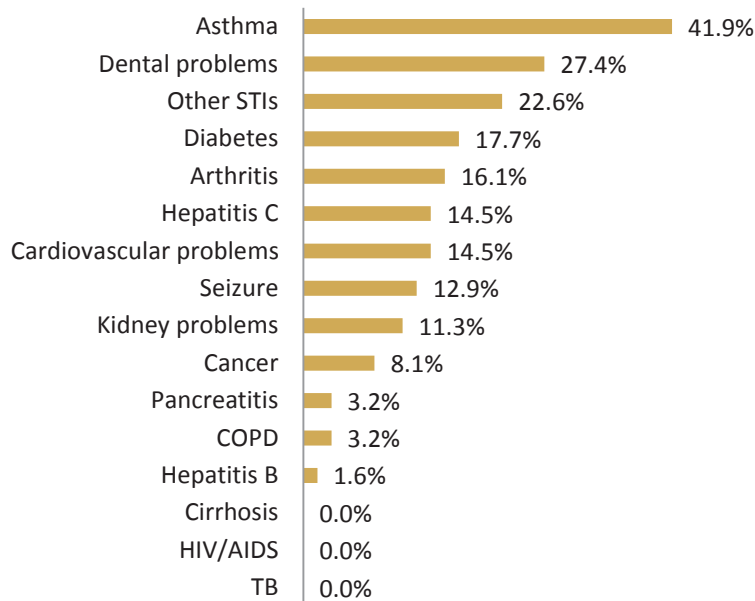
Chronic Health Problems Reported at Prenatal Baseline

At prenatal baseline, 41.5% of clients reported no health problems, 26.4% reported having one chronic health problem, and 32.1% of clients had two or more chronic health problems.

As Figure 9.1 shows, among the clients who reported at least one physical health problem at prenatal baseline (n = 62), 41.9% of KY-Moms MATR clients reported asthma, 27.4% reported dental problems, 22.6% reported a sexually transmitted infection (STI), 17.7% reported diabetes, and 16.1% reported arthritis.

- 41.5% had no chronic health problems
- 26.4% had one chronic health problem
- 17.9% had 2 health problems
- 14.1% had 3 health problems or more

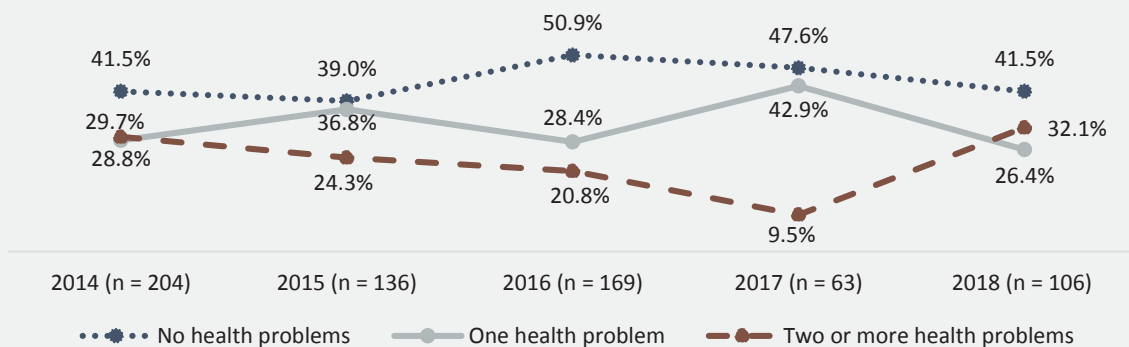
FIGURE 9.1. CHRONIC HEALTH PROBLEMS REPORTED BY CLIENTS AT PRENATAL BASELINE (N= 106)



TRENDS IN CHRONIC HEALTH PROBLEMS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

In general, for each year, most clients reported no health problems at prenatal baseline. In 2016, for example, a little over half of clients (50.9%) reported they had no health problems. The number of clients who reported one health problem and multiple health problems were similar over the past 5 years with the exception of 2017 when only 9.5% of clients reported multiple health problems (compared to 42.9% of clients reporting only one health problem).

FIGURE 9.2. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CHRONIC HEALTH PROBLEMS AT PRENATAL BASELINE, 2014-2018



Overall, at prenatal baseline, 16.0% 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 = 17), 17.6% reported their Hepatitis C and 17.6% mentioned their anxiety and/or depression was not being treated.⁵⁵ Other clients mentioned periodontal disease, migraines, and carpal tunnel. At postnatal follow-up, 6.6% of clients reported major health problems that were not currently being treated. Of those clients (n = 7), 42.9% mentioned Hepatitis C and 28.6% reported kidney disease (which none of the clients reported at baseline).

“I loved the program. The people were nice and friendly. The criteria we went over was great.”

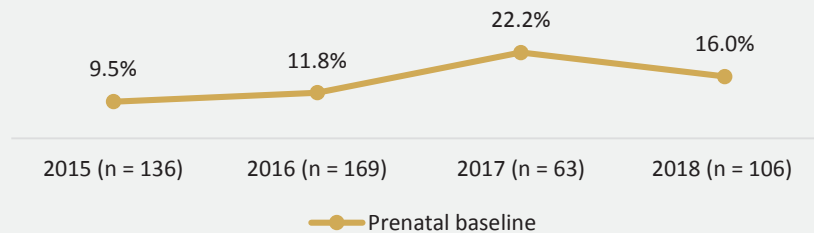
- KY-MOMS MATR FOLLOW-UP CLIENT

⁵⁵ While this is a mental health problem rather than a physical health problem, several clients felt it was a health concern that was not being treated.

TRENDS IN HEALTH PROBLEMS NOT BEING TREATED AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Less than one-quarter 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 in 2017 22.2% of clients reported having a major health problem that was not being treated.

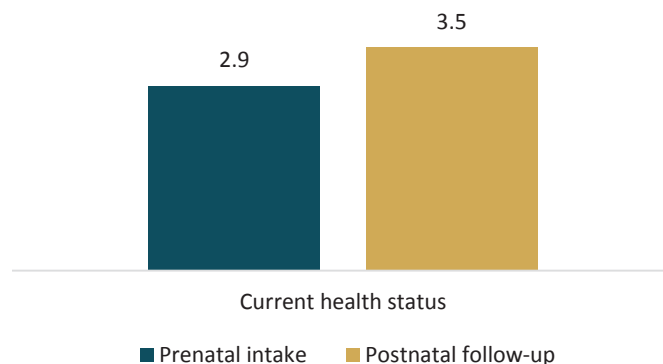
FIGURE 9.3. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING HEALTH PROBLEMS THAT WERE NOT BEING TREATED AT PRENATAL BASELINE, 2015-2018



Current Health Status

At prenatal baseline, clients reported their current health as an average of 2.9 on a scale of 1 being “poor” and 5 being “excellent”. At postnatal follow-up, clients reported that their current health was an average of 3.5, which is significantly higher compared to prenatal baseline (see Figure 9.4).

FIGURE 9.4. AVERAGE OVERALL HEALTH RATING FROM PRENATAL BASELINE TO POSTNATAL FOLLOW-UP (N = 106)***

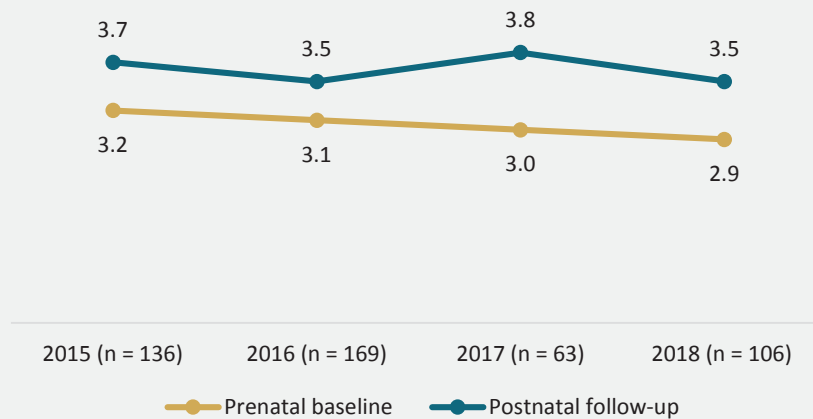


*** p < .001
Significance tested with paired sample t-test

TRENDS IN CURRENT HEALTH RATING AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Average current health ratings have steadily declined at baseline over the past 4 years. In 2015, clients reported an average rating of 3.2 compared to 2018 in which clients reported an average health rating of 2.9. At follow-up, the average health rating was significantly higher at each year compared to baseline. The average client health rating was highest in 2017 with a 3.8 rating.

FIGURE 9.5. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING AVERAGE HEALTH RATING AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Chronic Pain

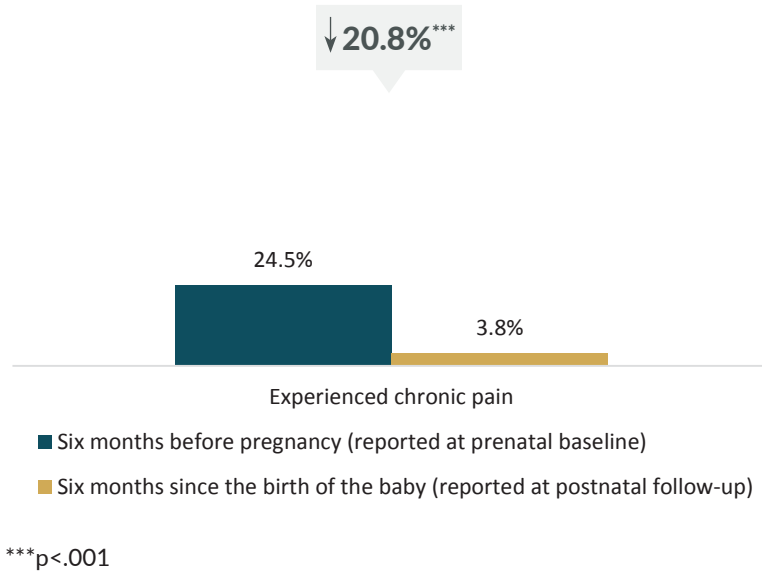
At prenatal baseline, 24.5% of women reported experiencing chronic pain in the 6 months before pregnancy and, of those clients (n = 26), they reported experiencing pain an average of 17 days in the 30 days before pregnancy. About 81% of these clients reported that this chronic pain continued into their pregnancy with those clients reporting experiencing an average of 19 days of chronic pain in the past 30 days at prenatal baseline.

Approximately 4% of clients reported experiencing chronic pain in the past 6 months at postnatal follow-up (a significant decrease of 20.8% compared to the 6 months before pregnancy). Of those clients (n = 4), they reported an average of 25 days experiencing chronic pain.

“All of the information was great. They gave me really good advice and showed me how to breastfeed.”

- KY-MOMS MATR FOLLOW-UP CLIENT

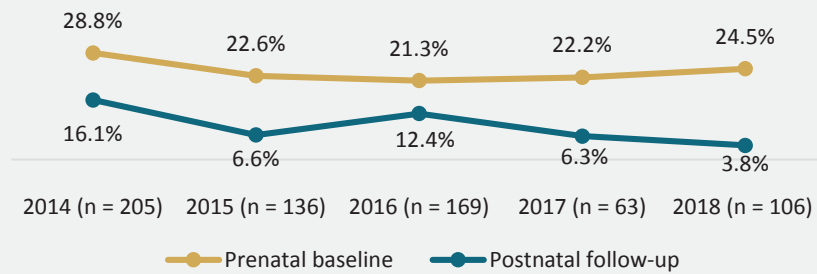
FIGURE 9.6. CHRONIC PAIN IN THE 6 MONTHS BEFORE PREGNANCY AND THE 6 MONTHS BEFORE POSTNATAL FOLLOW-UP (N = 106)



TRENDS IN CHRONIC PAIN AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

Around one-quarter of clients each year reported having chronic pain at baseline. In 2014, 28.8% of clients at baseline and 16.1% of clients at follow-up reported having chronic pain. In 2018, 24.5% of clients reported experiencing chronic pain at baseline and only 3.8% of clients reported chronic pain at postnatal follow-up.

FIGURE 9.7. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING CHRONIC PAIN AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2014-2018



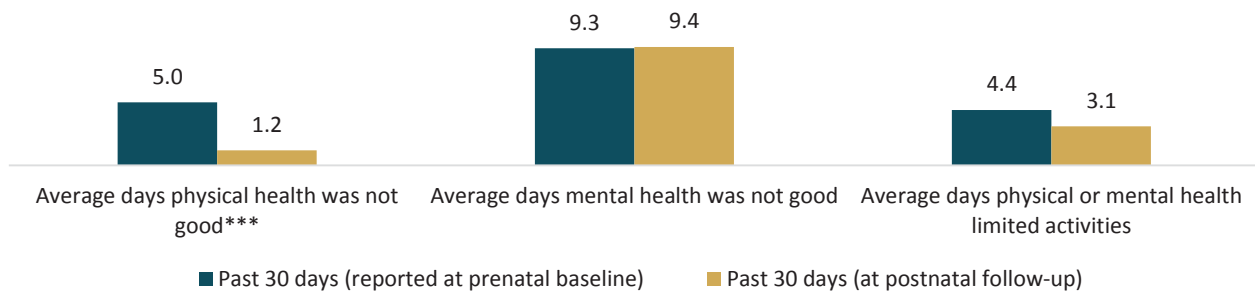
Perceptions of Poor Physical or Mental Health Limiting Activities

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 9.8). There was a significant decrease from baseline to follow-up in the number of days clients reported their physical health was not good (from 5.0 days to 1.2 days⁵⁶). In comparison, America’s Health Rankings indicate people in Kentucky report an average of 5.0 days of poor physical health in the past 30 days. Specifically, women reported 5.6 poor physical health days.⁵⁷ KY-Moms MATR clients report fewer days of poor physical health at both prenatal baseline and postnatal follow-up compared to both the overall population and women surveyed in Kentucky.

The number of days clients reported their mental health was not good remained stable from 9.3 days at prenatal baseline to 9.4 days at postnatal follow-up. America’s Health Rankings indicate that, overall, Kentuckians reported an average of 4.3 days of poor mental health in the past 30 days while women reported an average of 4.9 days of poor mental health. This indicates KY-Moms MATR clients reported over double the amount of days their mental health was poor compared to the overall population in Kentucky and almost double the days compared to women surveyed in Kentucky.

Clients were also asked to report the number of days in the past 30 days poor physical or mental health had kept them from doing their usual activities. The number of days clients reported their physical or mental health kept them from doing their usual activities decreased (but not significantly) from 4.4 days at baseline to 3.1 days at follow-up.

FIGURE 9.8. PERCEPTIONS OF POOR PHYSICAL HEALTH AND MENTAL HEALTH LIMITING ACTIVITIES IN THE PAST 30 DAYS AT BASELINE AND FOLLOW-UP (N = 106)



*** p < .001
Significance tested with paired sample t-test

⁵⁶ This could possibly be due to no longer being pregnant.

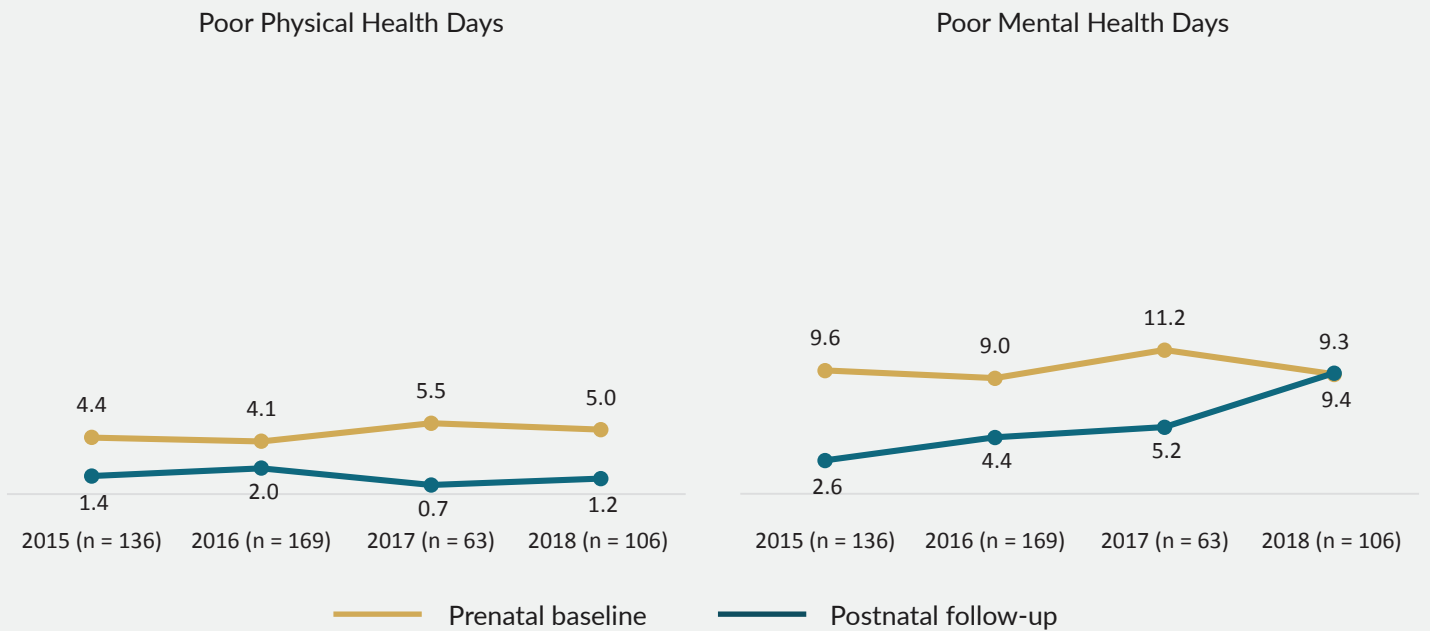
⁵⁷ *America’s Health Rankings: A Call to Action for Individuals and Their Communities*. Retrieved from <http://www.americashealthrankings.org/KY>.

TRENDS IN AVERAGE NUMBER OF DAYS PHYSICAL AND MENTAL HEALTH WERE POOR 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 has been poor. Each year, the number of days clients report poor physical health has significantly decreased from baseline to follow-up. In 2017 clients reported an average of 5.5 days their physical health was poor compared to 0.7 days at follow-up.

At baseline and follow-up, clients are also asked how many days in the past 30 days their mental health has been poor. The average number of poor mental health days reported at baseline has fluctuated from 2015 to 2018. In 2017, the average number of poor mental health days reported at baseline was 11.2 compared to 9.3 days in 2018. At follow-up, the number of poor mental health days has increased from 2015 (2.6) to 2016 (4.4), and again from 2017 (5.2) to 2018 (9.4).

FIGURE 9.9. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING AVERAGE NUMBER OF DAYS PHYSICAL AND MENTAL HEALTH WERE POOR AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Summary

At prenatal baseline, almost 60% of clients reported having at least one chronic health problem such as asthma, dental problems, diabetes, and arthritis. About 1 in 6 clients reported they had health problems that were not currently being treated. Clients' overall current health status rating improved significantly from prenatal baseline to postnatal follow-up. Slightly less than one-quarter of clients reported experiencing chronic pain in the 6 months before pregnancy and this decreased significantly to 3.8% in the past 6 months at postnatal follow-up. Clients also reported a significant decrease in the average number of days their physical health (but not mental health) were not good.

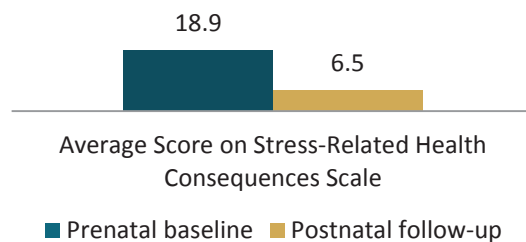
Section 10. Stress, Quality of Life, and Emotional Support

This section examines changes in stress, quality of life, and emotional support including the following factors: (1) health consequences of stress; (2) quality of life ratings; (3) satisfaction with life; (4) the number of people clients said they could count on for emotional support; and (5) their satisfaction with the level of emotional support from others.

Stress-Related Health Consequences

Clients were asked about 12 physiological symptoms often associated with higher stress called the Stress-Related Health Consequences scale.⁵⁸ The scale asks clients to indicate how often they have experienced the symptoms in the past 7 days (e.g., unexplained aches and pains, slept poorly, increased heart rate). Higher scores on the scale indicate higher stress and greater health consequences of stress. The minimum score is 0 and the maximum score is 45. For the overall sample, Stress-Related Health Consequences scores decreased significantly from 18.9 at prenatal baseline to 6.5 at postnatal follow-up (see Figure 10.1).

FIGURE 10.1. AVERAGE SCORES ON THE STRESS-RELATED HEALTH CONSEQUENCES SCALE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)^{***}

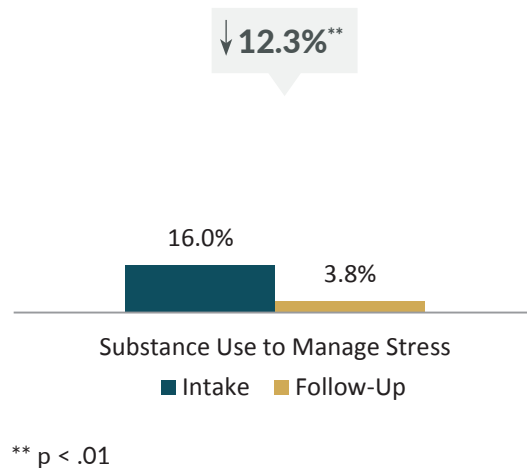


^{***} $p < .001$; Significance tested with paired sample t-test

Clients were also asked if they used alcohol, prescription drugs, or illegal drugs in the past 7 days to reduce or manage stress at prenatal baseline and postnatal follow-up. Figure 10.2 shows that 16.0% of clients reported they used at least one type of substance to reduce or manage their stress in the 7 days before entering treatment. At follow-up, that number significantly decreased to 3.8%.

⁵⁸ Logan, T. & Walker, R. (2010). Toward a deeper understanding of the harms caused by partner stalking. *Violence and Victims*, 25(4), 440-455.

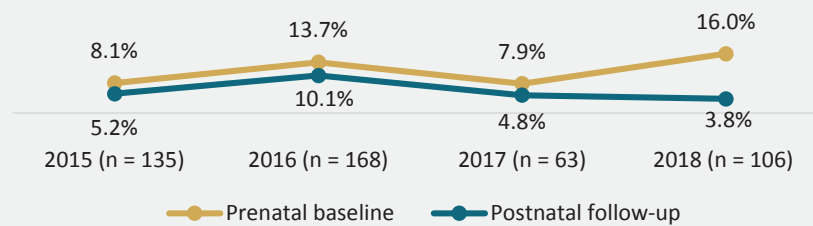
FIGURE 10.2. CLIENTS REPORTING SUBSTANCE USE TO REDUCE OR MANAGE STRESS AT INTAKE AND FOLLOW-UP (N = 106)



TRENDS IN SUBSTANCE USE TO MANAGE STRESS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

The number of clients who reported using substances to manage stress at baseline and follow-up remained fairly consistent from 2015 to 2017. In 2018, however, 16.0% of clients reported using alcohol or drugs to manage their stress at baseline compared to 3.8% of clients at follow-up.

FIGURE 10.3. CLIENTS IN THE FOLLOW-UP SAMPLE REPORTING SUBSTANCE USE TO MANAGE STRESS AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



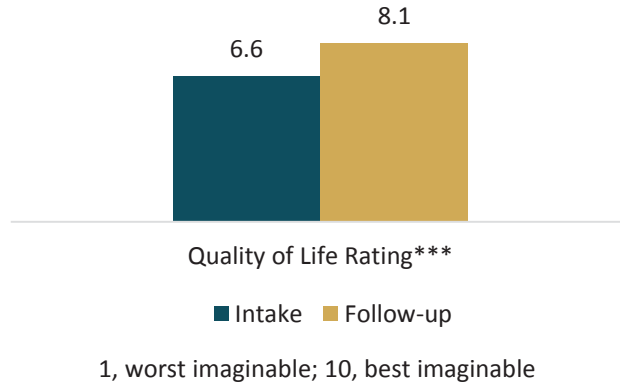
Quality of Life

There were two quality of life and satisfaction with life indexes used including: (1) quality of life rating, and (2) satisfaction with 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 6.6, on average (see Figure 10.4). The average rating of quality of life increased significantly to 8.1 at postnatal follow-up.

Average rating of quality of life significantly increased from 6.6 at prenatal baseline to 8.1 at postnatal follow-up

FIGURE 10.4. PERCEPTION OF QUALITY OF LIFE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (n = 106)

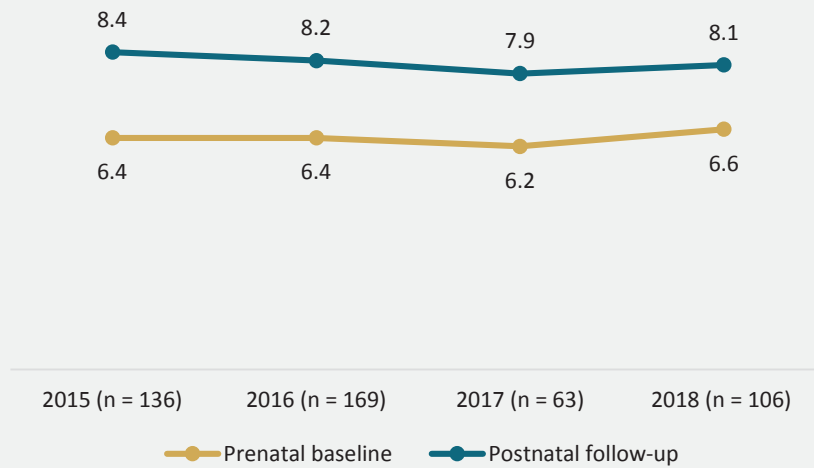


*** p < .001

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 6.6. At postnatal follow-up, that rating has significantly increased to an average of around 8.

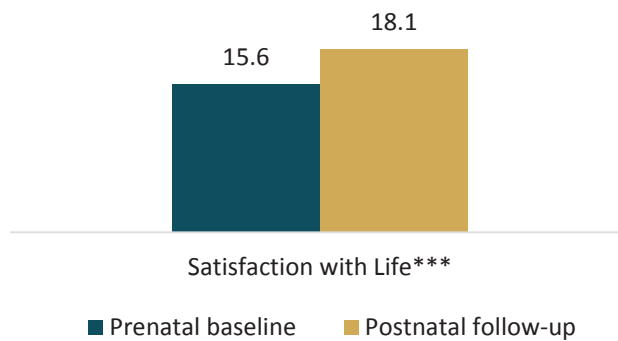
FIGURE 10.5. CLIENTS IN THE FOLLOW-UP SAMPLE RANKING THEIR QUALITY OF LIFE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



Satisfaction with Life

In order to measure the clients' overall satisfaction with their life, clients were asked 5 questions on the Satisfaction With Life Scale (SWLS)⁵⁹ at both prenatal baseline and postnatal follow-up, and clients responded to each item with 1 'Extremely dissatisfied' to 5 'Extremely satisfied' (see Figure 10.6). Scale scores were a sum of the five items and ranged from 5 which indicates the client is extremely dissatisfied with her current life to 25 which indicates the client is highly satisfied with her life. At prenatal baseline, clients reported an average well-being score of 15.6 and this significantly increased to 18.1 at postnatal follow-up, indicating that clients were generally happy with their lives at follow-up.

FIGURE 10.6. AVERAGE RANKING OF SATISFACTION WITH LIFE AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 106)



***p < .01

Emotional Support

In the past 30 days at baseline, clients reported they could count on an average of 6.3 people for emotional support. In the past 30 days at postnatal follow-up, clients reported that they could count on an average of 7.4 people for emotional support (see Figure 10.7).

FIGURE 10.7. AVERAGE NUMBER OF PEOPLE CLIENT COULD COUNT ON FOR EMOTIONAL SUPPORT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP (N = 105)⁶⁰



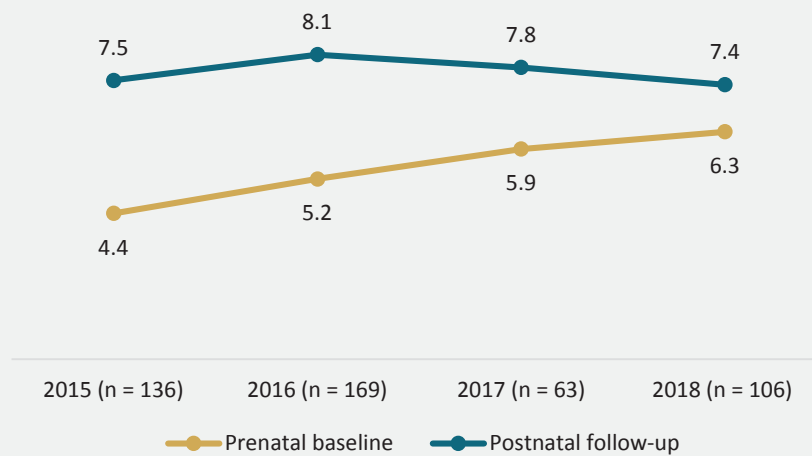
⁵⁹ A modified version of the Satisfaction With Life Scale. Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.

⁶⁰ One client refused to answer questions about emotional support.

TRENDS IN THE AVERAGE NUMBER OF PEOPLE CLIENTS CAN COUNT ON FOR EMOTIONAL SUPPORT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP

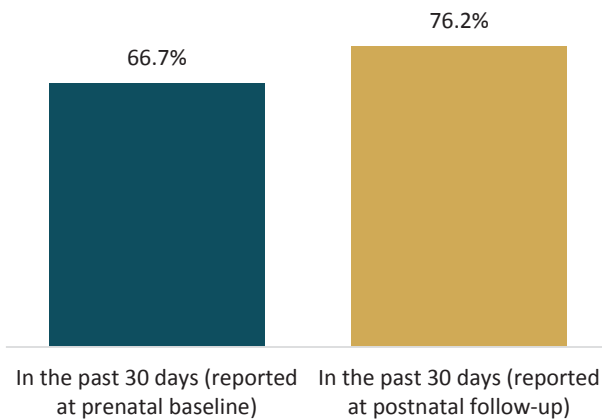
The average number of people clients reported they could count on for emotional support in the past 30 days has steadily increased over the past 4 years. In 2015 clients reported they could count on 4.4 people and in 2018 clients reported an average of 6.3 people they could count on for emotional support. While the average number of people clients could count on for emotional support has increased over time at baseline, at follow-up, the average number of people have remained somewhat consistent with a small increase in 2016 (8.1).

FIGURE 10.8. CLIENTS IN THE FOLLOW-UP SAMPLE ON THE AVERAGE NUMBER OF PEOPLE CLIENTS CAN COUNT ON FOR EMOTIONAL SUPPORT AT PRENATAL BASELINE AND POSTNATAL FOLLOW-UP, 2015-2018



In general, the majority of clients were satisfied with the level of emotional support they received from others in the past 30 days. Two-thirds of clients at prenatal baseline and 76.2% 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 10.9).

FIGURE 10.9. SATISFACTION WITH THE OVERALL LEVEL OF SUPPORT IN LIFE (N = 105)



Summary

Clients reported significantly fewer physiological consequences associated with higher stress at postnatal follow-up compared to prenatal baseline. In addition, clients reported a significantly greater quality of life at postnatal follow-up compared to prenatal baseline. Furthermore, clients reported a significant increase in their satisfaction with their lives at postnatal follow-up. Almost 76% of KY-Moms MATR clients at postnatal follow-up were satisfied with the level of support they received from others. However, the average number of people clients felt they could count on for support did not increase significantly from before pregnancy to postnatal follow-up.

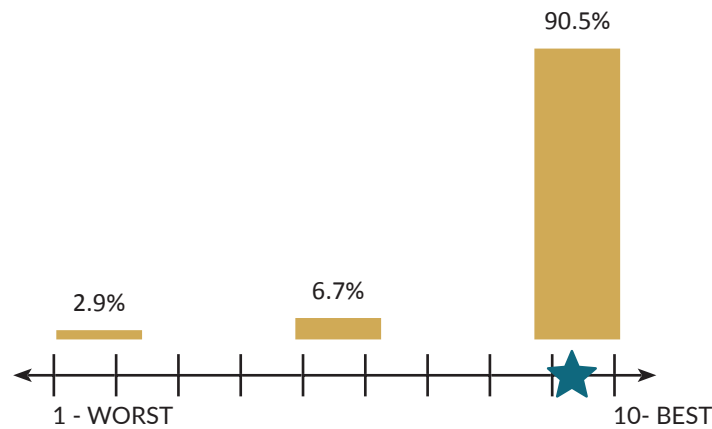
Section 11. Client Satisfaction with KY-Moms MATR Case Management

This section describes three aspects of client satisfaction assessed for clients who completed a postnatal follow-up: (1) overall program satisfaction; (2) ratings of program experiences; and (3) if the client would recommend the program to a friend.

KY-Moms MATR Case Management Services Satisfaction Rating

At the beginning of the follow-up interview, interviewers asked clients questions about their satisfaction with the KY-Moms MATR case management services where 1 represented the worst experience and 10 represented the best experience. Clients rated their KY-Moms MATR experience, on average, as 9.3 (see Figure 11.1). Overall, 90.5% gave a rating between 8 and 10 and 76.2% of clients gave the highest possible rating, 10.

FIGURE 11.1. RATING OF EXPERIENCE WITH KY-MOMS MATR (N = 105)⁶¹

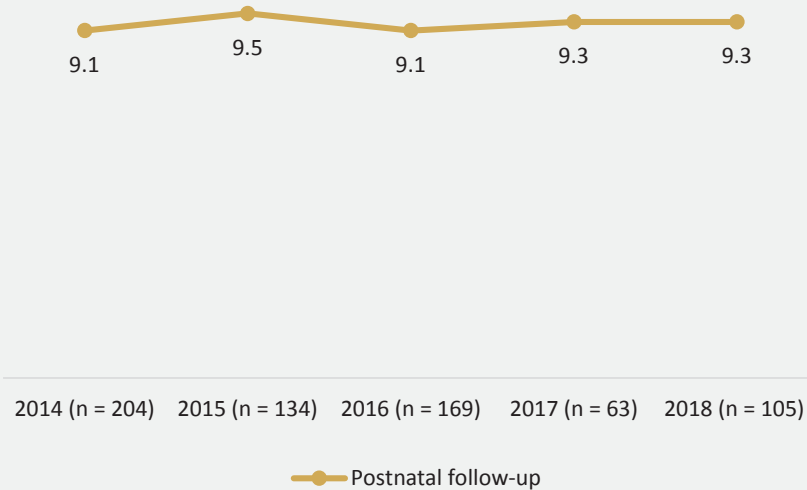


⁶¹ One client responded “don’t know”.

TRENDS IN RATINGS OF EXPERIENCE WITH KY-Moms MATR POSTNATAL FOLLOW-UP

On a scale of 1 to 10 with 1 being the worst possible experience and 10 being the best possible experience, KY-Moms MATR clients have consistently ranked their experience with the program as an average of 9.1 or higher over the past 5 years.

FIGURE 11.2. AVERAGE SATISFACTION RATING OF THE KY-MOMS MATR PROGRAM AT POSTNATAL FOLLOW-UP, 2014-2018



Satisfaction with Experience⁶²

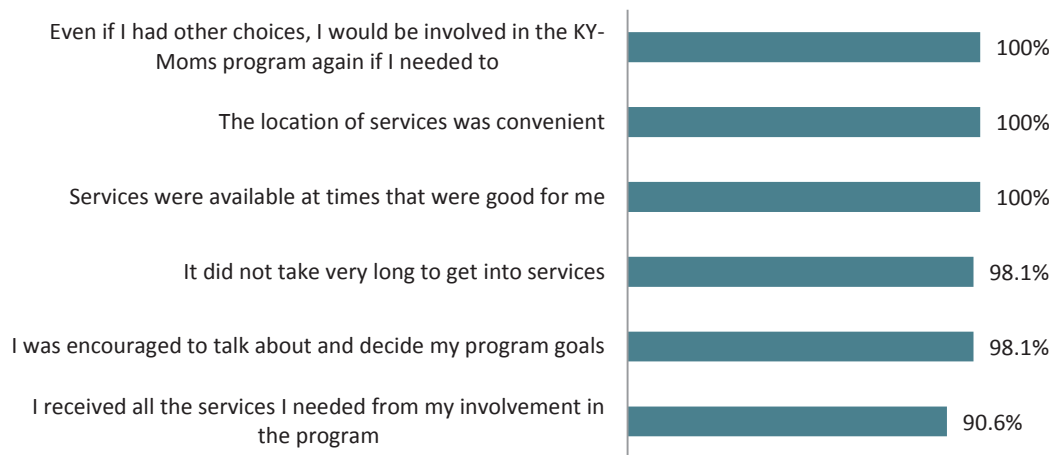
Figure 11.3 shows that KY-Moms MATR clients were extremely satisfied with the overall program services. In fact, all the clients reported that, even if they had other choices, they would be involved in KY-Moms MATR again if they needed to. All clients also reported that the location and the available times of the services was convenient and 98.1% of clients reported that it didn't take very long to get into services. The majority of clients (98.1%) also reported that they were encouraged to talk about and decide their program goals. About 91% of KY-Moms MATR clients believed that they received all the services they needed from their involvement in the program.

“My case manager was very hands on and talked to me about everything I needed and they were there for me.”

- KY-MOMS MATR FOLLOW-UP CLIENT

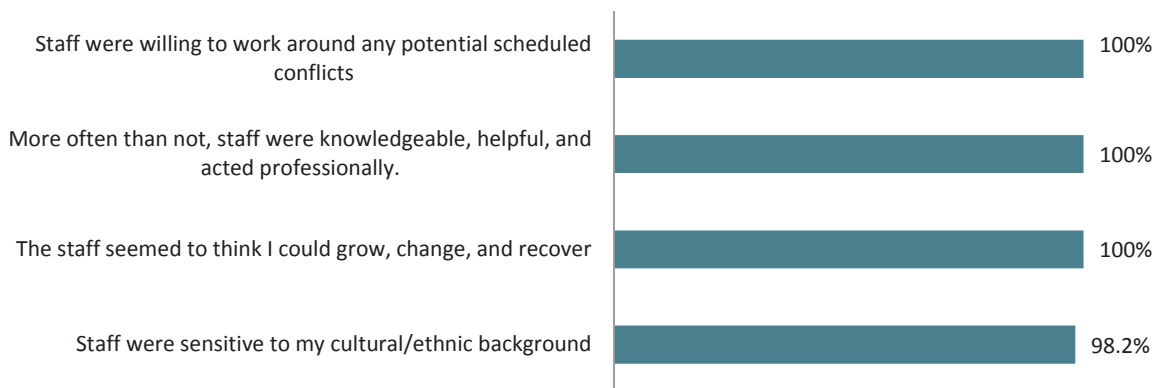
⁶² These updated program satisfaction questions were added to the follow-up survey in October 2016; therefore, not all clients had the opportunity to answer.

FIGURE 11.3. SATISFACTION WITH KY-MOMS MATR SERVICES (N = 53)



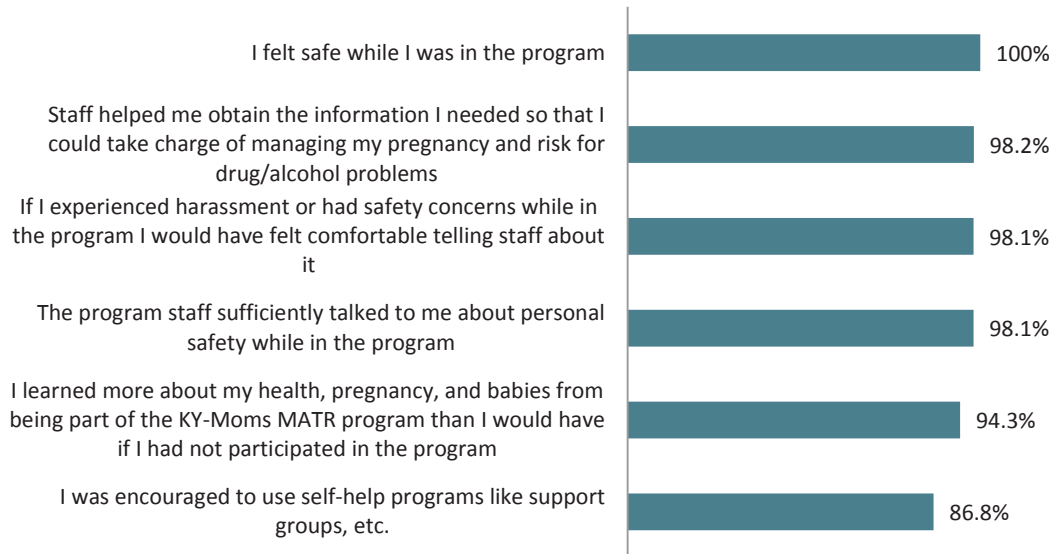
Clients were also very satisfied with the KY-Moms MATR program staff (see Figure 11.4). Specifically, all clients reported that staff were willing to work around any potential scheduled conflicts and that, more often than not, staff were knowledgeable, helpful, and acted professionally. All clients also believed that the staff seemed to think the client could grow, change, and recover. The majority of clients (98.2%) reported that staff were sensitive to the clients' cultural/ethnic background.

FIGURE 11.4. GENERAL SATISFACTION WITH KY-MOMS MATR STAFF (N = 53)



All clients reported that they felt safe while in the case management program. The majority of clients (98.2%) believed that the staff helped them obtain information so they could take charge of managing their pregnancy and risk for drug/alcohol problems. About 98% reported that the staff talked to the client about personal safety while in the program and if they experienced harassment or had safety concerns while in the program that the client would have felt comfortable telling staff about it. About 94% of clients reported they learned more about their health, pregnancy, and babies from being part of the KY-Moms MATR program than they would have if they had not participated. Finally, 86.8% of clients reported they were encouraged to use self-help programs like support groups.

FIGURE 11.5. SATISFACTION WITH PROGRAM ASPECTS ADDRESSING TARGETED FACTORS (N = 53)



Recommend KY-Moms MATR to a Friend

Ninety-eight percent of clients in the postnatal follow-up sample indicated they would recommend KY-Moms MATR case management to a friend. The following are some quotes from clients about why they would recommend the program to a friend:



"Anything I needed they were there for me always."



"The help they give you is amazing. I feel like I'm not alone."



"Super helpful program to new moms."



"There's invaluable information."

Section 12. Conclusion

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

Areas of Success

In spite of these significant risk factors (high rates of substance use, mental health problems and intimate partner abuse), the KY-Moms MATR mothers had very positive birth outcomes that were similar to the general population of mothers in Kentucky who had babies during the same period. Specifically, the two groups of mothers had similar birth outcomes, such as babies' average number of gestational weeks, the percent of babies who were born premature, birth weight, highest APGAR, the percent of babies with birthing problems, the percent of babies being taken to the neonatal intensive care unit, the decision to breastfeed, and the number of prenatal care visits with a health care provider. In addition, improvements were seen in the targeted risk factors:

Substance Use

Almost half of clients reported illegal drug use in the 30 days before becoming pregnant, compared to 11.4% of non-pregnant women reporting illegal drug use in the past month in a national survey.⁶³ In the past 30 days at prenatal baseline, 22.0% of clients reported illegal drug use and in the 30 days before the baby was born 5.0% of clients reported illegal drug use. Illegal drug use decreased significantly at postnatal follow-up compared to the period before clients found out about the pregnancy.

A similar pattern was seen with reduction in alcohol use with clients reporting significantly less use while pregnant and in KY-Moms MATR with a sustained decrease after the birth of the baby. Forty-one percent of clients reported using alcohol in the 30 days before pregnancy. Further, 8.0% of KY-Moms MATR clients reported any alcohol use in the past 30 days at prenatal baseline and none of the clients reported alcohol use in the 30 days before the baby was born. Although there was an increase in the number of clients who reported any alcohol use at postnatal follow-up (in the six months after the birth of the baby) compared to during pregnancy, there were still significantly fewer clients reporting alcohol use compared to the 6 months before pregnancy.

In addition, 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. This decrease was sustained in the 30 days before postnatal follow-up. In addition, the average number of cigarettes clients smoked decreased from before the client found out about their pregnancy (15.0) to the past 30 days at prenatal baseline (7.2). The number of cigarettes decreased further in the 30 days before the baby was born (5.1) and remained lower in the past 30 days at postnatal follow-up (8.4).

⁶³ Substance Abuse and Mental Health Services Administration. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863*. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014.

Mental Health

Clients' mental health also showed significant improvements. Specifically, significant reductions in the average number of reported depression (6.5 symptoms at baseline to 2.5 symptoms at follow-up) and anxiety symptoms (4.7 symptoms at baseline to 2.8 symptoms at follow-up) were found in the past 6 months at postnatal follow-up compared to before pregnancy. Similar results were found for past 30 day measures. Clients also reported fewer stress-related health consequences at postnatal follow-up (18.9 at baseline compared to 6.5 at follow-up).

Intimate Partner Abuse

Reported incidences of any intimate partner abuse, such as psychological abuse and coercive control, decreased from the period before clients found out they were pregnant (33.3%) to postnatal follow-up (12.4%).

Other Areas of Improvement

In addition to the improvement in targeted risk factors, there were improvements in other general areas of the mothers' lives after becoming involved in the KY-Moms MATR program including a reduction in chronic pain and improved overall health. Moreover, individuals reported significantly fewer days in the past 30 days their physical health was not good at follow-up compared to baseline. Women reported improved economic conditions with significantly fewer clients reporting they had difficulty meeting health care needs as a result of financial problems.

Clients reported significantly higher quality of life after the program and an overall greater satisfaction with life at postnatal follow-up compared to prenatal baseline. The vast majority of clients were satisfied with KY-Moms MATR case management services and would recommend the program to others.

Areas of Concern

Despite significant improvements in many areas of clients' lives, there was a minority of new mothers who continued to struggle with targeted risks such as drug use, tobacco use, mental health problems, partner abuse, and economic hardship at follow-up.

Drug Use

Over 13% of clients reported still using illegal drugs in the 6 months since having the baby. Of those clients (n = 14), 78.6% reported marijuana use, 28.6% reported non-prescribed opioids, 7.1% reported non-prescribed methadone use, and 7.1% reported heroin use. Parental drug use may interfere with the ability to care for a child and provide a safe environment. From the physical and mental impairments resulting from the drugs themselves, prioritizing money spent on drugs instead of other household needs, or

time spent looking for drugs, children's needs may go unmet by a drug using parent.⁶⁴ Furthermore, a household with a substance using parent may be unsafe if illegal drugs or paraphernalia are accessible to children.⁶⁵

Smoking

The majority of clients smoked during pregnancy (53.0% in the past 30 days at prenatal baseline and 45.0% in the 30 days before the baby was born) and during the 6 months after the baby was born (64.2%). This is considerably higher than the number of both pregnant and non-pregnant women who smoke in the U.S. and higher than mothers in Kentucky who did not participate in KY-Moms MATR. While it is well-known that smoking can cause negative birth outcomes, many mothers may not consider the impact that cigarette smoke has on a baby's health once the baby has been born. In fact, several studies have shown that childhood exposure to cigarette smoke contributes to the incidence of sudden infant death syndrome,^{66, 67} respiratory infections,⁶⁸ middle ear disease and adenotonsillectomy,⁶⁹ poor lung function and asthma,^{70, 71, 72} neurodevelopmental and behavioral problems,⁷³ and childhood cancer.^{74, 75, 76} As a result, there may be a need to increase postpartum support services for substance use and smoking cessation in the KY-Moms MATR program.

Mental Health

One-third of KY-Moms MATR clients reported meeting study criteria for depression or anxiety (or both) in the six months after the baby was born. Further, the average number

⁶⁴ Child Welfare Information Gateway. (2003). *Substance Abuse and Child Maltreatment*. U.S. Department for Health and Human Services, Washington, DC. Retrieved from https://www.childwelfare.gov/pubPDFs/subabuse_childmal.pdf

⁶⁵ Smith, V. & Wilson, C., AAP Committee on Substance Use and Prevention. (2016) Families affected by parental substance use. *Pediatrics*, 138(2), e20161575.

⁶⁶ Anderson, H. R., & Cook, D. G. (1997). Passive smoking and sudden infant death syndrome: review of the epidemiological evidence. *Thorax*, 52(11), 1003–1009.

⁶⁷ Zhang, K., & Wang, X. (2013). Maternal smoking and increased risk of sudden infant death syndrome: a meta-analysis. *Legal Medicine*, 15(3), 115–121.

⁶⁸ 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.

⁶⁹ 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.

⁷⁰ 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.

⁷¹ Von Mutius, E. (2002). Environmental factors influencing the development and progression of pediatric asthma. *Journal of Allergy and Immunology*, 109(6), 525–532.

⁷² 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.

⁷³ 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.

⁷⁴ John, E., Savitz, D., & Sandler, D. (1991). Prenatal exposure to parents' smoking and childhood cancer. *American Journal of Epidemiology*, 133(2), 123–132.

⁷⁵ Sasco, AJ, & Vainio, H. 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.

⁷⁶ Hofhuis, W., Jongste, JC, & Merkus, P. (2003). Adverse health effects of prenatal and postnatal tobacco smoke exposure on children. *Archives of Disease in Childhood*, 88, 1086–1090.

of days KY-Moms MATR clients reported that their mental health was not good did not change from prenatal baseline (9.3 days) to postnatal follow-up (9.4 days). Dealing with a newborn and the typical new mother sleep deprivation may be especially difficult for women experiencing trauma, depression, and/or anxiety. 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,⁷⁷ it can continue for as long as 14 months.⁷⁸ While it is mostly caused by the swing of hormones that occur after birth, a study by the Centers for Disease Control found that postpartum depression was significantly associated with tobacco use in the last trimester, intimate partner abuse, and financial stress (including the use of Medicaid).^{79, 80} 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.^{81, 82} For these women who have experienced mental health problems, targeted or adapted mental health services may be critical.

Intimate Partner Abuse

At intake, one-third of clients reported any intimate partner abuse in the 6 months before they found out they were pregnant. At follow-up, 11.4% of KY-Moms MATR clients reported experiencing intimate partner abuse in the 30 days before their baby was born and 12.4% reported experiencing intimate partner abuse in the past 6 months. Overall, 22% of the women reported experiencing intimate partner violence in the 30 days before the baseline suggesting that the intimate partner violence is an ongoing concern through the pregnancy and after the baby is born. Partner abuse and trauma can contribute to mental health symptoms and can interfere with the parenting relationship.⁸³ 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.⁸⁴ Thus, support and resources for trauma and partner violence is an issue that should be targeted during the pregnancy and postnatal period.

⁷⁷ American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington, VA: American Psychiatric Publishing.

⁷⁸ Wolkind S, Zajicek E, & Ghodsian J. (1990). Continuities in maternal depression. *International Journal of Family Psychiatry*, 1, 167-182.

⁷⁹ Centers for Disease Control and Prevention (2008). Prevalence of self-reported postpartum depressive symptoms --- 17 states, 2004–2005. *MMWR*, 57(14), 361-366.

⁸⁰ 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.

⁸¹ O'Hara, M. & McCabe, J. (2013). Postpartum depression: current status and future directions. *Annual Review of Clinical Psychology*, 9, 379-407.

⁸² 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.

⁸³ 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.

⁸⁴ 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.

Financial Issues

With 70.8% of KY-Moms MATR women reporting being currently unemployed and almost half 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. 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.⁸⁵ 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).⁸⁶ 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.

Trend Report Summary

Trend reports provided throughout this report reflect the importance of annual data collection. These data trends over time can show consistency, improvement, or highlight an area which may need further attention in the KY-Moms MATR program. Clients reporting their current health rating has remained fairly consistent at both intake and follow-up over the past 4 years. The number of clients who have reported chronic pain in the 6 months before pregnancy also remained constant at baseline. In addition, the average number of poor physical health days in the past 30 days clients have reported were consistent at both baseline and follow-up over the past 4 years. Further, clients' ranking of their quality of life were relatively consistent through the years for both baseline and follow-up. 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 9.1 or higher over the past 5 years.

Trend analysis of substance use shows a steady increase in clients reporting past-6-month illegal drug use at prenatal baseline. While the number of clients reporting illegal drug use decreased for each year at follow-up compared to baseline, over the years the number of clients reporting illegal drug use at follow-up has increased slightly. In addition, a four-year trend analysis shows that rates of depression and/or anxiety have remained steady at prenatal baseline but have fluctuated at postnatal follow-up. Further, with trend analysis, findings show that the number of clients who have reported any partner abuse at prenatal baseline has been fairly consistent over the past 4 years.

Trend analysis has also shown areas where the gap between prenatal baseline and postnatal baseline is narrowing. The percent of clients reporting difficulty meeting basic household needs increased at follow-up this report year compared to past years. In addition, for the number of clients who reported being currently unemployed, the difference between

⁸⁵ Kiernan, K. E., & Huerta, M. C. (2008). Economic deprivation, maternal depression, parenting and children's cognitive and emotional development in early childhood. *The British Journal of Sociology*, 59(4), 783-806.

⁸⁶ 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.

prenatal baseline and postnatal follow-up has decreased. In terms of the average number of days clients reported poor mental health days, the difference in the number of days reported at baseline and at follow-up narrowed considerably this year compared to past years. Finally, the difference between baseline and follow-up on the average number of people clients can count on for emotional support has narrowed over the past four years with this year not being significantly different at all.

Limitations

There are several limitations to this outcome study including the lack of 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 a program such as KY-Moms MATR, random assignment can 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 with which to compare KY-Moms MATR clients. While the matched comparison group matches mothers on several key factors (age, race, education, marital status, community residence, and smoking status), there is no information on drug use, mental health problems or intimate partner violence for the comparison group. However, given the small number of cases that had negative birth outcomes against significant odds (i.e., multiple risk factors), it is reasonable to assume that the services provided by KY-Moms MATR play an important role in the health and safety of these mothers and their children. Further, in order to better understand the results of the KY-Moms MATR program, the analysis was done in several ways. As presented in this report, a multivariate analysis of birth outcomes was conducted to control for several key factors that may be associated with birth outcomes. Additionally, a group of mothers matched on selected factors⁸⁷ along with a randomly selected comparison group from the general population were compared to the KY-Moms MATR case management group on birth outcomes (see Appendix B). Results were similar to findings of the multivariate analysis on birth outcomes. Specifically, compared to the general population, babies born to mothers in KY-Moms MATR had a similar average number of gestational weeks, highest APGAR score, birth weight, and prenatal visits. In addition, like the multivariate regression analysis, the matched comparison analysis showed that KY-Moms MATR mothers were similar to the general population and comparison in terms of birthing problems.

Second, most of the 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.^{88, 89, 90, 91} Earlier studies found that the context of the interview influences

⁸⁷ Mothers were matched on age, education, metropolitan/non-metropolitan residence, marital status and smoking status.

⁸⁸ 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.

⁸⁹ 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.

⁹⁰ 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.

⁹¹ 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.

reliability.⁹² During the informed consent process at the beginning of the 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 self-report is as good as urine tests in identifying illegal drug use.^{93, 94}

Third, 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 interpersonal violence victimization, there is likely a segment of the pregnant population who are heavier drug 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 use may be more hesitant to seek or accept treatment because they either do not accept they have a problem, fear having the child removed from their custody, or fear being prosecuted.⁹⁵ 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 abuse 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 Behavioral Health to address the rising statewide and national problem of drug-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.

Given these positive outcomes, there is every reason to see a rationale for maintaining these services in the eleven participating regions and expanding these services to the remaining regions of the state. This is especially critical when comparing the level of tobacco and drug use in the pregnant women served by the KY-Moms MATR program to the national level data, which

⁹² Babor, T.F., Stephens, R.S., & Marlatt, A. (1987). Verbal report methods in clinical research on alcoholism: Response bias and its minimization. *Journal of Studies on Alcoholism*, 48, 410-424.

⁹³ 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.

⁹⁴ 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.

⁹⁵ Tuchman, E. (2010). Women and addiction: The importance of gender issues in substance abuse research. *Journal of Addictive Diseases*, 29(2), 127-138.

shows significantly higher rates of substance use at prenatal baseline for Kentucky women.

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. Those mothers who persist in or return to drug-using lifestyles are at great risk for child neglect and other forms of child maltreatment,^{96,97} as well as for setting the stage for their children to use and misuse alcohol and illegal drug as adolescents and adults.^{98,99} Thus, reducing risk during the early development of the child 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 utilization 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.

⁹⁶ 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.

⁹⁷ 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.

⁹⁸ 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.

⁹⁹ 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.

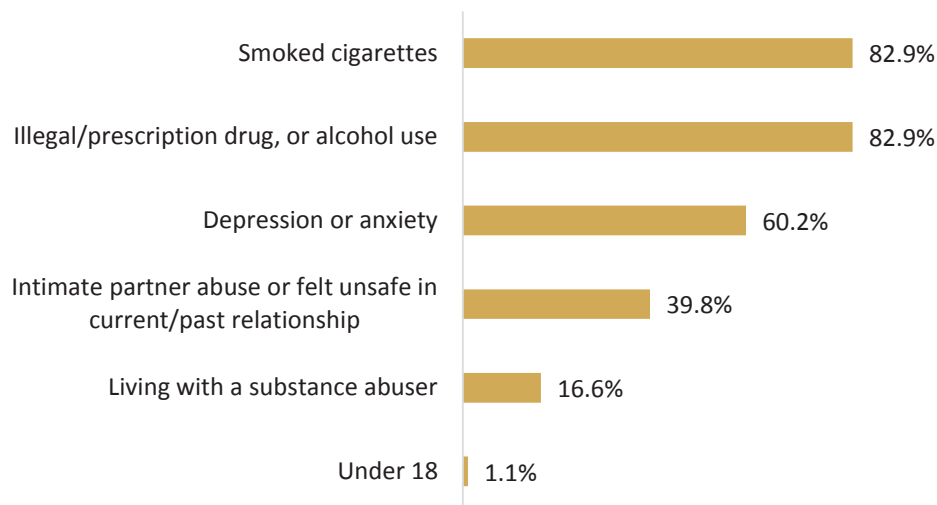
Appendix A. Description of KY-Moms MATR Program Clients at Prenatal Baseline

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 2015 and December 2016, 181 pregnant women completed a prenatal baseline interview and were eligible for a six-month postnatal follow-up within FY 17.¹⁰⁰

Risk Status

Figure AA.1 shows that of the 181 clients who completed a KY-Moms MATR prenatal baseline, 96.7% (n = 175 clients) fit into at least one of the major risk factor categories assessed in the baseline interview. Overall, 82.9% of clients reported cigarette use, 82.9% reported drug or alcohol use at baseline, 60.2% reported depression or anxiety, 39.8% reported intimate partner abuse and/or feeling unsafe in either their current relationship or because of a partner from a previous relationship, 16.6% of clients reported currently living with someone who had drug or alcohol problems, and 1.1% were under the age of 18.

FIGURE AA.1. PERCENT OF CLIENTS FALLING INTO AT LEAST ONE TARGETED RISK FACTOR (N = 181)¹⁰¹



Pregnancy Status

One-third of KY-Moms MATR clients were referred to the case management program by the prevention program and 21.0% were referred by their counselor at a community mental health agency.

¹⁰⁰ Clients who completed a prenatal baseline (n = 181) entered the KY-Moms MATR program between May 2015 and December 2016 and were eligible for follow-up between July 2016 and June 2017.

¹⁰¹ One client was missing information for age and date of birth.

A little more than 7% were referred by HANDS and 6.6% just decided on their own to participate in the program.

Overall, at the time clients completed the prenatal baseline, they were an average of 22 weeks pregnant (ranging from women who were 6 weeks pregnant to women who were 38 weeks pregnant). Although 79.0% of the clients indicated their pregnancy was unplanned, only 0.6% reported they were not sure about keeping the baby.

At the time of prenatal baseline, clients had been to an average of 5.5 visits (range of 0-25 visits) with their prenatal health care provider and 54.2% reported they were planning on breastfeeding.

Overall, 74.0% of clients reported they had been pregnant before. The majority of clients who entered the KY-Moms MATR program were confident (29.9%) or very confident (57.6%) about caring for a newborn.

Only 1.6% of the women reported the father did not know about the baby. Of those who indicated the father knew about the baby (n = 178), 73.6% indicated the father was excited (16.3%) or very excited (57.3%) about the baby.

Socioeconomic Status

On average, clients were 26.7 years old (ranging from 17 years old to 46 years old).

- The majority of women who entered KY-Moms MATR case management were unemployed (70.2%) at the time of the baseline interview. Less than 10% were employed full-time and 17.7% either worked part-time or had occasional/seasonal work.
- About 61% of clients were either married (22.1%) or cohabiting with a partner (39.2%) at prenatal baseline. Of those clients who were married or cohabiting (n = 111), 90.1% reported that their partner was the father of the baby with whom they were pregnant.
- Around 8% of the KY-Moms MATR mothers reported at prenatal baseline they were currently homeless. Of those who indicated they were homeless (n = 15), 73.3% were staying temporarily with friends/family, and 26.7% reported they perceived themselves to be homeless because they were staying in a shelter.

Appendix B. Methods

This evaluation project collects data from pregnant women in Kentucky who are at high risk for substance abuse and participate in KY-Moms MATR case management services. Eleven 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; (2) comparisons of KY-Moms MATR clients and general population birth outcome information from the Vital Statistics birth outcome data set; and (3) comparison of KY-Moms MATR clients matched to mothers in the general population who did not receive KY-Moms MATR case management services based upon age, race, education, marital status, smoking status and metropolitan/non-metropolitan residence.

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 181 baselines were completed between June 2015 and December 2016 with women who had due dates that would result in target months for a follow-up interview between July 2016 and June 2017. Overall, women completed a KY-Moms MATR case management baseline when they were an average of 22 weeks pregnant (minimum = 6 weeks, maximum = 38 weeks).¹⁰²

Method of Determining Follow-Up Sample

FOLLOW-UP ASSESSMENT. KY-Moms MATR 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 plans on keeping the baby; (4) the client is in the program at least 30 days before the birth of the baby; and (5) 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 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 5.0 months between the time the baby was born and the date of the follow-up

¹⁰² The average number of days between when the client was admitted to the KY-Moms MATR program and when the baseline was completed was 4.4 days with a minimum of 0 days and a maximum of 61 days. One case was not included in the average days because the intake date was entered as being after the submit date.

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.¹⁰³ 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 follow-up interview: (1) women who have not given birth to their babies or who do not have the baby living with them are not eligible for the follow-up interview; and (2) 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, 181 baselines were completed between June 2015 and December 2016 and had a targeted month for follow-up in FY 2017 (July 2016 – June 2017). Of these clients who were in the targeted window to complete a postnatal follow-up, 16 did not consent to be contacted by follow-up staff (see Table AB.1). Of the remaining 165 women, an additional 18 clients were ineligible for follow-up staff to begin locating as a result of prenatal baseline data (10 clients were in the program less than 30 days, 3 clients had their baseline assessment submitted more than 30 days after it was completed, 2 clients indicated at prenatal baseline that they may not keep their baby, 1 client had invalid contact data, and 2 were inadvertently not included in the follow-up sample).

In addition, 16 were not eligible because they were in jail or another controlled environment ($n = 5$), because their baby was not living with them ($n = 8$), or the client passed away ($n = 3$). Of the remaining eligible clients ($n = 131$), 21 clients (16.0%) 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 110 clients, representing a follow-up rate of 84.0%.

¹⁰³ The exception to this is if harm to the client, harm to others, or child abuse is disclosed to the researchers.

TABLE AB.1. FOLLOW-UP SAMPLE AND EFFORTS

	Number of baselines (n = 181)
Did not consent to follow-up	16
	n = 165
Not eligible for follow-up	34
Other reasons based upon prenatal baseline (i.e., invalid locator data, client was not sure if she was keeping the baby, client not in program long enough, baseline submission more than 30 days after completion)	18
In jail or controlled environment (i.e., residential treatment)	5
Baby not living with them	8
Client was deceased	3
Total number of baseline surveys eligible for follow-up	131
Expired cases (i.e., never contacted, did not complete the survey during the follow-up period)	21
Expired rate ((the number of expired cases/eligible cases)*100)	16.0%
Refused	0
Refusal rate ((the number of refusal cases/eligible cases)*100)	0.0%
Completed follow-up interviews	110
Follow-up rate	84.0%

Because the follow-up sample is based upon the women who have had their babies and had a follow-up interview, the next step in determining the follow-up sample was to match to the birth event data set.

OBTAINING THE BIRTH EVENT DATA. The Vital Statistics birth data is used to compare mothers in KY-Moms MATR case management and their babies to mothers who had babies during the same period but who did not participate in KY-Moms MATR Case Management. 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.

As a first step in merging Vital Statistics data with KY-Moms MATR baseline data, birth event data for 2015 and 2016 (up to the date of analysis on September 11, 2017) were combined

(n=113,441; 57,596 for 2015 and 55,845 for 2016). Only mothers in the birth data set that had their babies during the same time period as KY-Moms MATR clients were kept in the data set (December 2015-December 2016); thus, 52,838 cases were removed leaving a sample of n = 60,603. Eighty-seven cases were then removed because they were duplicate records or had very little information (the earliest record for the child was kept in the file). Next, KY-Moms MATR clients in the birth event data set were identified based upon social security number. In addition, 65 cases were removed from the whole birth event data set because they matched mothers involved in KY-Moms MATR but who were not involved in the current follow-up sample analysis and, therefore, should not be included in the general population of mothers.

The next step to preparing the data was that all cases in which the mother was not a Kentucky resident were eliminated (n=1,816) which was 3.0% of the birth data sample and left a sample of 58,635 cases in Kentucky.

FOLLOW-UP SAMPLE. In order to be included in the analysis of this report, there were other criteria clients needed to meet before being included in the report and therefore:

Because only clients who had data in the birth event data set were included in the analysis, 4 clients were not included in the follow-up analysis because they did not have a match to data in the Vital Statistics data set.¹⁰⁴

This left a follow-up sample of 106 KY-Moms MATR mothers for the birth event analysis.

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 December 2015 to December 2016, the final sample for the general population of mothers is 57,375 mothers and 58,528 babies who were not involved in KY-Moms MATR (106 mothers and 107 babies were involved in the KY-Moms MATR program).

The KY-Moms MATR Case Management study focuses on two units of analysis depending on the outcome being examined: (1) some outcomes use the mother as the unit of analysis and in those cases the mother will be represented only one time in the data set to avoid violating the assumption of independence; and (2) some outcomes use the birth and baby characteristics as the unit of analysis and those outcomes can include all of the babies in the Vital Statistics data set.

While the Vital Statistics data set has a variable which identified those mothers who had multiple births at one birth event (e.g., twins, triplets or quadruplets), it does not capture mothers who may have had two pregnancies and deliveries within the period analyzed (i.e., December 2015 – December 2016). In addition, the Vital Statistics data set counts each child as a multiple. For example, Child A will have a value indicating he or she is a twin and Child B will also have a value indicating he or she is a twin. When the unit of analysis is the baby (or births),

¹⁰⁴ This could be due to an incorrect social security number, name or birthdate, or the client could have given birth out of state.

all children should be included in the analysis. When the unit of analysis is the mother, only one child (the one with the first child identification number) will be included in the analysis to avoid violating the assumption of independence of cases. Thus, a variable is created in the data set which identifies whether the baby is a twin, triplet or quadruplet, or if there is a sibling in the file that was born in the approximate 12 months that were analyzed for this report.

Table AB.2 displays the number of children born at the same birth event as well as the number of children with a sibling in the data set. For the entire data set (58,635 babies) there were 2,026 twins, 51 triplets, 4 quadruplets, and 5 quintuplets (totaling 2,086 multiple births, or 3.6% of the sample) and 94 children that had siblings born during the time frame but the child was not a twin or triplet. Thus, when analyzing outcomes of the birth and baby characteristics the total sample size is 58,635 in order to include all babies.

TABLE AB.2. MULTIPLE BIRTH EVENTS AT ONE BIRTH EVENT OR SIBLINGS BORN AT SEPARATE BIRTH EVENTS BETWEEN DECEMBER 2015 AND DECEMBER 2016

Out of a total of 58,635 babies:	
Twins	2,026
Triplets	51
Quadruplets	4
Quintuplets	5
Total multiple births	2,086 or 3.6%
Siblings born in separate deliveries within the time frame	94

Note: None of the babies in the KY-Moms MATR sample were multiples, but one was a sibling.

Using mothers' social security numbers and children's dates of birth, mothers with multiple and multiparous births were identified as shown in Table AB.3. This shows there were 57,481 mothers total and 1,126 events with the same mother that were excluded from the analysis. The mother data that remained for analysis was based upon the first child identification number (as determined by the birth data set), or in the case of multiparous births, the child with the earlier birth date. A total of 1,013 mothers had twins, 17 had triplets, one had quadruplets, one had quintuplets and 94 had children in separate deliveries but within the selected time frame. When analyzing characteristics of the mother the sample size will be 57,481 so that these mothers are not counted more than once.

TABLE AB.3. MOTHERS WITH MORE THAN ONE BABY IN THE BIRTH DATA SET BETWEEN DECEMBER 2015 AND DECEMBER 2016

Out of a total of 57,481 mothers:	
Mothers who had twins	1,013
Mothers who had triplets	17
Mothers who had quadruplets	1
Mothers who had quintuplets	1
Total mothers with multiple births	1,032
Mothers with two separate single deliveries within the selected timeframe (siblings)	94
Total mothers with more than one child in the data set	1,126 or 2.0%

Note: In the general population, 2 women had twins first and then a single child later in the same year. In addition, 3 women had a single child first and then twins later on in the same year. Only the first child is counted in the analysis on the mother's data.

ANALYSIS. Using the statistical software IBM SPSS, analysis included Chi-square tests and one-way ANOVAS comparing clients that were in KY-Moms MATR to the general population of mothers. Demographics, socio-economic indicators, physical health status, smoking, prenatal visits, and birth outcomes (i.e., average weeks gestation, prematurity, birth weight and birthing problems) were included in the analysis. All analyses were done using a $p < .01$ alpha level based on power analysis, including the multivariate analysis and the comparison group analysis. For example, with the comparison group analysis using a Chi-square test, to detect a moderate effect size (0.3) with 8 degrees of freedom (3 groups X 3 category levels) on an overall sample size of 798, the alpha would be set at .00000001 when power is 0.95 using GPower to calculate the power analysis. Thus, alpha was set at $< .01$ because having a larger alpha would increase the risk of a Type I error. And for the multivariate analysis the sample size was so large GPower could not calculate the required alpha due to extreme parameters. Even reducing the sample size by an order of magnitude to 3,400 would require an alpha of .000000001 to detect a small effect size of .15 with a power of .95 and 7 degrees of freedom. Thus, to control for Type I error alpha was set at .01.

Multivariate regression models were used to examine the association between KY-Moms MATR participation and birth outcomes while adjusting for key factors. Each birth outcome was entered as the dependent variable in a separate binary logistic regression model with KY-Moms MATR participation as the predictor variable and the covariates of mother's age, education (i.e., less than a high school diploma or GED vs. high school diploma or higher), area of residence (metropolitan vs. non-metropolitan county), and smoking at the time of the birth (No/Yes).

MATCHED COMPARISON SAMPLE. In order to create a similar sample to which the KY-Moms MATR birth outcomes and service data can be compared, clients were matched to mothers in the general population who did not receive KY-Moms MATR case management services based upon age, race, education, marital status, smoking status and metropolitan/non-metropolitan residence.

To create these samples, a random number was assigned to the general population of mothers in Excel. Then, the KY-Moms MATR and general population mothers were placed in separate

data files within Access. A query was created from the KY-Moms MATR file which contained the fields upon which we wanted to base the comparison group. In addition, a count was created to determine how many clients had a certain set of characteristics that needed to be matched.

Next, a table was created in which the comparison characteristics in the above query were linked to the variables in the general population birth data set in order to create a table with only cases that had characteristics matching KY-Moms MATR clients. A structure only copy of this table was then created and the six fields being matched were set as the primary keys.

Another query was created which included the query from KY-Moms MATR with the data from the six fields we wanted to match and the birth data table with matching characteristics. The query and the table were linked on the six variables and appended to the table which had the six fields set to primary keys. This created the first sample in which one individual from the general birth data matched on the six characteristics to one case in the KY-Moms MATR birth event data.

Next, a table of birth event data with characteristics matching KY-Moms MATR was created, but without cases that were chosen for the first sample in order to pull cases for additional matches. Based upon the count that was created to determine how many clients from KY-Moms MATR possess each of the six characteristics, the next step was to pull the remaining number of cases from the birth data set that matched KY-Moms MATR.

If there were KY-Moms MATR clients that did not have a match to the birth event data set on all characteristics for comparison, the clients were excluded from the analysis because the remaining cases would not result in a complete matched comparison.

Once a matched comparison sample was generated, the remaining birth event data was sorted by the random number assigned and the top cases were chosen for the general population file based upon the sample size of the KY-Moms MATR client file. This resulted in a sample size of $n = 102$ mothers for each group. Because some mothers had multiple births, there were 103 babies in the KY-Moms MATR sample, 103 babies in the comparison group and 104 babies in the general population sample.

The three groups were analyzed using Chi-square tests and one-way ANOVAs with Tukey's HSD (honestly significant difference) test in order to determine which groups in the sample differ on birth characteristics and outcomes (see Appendix C).

Appendix C. KY-Moms MATR Birth Outcome Data Comparison

This section compares (A) general risk factors; (B) targeted risk factors; and (C) birth events and outcomes from the Kentucky Vital Statistics data for three mutually exclusive groups including: (1) high risk pregnant mothers involved in KY-Moms MATR case management services who gave birth between December 2015 and December 2016 (n = 102)¹⁰⁵; (2) a comparison group of mothers (n = 102) matched on selected characteristics (race, age, education, metropolitan/non-metropolitan residence, marital status and smoking status); and (3) a randomly selected group of mothers (n = 102) from the general population. Only mothers who reside in regions served by KY-Moms MATR were analyzed.

There are two units of analysis depending on the outcome being examined: (1) some outcomes use the mother as the unit of analysis and in those cases the mother will only be represented one time in the data set (although the Vital Statistics data set can include the mother multiple times if she has had multiple births [e.g., twins or siblings] during the time frame examined); and (2) some outcomes use the birth and baby characteristics as the unit of analysis and those outcomes can include all of the babies in the Vital Statistics data set.

One mother in KY-Moms MATR, one mother from the comparison group, and two mothers in the general population have more than one child in the sample. This means there were 103 babies in the KY-Moms MATR sample, 103 babies in the comparison group and 104 babies in the general population sample.

General Risk Factors

The general risk factors compared in this section are from the Kentucky Vital Statistics data set. This section describes demographic information (e.g., age, race, and type of community in which the mother resided), socioeconomic status indicators (e.g., education and source of payment for birth of the baby), and physical health status (e.g., maternal health problems).

Demographics

Table AC.1 shows that there are a few significant demographic differences between the KY-Moms MATR clients and matched comparison sample compared to the general population of mothers in the KY-Moms MATR regions. The majority of women in all three groups were White, but significantly more women in the general population were from metropolitan areas of the state. A significantly greater percentage of clients in the general population (59.8%) were married compared to the KY-Moms MATR and comparison group (35.3%). There was no significant difference for average age between the groups.

¹⁰⁵ While analysis on postnatal follow-up data includes 106 pregnant women involved in KY-Moms MATR, a match on all characteristics for 4 KY-Moms MATR clients could not be found in the sample of other mothers in the KY-Moms MATR regions. Thus, clients who did not have a matched comparison were excluded from the sample leaving a sample size of 102.

TABLE AC.1. DEMOGRAPHIC DIFFERENCES BETWEEN BIRTH EVENT DATA GROUPS

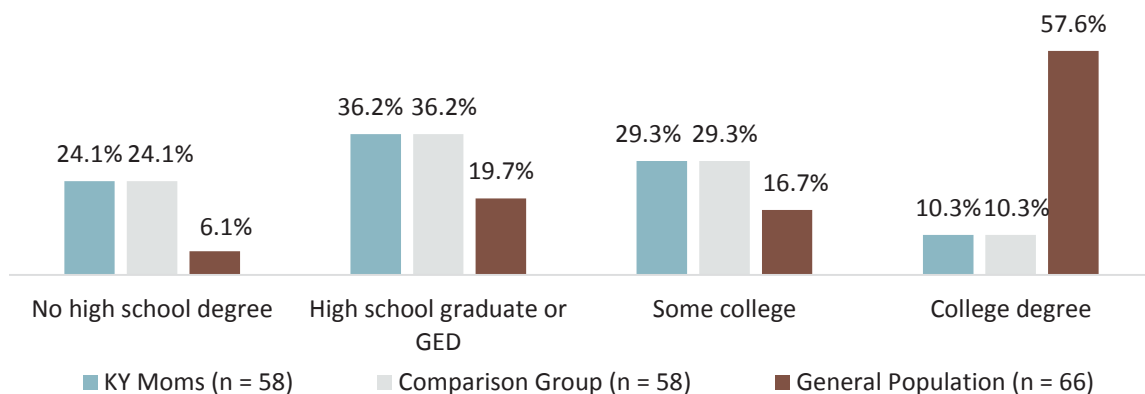
	KY-Moms MATR (n = 102)	Comparison Group (n = 102)	General Population (n = 102)
Race			
White	94.1%	94.1%	86.3%
Minority	5.9%	5.9%	13.7%
Average age			
	26.4	26.4	27.6
Metropolitan/non metropolitan status*			
Metropolitan	41.2%	41.2%	59.8%
Non-metropolitan	38.2%	38.2%	32.4%
Very rural	20.6%	20.6%	7.8%
Marital status***			
Not married	64.7%	64.7%	40.2%
Married	35.3%	35.3%	59.8%

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

Socioeconomic Status Indicators

It is important to compare education rates only for those who had sufficient time to finish high school. The 2011-2015 census estimates that of Kentuckians ages 25 and older, 86.7% had high school degrees. When groups of women ages 25 and older are compared, 75.8% of KY-Moms MATR mothers and 93.9% of mothers in the general population have at least a high school diploma or GED (see Figure AC.1). Therefore, when looking at women 25 years old or older, 24.1% of KY-Moms MATR and the matched comparison group mothers and 6.1% of mothers in the general population had less than a high school degree. Further, 57.6% of mothers in the general population received a college degree compared to 10.3% of mothers in KY-Moms MATR and the matched comparison sample.

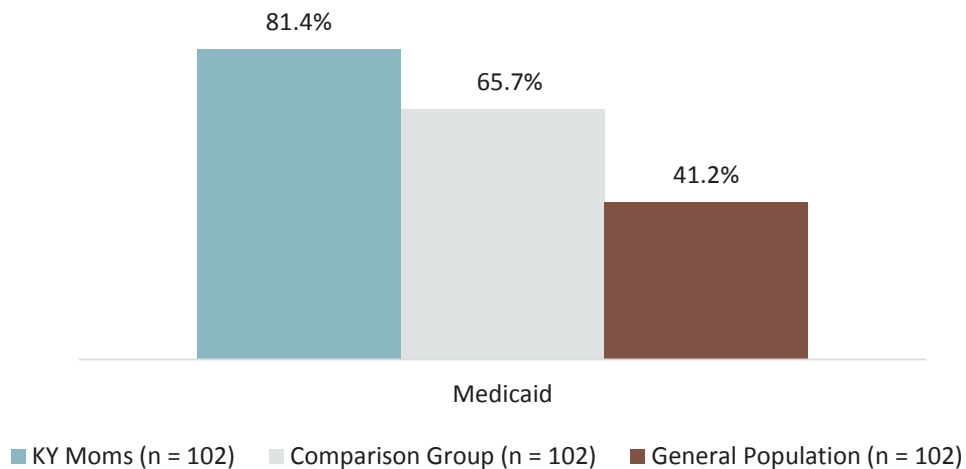
FIGURE AC.1. LEVEL OF EDUCATION BETWEEN BIRTH EVENT DATA GROUPS***



***p < .001

KY-Moms MATR women were more likely to use Medicaid as their source of payment for the birth of the baby compared to either the matched comparison sample or the general population as Figure AC.2 shows.

FIGURE AC.2. MOTHERS WITH MEDICAID AS THE SOURCE OF PAYMENT BETWEEN BIRTH DATA GROUPS***

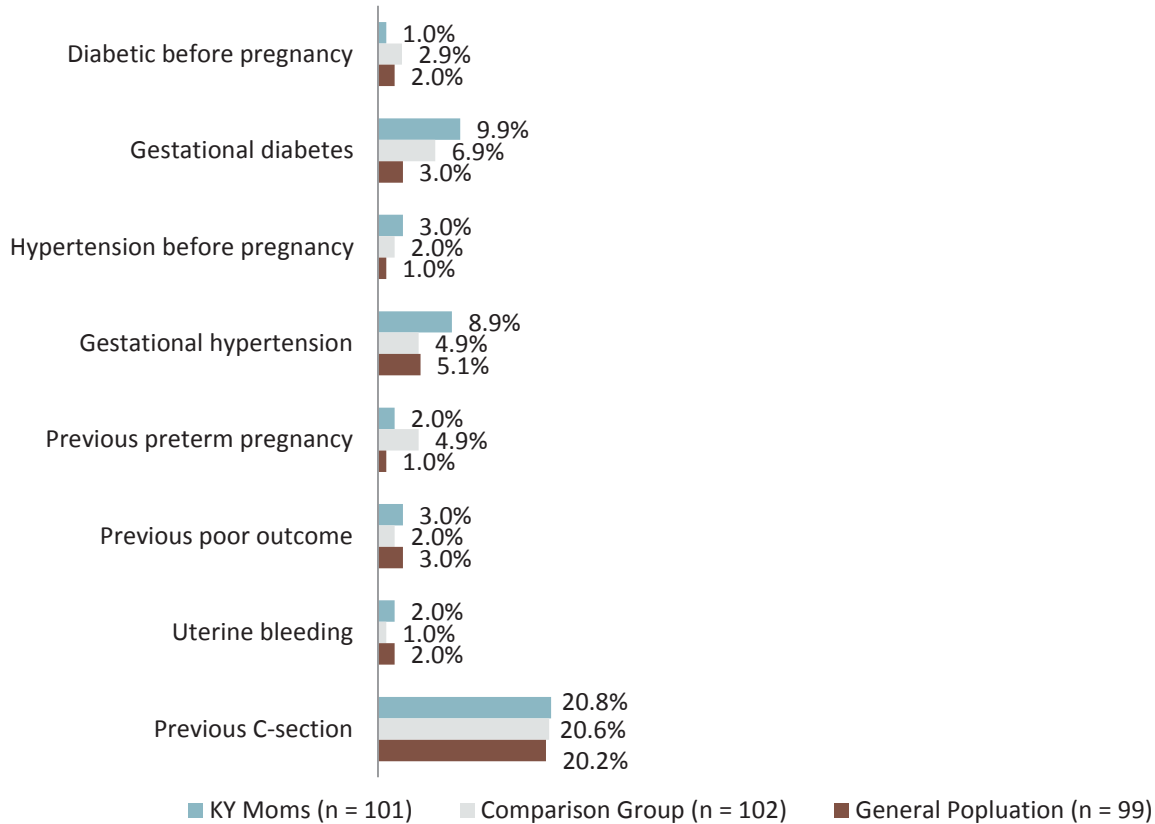


***p < .001

Physical Health Status

General health conditions of pregnancy were examined from the Vital Statistics data set as well (see Figure AC.3). There were no significant differences between the groups on health conditions such as gestational diabetes, gestational hypertension or previous poor birth outcomes.

FIGURE AC.3. OTHER MATERNAL RISK FACTORS BETWEEN BIRTH DATA GROUPS^a



a- Maternal health risk factors were unknown for 1 mother in the KY-Moms MATR group and 3 mothers in the general population.

KY-Moms MATR women were not significantly more likely to have a sexually transmitted infection such as gonorrhea, syphilis, herpes, or chlamydia (2.0%) compared to the matched comparison group (14.7%) or the general population sample (6.3%; not depicted in a figure).

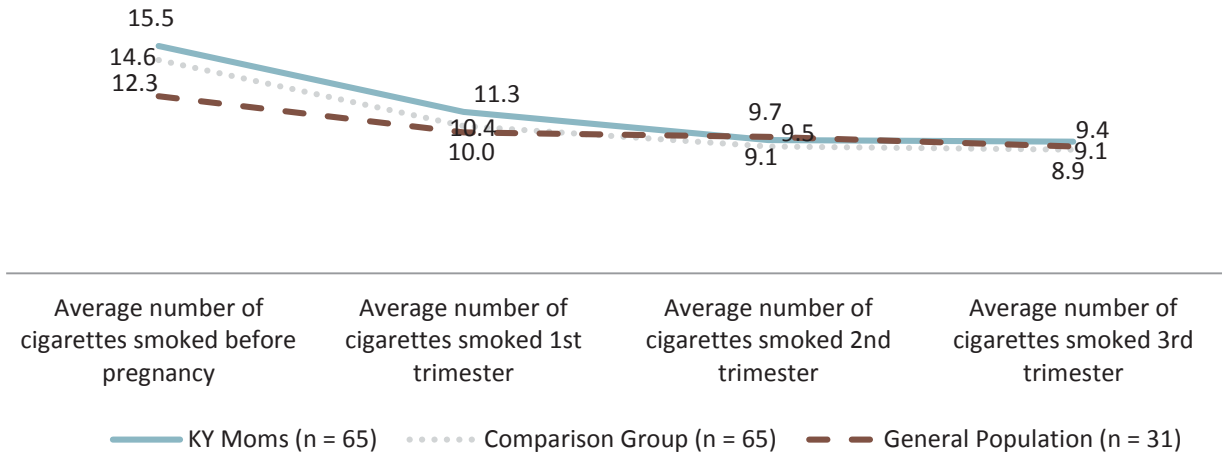
When only hepatitis B and C are examined, there was no significant difference in the number of KY-Moms MATR mothers infected (13.0%) compared to the matched comparison group (7.8%) and the general population sample (3.2%).

Targeted Risk Factors

Smoking Patterns

Significantly more KY-Moms MATR clients and the matched comparison mothers reported being a smoker (63.7%) compared to the general population (30.4%; not depicted in a figure). However, of those who smoked, KY-Moms MATR clients did not report smoking significantly more cigarettes in any trimester compared to mothers in the matched comparison sample or general population.

FIGURE AC.4. AVERAGE NUMBER OF CIGARETTES SMOKED PER TRIMESTER

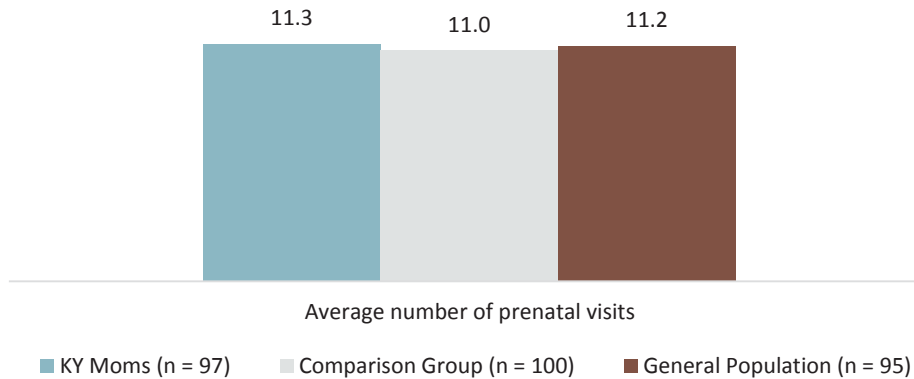


Birth Events And Outcomes

Prenatal Visits

There were no significant differences for the average number of prenatal visits between the groups (see Figure AC.5). KY-Moms MATR women had an average of 11.3 prenatal visits, the matched comparison group had an average of 11.0 prenatal visits and the general population had an average of 11.2 prenatal visits.

FIGURE AC.5. AVERAGE NUMBER OF PRENATAL CARE VISITS WITH A HEALTH CARE PROVIDER ACROSS GROUPS^a

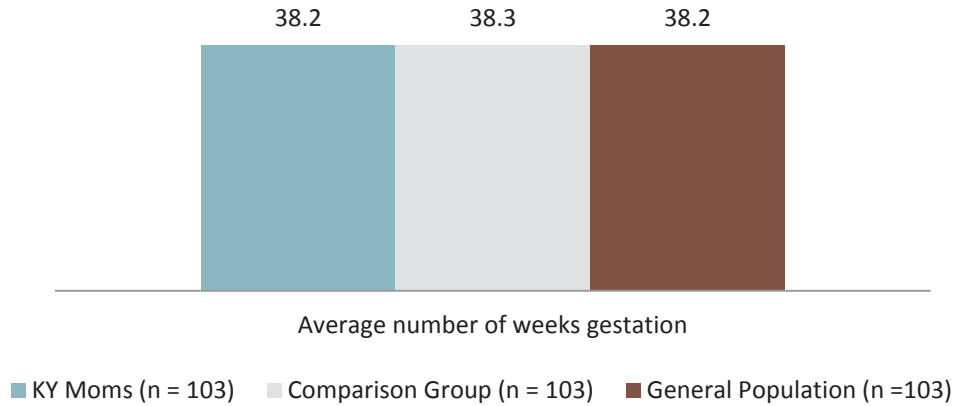


a- Five KY-Moms MATR mothers, 2 mothers in the comparison group and 7 mothers in the general population were missing information on the number of prenatal visits.

Weeks Gestation

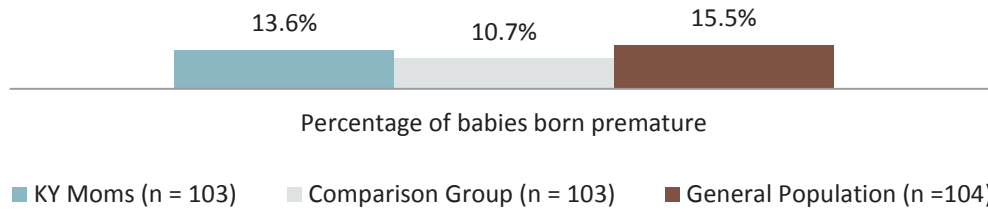
There were no differences between the three samples for average weeks of gestation as Figure AC.6 shows. KY-Moms MATR babies were born at an average of 38.2 weeks, babies born to mothers in the matched comparison group were 38.3 weeks, and babies born to mothers in the general population were born at 38.2 weeks.

FIGURE AC.6. AVERAGE NUMBER OF GESTATIONAL WEEKS ACROSS GROUPS



Similarly, comparing all three groups, there were no significant differences between the groups for the number of babies born prematurely (i.e., before 37 weeks gestation; see Figure AC.7).

FIGURE AC.7. BABIES BORN PREMATURELY ACROSS BIRTH DATA GROUPS

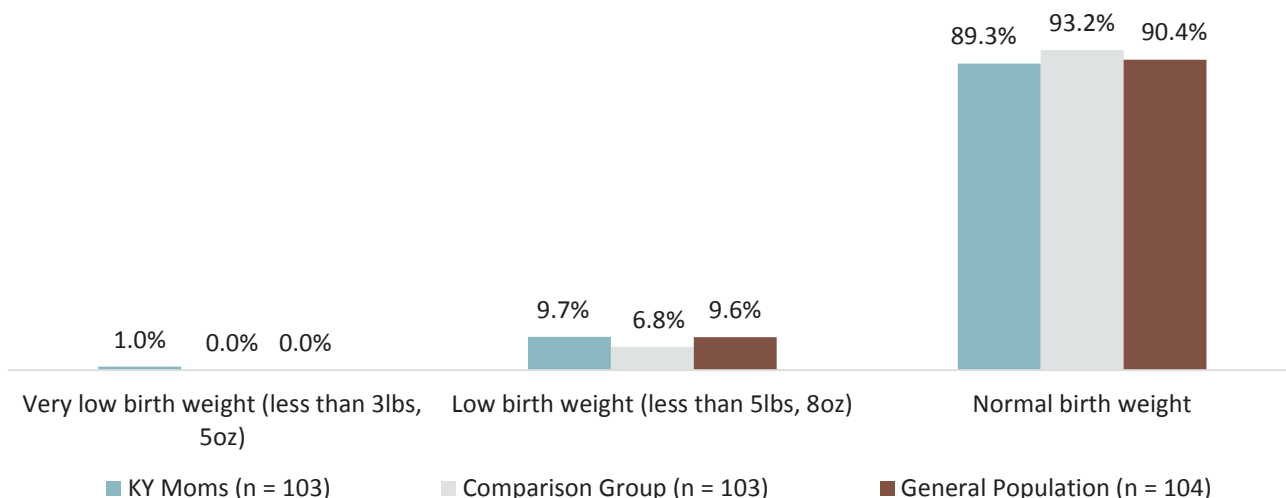


Birth Weight

There was no significant difference between the groups for birth weight with babies born to both KY-Moms MATR clients and mothers in the comparison group weighing an average of 7lbs, 1oz, and babies born to mothers in the general population weighing an average of 7lbs, 3oz (not depicted in a figure).

As a result, there were no significant differences in rates of low birth weight babies between the three groups. Figure AC.8 shows that among KY-Moms MATR babies, 9.7% were considered low birth weight and 1.0% of babies were under 3lbs, 5oz, which is considered “very low birth weight” (therefore, a total of 10.7% of babies weighed less than 5lbs, 8oz). For the matched comparison group, 6.8% were considered low birth weight and none were very low birth weight. While there were no babies who were considered very low birth weight born to the general population, 9.6% of the babies were low birth weight.

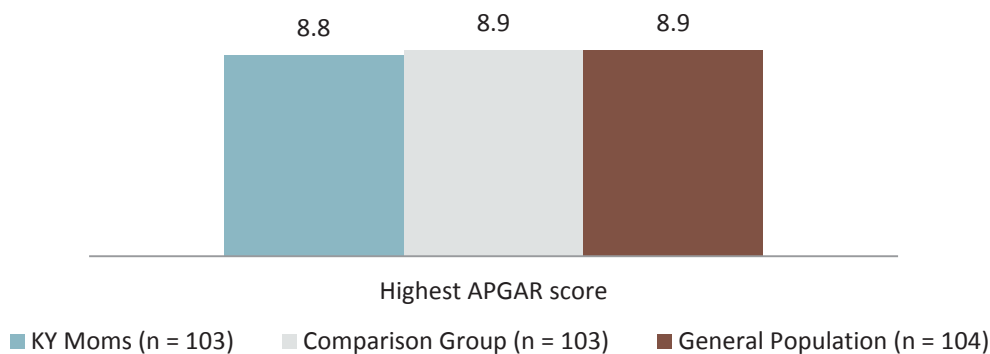
FIGURE AC.8. BIRTH WEIGHT STATUS ACROSS GROUPS



APGAR

The final APGAR scores recorded may be taken at either five minutes or ten minutes after the birth. The highest score of the 5-minute and 10-minute APGARs for each group is displayed in Figure AC.9 and shows no significant differences between the groups.

FIGURE AC.9. AVERAGE HIGHEST APGAR SCORES ACROSS GROUPS



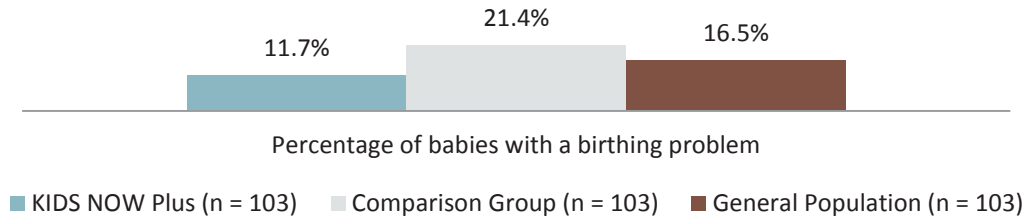
Birth Problems

There were no significant differences between the groups (one baby in KY-Moms MATR, four babies in the comparison group and none in the general population sample) for birth defects or anomalies (such as Down’s syndrome, cleft palates, anencephaly, congenital heart failure, spina bifida, etc.).

There was not a significant difference in the percent of babies born with a birthing problem during labor and delivery as Figure AC.10 shows (not including being admitted to the neonatal intensive care unit). Almost 12% of babies born to KY-Moms MATR mothers were born with a birthing problem compared to 21.4% of babies in the matched comparison sample and 16.5% of

babies born to the general population of mothers. Among those babies with birthing problems, there were also no differences in the average number of birthing problems between babies in the KY-Moms MATR group (an average of 1.3 problems) and the babies in the matched comparison sample (an average of 1.4 problems) or the general population (an average of 1.5 problems).

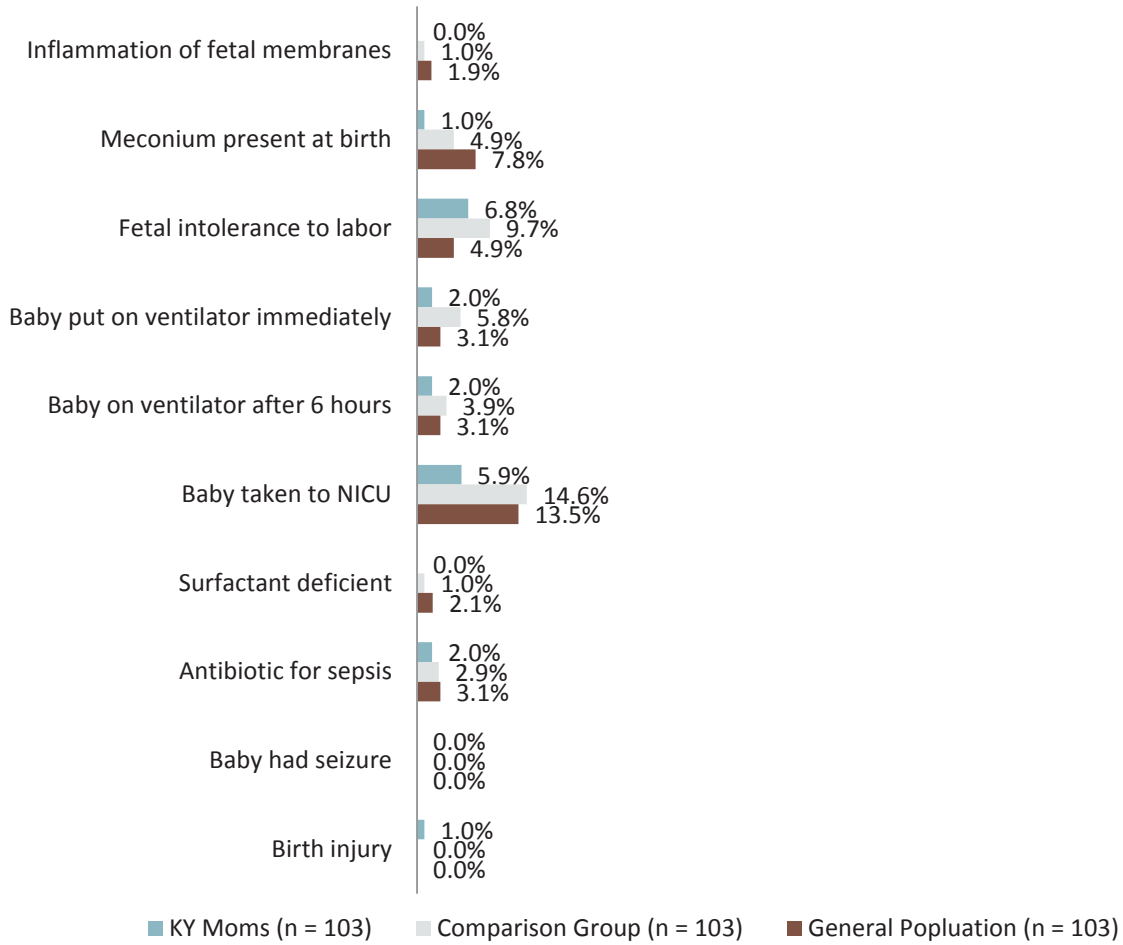
FIGURE AC.10. BABIES BORN WITH BIRTHING PROBLEMS (NOT INCLUDING NICU) ACROSS BIRTH DATA GROUPS^a



a- One mother in the general population was missing information on birthing problems.

KY-Moms MATR babies were not significantly more likely to have particular birthing problems such as inflammation of fetal membranes, intolerance to labor, or being placed on a ventilator (see Figure AC.11).

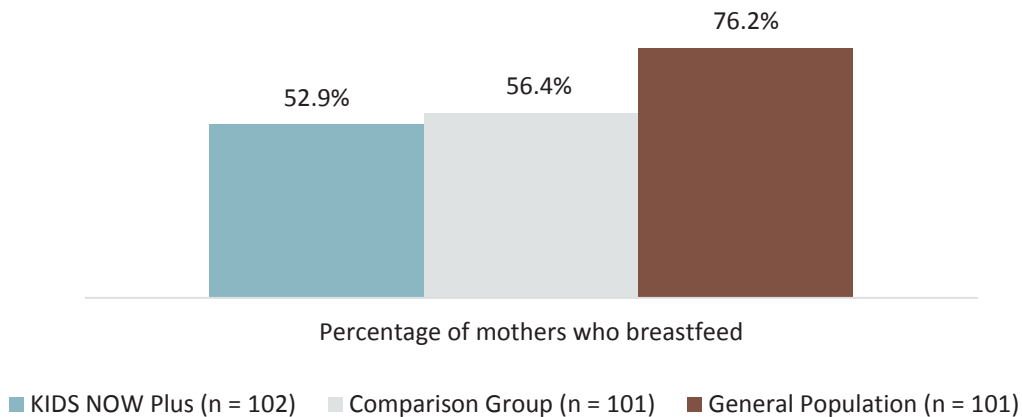
FIGURE AC.11. BABIES WITH A BIRTHING PROBLEM ACROSS GROUPS^a



a- One mother in the general population was missing information on birthing problems.

Compared to the general population, significantly fewer KY-Moms MATR mothers and mothers in the comparison group reported breastfeeding. Over half of KY-Moms MATR mothers (52.9%) and mothers in the matched comparison group (56.4%) were breastfeeding compared to 76.2% of mothers in the general population (as shown in Figure AC.12).

FIGURE AC.12. PERCENT OF CLIENTS WHO BREASTFED^{***a}



a- Breastfeeding information was missing for one mother in the matched comparison group and one mother in the general population.

***p < .001

Conclusion

In general, results of this analysis parallel the results of the multivariate analysis on birth events and outcomes. Compared to the general population of mothers, KY-Moms MATR clients and mothers in the matched comparison sample were less likely to have a college degree, and more likely to have Medicaid as their source of payment for the birth of the baby. More KY-Moms MATR mothers smoked cigarettes before becoming pregnant than mothers in the general population. At the same time, babies born to mothers in KY-Moms MATR had a similar average number of prenatal visits, gestational weeks, highest APGAR score, birth weight, and percent of babies with birthing problems compared to the general population and the matched comparison sample. Compared to the general population, however, KY-Moms MATR mothers were significantly less likely to breastfeed.

Appendix D. Client Characteristics at Baseline for Those with Completed Follow-Up Interviews and Those without Completed Follow-Up Interviews

Between June 2015 and December 2016, 181 pregnant mothers completed a prenatal baseline and were eligible for a six-month postnatal follow-up between July 2016 and June 2017. Individuals who completed a postnatal follow-up assessment during this time (n = 110) are compared in this section with 71 individuals who did not complete a postnatal follow-up interview but were in their 6-month follow-up window in FY 2017.

As mentioned in Appendix B, 71 clients did not complete a postnatal follow-up interview for a variety of reasons:

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

Reason for not completing follow-up assessment	n
Ineligible as a result of prenatal baseline criteria:	
Client did not consent to follow-up	16
Client was unsure she was keeping the baby	2
Client was not in the program long enough	10
More than 30 days between when the baseline was completed and when it was submitted	3
Inadvertently not included in the follow-up sample	2
Insufficient locator information	1
Ineligible as a result of postnatal follow-up criteria:	
Baby was not living with the mother	8
Client was living in a controlled environment	5
Client passed away	3
Client was not located within the targeted window	21
TOTAL	71

Demographic Characteristics

The average client age was over 26 years old for both groups of clients (see Table AD.2). Clients who were not followed up were significantly further along in their pregnancies at baseline (23.7 weeks) compared to clients who were followed up (21.0 weeks) which would be expected given clients must be in the program at least 30 days in order to be eligible for follow-up and women who are further along in their pregnancies might not have spent enough time in the program. More than half of clients in both groups were either married or cohabiting at prenatal baseline. Of those who were married or cohabiting, the majority of clients in both groups reported this partner was the father of the baby. In addition, the majority of clients in both groups was White.

TABLE AD.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

	FOLLOWED UP	
	NO n = 71	YES n = 110
AVERAGE AGE	26.4	26.9
AVERAGE WEEKS PREGNANT*	23.7	21.0
RELATIONSHIP STATUS		
Married	15.5%	26.4%
Cohabiting	40.8%	38.2%
Separated, divorced, or widowed	9.9%	4.5%
Never married	33.8%	30.9%
Of those married or cohabiting, percent that reported the partner is the father	85.0%	93.0%
RACE		
White	87.3%	91.8%
Black	8.5%	5.5%
Other or multiracial	4.2%	2.7%

*p < .05

Of those who completed a postnatal follow-up, 66.4% were currently unemployed compared to 76.1% of the clients who did not complete a follow-up. Significantly more clients who were not followed up expected to be employed in the next 12 months compared to clients who were followed up (see Table AD.3).

TABLE AD.3. CURRENT EMPLOYMENT STATUS AT PRENATAL BASELINE

	FOLLOWED UP	
	NO n = 71	YES n = 110
EMPLOYMENT		
Not currently employed	76.1%	66.4%
Full-time	9.9%	10.0%
Part-time	14.1%	18.2%
Occasional, from time to time seasonal work	0.0%	1.8%
On leave from a job for pregnancy related reasons	0.0%	3.6%
Expect to be employed in the next 12 months*	84.5%	70.0%

*p < .05

There was a significant difference in usual living arrangement between those who completed a follow-up assessment and those who did not. Almost 95% 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 AD.4) compared to clients who were not followed up (78.9%). About 18% of clients who did not complete a follow-up and 5.5% of clients who did complete a follow-up were living in a residential facility, hospital, recovery center, or sober living home. A small number of individuals who did not complete a follow-up reported their usual living arrangement had been in a shelter or on the street.

At baseline, there was no significant difference between the groups on clients who considered themselves to be homeless. About 8.5% of clients who did not complete a follow-up and 8.2% of clients who did complete a follow-up considered themselves homeless. The majority of clients who considered themselves homeless in either group stated that they were temporarily staying with friends or family (see Table AD.4).

TABLE AD.4 LIVING SITUATION OF CLIENTS BEFORE ENTERING THE KY-MOMS MATR PROGRAM

	FOLLOWED UP	
	NO n = 71	YES n = 110
USUAL LIVING ARRANGEMENT IN THE PAST 30 DAYS*		
Own or someone else’s home or apartment	78.9%	94.5%
Jail or prison	0.0%	0.0%
Residential program, hospital, recovery center, or sober living home	18.3%	5.5%
Shelter or on the street	1.4%	0.0%
Other	1.4%	0.0%
CONSIDERS SELF TO BE CURRENTLY HOMELESS		
Why the individual considers himself/herself to be homeless	(n = 6)	(n = 9)
Staying in a shelter	50.0%	11.1%
Staying temporarily with friends or family	50.0%	88.9%

*p< .05

Physical Health

Clients who completed a follow-up were very similar on physical health measures to clients who did not complete a follow-up (see Table AD.5). On a scale of 1 - 5, clients who completed a follow-up rated their health an average of 2.9 while clients who did not complete a follow-up rated their health an average of 3.0. Around half of clients in both groups reported they had no health problems and around 30% of clients in both groups reported one health problem. A little over 18% of clients who did not complete a follow-up and 32% of clients who did complete a follow-up reported two or more health problems. There were no significant differences between the groups on chronic pain in the 6 months before pregnancy. The average number of doctor visits reported by clients was very similar with 5.9 visits for clients not followed up and 5.2 visits

for clients who completed a follow-up.

TABLE AD.5. PHYSICAL HEALTH ISSUES OF CLIENTS BEFORE ENTERING THE KY-MOMS MATR PROGRAM

	FOLLOWED UP	
	NO n = 71	YES n = 110
NUMBER OF HEALTH PROBLEMS		
None	50.7%	41.8%
One health problem	31.0%	26.4%
Two or more health problems	18.3%	31.8%
OVERALL HEALTH RATING (1 – Poor, 5 – Excellent)	3.0	2.9
CHRONIC PAIN IN THE 6 MONTHS BEFORE PREGNANCY	22.5%	23.6%
Of those experiencing chronic pain	(n = 16)	(n = 26)
Average level of pain over the past 30 days	6.9	6.5
Pain continued into pregnancy	93.8%	80.8%
AVERAGE NUMBER OF DOCTOR VISITS ABOUT PREGNANCY	5.9	5.2

Targeted Risk Factors

Substance Use

There were significant differences for substance use at prenatal baseline between clients who did and clients who did not complete a postnatal follow-up. While the majority of clients in both groups reported illegal drugs and/or alcohol use, significantly more clients who were not followed up reported illegal drug use in the 6 months prior to pregnancy (76.1%) compared to clients who were followed up. More clients who were followed up, however, reported alcohol use in the 6 months before pregnancy (58.2%) compared to clients who were not followed up (36.6%). In addition, more clients who completed a follow-up reported alcohol use in the 30 days prior to pregnancy (42.7% vs. 28.2%). More clients who were not followed up reported cigarette use (77.5%) in the past 30 days compared to clients who were followed up (55.5%).

TABLE AD.6 SUBSTANCE USE OF CLIENTS AT PRENATAL BASELINE

	FOLLOWED UP	
	NO n = 71	YES n = 110
SUBSTANCE USE IN THE 6 MONTH PRIOR TO PREGNANCY		
Illegal drugs and/or alcohol	85.9%	80.0%
Illegal drugs*	76.1%	60.9%
Alcohol**	36.6%	58.2%
Cigarettes	84.5%	80.0%
SUBSTANCE USE IN THE 30 DAYS PRIOR TO PREGNANCY		
Illegal drugs and/or alcohol	74.6%	65.5%
Illegal drugs	60.6%	50.0%
Alcohol*	28.2%	42.7%
Cigarettes	84.5%	76.4%
Of clients who smoked	(n = 60)	(n = 84)
Average number of cigarettes per day	21.2	15.4
SUBSTANCE USE IN THE PAST 30 DAYS		
Illegal drugs and/or alcohol	26.8%	24.5%
Illegal drugs	22.5%	21.8%
Alcohol	7.0%	8.2%
Cigarettes**	77.5%	55.5%
Of clients who smoked	(n = 55)	(n = 61)
Average number of cigarettes per day	16.6	10.4

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

Mental Health

There were no significant differences between the two groups for self-reported mental health problems (see Table AD.7). Among those clients who reported depression and those clients who reported anxiety, there were no significant differences between the clients on the average number of symptoms reported for either depression or anxiety.

TABLE AD.7 SELF-REPORTED MENTAL HEALTH SYMPTOMS OF CLIENTS AT PRENATAL BASELINE

	FOLLOWED UP	
	NO n = 71	YES n = 110
EXPERIENCED SYMPTOMS OF DEPRESSION IN THE PAST 6 MONTHS BEFORE PREGNANCY	46.5%	32.7%
Average number of symptoms	(n = 33) 6.7	(n = 36) 6.5
EXPERIENCED SYMPTOMS OF DEPRESSION IN THE PAST 30 DAYS AT PRENATAL BASELINE	32.4%	27.3%
Average number of symptoms	(n = 23) 5.9	(n = 30) 6.1
EXPERIENCED SYMPTOMS OF ANXIETY IN THE PAST 6 MONTHS BEFORE PREGNANCY	40.8%	30.9%
Average number of symptoms	(n = 29) 5.2	(n = 34) 4.7
EXPERIENCED SYMPTOMS OF ANXIETY IN THE PAST 30 DAYS AT PRENATAL BASELINE	42.3%	35.5%
Average number of symptoms	(n = 30)	(n = 39)

Intimate Partner Abuse And Violence

There were no significant differences between clients who completed a postnatal follow-up and clients that did not on intimate partner abuse and violence measures. Around one-third of clients in both groups reported some type of partner abuse or violence in the 6 months before pregnancy (see Table AD.8).

TABLE AD.8 INTIMATE PARTNER VIOLENCE AND SEXUAL VIOLENCE BY ANY TYPE OF PERPETRATOR REPORTED BY CLIENTS AT PRENATAL BASELINE

	FOLLOWED UP	
	NO n = 71	YES n = 110
ANY PARTNER ABUSE		
6 Months before pregnancy	31.0%	34.5%
Past 30 days	21.1%	21.8%
VERBAL ABUSE		
6 Months before pregnancy	28.2%	24.5%
Past 30 days	14.1%	14.5%
COERCIVE CONTROL		
6 Months before pregnancy	25.4%	28.2%
Past 30 days	15.5%	15.5%
PHYSICAL ABUSE		
6 Months before pregnancy	9.9%	9.1%
Past 30 days	4.2%	1.8%
SEXUAL ABUSE		
6 Months before pregnancy	5.6%	5.5%
Past 30 days	1.4%	0.9%