

TYRO Couples Project Study

Impact Evaluation Study Protocol and Analysis Plan

NCT05267236

August 22, 2024

This page has been left blank for double-sided copying.

Impact Evaluation Analysis Plan: “The Evaluation of TYRO Couples in Ohio”

A. HMRE grant recipient

HMRE grant recipient name: The RIDGE Project, McClure, OH

Project leads: Cathy and Ron Tijerina

Email address: catherine@theridgeproject.com; ron@theridgeproject.com

B. Evaluator

Evaluator’s organization: Midwest Evaluation and Research, Emporia, Kansas

Evaluator lead: Michelle Jackson

Email address: michelle.jackson@midwestevaluation.com

Impact Evaluation Analysis Plan

The Evaluation of TYRO Couples in Ohio

Program overview

The nationally recognized TYRO Couples curriculum was developed by RIDGE Executive Directors, Ron and Catherine Tijerina, out of their own personal experience with incarceration. TYRO Couples is just one program in the suite of programs offered by The RIDGE Project that strengthen families, individuals, and organizations by providing evidence-based material that transforms and empowers others. The word “TYRO” means novice, learner, apprentice, someone learning something new and is from the Latin word ‘tiro’ meaning a young soldier, a recruit. TYRO Couples contains ten lessons, referred to as workshops. The curriculum educates participants about what healthy relationship skills are in addition to providing training and opportunity to practice healthy relationship skills for individuals and couples.

The RIDGE Project was awarded a Healthy Marriage and Responsible Education (HMRE) grant in 2020 to compare two delivery modes of the TYRO Couples curriculum using a randomized controlled trial (RCT) study design. The standard in-person delivery mode is being compared to the newly implemented on-demand delivery mode where participants view curriculum content through pre-recorded videos and proceed through the content at their own pace. The on-demand delivery and in-person delivery both have 12 lessons of the same content. For the on-demand mode, instructors were filmed teaching the content as taught in-person.

Informed by the self-efficacy and learner control theory, the purpose of this study is to assess the extent to which TYRO Couples training delivered in an on-demand format has an impact on economic stability outcomes among all participants as well as marriage/intimate partner relationships among participants who report being in a relationship. Originally coined by Bandura in 1977, self-efficacy is the concept that describes an individual’s belief in his or her capability to independently accomplish the various tasks needed to achieve a desired outcome. Therefore, implementing prison-based interventions that help to increase individuals’ and couples’ self-efficacy in developing and maintaining healthy marriage and intimate relationships that expands to securing employment and maintaining employment relationships is important. TYRO equips individuals, institutions, and organizations with skills they need to be overall responsible citizens but specifically parents, partners, reliable employees, and positive role models. TYRO provides individuals with a clear picture of what responsibility looks like and how they can achieve success in their jobs, communities, and within their own families.

A. Research questions

This section presents the primary and secondary research questions that will be assessed in the impact evaluation of the TYRO Couples curriculum service delivery format on participants.

1. Primary research questions

For this impact evaluation, the intervention that will be tested is the delivery format of the TYRO Couples curriculum. The standard in-person delivery format will be compared to the newly developed on-demand format. TYRO Couples will be provided either in an on-demand (tablet) format, where program participants access the TYRO Couples curriculum in a self-directed learning environment to go at their

own pace, or in the standard in-person delivery format, where participants receive the TYRO Couples curriculum from a facilitator in a group classroom setting. In this study, participants in the on-demand method of delivery are considered the treatment group while those in the standard in-person delivery format are considered the comparison group (also referred to as the counterfactual group).

Testing the delivery format of TYRO Couples is important for several reasons. First, more research is needed to better understand which prison-based learning methods are more effective on economic stability and marriage/intimate partner relationship. Although there are some previous studies of best practices for prison-based learning, there are no studies, to our knowledge, that examine the effectiveness of on-demand learning on economic and relationship and outcomes among couples affected by incarceration. This study is not only looking at impacts on couples, but more broadly focuses on outcomes impacting both individuals or couples, as being in a relationship is not required to be in the study. Therefore, partner relationship behavior and attitudes items are not asked of the entire sample so that any assessment of the impact of TYRO on these outcomes would be underpowered. Relationship behaviors and attitudes are included as exploratory secondary research questions.

Second, previous studies suggest that on-demand learning can be a helpful tool that empowers learners to digest the course material at their own pace. Learner control is a theory that derives from several motivational theoretical underpinnings, including attribution theory, motivation theory, and information processing theory (Chou & Liu, 2005). Previous research guided by learner control theory suggests that self-guided, on-demand learning is positively related to greater learner satisfaction and higher levels of learning compared with those who did not use this format (Chou & Liu, 2005).¹ The on-demand mode of the TYRO curriculum is a new way of delivering content that may be more effective than the standard in-person delivery mode. This study will build on the research around the viability of long-term use of technology, specifically tablets, in the prison system.

The primary research questions are as follows:

1. What is the impact of the on-demand delivery (treatment) compared to the in-person delivery (counterfactual) of the TYRO Couples curriculum on **employment attitudes** six months after program enrollment?
2. What is the impact of the on-demand delivery (treatment) compared to the in-person delivery (counterfactual) of the TYRO Couples curriculum on **financial attitudes** six months after program enrollment?

2. Secondary research question

1. For participants who report being in a relationship, what is the impact of the on-demand delivery (treatment) compared to the in-person delivery (counterfactual) of the TYRO Couples curriculum on **marriage/intimate partner relationship behaviors** six months after program enrollment?
2. For participants who report being in a relationship, what is the impact of the on-demand delivery

¹ Source: Chou, S., & Liu, C. (2005). Learning effectiveness in a web-based virtual learning environment: A learner-control perspective. *Journal of Computer Assisted Learning*, 21(1), 65 - 76.

(treatment) compared to the standard in-person delivery (counterfactual) of the TYRO Couples curriculum on **marriage/intimate partner relationship attitudes** after program completion?

3. Primary and secondary outcome measures

For this impact evaluation study, the intervention that will be tested is the delivery format of the TYRO Couples curriculum. The research questions are framed to determine if program participants who are randomly assigned to the TYRO Couples curriculum through an on-demand format will derive more benefits compared to those who are assigned to the TYRO Couples curriculum in a standard, in-person format.

Primary research questions are applicable to the entire population in the study and will be measured six months after the intervention has ended. This study focuses on employment and financial attitudes as the primary research questions. Finding and maintaining a job, which is one of the top priorities participants will have after release, has been noted in criminal justice research to reduce former prisoners' chances of reoffending (Visher, Debus, and Yahner, 2008). Subsequent secondary research questions focusing on relationships are only applicable to the study population who report being in a relationship. However, all research questions are relevant to the TYRO Couples Curriculum as well as consistent with the study's logic model.

Outcome measures in this study were created for this evaluation and are not based on already-validated scales. Using the local evaluation baseline survey, we will generate a correlation matrix between items in a given construct to ensure that theoretically related items are also empirically related in our data set. Items that are not strongly correlated with other items in a construct will be removed as necessary. Factor analysis will be used to ensure that all construct items hang together (using an alpha of 0.60 or higher as the threshold). We will then create a composite measure by taking an average of the scores on each non-missing item in the construct. For composite measures, a change score will be calculated between a participant's pre-program composite score and six-month-post-enrollment follow-up composite score. If construct items do not meet the 0.60 threshold, that outcome will be removed. An alpha value of 0.60 is the minimally acceptable value that will be used for scale construction.

We will create a composite score by taking the average of multiple individual items. For these composite measures, our plan is to use 20% as a threshold for allowable missing items. This plan is contingent on the final distribution of missing data in our dataset. With a 20% threshold, if a respondent is missing more than 1 item used for creating the employment construct or more than 2 items for creating the financial construct, the respondent will be assigned a missing value for that construct. We will not impute truly missing values for outcomes. To create a construct score, the average will be divided by the number of non-missing values in the construct.

Table 1. Description of outcome measures used to answer impact analysis primary research questions

Research question #	Outcome name	Description of the outcome measure and its properties	Source of the measure	Timing of measure
1	Employment Attitudes	The outcome measure is a scale (value range of 1=strongly disagree to 5=strongly agree) calculated as the average of eight survey items related to employment attitudes. Sample item: I have the skills I need to get a decent job.	Local evaluation follow-up-survey	Six months after program enrollment
2	Financial Attitudes	The outcome measure is a scale (value range of 1=strongly disagree to 5=strongly agree) calculated as the average of seven survey items related to financial attitudes. Sample item: I am overwhelmed when I think about my financial situation.	Local evaluation follow-up-survey	Six months after program enrollment

Table 2. Description of outcome measures used to answer impact analysis secondary research questions

Research question #	Outcome name	Description of the outcome measure and its properties	Source of the measure	Timing of measure
1	Relationship Behaviors	The outcome measure is a scale (value range 1=never to 4=often) calculated as the average of seven survey items related to the frequency of healthy intimate partner/spouse relationship behaviors. Sample item: When my partner/spouse and I had a serious disagreement, we discussed our disagreements respectfully. Note: skip logic is built into the survey. If a participant is not currently in a committed relationship, he or she will be asked to move to the next section of the survey.	Local evaluation follow-up survey	Six months after program enrollment
2	Relationship Attitudes	The outcome measure is a scale (value range of 1=strongly disagree to 5=strongly agree) calculated as the average of eight survey items related to intimate partner/spouse attitudes and expectations Sample item:	Local evaluation post-survey	After program completion

Research question #	Outcome name	Description of the outcome measure and its properties	Source of the measure	Timing of measure
		<p>My partner and I can handle any conflicts that come up in our relationship.</p> <p>Note: skip logic was built into the survey in Oct 2023. If a participant is not currently in a committed relationship, he or she will be asked to move to the next section of the survey.</p>		

B. Description of the focal population and the intervention and counterfactual conditions

This section provides a brief description of the focal populations, the intervention being evaluated, and the services that are intended as the comparison to the intervention, including any service-as-usual resources available. In addition, it includes a description of the services actually received by the intervention and comparison groups.

1. Focal population(s)

The focal populations for the study are incarcerated males and females who are at least 18 years of age and within 9 months of release from prison in six central Ohio facilities: Ohio Reformatory for Women, Richland Correctional Institution, Franklin County Community Based Correctional Facility, Lorain Correctional, North Central Correctional, and the Worth Center (for women). These facilities are located in central, north central, northeastern, and northwestern Ohio.

2. Intended intervention condition(s)

Treatment condition 1: On-demand TYRO Couples curriculum offered asynchronously via tablet at an individuals' self-directed pace.

Intended components. The curriculum, TYRO Couples, is a comprehensive program that teaches self-efficacy and is designed to prepare individuals for healthy relationships (both personal and professional), strengthen relationships, enhance parenting skills, and create a harmonious workplace and family dynamic upon reentry to the community. The combination of employment, financial, and relationship components within the TYRO suite helps set participants up to be more successful after release from prison and lessen the likelihood of recidivating.

The intervention is the TYRO Couples curriculum delivered in an on-demand, tablet format. Participants do the lessons at their own pace over a six-week period. The on-demand delivery format has the same number of lessons as the standard in-person delivery format and contains the same content. Activities in the on-demand delivery format are the same as those in the in-person delivery mode. However, activities were adapted to fit the on-demand learning path using different engagement tactics to replace class discussion and group activities, which are part of the standard delivery model. For example, to modify the activities for the on-demand mode, actors were filmed portraying the same interactive activities that were taught in the in-person lessons.

Intended content. The content of the TYRO Couples curriculum focuses on how to understand your partner's perspective, how to avoid destructive conflict, and how to communicate effectively that is applicable to both the workplace and personal relationships. TYRO Couples prepares individuals for healthy relationships, strengthens existing relationships, enhances parenting skills, and creates a harmonious workplace and family dynamic. TYRO Couples offers a holistic approach to building healthier, happier families and leaders in their homes, communities, and workplaces. TYRO Couples teaches self-efficacy, whether that is in personal relationships or the ability to job search, secure employment, build job skills, or maintain employment relationships. Participants embark on a transformative journey towards deeper connection, effective communication, thriving careers, and empowered parenting.

The content, whether delivered in-person or on-demand, is designed to help individuals learn the skills to have healthy relationships, regardless of their current relationship status or desire to be in a relationship. Individuals learn to identify cycles of unhealthy relationship behaviors and how to replace those behaviors with healthy habits. Self-awareness, self-regulation, dream-pursuit, healthy communication, conflict resolution skills, and relational investment metrics are taught to help inspire participants to desire a healthy relationship regardless of marital status. Most participants have been in previous, unhealthy relationships that ended and a small percentage are in a current relationship. As of grant year four and taking into consideration everyone who enrolled into the study and completed an Applicant Characteristics Survey (ACS), over 50% of participants who responded to the item stated that they did not have a current partner. In addition, about 29% reported being romantically involved or in a committed relationship, and 17% reported being involved in an on-again off-again relationship (among those who responded to the survey item). Final numbers for the analytic sample of RCT participants will be included in the final report. By teaching participants self-improvement guided by self-awareness and self-regulation, they learn what it takes to develop a strong, thriving, healthy and permanent relationship.

Planned dosage and implementation schedule. Target dosage for TYRO Couples on-demand is 24 total hours of curriculum received asynchronously via tablet at an individuals' self-directed pace over a 6-week period. Participants must complete a quiz for every one of the 12 lessons and answer 100% of the

questions correctly in order to move onto the next lesson. There is one quiz per lesson totaling 12 quizzes. Each quiz contains four questions per lesson totaling 48 questions for the course. The learning management system (LMS) platform, Thinkific, tracks participant progress, completion percentage of each lesson, questions answered, and overall time spent for the course.

Delivery mode. Content is delivered on-demand online via tablet; participants watch the curriculum at their own pace in a designated room where all on-demand participants can check out a tablet. The on-demand course is filmed and designed to be taken in order so the participant cannot watch the next lesson until the previous one is watched and the quiz is successfully completed.

Staff characteristics, education, and training. Content is delivered without facilitators present; this is a pre-recorded, video-based, interactive, and progressive/sequential program that requires retention of knowledge by a series of assignments and quizzes built into the curriculum that must be passed before moving to the next section so participants can receive their certificate. The authors of the program are the virtual facilitators for the on-demand videos.

3. Intended counterfactual condition(s)

Treatment condition 2-Counterfactual Group (Standard, in-person TYRO Couples curriculum delivered in a group classroom setting)

Intended components. The curriculum, TYRO Couples, is a comprehensive program designed to prepare individuals for healthy relationships, strengthen relationships, enhance parenting skills, and create a harmonious workplace and family dynamic.

The counterfactual condition is the standard, in-person TYRO Couples curriculum, with lessons that are taught in small groups in a classroom setting over a six-week period.

Intended content. The content of the TYRO Couples curriculum is how to understand your partner's perspective, how to avoid destructive conflict, and how to communicate effectively. TYRO Couples prepares individuals for healthy relationships, strengthens relationships, enhances parenting skills, and creates a harmonious workplace and family dynamic. TYRO Couples offers a holistic approach to building healthier, happier families and leaders in their homes, communities, and workplaces. Participants embark on a transformative journey towards deeper connection, effective communication, thriving careers, and empowered parenting.

Planned dosage and implementation schedule. Target dosage for TYRO Couples in-person is 24 total hours of curriculum, which includes 12 in-person classes of two hours each, with two classes per week, over a six-week period.

Delivery mode. In-person group lessons provided at the facility by one professional or trained peer facilitator in every session.

Staff characteristics, education, and training. Facilitators are male and female and at minimum hold a high school diploma plus professional licenses or have some college attendance; over 70% of facilitators have bachelor's or graduate degrees. All will have received four days of initial training and approximately one month of on-the-job shadowing of a trained facilitator. Facilitators receive two days of recertification

training on an annual basis in addition to a minimum of one additional professional training per year (e.g., trauma-informed care, addiction and recovery, data management, motivational interviewing).

Table 3. Description of intended intervention and counterfactual components and focal populations

Component	Curriculum and content	Dosage and schedule	Delivery	Focal population
Intervention: On-demand delivery format				
On-demand, asynchronous delivery of curriculum via tablet	TYRO Couples is a healthy relationships curriculum. Content includes understanding your partner's perspective, avoiding destructive conflict, and communicating effectively.	24 curriculum hours received asynchronously via tablet at an individual's self-directed pace over a 6-week period	Pre-recorded, video-based, interactive programming available on demand via a checked-out tablet used in a designated space	Incarcerated male and female participants who are at least 18 years of age and within 9 months of release
Counterfactual: In-person delivery format				
In-person delivery of curriculum in group setting	TYRO Couples is a healthy relationships curriculum. Content includes understanding your partner's perspective, avoiding destructive conflict, and communicating effectively.	24 curriculum hours delivered over 12 two-hour classes; 2 classes a week for 6 weeks	In-person group lessons provided at the facilities by one professional or trained peer facilitator in every session	Incarcerated male and female participants who are at least 18 years of age and within 9 months of release.

Table 4. Staff characteristics, education, training, and development to support intervention and counterfactual components

Component	Staff characteristics, education, and initial training	Ongoing staff training
Intervention: On-demand delivery format		
TYRO Couples, Healthy Relationship Skills (on-demand)	Content is delivered without facilitators present; workshops are recorded by the creators of the curriculum. There is no ongoing staff training; however, this is a pre-recorded, video-based, interactive, and progressive/sequential program that requires retention of knowledge by a series of assignments and quizzes built into the curriculum to receive a certificate.	Content is delivered without facilitators present as pre-recorded sessions by the creators of the curriculum, so there is no ongoing staff training for this delivery method.
Counterfactual: In-person delivery format		
TYRO Couples, Healthy	Facilitators are male and female and, at a minimum, hold a high school diploma plus	Facilitators receive two days of recertification training on an annual basis in addition to a

Component	Staff characteristics, education, and initial training	Ongoing staff training
Relationship Skills (in-person)	professional licenses or some college. Over 70% of staff have bachelor's or graduate degrees. All will have received four days of initial training and approximately one month of on-the-job shadowing of a trained facilitator.	minimum of one additional professional training per year (e.g., trauma-informed care, addiction and recovery, data management, motivational interviewing).

4. Services actually received by the intervention and control/comparison groups

For this randomized controlled trial (RCT) study, the evaluation team will use a combination of administrative nFORM data and site visit interview data to measure the services that were actually received by study participants in both study groups. Fidelity and dosage will be assessed using workshop series and attendance records on nFORM that are kept up to date by RIDGE program staff on an ongoing basis. Any unplanned adaptations or contextual challenges that had an effect on program implementation for either study group will be assessed through staff interviews during site visits. Because the authors of the program are also the instructors filmed for the on-demand delivery format, we can assume fidelity among both formats. The LMS platform, Thinkific, tracks participant progress, completion percentage of each lesson, questions answered, and overall time spent for the course that will allow for measuring dosage of those in the on-demand delivery group. For more information on planned implementation research questions that will provide context for the impact estimates, please see the accompanying implementation analysis plan.

C. Study design

This section provides a brief description of the study design and the process for creating intervention and comparison groups.

1. Evaluation enrollment and assignment to study conditions

This study will utilize an RCT design to compare two sets of participants: those who were randomly assigned to the standard in-person delivery mode of the TYRO curriculum and those who were randomly assigned to the on-demand delivery mode of the TYRO curriculum.

Recruitment and study sample enrollment targets. Participants are recruited from Ohio Department of Rehabilitation and Correction (ODRC) prisons. The following facilities are participating service sites for the RCT; it is not anticipated that additional service sites will be added before the end of study enrollment, but additional facilities may be considered if enrollment targets are not being met with these sites. All study sites enroll participants into both the on-demand and in-person study groups.

- Community-based Correctional Facility (CBCF) – Franklin County
- Ohio Reformatory for Women
- Richland Correctional Institution
- North Central Correctional Institution
- Lorain Correctional Institution
- The Worth Center (for women)

Participants are considered active in the study for six months, from the time that they enroll in the program to the completion of the six-month post-enrollment follow-up survey.

The target analytic sample size for the impact study is 768 participants, with study groups being equal in size, for a target of 384 in-person participants and 384 on-demand participants.

Participant eligibility criteria. Individuals are eligible to participate in the program if they are incarcerated adults aged 18 years or older and within nine months of release from prison. All program enrollees who are receiving services at a site that has been authorized by the Ohio Department of Rehabilitation and Corrections (ODRC) to use tablets (and so can offer both delivery formats) for this program are eligible for the impact evaluation after giving informed consent to be randomly assigned to a study group. Approvals are for a specific tablet that the state of Ohio has granted a contract to provide technology services and devices into prisons across the state. Each warden (head of the specific institution) must approve the program delivered via tablet in their specific institution. This design allows for more equal opportunity for participants to be assigned to either delivery format. It also puts less burden on The RIDGE Project to meet enrollment numbers at numerous locations in order to get a sufficient sample to randomize. Program participants who have other commitments that prevent them from being able to participate in the in-person workshops are not eligible for random assignment; these participants are still offered TYRO Couples programming, but they are not part of the impact study sample. This within-facility design offers The RIDGE Project the opportunity to serve those in need without ever having to deny eligible applicants. In instances where unexpected situations arise, such as technological issues with the tablets, participants can opt out of the treatment group and receive in person services if it is more convenient or preferable to them. This would remove the participant from the study, but still allow the participant to continue with the TYRO curriculum. Having sites offer both delivery formats is invaluable for program delivery.

Consent Process. Project staff follow a protocol that was approved by Solutions IRB, Inc. to solicit informed consent. Because the planned evaluation involves human subjects, The RIDGE Project understands program implementation requires both IRB approval and participant informed consent. Midwest Evaluation and Research (MER) has an established relationship with Solutions IRB, having secured more than 20 IRB approvals and renewals for evaluations it has conducted during the past five years. The original study and data collection plans for TYRO Couples were initially approved by Solutions IRB on 3/31/2021 and have been annually reviewed and approved three times on 3/15/2022, 3/4/2023, and 3/2/2024. IRB approval for TYRO Couples was recently renewed and will be renewed again in March 2025. Additionally, revisions to the study and/or data collection plan were submitted to the IRB as amendments and were approved on 4/15/2022, 2/23/2022, and 8/23/2023.

Informed consent procedures take place before random assignment and are the same for all study participants, regardless of ultimate study group assignment. To secure informed consent, after participants attend an orientation/enrollment session (in-person), the data manager, case manager, or facilitator describes the impact evaluation process and the risks and benefits of study participation. Individuals are then provided with a paper consent form that reiterates what program staff have explained about the study and provides contact information for the evaluation team or Solutions IRB, should they have any questions. Individuals indicate consent or refusal to participate in the study by signing the paper consent form, which is scanned and uploaded to MER's secure Dropbox by RIDGE program staff for the

evaluation team to keep in their records.

Consent or refusal can also be indicated through the local evaluation baseline survey. The first item on the evaluation baseline survey reads: "By answering this question and typing my name below, I am acknowledging that I have been presented information about this study and am providing my voluntary consent to participate in the study described. I also understand that I can quit participating at any time and can skip any questions in this survey that I do not wish to answer without consequence, and further, I understand that all my answers are confidential and will not be shared with anyone outside of the research team." This item assures that the study information has been presented to participants and they know their rights as human subjects in a research study. Should someone decide that they no longer want to participate in the study, they can indicate on the local evaluation baseline survey and refuse to participate any further in the evaluation.

Random Assignment Process

After informed consent has been obtained, random assignment occurs. Random assignment takes place after one or two in-person orientation sessions, giving participants time to complete enrollment paperwork, provide consent, and take baseline surveys. During the one or two-in person orientation sessions, no curriculum content is covered until participants begin either the in-person or on-demand delivery format. Participants are randomized into the in-person or on-demand delivery format prior to the class starting, typically in one to two weeks. The participants attend classes one and two and are told at the beginning of class two whether they will be taking the course in person or via tablet.

The unit of randomization for this study is the individual. Participants are randomly assigned to a study group using the last single digit of their inmate number, a six-digit identifier assigned by the facility based on an inmate's chronological intake order. Because it is assigned by the facility, program staff and researchers have no influence in deciding who ends up in each study group, leaving it completely at random. With this method, half of the inmate population bears an even number, and the other half bears an odd number. The inmate number remains with the participant, which can also be used to look up their incarceration status within the ODRC facilities. Within a given cohort, participants with an odd last digit will be assigned to one study group, while participants with an even last digit will be assigned to the other study group. The intended probability of assignment to either study group is 50-50.

Which study group aligns with even/odd numbers varies randomly by cohort (e.g., odd numbers may be assigned to the on-demand format in one cohort but to the in-person format in the next cohort). Cohorts are formed around the length of time it takes to complete the program on a rolling basis based on demand. Evaluation staff use a random number generator in Excel to randomly vary what even or odd last digits mean for each upcoming cohort. The Excel spreadsheet with the results of the random number generator is shared with the RIDGE data manager via a secure Dropbox link. The data manager then prepares a sealed envelope with the random assignment information needed for each cohort's orientation, to be opened by the facilitator at the end of the orientation sessions when consent has been obtained. The facilitator then informs participants which group they have been assigned to based on the last digit of their inmate number. Once participants have been informed of their group assignment, they are considered part of the RCT study sample. The data manager enters study group assignments into the nFORM system. This process repeats with each new cohort in the RCT.

2. Data collection

The data for this impact evaluation comes from surveys of study participants. Participants are surveyed at three different time points throughout the study—baseline, post-survey, and six-month post-enrollment follow-up. The process and timing for data collection are the same for all study participants, regardless of study condition assignment. Wave 1 of data collection, which includes completion of the nFORM Applicant Characteristics Survey, the nFORM Healthy Marriage Adult Program Entrance Survey, and the local evaluation baseline survey, happens during orientation before any primary workshop hours have been delivered. Wave 2 of data collection, which includes the nFORM Healthy Marriage Adult Program Exit Survey and the local evaluation post-survey, happens six weeks after program enrollment for both study groups. Wave 2 of data collection happens immediately following the final primary workshop session for the in-person group, but since the on-demand mode is self-paced, the amount of time that has elapsed between curriculum completion and wave 2 of data collection six weeks post-enrollment can vary for on-demand group participants. For example, if a participant in the on-demand delivery group completes the TYRO curriculum two weeks after enrollment, then four weeks will have elapsed between program completion and administration of the exit survey.

Wave 3 of data collection, which includes the local evaluation 6-month post-enrollment follow-up survey, is intended to be collected six months after program enrollment, with data collection efforts focused on five to seven months after program enrollment. However, the timing of the follow-up survey data collection can vary, with some participants taking the survey later than expected (e.g., an email with a survey link is opened and completed months after it was delivered) or earlier than expected (in the case of Franklin CBCF participants who complete their follow-up survey immediately upon release; see below). The tracking process typically begins at least 60 days prior to when a participant is due for a follow-up survey. This allows time for new contact attempts when email addresses are undeliverable and mailings are returned to the sender. The incarcerated population also tends to be a difficult population to get in touch with for various reasons. Someone just released from prison may be focusing on housing and employment needs or their contact information is outdated since they were enrolled into the program.

Waves 1 and 2 of all surveys are administered on paper with participants in person, due to technology restrictions in the prison facilities. Paper surveys are entered onto nFORM and Qualtrics (for the local evaluation surveys) within 72 hours of completion by RIDGE staff who have been certified in protecting human research participants. Paper surveys are securely transported by program staff to the RIDGE offices where they are entered and kept in locked storage.

The process for follow-up data collection (Wave 3) differs from the other two waves. The MER survey tracking team begins attempts to contact study participants approximately five months after program enrollment using email and text messages as the primary contact methods. Participants are sent a QR code and hyperlink that directs them to the self-administered formatted follow-up survey accessed through Qualtrics. Participants can also complete the follow-up survey over the phone with a member of the MER survey tracking team if they prefer. If initial contact attempts are not successful, the survey tracking team will reach out to secondary contacts that participants have identified and provided contact information for during the study enrollment process. Contact attempts continue for 60 days (until 7 months after program enrollment), after which point the survey tracking team stops efforts to collect follow-up surveys. At this point, program staff are provided a list of participants that the tracking team is

unable to get in contact with. If program staff come in contact with any of the participants on the archived list, they will direct the participants to the follow-up survey. Otherwise, all tracking efforts are complete at that point. All participants who complete a follow-up survey receive a \$50 incentive.

To increase follow-up response rates and with the approval of OFA, alternative follow-up data collection procedures were developed by the RIDGE and evaluation teams for one service site that enrolls most of the impact study participants at about 78%, Franklin CBCF. Many impact study participants from the Franklin CBCF service site go on to participate in a Department of Labor initiative immediately following their release from prison. As part of this initiative, participants are bussed from the Franklin CBCF to an American Jobs Center. TYRO Couples RCT participants who are part of this initiative are invited to complete a paper follow-up survey on the Thursday prior to the bus taking participants to the American Jobs Center the following Monday morning. Eligible participants who completed the survey will be handed a physical \$50 gift card upon boarding the bus. This follows guidelines of prisons where no monetary incentives can be administered on the premises. To be eligible for the follow-up survey, participants must have a signed consent form on file and have taken either the nFORM entrance survey or the local evaluation baseline survey. Evaluation staff will coordinate with program staff to ensure only those who are eligible for the follow-up survey are offered it. Paper surveys will be sealed in an envelope where they are given to a team member certified in protecting human research participants to enter the surveys into Qualtrics. Paper surveys are to be kept in locked storage at RIDGE offices and will be stored for a minimum of three years before being destroyed in accordance with IRB guidelines. This process is set to begin in May 2024.

Table 5. Key features of the data collection

Study group	Data source	Timing of data collection	Mode of data collection	Party responsible for data collection	Start and end date of data collection
Intervention (on-demand)	Survey Wave 1 (nFORM baseline and local evaluation baseline surveys)	Immediately following informed consent and randomization during orientation (within 1-2 weeks of enrollment)	In-person paper survey	RIDGE Staff	April 11, 2023 – November 30, 2024
	Survey Wave 2 (nFORM exit and local evaluation post-surveys)	Six weeks after program enrollment	In-person paper survey	RIDGE Staff	May 23, 2023 (or February 2023 for pilot cohort) – January 11, 2025
	Survey Wave 3 (Local evaluation follow-up survey)	Six months after program enrollment; Between three to six months after program enrollment at Franklin CBCF	Online via a QR code or email link; over the phone; in person paper survey if in the eligible Franklin CBCF group	MER Staff or RIDGE facilitator if in the eligible Franklin CBCF group	October 2023 – May 31, 2025 for all locations aside from Franklin CBCF; For Franklin CBCF- May 2024- May 31, 2025

Study group	Data source	Timing of data collection	Mode of data collection	Party responsible for data collection	Start and end date of data collection
Counterfactual (in-person)	Survey Wave 1 (nFORM baseline and local evaluation baseline surveys)	Immediately following informed consent and randomization during orientation	In-person paper survey	RIDGE Staff	April 11, 2023 (or January 2023 for pilot cohort) - November 30, 2024
	Survey Wave 2 (nFORM exit and local evaluation post-surveys)	Six weeks after program enrollment, immediately following the last primary workshop session	In-person paper survey	RIDGE Staff	May 23, 2023 (or February 2023 for pilot cohort) – January 11, 2025
	Survey Wave 3 (Local evaluation follow-up survey)	Six months after program enrollment; Between three to six months after program enrollment at Franklin CBCF	Online via a QR code or email link; over the phone; in person paper survey if in the eligible Franklin CBCF group	MER Staff or RIDGE facilitator if in the eligible Franklin CBCF group	October 2023 – May 31, 2025; For Franklin CBCF- May 2024- May 31, 2025

3. CONSORT diagram

The CONSORT diagram for this impact study (where random assignment occurs after consent) can be found in the appendix to this plan. The data used to complete the CONSORT diagram were pulled on July 22, 2024.

D. Analysis

This section describes the plans for defining the analytic sample, assessing baseline equivalence, cleaning data, handling missing data, and addressing potential crossover and contamination. It also describes the analytic models for estimating program impacts and planned sensitivity analyses.

1. Data preparation

Raw data sets will be cleaned and prepared for analysis using the R Studio statistical software. nFORM survey responses and participant information (e.g., study group assignment) will be downloaded using the Data Export feature of nFORM, and local evaluation survey responses will be exported from Qualtrics as Excel files. All exports will be imported into R and cleaned separately before data sets are merged into a final, wide format file for analyses using nFORM Client ID as the unique identifier for matching observations. Planned procedures for data cleaning and handling missing data are detailed below.

Inconsistent or seemingly inaccurate data

To address participant feedback about the relevance of some local evaluation survey items, evaluators added skip logic to local evaluation surveys in October 2023 for relationship attitudes and behaviors (which are used in a secondary research question because they are not applicable to the entire sample).

Measures for primary research questions only use items that are applicable to the entire study population. However, secondary exploratory research questions include items that are not applicable to the entire study population as not all study participants report being in a committed relationship.

See Figure A.4. for a full breakdown of survey items, including which had skip logic added.

In addition, preliminary analyses showed relationship questions had 25-28% of missing responses. After the skip logic was added, participants who reported not being in a committed relationship were permitted to skip questions about relationship behaviors, and participants who reported not being currently employed were permitted to skip some questions about employment behaviors. Some participants may have responded to these questions at baseline but not been shown the same questions at follow-up due to the added skip logic. For example, a participant might have been in a relationship at the time of the baseline survey completion, but not at the time of the follow-up survey completion.

Because technology restrictions in prison facilities require the administration of paper surveys, it is possible for respondents to answer questions in violation of skip/display logic if they misunderstand the instructions on the paper survey. To err on the side of retaining as much of the sample as possible, we will not deem a response invalid if the participant response to a skip logic question incorrectly (answering “no” instead of “yes”) but then proceeds to answer the follow-up question accurately.

Participants who report inconsistencies in the number or age of their child(ren) between nFORM and local evaluation surveys at the same time point will have their answers be assigned as the response they gave on the nFORM ACS or entrance survey.

Outlier values, defined as extremely low or extremely high values that are likely introduced to the dataset due to an input error, for variables such as participant’s age, children’s age, and income, which participants manually input, will be recoded to the 99th percentile for the sample if necessary. We will top-code any values above the 99th percentile with the average of all values below this threshold.

Duplicate data

In the case of duplicate data, where one participant has taken the same local evaluation survey more than one time, we plan to take the following approach:

- Check for incorrectly entered Client IDs that inaccurately flag surveys as duplicates. Using the name and/or DOB fields on the local evaluation survey, we will check that responses that appear to be duplicates were in fact collected from the same participant multiple times (i.e., are true duplicates). Common instances of this occurring could be if a participant did not finish a survey and re-took it later on, or if they took the follow-up survey twice for the incentive. If the survey is not a true duplicate, we will correct Client IDs as necessary.
- For surveys identified as true duplicates, we will check for completeness. If one duplicate survey is complete while the other is not, we will use the most complete survey to minimize item non-response.
- If both duplicate surveys are equally complete, we will use the first response that a participant submitted, as indicated by the Recorded Date field on the Qualtrics data export. This approach is

only applicable to the follow-up survey. Because program staff enter paper survey data into Qualtrics, there should not be duplicate baseline and post-surveys.

Missing data

Survey nonresponse

Because outcome measures for this impact study are constructed from survey items from both nFORM and the local evaluation surveys, survey nonresponse on either the nFORM baseline survey, local evaluation baseline survey, nFORM exit survey, local evaluation post survey, or local evaluation follow-up survey can lead to sample attrition. Survey response rates are monitored on an ongoing basis through bi-weekly CQI reports produced by the evaluation team using the nFORM Survey Completion Summary operational report and Qualtrics response data export feature. Response rates are calculated by dividing the number of participants who responded to each survey by the number of participants who were eligible to respond to the that survey up to that time point. If CQI reports show that survey response rates are below intended targets, the CQI team brainstorms and implements strategies to increase response rates to minimize sample attrition caused by survey nonresponse. Reasons for survey nonresponse, to the degree that they are known, will be reported in the CONSORT diagram. Individuals with survey nonresponse at the follow-up time point will not be included in the analytic sample; the analysis for each outcome will use complete case data.

Item nonresponse

Item nonresponse can also lead to sample attrition for particular outcome measures if participants skip survey items that are aligned with the research questions for this study. Item nonresponse is calculated by dividing the number of participants who respond to a survey item by the number who were eligible and able to answer a question based on skip/display logic. As stated in the data preparation section above, respondents taking paper surveys may violate skip/display logic, and invalid responses will be dropped before item-level response rates are calculated. We will also note what proportion of the sample skipped out of the relationship and employment attitude questions to give context to the item nonresponse.

Constructed outcome measures

Each of the outcomes for the primary research questions for this study are constructed averages using multiple, related survey items. Sufficiently high item nonresponse among items used to construct outcome measures will lead to sample attrition for that outcome. The evaluation team plans to use an 80% threshold as the cutoff for constructed measures; respondents who answer less than 80% of survey items associated with a constructed measure will be dropped from the analysis for that outcome. The constructed average for each participant who has answered at least 80% of associated survey items will be calculated by dividing the sum of their survey answers by the number of items they answered. For example, if a participant answers 8 out of 10 survey items associated with a construct, their average for that outcome measure will be the sum of their 8 answers divided by 8. The evaluation team does not plan to use imputation for multi-item constructed outcomes with 20 percent or fewer missing items. A sensitivity analysis will be conducted to see if and how results would change with a 70% threshold cutoff instead of an 80% cutoff.

2. Attrition and analytic sample

The analytic sample for each outcome construct identified in Table 2 will consist of study participants who have a non-missing value at baseline and follow-up time points for that construct (complete case). The size of the analytic sample may vary by outcome measure based on the prevalence of item non-response missing data at the baseline and follow-up surveys for the items used to create those composite measures. For attitudinal outcomes related to economic stability, and finances, all respondents with complete case data will be included in the analytic sample. For relationship behavior outcomes, participants will be included in the analytic sample if they report being in a committed relationship at the time the survey was administered (i.e., do not choose 'no' for the skip logic question 'Are you currently in a committed romantic relationship?'). Because this skip logic was added to the local evaluation surveys belatedly (in October 2023), this condition will only apply to those respondents who took a survey with this skip logic. For those respondents who took a survey before this relationship skip logic was added, all participants who have complete case data will be included in the analytic sample in response to the secondary research question.

All outcome measures for this study are constructed averages calculated using a number of theoretically and empirically related survey items. As mentioned in the previous section, a respondent who answers some but not all survey items in a given outcome construct will have their outcome value assigned as missing if they do not respond to at least 80% of the items in the construct. We will not impute missing baseline or outcome data for our analyses. Based on the recommendation from ACF, we will use the cautious attrition threshold from the What Works Clearinghouse (WWC) to assess whether attrition can be considered high or low.

Assessment of baseline equivalence

Per the WWC's standards, we will use effect sizes (i.e., standardized mean differences), to examine the baseline equivalence between the study groups. Effect size is defined as the difference between the intervention group mean and the comparison group mean, divided by the pooled standard deviation. We will calculate the effect size for demographic characteristics (such as gender, age, and race/ethnicity, as reported on the nFORM Applicant Characteristics Survey) and each baseline outcome of interest depending on the type of variable: Hedge's g , for continuous variables; and Cox's index, for dichotomous variables. We can determine baseline equivalence by comparing each outcome's effect size using the WWC standard, which suggests that if the corresponding effect size is 0.05 or less in absolute value, it is considered "small," and we can conclude that it satisfies baseline equivalence without statistical adjustment. However, if the effect size falls between 0.05 and 0.25, it is considered "moderate," and it will require a statistical adjustment to meet baseline equivalence (we will use statistical adjustments such as regression adjustments or matching/weighting). Lastly, in the case that the effect size is greater than 0.25, it will be considered "large", which shows that the differences at baseline are too large to meet WWC standards, even with statistical adjustments. In that case, we will apply appropriate caveats to any interpretation of the results.

Condition crossover

At the primary RCT enrollment site, Franklin CBCF, condition crossover is not possible due to restrictions put in place when designing the implementation of the two delivery formats. If a participant who was

assigned to the on-demand group attempts to attend the in-person classes, the facilitators will not allow them to sit in on in-person classes and will remind them that they are to complete the curriculum via tablet in the designated classroom. Tablets must be checked out to be used in the designated space, and a program staff member will be present to verify that participants who attempt to check out a tablet have been assigned to the on-demand group.

Other facilities participating in the RCT may not have the same restrictions in place to prevent condition crossover. In all participating facilities, facilitators have been trained on the design of the study and understand the importance of enforcing adherence to the condition to which a participant has been assigned. The evaluation team has a record of which study group each participant should have been assigned to based on the last digit of the inmate number and the randomization schema for each cohort, so cross-over to a different treatment condition can be flagged, and the prevalence of condition crossover will be disclosed in the final report.

3. Analytic approach

Modeling approach

Due to the nature of the continuous dependent variables of interest, we plan to fit a model using linear regression for all primary and secondary analyses for this study. We will model curvatures to ensure that the model is still linear in the parameters by doing re-expressions of the independent variables to fit a curve. We will also check the adequacy of the model to meet the remaining assumptions of a linear model (normality, multicollinearity, homoscedasticity, and independence) by reviewing the diagnostic plots and transforming our variables accordingly, if necessary. However, based on the nature of the survey data we will be using, we do not anticipate needing to fit a nonlinear model.

Analyses will be conducted using the R Studio statistical software package. The basic model for this impact evaluation will include a dummy variable for intervention group assignment, equal to 1 if a participant was randomly assigned to receive the curriculum on-demand via tablet, and a participant's score at baseline as the main predictors of each outcome measure at follow-up. To enhance the precision of the impact estimates, we plan to include several other covariates in our models. For all outcome analyses, we will control for participant age, gender, and race, as well as the timing of a participant's follow-up survey (number of days between program enrollment and follow-up survey completion). We will also consider including a facility indicator to denote which site the participant received services at. Additionally, we will include any demographic variables that were shown to be significantly different between study groups during baseline equivalency analysis. For the healthy relationship attitudes outcome, we also plan to include relationship status at baseline as a covariate. This will only be available if a participant reports being in a relationship at baseline and at follow-up.

Table 6. Covariates included in impact analyses

Covariate	Description of the covariate
Age	Age (in years) as of the baseline data collection, as reported on the ACS
Gender	Self-reported gender identification as of the baseline data collection, as reported on the ACS
Race	Self-reported racial identification as of the baseline data collection, as reported on the ACS

Covariate	Description of the covariate
Timing of follow-up survey	Number of days between program enrollment date and date of follow-up survey completion to control for variation in survey timing
Relationship status (relationship attitude and behavior outcomes only)	Relationship status (1 = in a committed relationship, 0 = not in a committed relationship) as of the baseline data collection, as reported on the ACS

4. Sensitivity analyses for primary research questions

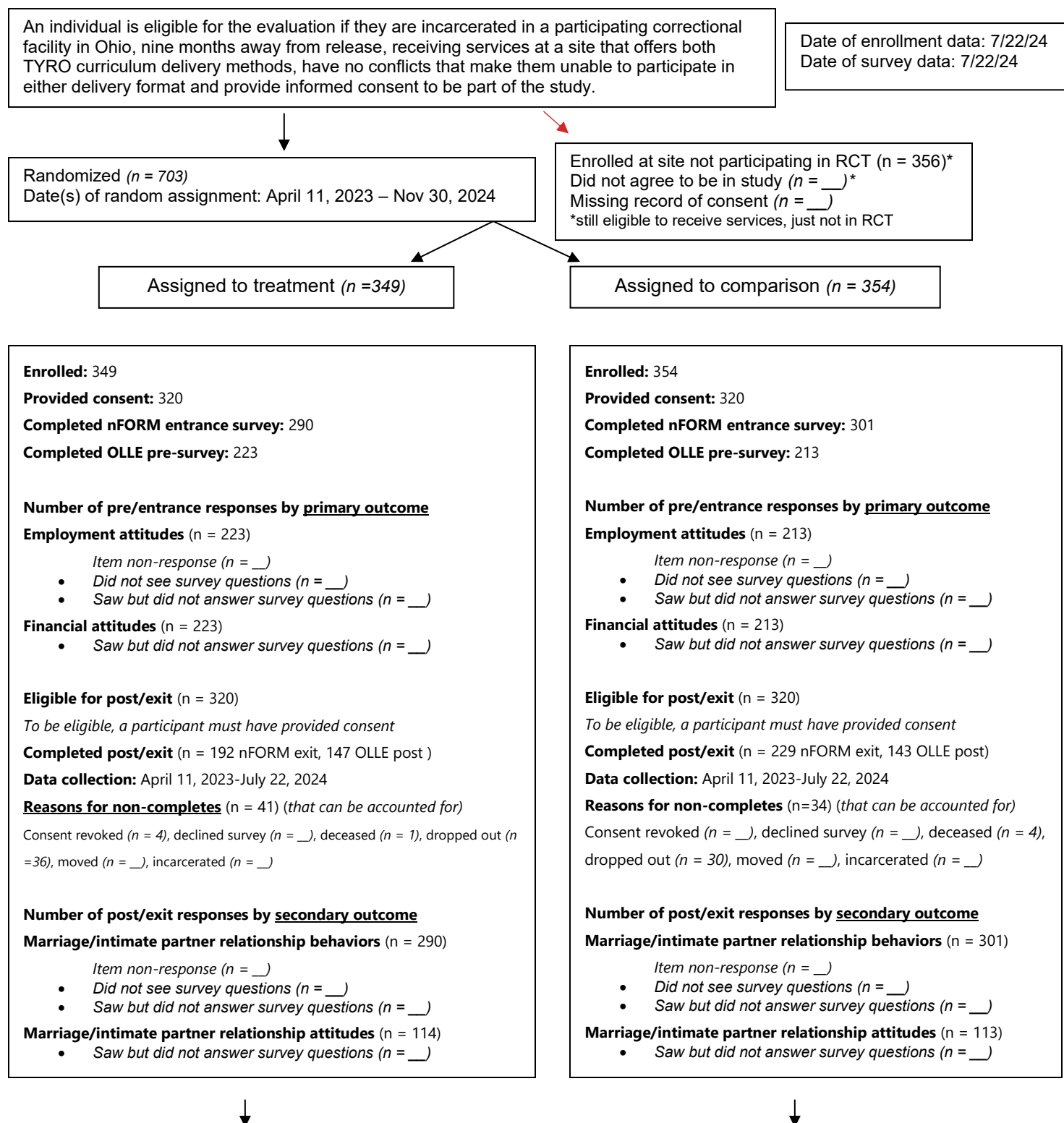
We plan to conduct several sensitivity analyses to test the robustness of our results. First, and as mentioned earlier in the plan, we will conduct a sensitivity analysis to see if and how our outcome construct measures change if we use 70% as a threshold for non-missing items instead of 80% as a threshold.

Next, we will conduct an analysis to see how outcome construct measures change if we use mean imputation to replace missing items in the multi-item scales used to create our outcome variables. This is the mean based on observed values from the rest of the sample for that item. The current plan is not to use any imputation for outcome measures, including constructed outcomes from multiple survey items, and instead to make the denominator for the calculation of the average score be equal to the number of non-missing items in that construct.

Finally, we plan to conduct a sensitivity analysis regarding the timing of the follow-up survey. Given changes in follow-up data collection protocol at Franklin CBCF, we anticipate that some respondents will have taken their paper follow-up survey earlier than intended. The sensitivity analysis will repeat our analyses using only people who completed their follow-up survey within the intended data collection window (5-7 months post-enrollment).

5. Analyses addressing secondary research questions

The analytic approach for answering the secondary research question about partner relationship behaviors will be the same as the approach taken for the primary research questions.

Figure A.3. CONSORT diagram for individual clients, for studies in which consent occurred before assignment

Eligible for 6-month post-enrollment follow-up (n = 206)

To be eligible, a participant must have provided consent and taken either the nFORM baseline or local evaluation baseline survey

Completed follow-up (n = 64)

Data collection: July 1, 2023-July 22, 2024

Reasons for non-completes (n = 1) *(that can be accounted for)*

Consent revoked (n = __), declined survey (n = __), deceased (n = __),
dropped out (n = 7), moved (n = __), incarcerated (n = 1)

Eligible for 6-month post-enrollment follow-up (n = 190)

To be eligible, a participant must have provided consent and taken either the nFORM baseline or local evaluation baseline survey

Completed follow-up (n = 52)

Data collection: July 1, 2023-July 22, 2024

Reasons for non-completes (n = 1) *(that can be accounted for)*

Consent revoked (n = __), declined survey (n = __), deceased (n = __),
dropped out (n = 4), moved (n = __), incarcerated (n = 1)

Figure A.4. Survey items linked to research questions

Measure	Item Response	Are these items linked to a primary research question?	Are these items linked to a secondary research question?
Partner relationship beliefs 8 items	Added skip logic allows participants to only respond to these items if they indicate that they are currently in a committed relationship.	No	No
Partner relationship attitudes/expectations 8 items			Yes
Partner relationship behaviors 2 sets of questions: 7 items 11 items			Yes (only the first set of items containing 7 items)
Finance attitudes 7 items	Shown to all participants	Yes	No
Finance behaviors 4 items		No	No
Employment attitudes 8 items	Shown to all participants	Yes	No
Employment behaviors 5 items	Added skip logic allows participants to only respond to these items if they indicate that they are currently employed.	No	No
Parenting attitudes 8 items	Added skip logic allows participants to only respond to these items if they indicate that they have at least one child.	No	No
Parenting behaviors Based on child's age 11 items (>age 6 & =< age 12), 9 items (< age 1 & =<6), 11 items (for child =<1)			
Co-Parenting attitudes 5 items			

References

- Bandura, A (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review*. 84 (2), 191–215.
- Chou, S., & Liu, C. (2005). Learning effectiveness in a web-based virtual learning environment: A learner-control perspective. *Journal of Computer Assisted Learning*, 21(1), 65 - 76.
- Visher, C., Debus, S., & Yahner, J. (2008). *Employment after prison: A longitudinal study of releasees in three states*. Urban Institute Justice Policy Center. <https://www.urban.org/sites/default/files/publication/32106/411778-Employment-after-Prison-A-Longitudinal-Study-of-Releasees-in-Three-States.PDF>