PARENT LEARNING STUDY: ANALYSIS PLAN

EVALUATION OF YOUNG UNITED PARENTS

CLINICAL TRIALS REGISTRATION: NCT05569070

SEPTEMBER 2025

Submitted by:
The Policy & Research Group
www.policyandresearch.com

8434 Oak St.
New Orleans, LA 70118

107 Spring St.
Seattle, WA 98104

TABLE OF CONTENTS

1. INTRODUCTION

The purpose of this evaluation is to test an innovative adolescent pregnancy prevention strategy, Young United Parents (YUP!) designed specifically for adolescents ages 15 to 22 who are pregnant or parenting. According to the U.S. Centers for Disease Control and Prevention, nearly one in six births to teens, ages 15 to 19, are repeat births. [1] Repeat births among adolescents are of particular concern because young mothers who have repeat births are more likely than first-time teen and older mothers to delay or forgo prenatal care and to have low birth weight babies, experience preterm birth, or have a pregnancy that results in infant mortality. [2]

While a number of interventions for parenting teens have been developed, they are either highly resource intensive, limited in scope and duration, and/or available only in select locations. [3] Policymakers and researchers alike have highlighted the need for more holistic approaches that take into account the complex, intersecting factors associated with repeat teen pregnancies. [4, 5] A review of 40 high-quality evaluations of programs designed to prevent repeat pregnancy among adolescents concluded that programs should: link comprehensive contraceptive information and services with activities to enhance planning skills; support career and educational goal attainment; provide mentoring and motivation; and link reproductive health decisions to positive life outcomes. [6] Additionally, research suggests programs may be more successful if they meaningfully involve youth in their development, utilize technology, include a focus on social determinants and health, and work to bolster parents' self-determination and motivation. [7, 8]

YUP! has been developed with an aim to be responsive to each of these critical needs and to fill a number of existing gaps in adolescent pregnancy prevention strategies. YUP! is a website with wide-ranging content that aims to increase opportunities for teen parents by preventing repeat births, while recognizing the need to avoid stigmatizing youth who are already parents. YUP! provides holistic information, skills, motivation, and support to empower young parents to avoid unplanned pregnancy, to reach their full potential, and to thrive in all areas of their lives. It is designed to address the multiple factors that may lead to unplanned pregnancy, sexually transmitted infections (STIs) and HIV, including young parents' social and emotional well-being, social determinants of health, social isolation, and other

---

[1] U.S. Centers for Disease Control and Prevention. (2017, June 28). Repeat teen births. U.S. Department of Health and Human Services. Retrieved June 13, 2023, from https://www.cdc.gov/teenpregnancy/health-care-providers/repeat-births.htm

[2] Reime, B., Schücking, B. A., & Wenzlaff, P. (2008). Reproductive outcomes in adolescents who had a previous birth or an induced abortion compared to adolescents' first pregnancies. *BMC Pregnancy and Childbirth*, *8*(1), 1–7. Partington, S. N., Steber, D. L., Blair, K. A., & Cisler, R. A. (2009). Second births to teenage mothers: Risk factors for low birth weight and preterm birth. *Perspectives on Sexual and Reproductive Health*, *41*(2), 101–109. Smith, G. C., & Pell, J. P. (2001). Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: Population based retrospective cohort study. *BMJ. 323*(7311), 476.

[3] Norton, M., Chandra-Mouli, V., & Lane, C. (2017). Interventions for preventing unintended, rapid repeat pregnancy among adolescents: A review of the evidence and lessons from high-quality evaluations. *Global Health: Science and Practice*, *5*(4), 547–570. https://doi.org/10.9745/GHSP-D-17-00131

[4] Charles, J. M., Rycroft-Malone, J., Aslam, R., Hendry, M., Pasterfield, D., & Whitaker, R. (2016). Reducing repeat pregnancies in adolescence: Applying realist principles as part of a mixed-methods systematic review to explore what works, for whom, how and under what circumstances. *BMC Pregnancy and Childbirth*, *16*, 271. https://doi.org/10.1186/s12884-016-1066-x

[5] Harding, J. F., Knab, J., Zief, S., & McCallum, D. (2020). A systematic review of programs to promote aspects of teen parents' self-sufficiency: Supporting educational outcomes and healthy birth spacing. *Maternal and Child Health Journal*, *24*(Suppl 2), S84–S104. https://doi.org/10.1007/s10995-019-02854-w

[6] See footnote 3.

[7] Brindis, C. D., Decker, M. J., Gutmann-Gonzalez, A., & Berglas, N. F. (2020). Perspectives on adolescent pregnancy prevention strategies in the United States: Looking back, looking forward. *Adolescent Health, Medicine and Therapeutics*, *11*, 135–145. https://doi.org/10.2147/AHMT.S219949

[8] See footnote 4.

areas of physical, mental, and emotional health. [9] YUP! includes information about comprehensive contraceptive options and abstinence, and aims to motivate and increase self-efficacy to adopt positive behaviors. The program is also designed to counter social isolation, a prevalent issue among young parents, by providing a community of peers. Additionally, near-peer young parent mentors provide encouragement and support directly through the website.

A 2020 study of Pregnancy Assistance Fund grantees documented a lack of evidence-based programs to address the unique and wide-ranging needs of expectant and parenting youth (i.e., shown to improve health, social, educational, and economic outcomes). [10] This evaluation of YUP! aims to respond to this noted gap by assessing the efficacy of a holistic, technology-based teen pregnancy and STI/HIV prevention intervention for young parents.

1.1 INTERVENTION ACTIVITIES

YUP! is a website-based intervention designed to help young parents ages 15 to 22 avoid unplanned pregnancy and STIs, reach their personal goals, and thrive in all areas of life. The mobile-optimized website contains 74 articles and over 196 personal narrative videos featuring young parents and experts from a broad spectrum.

The YUP! intervention includes: (1) video and written content on six topics (sexual health and birth control; healthy relationships; self-care; reaching your goals; parenting; and pregnancy and birth); (2) access to near-peer mentors; (3) a goal-setting tool; (4) daily tips, reminders, and motivational messages; (5) links and referrals to support services; and (6) membership in the YUP! online community of young parents.

The impact evaluation will evaluate the efficacy of *Guided* YUP!, which includes the six core components listed in Table 1 below. Participants will also have access to the additional content listed in Table 1, but they will not be explicitly directed to access that material. *Guided* YUP! will be delivered over the course of a two-month period, with participants spending approximately 50 to 105 minutes per week on the program.

Table 1. Guided YUP! Intervention Core Components

Core Component 1: Video and Written Content
Participants will be directed to materials on the four topics outlined below, which include both articles and personal narrative videos that feature young parents and experts. • **Sexual Health and Birth Control:** Understanding pregnancy; all contraceptive methods; method selection and effectiveness; condoms and dual contraception; consent; reproductive coercion; empowerment through family planning; STI prevention, testing, and disclosure; and abstinence as the only 100% way to avoid unplanned pregnancy and HIV/STIs. • **Healthy Relationships:** Developing healthy relationships with friends, family, partners, and in marriage; co-parenting and communication skills; signs of unhealthy relationships; interpersonal violence; building a support network; and learning to ask for help.

[9] U.S. Centers for Disease Control and Prevention. (2019, October 15). Social determinants and eliminating disparities in teen pregnancy. U.S. Department of Health and Human Services. Retrieved June 13, 2023, from https://www.cdc.gov/teenpregnancy/about/social-determinants-disparities-teen-pregnancy.htm

[10] Margolis, A., Rice, T., Banikya-Leaseburg, M., Person, A. E., Clary, E., Zief, S., Adamek, K., & Harding, J. F. (2020). Meeting the multifaceted needs of expectant and parenting young families through the pregnancy assistance fund. *Maternal and Child Health Journal*, 24(Suppl 2), S76–S83. https://doi.org/10.1007/s10995-020-02922-6

Table 1. Guided YUP! Intervention Core Components (Continued)

Core Component 1: Video and Written Content (continued)
• **Self-care:** Physical health and nutrition; mental health and stress; substance abuse; and dealing with stigma that young parents often face. • **Reaching Your Goals:** Motivational content about setting and achieving goals; videos of young parents discussing their road to success; future planning; understanding and managing finances; time management; finishing high school; planning for college; job and career planning, balancing parenting with school or work.
Core Component 2: Near-Peer Mentors
Trained in motivational interviewing and providing trauma-informed services, near-peer (e.g., age 22–26) mentors who are also young parents will provide guidance and support to YUP! registered users through the program's messaging system, answer questions, suggest content and resources, and provide referrals. *Guided* YUP! participants will have scheduled mentor interactions every two weeks over video chat (e.g., Google Hangouts) or through the YUP! messaging system. Participants will have up to five meetings with their mentor, each lasting approximately 30 to 60 minutes.
Core Component 3: Goal-Setting Tool
Goal-setting tools help young parents plan for personal goals and the steps they need to take to attain them. YUP! sends motivational messages and congratulates parents as each step is checked off. The tool also provides checklists for common goals (e.g., finding a new job; applying to college) and content to support the steps (e.g., preparing a resume). *Guided* YUP! participants will use the goal tool to set and track one short-term goal with support from a mentor.
Core Component 4: Reminders, Motivations & Tips
YUP! registered users receive daily tips (e.g., about family planning), reminders, affirmations, and motivational messages, and alerts to check out specific content.
Core Component 5: Links and Referrals
YUP! provides information on national resources that are available to young parents (e.g., health care and insurance, contraception, STI testing, mental health, food assistance, housing, childcare, education, job and career, and legal needs), and provides support and information regarding how to access these resources. *Guided* YUP! participants will be offered referrals by their near-peer mentor, based on their individual needs.
Core Component 6: Online Community
YUP! registered users can set up a profile, message other young parents or mentors, post content, or ask questions on a message board. Users can flag content or posts, and all user-generated content is reviewed by YUP! staff to ensure it meets the community guidelines and is medically accurate.
Additional Content
YUP! registered users also have access to additional videos and articles on the topics listed below. While they will not be explicitly directed to this content as part of the *Guided* YUP!, they will still be able to review material on the following: • **Pregnancy and Birth:** Prenatal care, preparing for birth, preparing for a baby, and postpartum care. • **Parenting:** Childcare; milestones; bonding; breastfeeding; nutrition; health and hygiene; crying and tantrums; sleep; setting boundaries; and single parenting.

ADULTHOOD PREPARATION SUBJECTS

The YUP! website intervention includes content on five of the six Adulthood Preparation Subjects (APS) specified under the Personal Responsibility Education Program (PREP). [11] We provide a brief overview below of the included content addressing these topics.

HEALTHY RELATIONSHIPS

YUP! has video and text content designed to educate and build skills needed for healthy relationships both in general and in specific situations (e.g., effective communication with partners around condoms and other effective contraceptive methods to prevent unplanned pregnancy and HIV/STIs). YUP!

[11] PREP grantees are required to include content on at least three of the six total APS, which are designed to support youth's successful transition to adulthood. YUP! Includes five APS; the only APS not addressed is *parent-child communication*.

includes information about building a strong network of family, friends, and community and asking for help. There is also content around how to identify and deal with unhealthy situations, such as interpersonal violence or reproductive coercion.

ADOLESCENT DEVELOPMENT

YUP! includes comprehensive content around self-regulation – a person's ability to exercise control over their thoughts, emotions, behaviors, and social interactions – which is fundamental to sexual and reproductive health outcomes as well as many other outcomes (e.g., mental health, academic achievement, substance abuse) through adulthood. Further, young parents often experience tremendous societal stigma, which impacts their mental health and well-being. YUP! content fosters resilience for dealing with multiple intersecting issues. YUP! also has information on topics such as body image and self-esteem.

FINANCIAL LITERACY AND FINANCIAL SELF-SUFFICIENCY

YUP! includes videos of experts and young parents providing guidance and tips on how to understand family finances and achieve financial self-sufficiency. These videos demonstrate that young parents can and do succeed financially.

EDUCATIONAL AND CAREER SUCCESS

YUP! includes videos of young parent peers discussing their experiences and successes, to increase self-efficacy around education and career attainment. This content provides users with tools and motivation to succeed in their education and pursue the career of their choice.

HEALTHY LIFE SKILLS

YUP! includes videos of young parents who are setting goals, making a plan to reach them, working toward them, and achieving them. The aim of these videos is to improve the self-efficacy and motivation of YUP! participants. YUP! also includes an easy-to-use tool to help young parents identify, plan for, and attain their goals. It includes checklists for attaining goals like finishing high school, getting a GED, applying for college, and applying for a job, and allows for setting custom goals as well.

1.2 LOGIC MODEL AND THEORY OF CHANGE

YUP! is based on Social Cognitive Theory (SCT) and Self-Determination Theory (SDT). SCT posits that individuals learn from their own experiences and by observing the behaviors of others. It describes how human behavior is determined by triadic reciprocal causation between environmental factors, cognitive or personal factors, and behavioral factors. Individuals have personal beliefs and capacities, which influence their behaviors. They also live within social contexts, which teach them, influence them, and reinforce their behaviors. Observed behaviors can influence an individual's cognition, this cognition can affect an individual's behaviors, and an individual's behaviors can be observed by others within their environment. [12]

The YUP! developer envisions SCT working in the following ways within the context of the intervention: (1) participants can learn behaviors by observing others in the videos provided on the website; and (2) these behaviors may be more likely assimilated when the observed actors are similar to the participant (identification), the participant has high self-efficacy, and the actors' behaviors result in positive

[12] Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*(9), p. 1175–1184. Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development*. *Vol. 6, Six theories of child development* (pp. 1–60). JAI Press.

outcomes. YUP! offers videos that prominently feature personal narratives from a broad spectrum of young parents. Videos portray young parent peers sharing their experiences on a wide variety of topics, including sexual behaviors, healthy relationships, self-care, and goal attainment. Videos also present vignettes of young parents' actual experiences overcoming challenges. In the reproduction of these experiences, actors' model positive sexual health behaviors and provide medically accurate information on effective contraception, condom use, and STIs.

Learning about effective contraception, condom use, and STIs by watching people like themselves overcome challenges has the potential to increase YUP! participants' knowledge, build positive outcome expectations, and increase their self-efficacy around contraceptive and condom use, condom negotiation, and STI testing. By targeting these particular behavioral antecedents, YUP! aims to increase the use of effective, non-barrier contraception and reduce the frequency of condomless vaginal sex in the short-term and ultimately reduce unplanned repeat pregnancy and STIs in the long-term. Additionally, the YUP goal-setting tool and near-peer mentoring provide mechanisms for the young parent to increase their goal achievement self-efficacy by demonstrating their ability to set a short-term goal and work toward completion of that goal.

SDT emphasizes each individual's capacity to make decisions and manage their life (i.e., self-determination) and the role this plays in motivating their behavior. When individuals feel they have control over their life trajectory, this encourages them to engage in behaviors which they believe can lead to a desired outcome. SDT posits that intrinsic motivation is based on three innate needs: competence, where one seeks to control outcomes and experience mastery; relatedness, where one wants to interact with, be connected to, and experience caring for others; and autonomy, the urge to be the causal agent of one's own life. [13]

The YUP! developer contends that when YUP! participants read the written content and watch the videos offered, which provide medically accurate information on condom and contraceptive use, individuals have opportunities to gain competence in these key areas. The online community and near-peer mentoring provides virtual connection to peers who they can relate to, learn from, and be empowered by. The developer theorizes that this can have a subsequent positive impact on participants' perceived stigma and sense of social support, with the expectation that this will result in reduced social isolation and ultimately improve their overall well-being. Furthermore, the YUP! goal-setting tool provides a mechanism for the young parent to identify a personal goal that is important for them to achieve (facilitating competence in their ability to control their outcomes) and a way to track their progress toward that goal (facilitating their autonomy to impact change in their own life).

Please see Appendix A for a graphic depiction of the logic model. The logic model is a visual representation of the key components and activities of the *Guided* YUP! intervention, the expected outputs of the intervention, the hypothesized mediators through which the program will work, and the anticipated short-and long-term outcomes of the intervention.

[13] Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology: Vol. 1* (pp. 416–436). Sage Publications Ltd. https://doi.org/10.4135/9781446249215.n21

1.3 TARGET POPULATION FOR THE INTERVENTION

YUP! was designed to serve and respond to the needs of adolescent pregnant and parenting youth ages 15 to 22 throughout the United States. While intended for all adolescent pregnant and parenting youth, YUP! content has been specifically tailored toward populations that experience higher teen birth rates in the United States. [14]

It is estimated that there are around 67,000 repeat births to adolescents in the United States each year. [15] Given that YUP! is a website-based intervention accessible to anyone with internet access, it has the potential to reach the population of pregnant and parenting adolescents who have adequate, regular access to internet-connected devices. In an April 2021 U.S. Census Bureau report on Computer and Internet Usage in the United States (which used data collected in 2018), it was estimated that 92% of U.S. households had at least one type of computer (which includes desktops, laptops, tablets, and smartphones). Assuming an equivalent proportion of the target population has access to internet-connected devices, we estimate that YUP! has the potential to serve around 61,000 adolescent pregnant and parenting youth ages 15 to 22. [16] Youth will have the opportunity to learn about YUP! through local parenting organizations in their area and social media.

2. IMPACT EVALUATION

2.1 IMPACT EVALUATION OVERVIEW

The Parent Learning Study (PaLS) will be a two-armed, individual-level randomized controlled trial (RCT). The confirmatory contrast will assess the efficacy of *Guided* YUP! (described above in Section 1.1) as compared to the control condition on two, participant-reported, sexual behavior outcomes: (1) use of effective non-barrier contraception, and (2) frequency of condom use during vaginal sex. The analysis will be conducted within an intent-to-treat (ITT) framework, where participants will be analyzed in their assigned condition (*Guided* YUP! or control condition), regardless of actual exposure to the *Guided* YUP! treatment.

2.1.1 RESEARCH QUESTIONS

PRIMARY RESEARCH QUESTIONS

Research Question 1: What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' current use of effective non-barrier contraception three months after the intervention period has concluded?

Research Question 2: What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of recent vaginal sex without condoms three months after the intervention period has concluded?

---

[14] U.S. Centers for Disease Control and Prevention. (2013, April). Preventing repeat teen births. https://www.cdc.gov/vitalsigns/teenpregnancy/index.html

[15] See footnote 14.

[16] There is no known population parameter of the proportion of pregnant and parenting youth ages 15–22 who have access to an internet-connected device, so this number is our best estimate of the population YUP! may have the potential to serve. This is calculated by taking 67,000 and multiplying by 92%. See U.S. Census Bureau. (2022, August 11). Computer and internet use in the United States: 2018 [Press Release]. https://www.census.gov/newsroom/press-releases/2021/computer-internet-use.html

SECONDARY RESEARCH QUESTIONS[23]

Table 2 lists each of the secondary research questions we intend to explore; Table 3 provides further details on primary and secondary research questions. Questions are grouped by domain. Research questions followed by an asterisk (*) denote those which assess measures not currently included in the program's logic model.

Table 2. Secondary Research Questions

Domain	Secondary Research Question
Contraceptive use	3. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive knowledge immediately after the intervention period has concluded? 4. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive knowledge three months after the intervention period has concluded? 5. What is the impact of the offer of the 2-month *Guided* YUP! (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom knowledge immediately after the intervention period has concluded? 6. What is the impact of the offer of the 2-month *Guided* YUP! (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom knowledge three months after the intervention period has concluded? 7. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom negotiation self-efficacy immediately after the intervention period has concluded? 8. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom negotiation self-efficacy three months after the intervention period has concluded? 9. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive use self-efficacy immediately after the intervention period has concluded? 10. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive use self-efficacy three months after the intervention period has concluded? 11. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom use outcome expectations immediately after the intervention period has concluded? 12. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' condom use outcome expectations three months after the intervention period has concluded? 13. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive use outcome expectations immediately after the intervention period has concluded? 14. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' contraceptive use outcome expectations three months after the intervention period has concluded?

[23]Per guidance received from the Personal Responsibility Education Program Local Evaluation Support Technical Assistance providers, the secondary research questions listed in this *Impact Evaluation Plan* include all measures and their applicable time points on which we intend to assess the potential impact of the *Guided* YUP! intervention. All secondary research questions are considered exploratory in nature. We include in this table research questions that assess the impact of *Guided* YUP! on measures articulated in the hypothesized theory of change and currently included in the program's logic model (see Appendix A) as well as research questions that will assess exploratory hypotheses on behaviors that are not (yet) part of the logic model, but which are of substantive interest to the evaluation team and intervention developer.

Table 2. Secondary Research Questions (Continued)

Domain	Secondary Research Question
Contraceptive use (continued)	15. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' consistent use of effective non-barrier contraception three months after the intervention period has concluded?*
	16. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' consistent use of effective non-barrier contraception twelve months after the intervention period has concluded?*
	17. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of emergency contraceptive use three months after the intervention period has concluded?*
	18. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of emergency contraceptive use twelve months after the intervention period has concluded?*
	19. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of effective non-barrier contraception during last vaginal sex three months after the intervention period has concluded?*
	20. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of effective non-barrier contraception during last vaginal sex twelve months after the intervention period has concluded?*
	21. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of condoms during last vaginal sex three months after the intervention period has concluded?*
	22. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of condoms during last vaginal sex twelve months after the intervention period has concluded?*
	23. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of completely unprotected (neither condom nor effective non-barrier contraceptive use) vaginal sex three months after the intervention period has concluded?
	24. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of completely unprotected (neither condom nor effective non-barrier contraceptive use) vaginal sex twelve months after the intervention period has concluded?
	25. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of no effective contraception (neither condom nor effective non-barrier contraceptive use) during last vaginal sex three months after the intervention period has concluded?*
	26. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of no effective contraception (neither condom nor effective non-barrier contraceptive use) during last vaginal sex twelve months after the intervention period has concluded?*

Table 2. Secondary Research Questions (Continued)

Domain	Secondary Research Question
Contraceptive use (continued)	27. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of dual methods of protection (combined condom and effective non-barrier contraceptive use) during last vaginal sex three months after the intervention period has concluded?*
	28. What is the impact of the offer of the 2-month *Guided* YUP! website intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' use of dual methods of protection (combined condom and effective non-barrier contraceptive use) during last vaginal sex twelve months after the intervention period has concluded?*
	29. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' frequency of recent vaginal sex without condoms twelve months after the intervention period has concluded?
	30. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' current use of effective non-barrier contraception twelve months after the intervention period has concluded?
STIs or HIV	31. What is the impact of the offer of the 2-month *Guided* YUP! (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' sexually transmitted infection (STI) knowledge immediately after the intervention period has concluded?
	32. What is the impact of the offer of the 2-month *Guided* YUP! (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' sexually transmitted infection (STI) knowledge three months after the intervention period has concluded?
	33. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' STI testing self-efficacy immediately after the intervention period has concluded?
	34. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' STI testing self-efficacy three months after the intervention period has concluded?
	35. What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' receipt of STI testing three months after the intervention period has concluded?
	36. What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' receipt of STI testing twelve months after the intervention period has concluded?
	37. What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' STI acquisition three months after the intervention period has concluded?
	38. What is the impact of the offer of the two-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' STI acquisition twelve months after the intervention period has concluded?
Self-care	39. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' self-care self-efficacy immediately after the intervention period has concluded?
	40. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' self-care self-efficacy three months after the intervention period has concluded?

Table 2. Secondary Research Questions (Continued)

Domain	Secondary Research Question
Goals	41. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' goal-setting self-efficacy immediately after the intervention period has concluded?
	42. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' goal-setting self-efficacy three months after the intervention period has concluded?
	43. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' ability to achieve personal goals immediately after the intervention period has concluded?
	44. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' ability to achieve personal goals three months after the intervention period has concluded?
	45. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' ability to achieve personal goals twelve months after the intervention period has concluded?
Pregnancy	46. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived pregnancy fatalism immediately after the intervention period has concluded?
	47. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived pregnancy fatalism three months after the intervention period has concluded?
	48. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' repeat pregnancy twelve months after the intervention period has concluded?
	49. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' repeat unintended pregnancy twelve months after the intervention period has concluded?*
Parenting competence	50. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived parenting competence immediately after the intervention period has concluded?
	51. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived parenting competence three months after the intervention period has concluded?
	52. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived parenting competence twelve months after the intervention period has concluded?
Stigma	53. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived stigma immediately after the intervention period has concluded?
	54. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived stigma three months after the intervention period has concluded?
	55. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived stigma twelve months after the intervention period has concluded?

Table 2. Secondary Research Questions (Continued)

Domain	Secondary Research Question
Social support	56. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived social support immediately after the intervention period has concluded?
	57. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived social support three months after the intervention period has concluded?
	58. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived social support twelve months after the intervention period has concluded?
Well-being	59. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived sense of well-being as it relates to optimism immediately after the intervention period has concluded?
	60. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived sense of well-being as it relates to optimism three months after the intervention period has concluded?
	61. What is the impact of the offer of the 2-month *Guided* YUP! intervention (treatment) relative to the offer of the control condition (nutrition website) on adolescent mothers' perceived sense of well-being as it relates to optimism twelve months after the intervention period has concluded?

Table 3. Primary and Secondary Research Question Details

Research Question(s)	Target Population	Treatment (Intervention or Components Being Tested)	Comparison (Counterfactual) Condition	Outcome Domain	Primary or Secondary?
1, 2	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Contraceptive use	Primary
3-30	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Contraceptive use	Secondary
31-38	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	STIs or HIV	Secondary
39 ,40	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Self-care self-efficacy	Secondary
41-45	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Goals	Secondary
46-49	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Pregnancy	Secondary
50, 15, 52	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Parenting competence	Secondary
53, 54, 55	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Stigma	Secondary
56, 57, 58	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Social support	Secondary
59, 60, 61	Adolescent mothers ages 15–20	*Guided* YUP!	Nutrition website	Well-being	Secondary

2.1.2 STUDY REGISTRATION

PaLS was registered on clinicaltrials.gov in October 2022 (NCT NCT05569070). We updated the registration on April 27, 2025 to indicate that enrollment is closed.

2.1.3 CONFLICTS OF INTEREST

We have no conflicts of interest to declare.

2.2 TREATMENT AND COMPARISON CONDITIONS

2.2.1 TREATMENT CONDITION

The treatment condition for the confirmatory contrast is *Guided* YUP!, which will involve two months of directed use of the YUP! website.

Guided YUP! participants will have a structured program experience over the two-month period. Specifically, each week participants will be directed through the YUP! participant dashboard to review between 20 and 45 minutes of particular content on the YUP! website. Below is an overview of the focus of and content included each week:

- Week 1: Setting goals (6 videos, 1 article)
- Week 2: Healthy relationships and support systems (6 videos, 4 articles)

- Week 3: Sexual health communication, condom negotiation (7 videos, 3 articles)
- Week 4: Birth control Part 1 (6 videos, 3 articles)
- Week 5: Birth control Part 2 (7 videos, 2 articles)
- Week 6: STIs and healthy living (2 videos, 9 articles)
- Week 7: Self-care and healthy parenting (9 videos, 2 articles)
- Week 8: Education, financial and career goals, accessing resources (8 videos, 4 articles)

Additionally, *Guided* YUP! participants will be asked to outline and complete at least one goal during the two-month intervention period, using the goal tool on the website. *Guided* YUP! participants will also receive automatically generated tips and affirmations through the website and have access to the YUP! online community to participate in, if desired.

Participants will be paired with a near-peer mentor who will schedule virtual interactions with them every two weeks, for a total of up to five interactions over the course of the two-month intervention period. All interactions will be held via the YUP! participant dashboard and are expected to last around 30 to 60 minutes. The first interaction is encouraged to be held over video chat. All interactions can occur either via video, audio, or texts through the dashboard or Google Voice, based on the preferences of the participant. The aim of these interactions is for the near-peer mentor to offer support and guidance, using motivational interviewing techniques, as the participants go through the *Guided* YUP! program. Specifically, the near-peer mentors will engage in five core activities during each interaction. First, the mentors will review participants' progress through the structured program using the dashboard and talk with participants about how they are doing with staying on track with the *Guided* YUP! content. Second, they will do a check-in with the participant to hear how life is going in general and may suggest additional content on the website that could apply to any challenges they are facing. Third, they will review the goal tool and check with the participant about their progress toward achieving that goal. Fourth, they will see how the participant's interactions with the YUP! online community are going, if they have decided to engage in this forum. Fifth, they will ask the participant if they need any specific resources related to their goal, themselves, or their family.

Guided YUP! participants who review the required weekly written and video website content and meet with their near-peer mentors during scheduled meetings will be entered into a monthly raffle and eligible to earn a gift card.

2.2.2 CONTROL/COMPARISON CONDITION

Participants assigned to the control condition will be directed to review a nutrition website called *MyPlate. MyPlate* is a website maintained by the U.S. Department of Agriculture (USDA) and is the current nutrition guide published by the USDA's Center for Nutrition Policy and Promotion. It aims to provide current dietary guidance to help individuals make educated food choices. This website was purposively selected as the control condition for this study because, although it contains no sexual and reproductive health content, it does offer content that may be useful for young parents related to nutrition for them and their children.

Participants randomized to the control condition will be emailed the link to the *MyPlate* website during the study enrollment session. Study staff will overview the key components of the *MyPlate* website, including: the quizzes, the "Eat Healthy," Eating on a Budget," and "Life Stages" written content; the "Shop Simple" tool that can help find local savings; the *MyPlate* Kitchen recipes; and the available phone app. During this introduction to the website, the control participants will be encouraged to engage in

any of the website or app features at whatever level they are comfortable with. No further direction will be provided to them after this enrollment session.

At the end of the study follow-up period (14 months post enrollment), once participants assigned to the control condition have completed their final follow-up questionnaire, or their final follow-up window has closed, the study team will provide them with access to YUP!

No Serious Confounds. Participants will be individually randomized into the treatment and control conditions. We are aware of no factors that could be perfectly aligned with either the treatment or control conditions. If the study is implemented with fidelity, the only systematic variation between treatment and control groups will be the YUP! intervention.

2.3 SAMPLE IDENTIFICATION, SELECTION, AND RETENTION

2.3.1 SAMPLE SIZE

We anticipated enrolling a total of 1,400 participants for our confirmatory analysis comparing *Guided* YUP! to the control condition, with 700 participants assigned to each arm. As of April 23, 2025, we have enrolled 1,404 participants, with 704 participants assigned to the treatment condition and 700 assigned to the control condition. Table 4 illustrates this sample size.

Table 4. Sample Size for Confirmatory Analysis

Unit	Treatment	Control
A. Number of cohorts enrolled	N/A	N/A
B. Number of clusters enrolled per cohort	N/A	N/A
C. Number of youth enrolled per cluster per cohort	704	700

2.3.2 IDENTIFICATION AND SELECTION OF INDIVIDUALS

RECRUITMENT AND ELIGIBILITY SCREENING

We recruited for this study nationally through online ads and social media, and with the assistance of study partners that serve our target population. While we established partnerships to support recruitment efforts (i.e., guide youth in the target population to study ads), our partners did not enroll individuals directly; PRG was the sole organization responsible for enrolling study participants.

Individuals interested in participating in the study were able to access an online *Eligibility Screening Form* (ESF) independently through various advertisements, such as: (1) posters hanging at partner sites that contain a URL and QR code to access the ESF; (2) partner website notices with links to the ESF; (3) partner social media posts with links to the ESF; (4) other direct communication (emails, texts, calls) from partners with links to the ESF provided; and (5) online and social media ads targeted to the study population that contain links to the ESF.

To be eligible for the study, participants must meet the following criteria:

- Biological female aged 15 to 20
- Has given birth to a child they currently provide care for

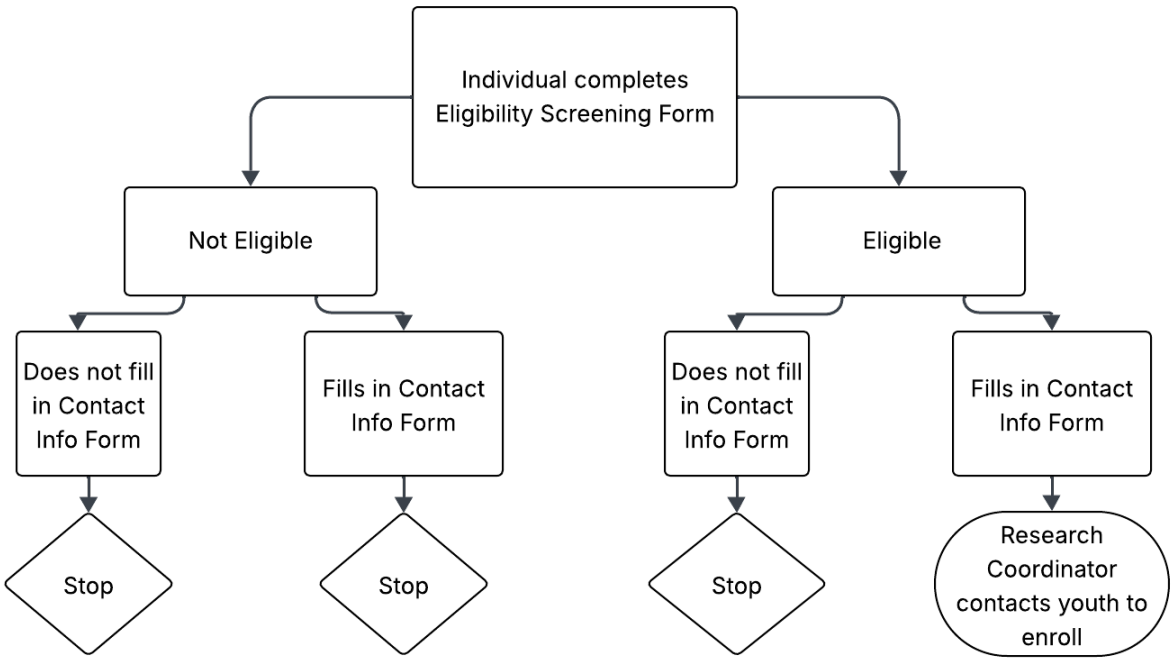
- Not currently pregnant [18]
- Not currently trying to become pregnant
- Report having penile-vaginal sex at least one time in past three months
- Fluent in English (able to read and comprehend the online intervention materials, which are available only in English)
- Own or have regular access to a personal device (smartphone, laptop, tablet) with internet access
- U.S. resident
- Not have previously registered to use the YUP! website or app
- Provide informed assent or consent for study participation

Youth who access the ESF are asked to answer questions to determine their eligibility. All of the procedures described below occur *before* random assignment. The first page of the online ESF includes information about the study and asks individuals to agree to answer the questions on the subsequent form. Individuals must agree to answer the questions and have their data stored by the study before they can answer the remaining questions on the form. The rest of the questions on the form ask participants questions pertaining to eligibility. The form is set to automatically calculate whether an individual is eligible or ineligible.

There are fraud detection features applied to the ESF in the online survey platform, Qualtrics, to prevent people from completing it more than once (i.e., to prevent the same person taking it multiple times with different answers to try to get into the study) and to flag records (respondents) identified as fraudulent. At the end of the ESF, *all respondents* (eligible and ineligible) are directed to a *Contact Information Form*. Individuals who screen ineligible are informed of their ineligibility but asked if they would be willing to provide contact information so they can be reached about future study opportunities. Those who screen eligible are asked to provide their name, email, phone number, and preferences for how study staff can contact them. They are also directed to the study's YouCanBookMe page (an online scheduling tool) so they can self-schedule their consent session (if they prefer) but are informed that a member from the PaLS team will reach out to them in one to two days to schedule their session if they would rather wait to be contacted. Respondents identified as potentially eligible but flagged for fraud are directed to a page that says they *may* be eligible to continue and if so, someone from the study will contact them soon. The contact information for fraud detected respondents is stored in the Ripple database while study staff review their submission for fraud. Staff check their contact information and ESF submission for existing fraud patterns, automated Qualtrics fraud flags, and duplicate submissions. If they are determined to be fraudulent, they will not be contacted by staff. If not fraudulent, they are treated as an eligible respondent and study staff reach out to them to schedule an enrollment session. Figure 1 visually represents the process by which individuals are screened for eligibility and – for those eligible – enrolled into the study.

[18] Although YUP! has been designed as an intervention for both pregnant and parenting youth, the impact evaluation will only recruit biological female youth who are parents but not currently pregnant. This has been done because one of the primary outcome measures being assessed is "use of effective non-barrier contraception," which is not relevant to pregnant or biological male youth.

Figure 1. *Screening Flow Diagram*



Contact Information Form data for youth will appear in PRG's secure online Ripple database. PRG research coordinators can view them and "assign" themselves to follow up with specific eligible youth. The next step for research coordinators is to confirm that the parent's self-reported age from their ESF matches the age calculated from their date of birth. This is an additional step to try and prevent fraudulent enrollments by confirming that the youth is within the eligible age range. PRG research coordinators will then check if the individual has previously registered for the YUP! website based on the email address given on the *Contact Information Form*. They also check to see if the youth has already enrolled in this study or been flagged as fraudulent by searching for their name, email, and phone number in the study participant database. If the youth has previously registered for the YUP! website, been enrolled in the study, or been flagged as fraudulent, the individual is not eligible and the research coordinator will let them know by email/text.

Those who are still eligible at this point are contacted by PRG research coordinators within one business day from the date they submitted the ESF to schedule a consent and enrollment session. If the individual already self-scheduled their consent and enrollment session in YouCanBookMe, the coordinators contact them to confirm the date of their session and establish communication; they use the contact information and preferences listed on the *Contact Information Form* to conduct this outreach. While the goal is to schedule this session as soon as possible after they complete the ESF, the coordinators have 30 days from the ESF completion date to complete a phone/video conference consent and enrollment session. This gives study staff enough time to connect with young parents who are often busy and difficult to reach.

Participant enrollment began on October 10, 2022 and ended on April 30, 2025.

INFORMED CONSENT/ASSENT PROCEDURES

As soon as possible after the ESF completion date, PRG research coordinators email and/or text the youth to schedule a 45-minute enrollment session that can be completed by phone or video conference (e.g., Facetime, Zoom). Prior to the session with each individual, coordinators email and/or text the individual a link to the electronic *Informed Consent Form* (ICF) so that the individual has time to review the ICF independently. Once the individual has joined the session, the research coordinator asks them to share a form of ID, such as a license, school ID card, or piece of mail. This is to confirm the individual's identity and prevent fraud. Then, the research coordinator reviews the ICF with the individual and engages in a paragraph-by-paragraph joint exploration of the form, with frequent check-ins to be sure they fully understand the study requirements and have ample time and opportunity to ask questions. Individuals who would like to participate then electronically sign the ICF and submit it. The electronic ICF is programmed to automatically notify the research coordinator upon submission. When they submit the ICF online, participants receive a copy via email of the electronically signed ICF. PRG has received a waiver of parental consent from its institutional review board (IRB), Sterling IRB; all participants independently consent or assent to study participation.

RANDOM ASSIGNMENT PROCEDURES

PRG randomly assigns individual participants to *Guided* YUP! or the control condition on a rolling basis. Assignment itself begins after the individual has been determined to be eligible for the study, enrolled, and begun the *Baseline Participant Questionnaire* in Qualtrics. No organizations are allowed to exempt individuals from random assignment. Prior to beginning study activities, PRG produced one electronic randomization allocation list for each research coordinator enrolling participants into the study using an existing algorithm available in Stata (*ralloc*). The allocation lists were produced by a senior research analyst and are stored on a PRG secure server. The randomization script generated assignments at a 1:1 ratio to *Guided* YUP! or the control condition; each assignment was associated with a unique study ID number.

Research coordinators were given a sequential list of unique five-digit study IDs that they assign in ascending numerical order to individuals who screen eligible and consent to participate in the study. Research coordinators provide the study ID number to the participant, and they are then directed to enter that number into the appropriate field of the *Baseline Participant Questionnaire*. Research coordinators receive an email from Qualtrics once a participant has completed the *Baseline Participant Questionnaire*. While the participant is completing the questionnaire, the research coordinator enters the participant's study ID number into the *Randomization Generator Form*; when they click "submit," the generator displays the name of the condition to which the participant has been assigned. This is the point at which an individual is officially considered an enrolled participant in the study and is included in the ITT sample, even if they complete no further study activities. A PRG senior research analyst is responsible for the design and monitoring of all random assignment procedures. Table 5 details the start and end dates of evaluation and program enrollment.

Table 5. Evaluation and Program Enrollment Start and End Dates

	Evaluation Enrollment	Program Enrollment
Start date	October 10, 2022	October 10, 2022
End date	April 30, 2025	June 30, 2025

2.3.3 TRACKING AND RETENTION OF INDIVIDUALS

ENGAGEMENT STRATEGIES

After randomization, for those assigned to the control condition, research coordinators provide a video with a brief overview and tour of the nutrition website's features. For those assigned to *Guided* YUP!, PRG research coordinators facilitate the YUP! registration process and then share a video providing a brief overview and tour of the YUP! website's features. The last step of enrollment for participants assigned to *Guided YUP!* involves the research coordinators scheduling their first meeting with their YUP! peer mentor. Peer mentors conduct outreach to schedule five meetings with each treatment participant over the two-month intervention period. Data on outreach attempts, sessions held, and if session content was delivered as intended are tracked by mentors within YUP's online administrative dashboard.

Treatment participants are not offered any monetary incentives for participation in *Guided* YUP!. YUP! was developed using a human-centered design approach with the aim to produce a highly engaging intervention for the target population. YUP! is also designed to send automatic reminders to *Guided* YUP! participants and give badges and stars to those who have finished content, so there are automated ways to prompt and reward participant engagement.

PRG regularly assesses participant engagement with and participant retention in *Guided* YUP!. The YUP! intervention was designed with the capability to track user activity on the website. PRG analyzes YUP! mentor-reported activity and user activity data on a regular basis and reports on which content, tools, and features study participants are accessing. PRG meets with the intervention developer monthly to discuss participant attendance and dosage. As this is a new, untested intervention, we do not have any specific expectations for attendance or dosage. However, when we observed midstream that engagement with particular components was low (i.e., <50%), the study team and the intervention developer developed strategies to motivate and promote participant completion of the content. These included sending automated messages (affirmation, reminders, etc.) to YUP! participants from the website and offering entry into a monthly raffle to win a $200 gift card. To be entered into the raffle, treatment participants must either: (1) earn a badge by engaging with their weekly YUP! content; (2) attend one, three, or five mentor meetings; (3) enter or complete a goal in the goal tool; (4) start or comment on a discussion in the discussion forum; or (5) add a profile photo to their YUP! profile. Participants can only win the raffle once and are only eligible for badges that are earned during their eight-week intervention period. Research coordinators also attempt to facilitate a brief five-minute introductory meeting between treatment participants and their YUP! peer mentor immediately after the enrollment session concludes.

FOLLOW-UP AND RETENTION STRATEGIES

To answer our primary research questions, our target enrollment is 1,400 individuals, with 700 randomly assigned to *Guided* YUP! and 700 to the control condition. As of April 22, 2025, PRG had successfully enrolled 1,404 participants and achieved the following follow-up rates at each time point:

- First follow-up (immediate post intervention): 91% (1,129 of 1,241)
- Second follow-up (3 months post intervention): 90% (887 of 981)
- Third follow-up (12 months post intervention): 88% (420 of 475)

PRG is implementing a comprehensive follow-up plan to retain all study participants (treatment and control) based on the evidence-based Engagement, Verification, Maintenance, and Confirmation (EVMC) Model. Research coordinators collect comprehensive participant contact information and update it on

an ongoing basis throughout the study to ensure we can follow up with study participants and obtain outcome data.

Immediately after informed consent, participants are asked to complete an electronic *Locator Form*. The *Locator Form* is carefully designed (and PRG has successfully used it in previous studies) to collect detailed contact information from adolescent study participants. These data include: home, cell, and alternate phone numbers; email address; social media handles (e.g., Instagram name, Facebook name); current mailing addresses; preferred method and timing of communication; names and relationships of others residing in household; and full contact information for three alternate contacts (e.g., relatives, friends). The form's instructions request that they only list alternates who they would be comfortable knowing that they are participating in a health study. The PRG research coordinator informs participants that they only contact alternates to initially verify the information and in the event the participant cannot be reached at their personal address and/or phone numbers. If alternates are contacted, the research coordinator introduces themselves, says the participant listed their name on a program contact sheet as a way to get in touch them, and communicates a desire to get in contact with the participant. The research coordinator reviews the *Locator Form* for completeness during the enrollment session, and then verifies all information listed on the form within one week of each participant's enrollment.

Participants are asked to formally review and update their contact information 8 and 11 months after the *Baseline Participant Questionnaire* and receive a $10 gift card incentive for updating the information at 8 months and a $15 incentive for updating it at 11 months. Locator data are entered into a secure electronic database, which is managed by research coordinators.

Study staff administer three follow-up questionnaires for each participant at 2, 5, and 14 months after the *Baseline Participant Questionnaire* (i.e., immediate post intervention, and 3 months and 12 months after the intervention ends). Participants have 30 days after the *2-Month Follow Up Participant Questionnaire* "due date" and three months after the 5- and 14-month questionnaire "due dates" to complete the questionnaire. PRG research coordinators are responsible for contacting participants and administering the 2-, 5-, and 14-month questionnaires. At all follow-up time points, questionnaires are administered electronically, with research coordinators sending instructions, the unique study ID number, and a link to the questionnaire via email or text to each participant as they become eligible. Once the message is sent, study staff communicate by text (and other methods as needed) to let the participant know to check their email or phone messages for instructions and a link to the next questionnaire. If participants are unable to complete the questionnaire electronically, a paper version may be mailed to them with a pre-addressed stamped return envelope; in some cases where online and mail are not feasible, a questionnaire may be administered by phone in an interview format.

The Ripple database contains a record for each enrolled participant. Each record includes the participant's study ID number, name, staff member who enrolled the participant, assigned study group, and all follow-up questionnaire window open and close dates and *Locator Form* update due dates. Research coordinators check the Ripple database daily to know when to contact participants for various tasks. The system maintains a secure database (separate from all outcome data) of up-to-date contact information for participants and tracks correspondence with study participants. It also collects administrative data on each data collection time point. All contacts with participants have three functions: (1) to remind the participant about upcoming questionnaire due dates and incentives; (2) to get the participant to continually update their contact information while enrolled in the study (~14 months); and (3) to alert study staff when contact information has become out-of-date/inaccurate (e.g., an email bounces back, a phone number no longer works). Research coordinators use various modes of

contact and types of messaging at each follow-up data collection point and during monthly check-ins between follow-up data collection points, including outreach to the participant's listed friends/family as needed, throughout the follow-up windows until the youth has completed the questionnaire.

Study participants are compensated for their time according to the following schedule:

- $100 gift card for enrolling and completing the *Baseline Participant Questionnaire*
- $50 gift card for completing the 2-month *Follow-Up Participant Questionnaire*
- $50 gift card for completing the 5-month *Follow-Up Participant Questionnaire*
- $10 gift card for completing an 8-month *Locator Form* review and update
- $15 gift card for completing an 11-month *Locator Form* review and update
- $50 gift card for completing the 14-Month *Follow-Up Participant Questionnaire*

The amounts provided at each time point were selected based on PRG's experience in using a similar strategy with eight other individual-level RCTs in which we achieved follow-up rates for the full samples of 77% or higher at all time points. [19] Dollar values are commensurate with the length of the questionnaire and data collection burden on the participant at each time point.

2.4 DATA COLLECTION

2.4.1 DATA COLLECTION PLAN

For each of the research questions listed in Section 2.1, we will rely upon participant self-reported data collected in the *Follow-Up Participant Questionnaires*. See Table 6 for specific details. Follow-up time points have been selected to be commensurate with when we would expect to observe change in the specified behavioral antecedents and behaviors for those exposed to the intervention.

PRG attempts to collect data for all treatment and control group participants. Research coordinators are responsible for emailing links to participants with the Qualtrics participant questionnaire at the appropriate time. The *Baseline Participant Questionnaire* is administered during the consent and enrollment session. Immediately after the youth has provided assent/consent and completed their *Locator Form*, the research coordinator assigns them the next available study ID number (from a prepared list of ID numbers unique to that research coordinator), provides verbal instructions for completing the questionnaire, and then emails the ID number and link to the *Baseline Participant Questionnaire*. Research coordinators receive an automatic email as soon as the *Baseline Participant Questionnaire* has been submitted through Qualtrics.

At 2-, 5-, and 14-month follow-ups, study staff again email participants their ID number, instructions, and a link to the *Follow-Up Questionnaire*, asking them to complete it online. Once the email is sent, study staff also communicate by text (and other methods as needed) to let the participant know to check their email for instructions and a link to the next questionnaire. Participants have 30 days after the 2-month follow-up "due date" and three months after the 5- and 14-month follow-up questionnaire "due dates" to complete their follow-up.

[19] PRG has conducted eight individual-level RCTs that have involved follow-up of different adolescent populations. In each of these PRG successfully achieved follow-up rates for the full samples of 77% or higher at all time points. In recently completed individual-level RCTs with equivalent follow-up time points, PRG achieved a 96% follow-up rate 3 months post baseline and a 94% follow-up rate nine months post baseline for a sample of 1,770 female adolescents aged 18–19. In another trial, our team achieved a 77% follow-up rate 12 months post baseline for a sample of 631 youth aged 14–19 involved in the juvenile justice system. Our anticipated response rates for this evaluation are informed by our experiences from all of these trials.

Participant recruitment and enrollment (baseline period) occurred over 30 months – from October 2022 to April 2025. The 2-month follow-up period will occur over 31 months – from December 2022 to July 2025. The 5-month follow-up period will occur over 33 months – from March 2023 to December 2025. The 14-month follow-up period will occur over 33 months – from December 2023 to September 2026.

Table 6. Data Collection for Primary and Secondary Research Questions

Impact Research Question	Data Source	Sample	Party Responsible for Data Collection	Data Collection Method	Timing
3, 5, 7, 9, 11, 13, 31, 33, 39, 41, 43, 46, 50, 53, 56, 59	2-Month Follow-up Participant Questionnaire	All treatment and control group participants	PRG research coordinators	Online participant self-administered Qualtrics questionnaire	Immediate post intervention (2 months after enrollment)
4, 6, 8, 10, 12, 14, 15, 17, 19, 21, 23, 25, 27, 32, 34, 35, 40, 42, 44, 47, 51, 54, 57, 60	5-Month Follow-up Participant Questionnaire	All treatment and control group participants	PRG research coordinators	Online participant self-administered Qualtrics questionnaire	Three months after the end of the 2-month intervention period (5 months after enrollment)
16, 18, 20, 22, 24, 26, 28, 30, 36, 38, 45, 48, 49, 52, 55, 58. 61	14-Month Follow-up Participant Questionnaire	All treatment and control group participants	PRG research coordinators	Online participant self-administered Qualtrics questionnaire	Twelve months after the end of the 2-month intervention period (14 months after enrollment)

The costs associated with obtaining the data necessary to answer our primary research questions are those pertaining to study staff time and incentive distribution, all of which have been incorporated into our grant budget.

PRG is executing a comprehensive follow-up plan (described in detail above) to retain all study participants (treatment and control) that: (1) educates and engages study participants; (2) collects comprehensive participant contact information (using methods described below) and verifies its accuracy; (3) maintains contact with study participants between follow-up data collection points (using regular email, social media, and phone reminders) and detects and corrects invalid contact information; and (4) confirms follow-up data collection time points with participants. Additional procedures designed to reduce non-response include: the use of gift card incentives to complete each questionnaire (baseline, 2-month follow-up, 5-month follow-up, and 14-month follow-up); careful presentation of the survey by research coordinators that details the importance of the survey and confidentiality procedures; and offering respondents multiple modes of survey completion (i.e., online, mail, or phone interview). All proposed methods have been IRB-approved. Based on past survey response rate data from similar studies, our detailed follow-up protocols, and the slightly shorter follow-up periods, we are aiming to collect outcome data from at least 90% of treatment and control participants at all follow-up time points.

2.4.2 SPECIFIC MEASURES, TOOLS, AND INSTRUMENTS

Table 7 provides details on the outcome measures that will be used to answer our primary and secondary research questions, with a rationale for why each measure has been chosen. Reproductive health behavioral outcome measures have been selected from national surveys and youth-focused studies that have been identified in the *PREP Evaluation Outcome Domains and Measures Guide* by the PREP LES team as reputable sources for measures. For many of these measures, psychometric properties are not available and are thus not included in the table below.

The scale measures we will use in this evaluation have originated from scales that have been published in the literature and assessed for performance. However, we have largely modified these scales to meet the needs of this particular evaluation. More specifically, our instrument design and measurement review process involves the following steps implemented over the course of the study:

1. First, prior to constructing the questionnaire, we worked with the intervention developer to clearly define each construct in the logic model as they understand it. Next, we conducted a robust review of the literature to identify scales that have been tested and used to measure each construct. We then reviewed the usage and content of the measures to assess the extent to which they align with the construct, as conceptualized in the logic model. In some instances, published scales did not capture the constructs as defined in the logic model; in these cases, we combined measures, selecting items from two or more measures that best reflect the conceptualization of the construct for YUP!. Additionally, at times the published scales were long. To ensure the questionnaire (which aims to measure a multitude of outcomes) is not overly burdensome for participants, we removed some items from existing measures.
2. Next, we conducted cognitive interviews with a sample of individuals from the target population to improve readability, interpretation, and understanding of instrument directions, questions, and response options. We then made appropriate modifications to the questionnaire based on their feedback to create the final version of the questionnaire.
3. Next, during the pilot of the intervention, we field-tested the questionnaire – assessing appropriateness and acceptability of length.
4. Once all baseline data have been collected during the full impact study, we will review all scale measures, examine scale dimensionality, and assess internal consistency of unidimensional scales. For each scale measure, we will present Cronbach's alpha as a measure of internal consistency in our final report.

Table 7. Specific Measures for Primary and Secondary Research Questions

Outcome (Domain)	Measure(s)	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
Contraceptive use	Current use of effective, non-barrier contraception Consistent use of effective non-barrier contraception Frequency of emergency contraceptive use	YUP! aims to encourage uptake of effective, non-barrier contraception by providing written and video content that offers knowledge about available methods and demonstrates young parents successfully using non-barrier contraception to prevent unplanned repeat pregnancies. The content aims to provide factual information, build confidence in an individual's ability to use contraception, and identify the positive outcomes associated with contraceptive use.	Individuals who are biologically able to become pregnant	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	Office of Adolescent Health. Teen Pregnancy Prevention 2015 Performance Measures (2022, August 12). https://opa.hhs.gov/sites/default/files/2020-07/tier2-survey-questions.pdf
	Use of effective non-barrier contraception during last vaginal sex		Women aged 15–44	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	U.S. Centers for Disease Control and Prevention's National Center for Health Statistics. National Survey of Family Growth. (22, August 12). https://www.cdc.gov/nchs/nsfg/nsfg-questionnaires.htm
	Contraceptive knowledge		Unmarried women and men aged 18–29	Nationally representative sample of 1,800 unmarried 18–29-year-old women and men in the United States - For all of the contraceptive behaviors except inconsistent use, the objective knowledge domain explained 10–13% of the variance among women when entered alone, and 6–9% of the variance beyond that explained by the background variables.	Frost, J. J., Lindberg, L. D., & Finer, L. B. (2012). Young adults' contraceptive knowledge, norms and attitudes: Associations with risk of unintended pregnancy. *Perspectives on Sexual and Reproductive Health*, *44*(2), 107–116.

Table 7. Specific Measures for Primary and Secondary Research Questions (Continued)

Outcome (Domain)	Measure(s)	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
Contraceptive use	Contraceptive use self-efficacy		Women aged 18–40 years	The final 8-item scale was determined based on acceptable internal consistency within the pilot sample (Cronbach's alpha 0.71).	Hamidi, O. P., Deimling, T., Lehman, E., Weisman, C., & Chuang, C. (2018). High self-efficacy is associated with prescription contraceptive use. *Women's Health Issues*, *28*(6), 509–513. https://doi.org/10.1016/j.whi.2018.04.006
	Contraceptive use outcome expectations		Individuals aged 18–58 accessing STD clinics throughout the United States	The Cronbach's alpha coefficient for the *Outcome Expectancy Scale* was 0.88.	Diiorio, C., Maibach, E., O'Leary, A., Sanderson, C. A., & Celentano, D. (1997). Measurement of condom use self-efficacy and outcome expectancies in a geographically diverse group of STD patients. *AIDS Education and Prevention*, *9*(1), 1–13.
	Frequency of vaginal sex without a condom in past 3 months Use of condoms during last vaginal sex Frequency of completely unprotected vaginal sex in past 3 months	YUP! aims to decrease vaginal sex acts that are not protected by a condom by providing written and video content that offers knowledge about condom use and demonstrates young parents successfully discussing and negotiating condom use to prevent STIs. The content aims to provide factual information, build confidence in an individual's ability to use condoms, and identify the positive outcomes associated with condom use.	Individuals who are engaging in vaginal sex Individuals who are engaging in vaginal sex	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	Office of Adolescent Health. Teen Pregnancy Prevention 2015 Performance Measures (2022, August 12). https://opa.hhs.gov/sites/default/files/2020-07/tier2-survey-questions.pdf Noar, S. M., Cole, C., & Carlyle, K. (2006). Condom use measurement in 56 studies of sexual risk behavior: Review and recommendations. *Archives of Sexual Behavior*, 35(3), 327–345. Fonner, V. A., Kennedy, C. E., O'Reilly, K. R., & Sweat, M. D. (2014). Systematic assessment of condom use measurement in evaluation of HIV prevention interventions: Need for standardization of measures. *AIDS and Behavior*, *18*(12), 2374–2386. https://doi.org/10.1007/s10461-013-0655-1
	Use of no effective contraception during last vaginal sex Use of dual methods of protection during last vaginal sex		Women aged 15–44	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	U.S. Centers for Disease Control and Prevention's National Center for Health Statistics. National Survey of Family Growth. (22, August 12). https://www.cdc.gov/nchs/nsfg/nsfg-questionnaires.htm

Table 7. Specific Measures for Primary and Secondary Research Questions (Continued)

Outcome (Domain)	Measure	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
Contraceptive use	Condom knowledge		Unmarried women and men aged 18–29	Nationally representative sample of 1,800 unmarried 18–29-year-old women and men in the United States. - For all of the contraceptive behaviors except inconsistent use, the objective knowledge domain explained 10–13% of the variance among women when entered alone, and 6–9% of the variance beyond that explained by the background variables.	Frost, J. J., Lindberg, L. D., & Finer, L. B. (2012). Young adults' contraceptive knowledge, norms and attitudes: Associations with risk of unintended pregnancy. *Perspectives on Sexual and Reproductive Health*, *44*(2), 107–116.
	Condom negotiation self-efficacy		6,213 multiethnic high school students from Texas and California	The Cronbach's alpha coefficient for the *Condom Negotiation Self-Efficacy Scale* was 0.66.	Basen-Enquist, K., Mâsse, L. C., Coyle, K. Kirby, D., Parcel, G. Banspach, S., & Nodora, J. (1996). Sexual risk behavior beliefs and self-efficacy scales. In T. D. Fisher, C. M. Davis, W. L. Yarber, & S. L. Davis (Eds.), (2010). *Handbook of sexuality-related measures* (3rd ed.) (pp. 588–591). Routledge.
	Condom use outcome expectations		Individuals aged 18–58 accessing STD clinics throughout the United States	The Cronbach's alpha coefficient for the *Outcome Expectancy Scale* was 0.88.	Diiorio, C., Maibach, E., O'Leary, A., Sanderson, C. A., & Celentano, D. (1997). Measurement of condom use self-efficacy and outcome expectancies in a geographically diverse group of STD patients. *AIDS Education and Prevention*, *9*(1), 1–13.
STIs or HIV	STI acquisition in past 3 or 12 months STI testing in past 3 or 12 months	YUP! aims to increase frequency of STI testing and decrease acquisition of STIs by providing written and video content that offers knowledge about condom use and demonstrates young parents successfully obtaining STI testing. The content aims to provide factual information and build confidence in an individual's ability to get tested for STIs.	Adolescents who are engaging in sex	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	Harris, K. M., &, Udry, J. R.. National longitudinal study of adolescent to adult health (add health), 1994–2008 [Public Use]. Carolina Population Center, University of North Carolina-Chapel Hill [distributor], Inter-university Consortium for Political and Social Research [distributor] (2018, August 6). https://doi.org/10.3886/ICPSR21600.v21

Table 7. Specific Measures for Primary and Secondary Research Questions (Continued)

Outcome (Domain)	Measure	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
STIs or HIV	STI knowledge		Pilot conducted with 50 college students and full test conducted with 391 college students	The full 27-item *STD-Knowledge Questionnaire* demonstrated internal consistency (α = .86) and test–retest reliability (r = .88) over a brief period.	Jaworski, B. C., & Carey, M. P. (2007). Development and psychometric evaluation of a self-administered questionnaire to measure knowledge of sexually transmitted diseases. *AIDS and Behavior*, *11*, 557–574. https://doi.org/10.1007/s10461-006-9168-5
	STI testing self-efficacy		1,294 sexually active university students	(Not reported – reliability will be assessed during analytic phase)	Martin-Smith, H. A., Okpo, E. A., & Bull, E. R. (2018). Exploring psychosocial predictors of STI testing in university students. *BMC Public Health*, *18*, 664. https://doi.org/10.1186/s12889-018-5587-2
Pregnancy	Report of pregnancy during evaluation period Report of unintended pregnancy during evaluation period Pregnancy fatalism	YUP! aims to decrease repeat pregnancy in young parents by providing written and video content that offers knowledge and contraceptive and condom use and demonstrates young parents successfully protecting themselves from repeat pregnancy. The content aims to provide factual knowledge and build confidence in their ability to use protection and control their trajectory.	Individuals who are biologically able to become pregnant	(Behavioral measure identified from resources provided in *PREP Evaluation Outcome Domains and Measures Guide*)	Harris, K. M., & Udry, J. R. National longitudinal study of adolescent to adult health (add health), 1994–2008 [Public Use]. Carolina Population Center, University of North Carolina-Chapel Hill [distributor], Inter-university Consortium for Political and Social Research [distributor] (2018, August 6). https://doi.org/10.3886/ICPSR21600.v21
			4,634 U.S. women aged 18–39 at baseline	(Not reported – reliability will be assessed during analytic phase)	Jones, R. K. (2018). Is pregnancy fatalism normal? An attitudinal assessment among women trying to get pregnant and those not using contraception. *Contraception*, *98*(4), 255–259. https://doi: 10.1016/j.contraception.2018.05.015

Table 7. Specific Measures for Primary and Secondary Research Questions (Continued)

Outcome (Domain)	Measure	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
Self-care	Self-care self-efficacy	YUP! aims to increase young parents' overall sense of well-being by providing written and video content showing ways that young parents take care of themselves. The content aims to build confidence in their ability to take care of themselves. YUP! also provides connection to an online community of other young parents and by doing so aims to offer them with a sense of social support that they may not have in their communities and reduce the perceived stigma they may feel as young parents.	Patients with cancer	Cronbach's alpha: 0.76–0.92	Lev, E. L., & Owen, S. V. A measure of self-care self-efficacy. (1996). *Research in Nursing & Health*, *19*(5), 421–429. doi:10.1002/(SICI)1098-240X(199610)19:5<421:AID-NUR6>3.0.CO;2-S
Stigma	Perceived stigma		HIV+ youth	Cronbach's alpha: 0.75	Wright, K., Naar-King, S., Lam, P., Templin, T., & Frey, M. (2007). Stigma scale revised: Reliability and validity of a brief measure of stigma for HIV+ youth. *Journal of Adolescent Health*, *40*(1), 96–98. https://doi:10.1016/j.jadohealth.2006.08.001
Social support	Perceived social support		College students	Cronbach's alpha for WB-Pro: 0.81–0.93	Items are adapted from the following sources: Marsh, H. W., Huppert, F. A., Donald, J. N., Horwood, M. S., & Sahdra, B. K. (2020). The well-being profile (WB-Pro): Creating a theoretically based multidimensional measure of well-being to advance theory, research, policy, and practice. *Psychological Assessment*, *32*(3), 294–313. https://psycnet.apa.org/doiLanding?doi=10.1037%2Fpas0000787 (Supplemental). Russell, D. , Peplau, L. A,. & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, *42*, 290–294.
Well-being	Perceived sense of well-being		Adolescents ages 10–18	Cronbach's alpha range for the well-being as it relates to optimism scale: .65–.85	Kern, M. L., Benson, L., Steinberg, E. A., & Steinberg, L. (2016). The EPOCH measure of adolescent well-being. *Psychological Assessment*, *28*(5), 586.

Table 7. Specific Measures for Primary and Secondary Research Questions (Continued)

Outcome (Domain)	Measure	Rationale for Selection	Intended Respondents	Psychometric Information	Citation(s)
Goals	Goal-setting self-efficacy	YUP! aims to increase young parent's abilities to achieve their personal goals by providing written and video content showing ways that young parents identify and work toward their goals and by offering a goal-setting tool, which helps users to monitor progress toward set goals. The aim of this content is to build confidence in young parents' perceived abilities to achieve their goals.	College students	Cronbach's alpha for this scale in the academic domain was found to be 0.87.	Singley, D. B. (2005). *Longitudinal prediction of domain satisfaction and global life satisfaction: Test of a social cognitive model* (Publication No. 3178564). [Doctoral dissertation, University of Maryland]. ProQuest Dissertations and Theses Global. Karoly, P., & Ruehlman, L. S. (1995). Goal cognition and its clinical implications. *Assessment*, *2*(2), 113–129. https://doi.org/10.1177/107319119500200202
	Goal attainment		Adolescents ages 12–17	Development of scale involved: reviewing the literature for extant measures for items to test and synthesizing the existing research into consensus definitions for each construct; conducting cognitive testing of items with adolescents and their parents; pilot testing the items; and conducting psychometric analyses.	Lippman, L. H., Moore, K. A., Guzman, L., Ryberg, R., McIntosh, H., Ramos, M. F., Caal, S., Carle, A., & Kuhfeld, M. (2014). Flourishing children: Defining and testing indicators of positive development. (Child Trends, Springer).
Parenting competence	Perceived parenting competence	YUP! aims to increase young parents' perceived sense of their parenting competence by providing written and video content that aims to build their knowledge about parenting, and by connecting them to an online community of other young parents who can help encourage and support them in their parenting responsibilities.	110 parenting individuals	Reported internal consistencies of two subscales are 0.75 (Satisfaction scale) and 0.76 (Efficacy scale):	Ohan, J. L., Leung, D. W., & Johnston, C. (2000). The parenting sense of competence scale: Evidence of a stable factor structure and validity. *Canadian Journal of Behavioural Science/Revue Canadienne des Sciences du Comportement*, *32*(4), 251–261.

2.5 ANALYSIS

2.5.1 DATA PREPARATION

OUTLIERS AND INCONSISTENCIES

Prior to beginning analysis, we will complete a data screening process to identify invalid, unreliable, outlying, and inconsistent values. Our benchmark approach is to include outlying values, inconsistent values, and data that have been determined at a certain time point to be unreliable. [20] We will re-code invalid values to missing. Details of our data cleaning steps and rationale for our missing data approach are outlined below.

i. **Item-Level Procedures.** Data cleaning begins with a thorough review of all questionnaire items. The goal of item-level procedures is to prepare data for analytic variable construction. To this end, we ensure data are as complete as possible and that all recorded values are valid.
   a. **Identify and flag invalid responses:** The first step in the data screening process is to inspect the data for instances in which responses are invalid because they are outside of a predetermined range of plausible or acceptable values. Each questionnaire type (e.g., baseline, follow-up) has a codebook, prepared by a PRG staff person, that contains variable names, prespecified and valid variable values or ranges of values, and when applicable, value labels. [21] Referring to the codebook, a research analyst performs diagnostics in Stata to ensure that values for all variables used in analysis are valid (i.e., data are within ranges specified in the codebook). A data analyst inspects the data using two commands in Stata. First, the analyst uses the command *sum variable_name,* which provides summary statistics (mean, minimum, maximum, standard deviation) for all numeric variables. The analyst checks that the minimum and maximum values are valid. If this command reveals there are values out of range, the analyst then inspects the data using the command, *tab variable_name, missing*, which provides a frequency table of all values (including missing values) so the analyst can identify and flag all values that are out of range as invalid and re-code these values to missing (coded as ".k"). Data that are re-coded to missing are treated according to our missing data approach (see Missing Data section below). Briefly, our benchmark approach is to impute missing baseline data and include in analysis; we exclude observations with missing outcome data from analysis.
   b. **Assess missingness:** The second step in the data screening process is to assess missingness. In this step, a research analyst reviews and reports the prevalence of unit and item missingness (which results from nonresponse) for both treatment and control samples.
   c. **Conduct logical data edits:** The third step is to determine if logical edits are possible for any variables that may have missing values due to skip patterns and nonresponse

[20] With regard to the potential for inconsistent responses, during instrument construction, the study team considered what types of questions may lead to inconsistencies – both internal (within the same instrument) and over-time (across instrument) inconsistencies. To avoid internal inconsistencies in our primary outcomes, we built skip patterns into the online questionnaire. If participants indicate they have not recently had a particular type of sex, they are skipped out of more specific questions related to that type of sex. If they state they have not recently had STI testing, they are then skipped out of a question asking whether the STI testing was positive or not. In addition, participants are precluded from indicating they had a particular type of sex without a condom more times than they said they had that type of sex. Furthermore, given the eligibility criteria for this study require participants to be recently sexually active, there was not a need to ask questions about whether participants have ever had certain types of sex; as a result, there are no items in the instrument that offer the potential for over-time inconsistencies to exist.

[21] Regardless of whether data are nominal, ordinal, or continuous, all response options are coded in Stata as numeric values; values are labeled according to corresponding category names when data are nominal or ordinal.

and logically edit where that may be the case. [22] We will not logically edit where the missing values are previously determined to be invalid.

ii. **Analytic Variable Level Procedures.** After review and updates to individual items, we construct our analytic variables and review resulting measures for outliers. [23] Outliers are values that are extreme compared to other observations but are not plainly invalid. In the data cleaning process, we inspect outliers so that we can try to ascertain whether they are in fact true (or plausible) values or potentially a result of measurement error. The only variables for which we inspect outliers are those used in the construction of our outcome variables (frequency of having vaginal sex without condoms, frequency of having vaginal sex without being protected by some form of non-barrier contraceptive or condom, and frequency of using emergency contraception after vaginal sex) because they have no upper limit (all other variables used in analysis are either categorical or have predicated upper and lower bounds). Our approach is to identify and flag potentially influential observations in our data.

Our benchmark analytic approach is to include data flagged as outliers in analysis, because we do not know for certain whether the values are true or invalid. However, we also run sensitivity analyses that exclude these data and report substantive differences from the benchmark approach in our findings.

iii. **Instrument Level Procedures.** Once analytic variables have been constructed and reviewed, we review entire cases to determine if they are reliable and conduct dummy variable adjustment on our baseline analytic variables.

a. **Identify and flag unreliable cases:** The final step in the data screening process is to identify and flag entire cases (i.e., entire questionnaires) that are unreliable. By unreliable, we mean that we have sufficient reason to believe that the respondent's answers are not honest representations of their behaviors, knowledge, and beliefs. Cases are considered to be unreliable if the participant indicates they have not been honest in responding to the questionnaire, if Qualtrics flags them as fraudulent, or if project staff indicate in the project logs specific issues encountered during data collection that are cause for treating a case as unreliable. Participants are asked the following question on the participant questionnaire to assess their level of honesty: "*Have you been as honest as possible in responding to all of the questions in this questionnaire?*" Persons who indicate *No*, *none of the time* are flagged as unreliable. Each suspected unreliable case is reviewed by the senior analyst for a final determination of reliability. Data for cases that are deemed unreliable are included in the benchmark analyses. However, sensitivity analyses that exclude the unreliable data will be conducted and any substantive differences from the benchmark approach will be noted in our findings.

[22] PRG's general approach to logically editing a specific variable is to use as few other variables as possible. Variables that are missing due to a skip pattern are updated, when possible, to a logical value. For variables in which an item should have been answered, but was not, we use only the variable that directly preceded it to inform and update its value, when possible.

[23] After constructing our analytic variables, we conduct the first step of the data review again (identify and flag invalid responses). Although this has already been done at the item level, this additional check ensures that variables are properly constructed.

b. **Adjustment of baseline data:** In the final step of the data cleaning process, we determine if any individuals who are in the randomized sample (for each outcome) are missing baseline covariates or the baseline measure of the outcome variable. If this is the case, our benchmark approach is to use dummy variable adjustment procedures. For dichotomous variables, we code missing data to zero; for continuous or count variables, we code missing data to the mean of non-missing observations. We also construct dummy indicators to identify missing cases imputed to the constant/mean value and we adjust estimates by including these dummy indicators in our analytic models.

MISSING DATA

For each outcome sample, we will employ case-wise deletion for any respondent who did not provide complete responses to all items necessary for the outcome measure; no outcome data will be imputed. Missing data due to nonresponse or skip patterns will be updated through logical editing when possible, and missing baseline covariate and baseline outcome data will be imputed using dummy variable adjustment (see Adjustment of baseline data section above). We also create indicators to identify records where dummy variable adjustment has been used to address missing baseline values. Details of our rationale for our missing data approach are outlined below. In addition, we will assess the robustness of these analytic decisions with sensitivity analyses and report on any substantive inconsistencies, as detailed in the 2.5.8 Sensitivity Analysis section.

i. **Missing data approach:** Assuming that our study design and procedures are sound, missing data pose perhaps the greatest threat to the internal validity of our RCT study and the ITT framework (Moher et al., 2010; Puma et al., 2009).[24] Randomization at the point of offer allows us to make causal statements about the effect of that offer because treatment and comparison samples are equal in expectation. For the ITT framework to remain internally valid, however, the treatment and comparison groups must remain equal in expectation at the point of analysis. When the analytic sample is diminished by attrition or nonresponse, nonrandom differences (i.e., self-selecting) between the treatment and comparison groups may be introduced into the sample and estimates of program impacts may become biased. Although there is no consensus on how to resolve this, practical guidance on how to address and mitigate the problems associated with missing data have been published in education literature (Puma et al., 2009). Our six-step decision process for addressing this problem, as detailed below, is informed by this guidance. These steps (which are incorporated into our data cleaning procedures) articulate how we will deal with missing outcome and baseline/covariate data. The benchmark approach that we have selected aims to mitigate the introduction of bias into our impact estimates and maximize the use of available data by adjusting missing baseline/covariate data. To test the robustness of this approach, and to verify these findings, we will report comparative findings using sensitivity analyses that also employ an alternative method which includes no adjustment.

    a. Using data cleaning procedures outlined in the Outliers and Inconsistencies section, identify potentially outlying, unreliable, and invalid data in any analytic (i.e., outcome or baseline/covariate) variables. Re-code invalid data as missing, and flag outlying and

[24] Moher, D., Hopewell, S., Schulz, K. F., Montori, V., Gøtzsche, P. C., Devereaux, P. J., Elbourne, D., Egger, M., & Altman, D. G. (2010). CONSORT 2010 explanation and elaboration: Updated guidelines for reporting parallel group randomised trials. *BMJ*, *340*, c869. Puma, M. J., Olsen, R. B., Bell, S. H., & Price, C. (2009). *What to do when data are missing in group randomized controlled trials* (NCEE 2009-0049). National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

unreliable data for sensitivity analyses.[25]

b. Report prevalence of unit and item missingness (which result from nonresponse and invalid data) for both treatment and control samples.[26]

c. Determine if logical edits are possible for any analytic variables that may have missing values (due to skip patterns or nonresponse) and logically update missing values where this is the case. We will not logically impute where the missing values are previously invalid.

d. Determine if any individuals who are in the randomized sample (for each outcome) do not have outcome data at the follow-up time point. If this is the case, our proposed benchmark approach is to use case deletion, as we feel it is the most straightforward and prudent approach for missing follow-up data recommended in Puma et al. (2009). These cases will be deleted from the analytic sample and attrition statistics will be reported.

e. Determine if any individuals who are in the analytic sample (for each outcome) are missing baseline covariates or the baseline measure of the outcome variable. If this is the case, our proposed benchmark approach is to use dummy variable adjustment procedures, as we feel it is the most straightforward and prudent approach for missing baseline/covariate data recommended in Puma et al. (2009).

f. Conduct sensitivity analyses by estimating results with missing baseline data excluded from the analysis (i.e., use case-wise deletion for all cases with missing baseline and outcome data). In our analytic write-up, we will report our benchmark results next to the sensitivity analysis results to verify findings.

2.5.2 APPROACH TO HYPOTHESIS TESTING

EVIDENCE THRESHOLDS

The prespecified cutoff for statistical significance for primary and secondary contrasts will be $p < .05$. All hypothesis tests will be two-sided.

STRATEGY FOR DEALING WITH MULTIPLE COMPARISONS

We will adjust for multiple comparisons in our primary outcome analyses, regardless of outcome domains. We propose to use the Benjamini-Hochberg method.[27] This method controls for the false discovery rate (FDR), which is the expected value of the number of false positive tests divided by the total number of significant tests within a family of tests. The following procedures will be used to implement this adjustment:

i. The p-values generated by our models of the effect of the intervention on our two primary outcome measures will be ranked from smallest to largest, indexed by i (where $i = 1$ for the smallest p-value and $i = k$ for the largest p-value).

ii. Beginning with the largest p-value (p_{k1}), we will assess if $p_{k1} < ((i/m)\alpha^{*})$, where m = the total

[25] We will code missing responses with a unique missing code that identifies or flags these missing values according to the reason they are missing (i.e., nonresponse, invalid, inconsistent). See the *Outliers and Inconsistencies* section for details on how missing data are coded.
[26] For item missing values, we will only report prevalence of missing data for variables that are included in our model specifications and could therefore influence the constitution of the analytic sample.
[27] This method has been selected because it helps to control the Type 1 error rate without also increasing the Type 2 error rate, which in our view is a serious consideration in preliminary efforts to identify evidence of effectiveness of new approaches. Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. Journal of the royal statistical society. Series B (Methodological), 289-300.

number of tests conducted, and a^* = the initial significance value at which we would reject the null hypothesis and the level of false discovery we are willing to accept (in this case, 0.05). The null hypothesis will be rejected and the test will be considered statistically significant if $p_{k1} < ((i/m)a^*)$. If $p_{k1} < ((i/m)a^*)$, all smaller p-values in the list will also be considered statistically significant and the null hypothesis will be rejected for each test. If $p_{k1} \geq ((i/m)a^*)$, the null hypothesis will hold, the test will not be considered statistically significant, and the next largest p-value in the ranked list will be assessed.

iii. If the 1st p-value is not statistically significant, the 2nd largest p-value in the list (p_{k2}) will be compared against $(i/m)a^*$. The null hypothesis will be rejected and the test will be considered statistically significant if $p_{k2} < ((i/m)a^*)$. If $p_{k2} < ((i/m)a^*)$, all smaller p-values in the list will also be considered statistically significant and the null hypothesis will be rejected for each test. If $p_{k2} \geq ((i/m)a^*)$, the null hypothesis will hold, the test will not be considered statistically significant, and the next largest p-value in the ranked list will be assessed.

We will not adjust for multiple comparisons in our secondary outcome analyses because they are exploratory in nature.

As a sensitivity analysis, we will follow the approach recommended in the *What Works Clearinghouse Procedures and Standards Handbook, Version 5.0*.[28] Specifically, we will create a domain-level composite finding and assess the statistical significance of this composite against the impact estimates generated for each of our primary outcomes using the benchmark approach. Any substantive differences between these findings will be discussed within the report.

2.5.3 ATTRITION AND BASELINE EQUIVALENCE

ATTRITION

Overall and differential attrition will be calculated using the full sample of participants enrolled in the study. Our plan for calculating attrition is described in this section.

[28] What Works Clearinghouse. (2022). *What Works Clearinghouse procedures and standards handbook* (Version 5.0).

Calculation of attrition

Attrition in treatment group:

$$Attrition_{participant}\,T = 1 - \left(\frac{Assessed_{participant}T}{Base_{participant}T}\right)$$

Attrition in control group:

$$Attrition_{participant}\,C = 1 - \left(\frac{Assessed_{participant}C}{Base_{participant}C}\right)$$

Overall participant level attrition:

$$Attrition_{participant} = 1 - \left(\frac{Assessed_{participant}}{Base_{participant}}\right)$$

Differential attrition:

$$Attrition_{t-c} = abs(Attrition_{participant}\,T - Attrition_{participant}\,C)$$

Where:

$Base_{participant}T$ = the number of enrolled study participants randomly assigned to the treatment group

$Assessed_{participant}T$ = the number of enrolled study participants assigned to the treatment group who reported outcome data at a particular time point

$Base_{participant}C$ = the number of enrolled study participants randomly assigned to the control group

$Assessed_{participant}C$ = the number of enrolled study participants assigned to the control group who reported outcome data at a particular time point

ASSESSING BASELINE EQUIVALENCE

Baseline equivalence will be reported for all baseline measures of each outcome variable as well as relevant demographic measures. We first list and describe the measures we will use to examine the equivalence of our treatment and control groups at baseline. After we identify the measures, we provide details on the diagnostic methods that we will use to assess any baseline differences that may exist between the treatment and control groups in the measures outlined below.

Demographic Measures

Baseline equivalence will be assessed for three demographic variables. Age is constructed from data gathered by PRG study coordinators in the ESF. Race and ethnicity are constructed using participants' responses to questions in the baseline *Participant Questionnaire*. For the race variables, categorical responses to a single question are used to create multiple

dichotomous variables. We provide details about variable construction in Table 8 of the section 2.5.4 Analytic Approach, Covariates below.

- Age at screening (continuous; range 15 to 20)[29]
- Race[30]
- Ethnicity[31]

Baseline Outcome Measures

In addition to select demographic variables, we will assess equivalency on the baseline outcome measures. We provide details on variable coding below; additional information about variable construction can be found in Table 8.

- *Current use of effective non-barrier contraception* at baseline (dichotomous; values of 0 or 1, where 0 = not currently using effective non-barrier contraception and 1 = currently using effective non-barrier contraception)
- *Frequency of having vaginal sex without condoms in the past three months* at baseline (continuous; values range 0 to *k*, where 0 = has had vaginal sex without condoms 0 times in past three months and *k* = number of times having vaginal sex without condoms in past three months)

Balance Assessment Methods

We propose to assess baseline equivalence of the treatment and control groups according to a multistep procedure. Baseline equivalence statistics will be produced for each analytic sample.[32] Only participants who provide sufficient baseline and primary outcome data (i.e., non-missing) will be included in the test for baseline equivalence of the analytic sample for the specified outcome; thus, the analytic sample used for each research question may vary slightly because of the exclusion of nonresponders.[33] We will report the standardized mean difference of each baseline variable for the treatment and control groups.[34]

To establish baseline equivalence, we propose to generate model-based point estimates of the difference between the treatment and control group means for the identified baseline equivalence variables. We will report the difference between the adjusted means of the baseline variable of interest for the treatment and control groups. We will then compute the pooled standard deviation of these variables. Finally, we will produce a standardized

[29] In the screening form, participants are asked, "*How old are you right now?*".

[30] At baseline, participants are asked, "*What is your race?"* and are provided with a list of the following response options: *American Indian or Alaska Native*, *Asian*, *Black or African American*, *Native Hawaiian or Other Pacific Islander*, *White or Caucasian*, or *Other (specify)*. Participants can select more than one category and they can also specify some other race. This item is used to create multiple race dummy variables indicating individuals who identify as a single race or as Multiracial.

[31] At baseline, participants are asked, "*Are you Hispanic or Latino?*" and are provided with *yes* or *no* response options. This item is used to create one dummy variable indicating individuals who identify as Hispanic/Latino or not.

[32] Due to item-missing outcome data, we expect there may be slight differences in analytic samples for each research question.

[33] Note that our benchmark approach is to produce diagnostic estimates of baseline equivalence on the sample of observations that have non-missing baseline and outcome data, without any adjustments to missing baseline data. We will conduct a sensitivity test, however, that calculates baseline equivalence using the exact same samples of observations that we will use in our primary analysis by applying the missing data approach outlined in the 2.5.*1* Data Preparation, Missing Data section.

[34] Mathematica Policy Research. (2023). *Identifying programs that impact teen pregnancy, sexually transmitted infections, and associated sexual risk behaviors: Review protocol* (Version 7.0).

difference of means by dividing the first term by the second. The steps for establishing baseline equivalence using standardized mean difference are outlined below:

Step 1. First, we generate a model-based estimate of the difference between treatment and comparison groups on the baseline measures identified above. Separate models will be run for each of the baseline variables. The empirical model will be estimated using Ordinary Least Squares regression (OLS) (in Stata). If the measure is dichotomous, we propose to use a Linear Probability Model to estimate the predicted probability of group membership. The model is a reduced-form variation of the model that we use to estimate program impact.[35]

$$Y_{baseline} = \beta_0 + \beta_1 T + \sum(\beta_n D_n) + \varepsilon$$

where:

$Y_{baseline}$ – is the baseline measure of the variable that we use to establish equivalency. This variable is included as a covariate in the benchmark analytic model. Separate models will be estimated for each baseline measure specified above.

β_0 – The intercept term, which represents the adjusted mean value of the baseline measure for participants in the control sample, with all other variables in the model held constant at zero.

β_1 – This represents the adjusted (but not standardized) mean difference in the baseline variable between treatment and control participants.

T - A dummy treatment indicator variable whose value equals 1 if the participant is randomized into the treatment group and zero otherwise.

D – An n-1 vector of blocking variables (i.e., subgroups within which random assignment occurred), where n represents the study coordinator who enrolled each participant. For each of these n coordinator blocks, we include in the baseline equivalence model a dummy indicator variable that will identify whether a study participant was randomized within that block (1) or not (0).

ε – The residual or random variation that remains for each observation after the structural components of the model are estimated. It is the difference between the observed and the predicted values at the individual level.

Step 2. Report the adjusted means of the differences in the baseline variable of interest for the treatment and control groups.

Step 3 (continuous variables only). If the baseline measure is continuous, we propose using the following formula to calculate the pooled within-group standard deviation of the outcome measure:

$$S_p = \sqrt{\frac{(n_t - 1)S_t^2 + (n_c - 1)S_c^2}{(n_t + n_c - 2)}}$$

[35] It is a reduced form because individual-level, demographic covariates are omitted. It is a variation because the dependent variable is the baseline equivalence variable, not the outcome measure.

where: nt and nc are the sample sizes, and St and Sc are the participant-level standard deviations for the baseline measures for the analytic treatment and comparison groups, respectively. We will produce separate calculations of the pooled standardized deviation for each variable used to establish baseline equivalence (as noted above).

Step 4. Produce the standardized difference of means. If the pre-intervention measure is continuous, we will use the formula for Hedges' *g* to compute the standardized difference of means for the treatment and comparison groups:

$$g = \frac{\beta_1}{S_p}$$

where: $\beta 1$ is the adjusted mean difference in the variable selected to establish baseline equivalence for the treatment and comparison groups (calculated in Step 1), and S_p is the pooled standard deviation (produced in Step 3).

For dichotomous baseline variables we will use the Cox Index, which yields effect size values similar to the values of Hedges' *g* that one would obtain if group means, standard deviations, and sample sizes were available, assuming the dichotomous outcome measure is based on any underlying normal distribution. Following this guidance, we propose to use the Cox Index to estimate baseline equivalence for dichotomous baseline covariates. The formula is as follows:

$$d_{Cox} = \left[ln\left(\frac{p_t}{1-p_t}\right) - ln\left(\frac{p_c}{1-p_c}\right) \right] \Big/ 1.65$$

where: pt and pc represent the probability of occurrence of the event (or characteristic) within the treatment and comparison groups, respectively.

2.5.4 ANALYTIC APPROACH

MODELING APPROACH FOR PRIMARY RESEARCH QUESTIONS

We will use an ITT framework, which does not measure the effect of the participant's exposure to the treatment itself but rather the effect of the offer of the treatment relative to the offer of receiving the control condition. This framework maintains the integrity of the experimental structure by including all participants who were randomized (except those who attrite) in the analytic sample, thereby maintaining an exogenous assignment of participants to experimental condition. However, bias can be insinuated through self-selection if any participant who is randomized fails to provide outcome data.

Both primary research questions will be analyzed using OLS regression where the intervention effects are modeled as a function of assignment to *Guided* YUP! (i.e., treatment), relevant baseline covariates, a baseline measure of the outcome variable, and the coordinator-level (dummy blocking) indicators. In addition, missing baseline data indicators will be included in the model for each baseline variable in which missing values are imputed through dummy variable adjustment. Although a straight difference-of-means approach should provide unbiased estimates of the effect of the treatment, we propose a model-based approach because it will increase the precision of those estimates and purge any small differences associated with baseline imbalance.

MODEL SPECIFICATION FOR PRIMARY RESEARCH QUESTIONS

The empirical model will be estimated with an OLS regression (using Stata). We present the empirical model here:

$$Y_{Post} = \beta_0 + \beta_1 T + \beta_2 Y_{Pre} + \sum(\beta_P X_P) + \sum(\beta_n D_n) + \sum(\beta_p M_p) + \varepsilon$$

where:

Y_{Post} - The outcome of interest, either: 1) current use of effective non-barrier (dichotomous; where 1 = currently using effective non-barrier contraception and 0 = not currently using effective non-barrier contraception) reported by participant *i* three months post-intervention; 2) times having vaginal sex without using a condom in the past three months (continuous; values range 0 to *k*, where 0 = has had vaginal sex without condoms 0 times in past three months and *k* = number of times having vaginal sex without condoms in past three months) reported by participant *i* three months post-intervention

β_0 – The intercept term, which represents, depending on the outcome measure of interest in the analysis, the outcome for the average control participant with all other variables in the model held constant at zero.

β_1 – This is the parameter estimate of substantive interest. β_1 represents, depending on the outcome measure of interest in the analysis, either: 1) the adjusted mean difference between the proportion of treatment participants who self-report using effective non-barrier contraception and control participants who self-report using effective non-barrier contraception measured three months post-intervention; or 2) the adjusted mean difference between treatment and control participants' self-reported times having vaginal sex without condoms in the past three months measured three months post-intervention

T –A dummy treatment indicator variable whose value equals 1 if the participant is randomized into the treatment group and 0 otherwise.

Y_{Pre}– The baseline measure of the outcome variable of interest reported by participant *i* at baseline (see Table C.1 and Table C.2 in Appendix C for full details on the variable construction); variable will be re-centered at the grand mean for analysis.

X – A *p* vector of baseline (i.e., measured prior to receiving) participant-level covariates to account for the variation in outcomes associated with these groups. These covariates will include:

a. Age – self-reported age (based on date of birth) at screening (continuous; range 15 to 20); variable will be re-centered at the grand mean for analysis.
b. Race – race of participant as self-reported at baseline (coded as 1 if participant self-identified as one particular race and 0 if otherwise); variable will be re-centered at the grand mean for analysis.
c. Ethnicity – Hispanic/Latino(a) ethnicity of participant as self-reported at baseline (coded as 1 if participant self-identified as Hispanic/Latino(a) and 0 if they do not identify as Hispanic/Latino(a)); variable will be re-centered at the grand mean for analysis.

D – An n-1 vector of the blocking variable (i.e., subgroups within which random assignment occurred), where n represents the block for the study coordinator who enrolled the participant from which they were randomly assigned to a condition. For each of these n coordinator-level blocks, we include in the analytic model a dummy indicator variable that will identify whether a study participant was randomized within

that block (1) or not (0). The variables will be re-centered at the grand mean for analysis.
M – A p vector of missing baseline data indicator variables representing each of the p baseline covariates that had missing observations (coded as 1 if the observation for that variable is missing and 0 if it is non-missing). The variables will be re-centered at the grand mean for analysis.

COVARIATES

We have made an a priori decision that the pre-test measure of the outcome will be included in the model along with age, race, and ethnicity. These decisions are based on recommendations included in both the *Teen Pregnancy Prevention Evidence Review Protocol*, Version 7.0 and the *What Works Clearinghouse Procedures and Standards Handbook*, *Version 5.0*, which provide guidelines about the covariates that should be included in regression models for individual-level RCTs.[36] Descriptions of these covariates can be found in Table 8 below.

Table 8. Covariates Included in Impact Analyses

Covariate	Description of the Covariate
Baseline Primary Outcome Covariates	
Frequency of vaginal sex without condoms in the past 3 months	The risk outcome is operationalized as the number of times in the past 3 months a person reports having vaginal sex *without* using a condom. The measure is calculated from the following item on the *Participant Questionnaire*: • Of the X times you said you had vaginal sex in the past 3 months, how many times did you NOT use a condom? *If you never used a condom during vaginal sex in the past 3 months, your response will be X.* The resulting variable is continuous with values that range from 0 to k, where 0 indicates that a person has not engaged in vaginal sex without a condom in the past 3 months, and k indicates the number of times the person has engaged in vaginal sex without a condom (risk behavior) in the past 3 months. Note: All respondents who have baseline data and have provided a response to either this question or have indicated they have not had vaginal sex in the past 3 months will be included in the construction of this measure. Persons who indicate that they have not had vaginal sex in the past 3 months are coded as having vaginal sex without a condom zero times.
Current use of effective non-barrier contraception	The protective outcome is operationalized as a dichotomous variable indicating whether a person reports currently using effective non-barrier contraception or not. The measure is calculated from the following item on the *Participant Questionnaire*: • Please indicate which method of highly effective birth control you are currently using. Select only one: ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ The implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena, Kyleena, Liletta) ○ None of the above

[36] See footnote 33. What Works Clearinghouse. (2022). *What Works Clearinghouse procedures and standards handbook* (Version 5.0).

Table 8. Covariates Included in Impact Analyses (Continued)

Covariate	Description of the Covariate
Baseline Primary Outcome Covariates (continued)	
Current use of effective non-barrier contraception (continued)	A person who selects *oral contraceptives, patch, shot/injection, ring, implant,* or *IUD* is given a value of 1 for the measure. A person who selects None of the above is given a value of 0 for the measure. The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who does not currently use effective non-barrier contraception and 1 indicates a person who does currently use effective non-barrier contraception. Note: All participants are asked this question, regardless as to whether or not they have had recent vaginal sex. All respondents who have baseline data and have provided a response to this question will be included in the construction of this measure.
Demographic Covariates	
Age (demographic Covariate)	The variable is measured as the respondent's self-reported age in years at screening. The measure is constructed from the following item on the Eligibility Screening Form: • How old are you right now? The resulting variable is continuous with values ranging from 15 to 20.
Race	A series of dummy variable indicators are created to operationalize these measures, where 0 = does not identify as a particular race; 1 = identifies as a particular race. The measures are created using a participant's response to the following item on the baseline *Participant Questionnaire:* • What is your race? (Participants can select more than one response.) ○ American Indian or Alaska Native ○ Asian ○ Black or African American ○ Native Hawaiian or Other Pacific Islander ○ White or Caucasian ○ Other (specify) The resulting variables are binary with either a value of 0 or 1.
Ethnicity	The measure is operationalized as a dummy variable, where 0 = does not identify as Hispanic or Latino; 1 = identifies as Hispanic or Latino. The measure is taken from the following item on the *Baseline Participant Questionnaire:* • Are you Hispanic or Latino? (Participants can only select one response.) ○ Yes ○ No The resulting variable is binary with either a value of 0 or 1.
Blocking Covariate	
Study Coordinator	A set of *n*–1 dummy variables, where *n* refers to the full set of study coordinator blocks within which participants are randomly assigned to the treatment or control condition. Participants are enrolled within one of 5 possible blocks defined by the research coordinator who enrolled the participant into the study. Data for the measure are obtained from the Ripple database (coordinator). Each dummy will be coded as 1 if the individual was enrolled by a particular study coordinator, and 0 if otherwise.

STATISTICAL SOFTWARE

All analyses will be conducted using Stata 18.

SUBGROUPS

An example of the types of exploratory subgroup analyses we expect to conduct include assessing whether any differences exist in the treatment effect between individuals in different racial and ethnic groups, age groups, levels of education, relationship status, and reasons for using birth control and/or condoms. This list is not intended to be exhaustive. Specific subgroups will be decided at the time of analysis. We will use our benchmark approach for all subgroup analyses and restrict the analysis to those individuals who reported having the characteristic at baseline in which we are interested exploring differences.

STATISTICAL POWER ANALYSIS

The YUP! intervention is innovative – we are unaware of any causal evaluations of low-intensity web-based interventions that aim to impact contraceptive and condom use by pregnant and parenting youth. However, there is limited evidence from two recently conducted RCTs on higher intensity interventions for this target population that can inform our understanding of the potential impact of YUP! on the outcomes of interest. Stevens et al. (2017) conducted an RCT to evaluate the impact of an 18-month-long monthly intervention between young mothers and registered nurses and found 14% more of the treatment group to be using long-acting reversible contraception six months after beginning the intervention and 8.8% more to be using an effective contraceptive method 18 months post intervention.[37] As it relates to condom use behaviors, this study also found 2.1% fewer treatment group participants to be reporting vaginal sex without a condom six months post baseline.[38] Cox et al. (2019) assessed a teen-tot services program combined with 5 one-hour long, one-on-one interactive parenting and life skills modules and found 17.6% more of the treatment group participants to be using longer-acting contraceptives (implant, IUD, or injection) 12 months after enrollment; this study did not evaluate condom use behaviors.[39]

Using these studies as a benchmark, we anticipate a reasonable minimum detectable impact (MDI) that we may observe of *Guided* YUP! on our measure of effective non-barrier contraceptive use in the treatment group to be 7% – that is, we estimate 7% more participants assigned to *Guided* YUP! will be using effective non-barrier contraceptive methods as compared to control group participants. For this outcome, an MDI of 7% translates to a minimum detectable effect size (MDES) of $d = 0.14$. We believe that an MDES of $d = 0.14$ is a realistic minimum impact given that *Guided* YUP! is lower intensity, but still involves routine participant interaction with the website content and near-peer mentors over a two-month period. Power calculations conducted with an Excel-based tool, Stata, and Optimal Design demonstrate that to achieve an MDES of 0.14 on both primary outcomes, our final confirmatory analytic samples should be 1,260 participants divided evenly between the *Guided* YUP! and control conditions. If we assume that we achieve a 90% response rate (which is our current rate at the five-month follow-up time point, with data collected from over 1,000 enrolled participants so far) the final ITT sample needs to be 1,400 youth. For the first primary outcome, these calculations are based on the following assumptions: (1) significance level for a two-tailed test (alpha) of 0.05; (2) power (beta) of 0.80; (3) an expectation that the covariates will explain 20% of the variation in the dependent variable; and (4) an assumption that 55% of participants will be using effective contraception at baseline. For the other

[37] Stevens, J., Lutz, R., Osuagwu, N., Rotz, D., & Goesling, B. (2017). A randomized trial of motivational interviewing and facilitated contraceptive access to prevent rapid repeat pregnancy among adolescent mothers. *American Journal of Obstetrics and Gynecology*, *217*(4), 423.e1–423.e9. https://doi.org/10.1016/j.ajog.2017.06.010

[38] See footnote 37.

[39] Cox, J. E., Harris, S. K., Conroy, K., Engelhart, T., Vyavaharkar, A., Federico, A., & Woods, E. R. (2019). A parenting and life skills intervention for teen mothers: A randomized controlled trial. *Pediatrics*, *143*(3), e20182303. https://doi.org/10.1542/peds.2018-2303

primary outcome, times having vaginal sex with no condoms, we applied the same beta, alpha, and variance-explained assumptions. We assumed the standard deviation of the frequency of condomless vaginal sex measure to be 21. Taken together, we believe that this study is adequately powered with an MDES of *d* = 0.14, which equates to an MDI of 2.97. This indicates that we estimate participants assigned to *Guided* YUP! will report approximately three fewer recent vaginal sex acts without condoms as compared to the control participants. We believe this to be a reasonable threshold for credible and meaningful effects for the type of intervention and outcomes examined.

2.5.5 DIFFERENCES IN APPROACH FOR SECONDARY CONTRASTS

There are no differences in our analytic approach for secondary research questions. We will use the same approach detailed above in section 2.5.4. Analytic Approach.

2.5.6 SUMMARY OF CONTRASTS

Please see Appendix B for details on the contrasts we will use to answer each research question.

2.5.7 REPORTING RESULTS

Included below is a sample table shell demonstrating how we anticipate reporting findings for our primary outcome measures.

Table Shell. Benchmark Analytic Model Results: Primary Outcomes

	Treatment Group		Control Group					
Outcome Measure	**Sample Size**	**Adjusted Mean**	**Sample Size**	**Adjusted Mean**	**Treatment – Control Difference**	**Standard Error**	***p*-value**	**Effect Size**
Times having vaginal sex without condoms in past 3 months								
5-month follow-up								
14-month follow-up								
Current use of effective non-barrier contraception								
5-month follow-up								
14-month follow-up								

2.5.8 SENSITIVITY ANALYSIS

We will conduct sensitivity analyses to test the robustness and validity of our benchmark approaches outlined above. We provide below a description of each of the planned sensitivity analyses, but this list is not intended to be exhaustive. Other sensitivity analyses may also be conducted depending on the data collected and our findings. We will report any substantive differences between our benchmark findings and sensitivity analyses in our results.

i. **Difference of means.** Our benchmark approach is to include baseline covariates and blocking variables in an OLS regression model to improve the precision of our effect estimates. Assuming our sample is sufficiently large, this approach should generate

unbiased estimates.[40] To test this, we will conduct sensitivity analyses that use OLS and only the treatment indicator included as an independent variable. This approach should approximate a difference of means t-test.

ii. **Lin estimator.** Our benchmark approach includes covariates and accounts for blocking procedures using fixed effects for the study coordinator assignment blocks. This strategy offers a compromise between the unbiasedness of the difference-of-means approach and the added precision and statistical power offered by regression adjustment. Heterogeneous treatment effects, however, remain a possible threat to this approach. As such, we propose to fit a model that constructs a treatment effect from a weighted average of a fully saturated OLS regression model. We will use the weighted least squares version of this model proposed by Lin (2013).[41]

iii. **Without baseline covariates.** Our benchmark approach is to include baseline covariates in our model to improve the precision of our estimates. To test this, we will conduct sensitivity analyses that involve running identical empirical models without the baseline covariates included (but still including blocking variables).

iv. **Without adjusted baseline data.** As outlined in the 2.5.1 Data Preparation section, our benchmark approach is to adjust baseline data as published guidance suggests that this may produce unbiased impact estimates and maximize the use of available data. We will test this by way of sensitivity analyses that involve running identical empirical models without the adjusted data.

v. **Without unreliable data.** As discussed in the 2.5.1 Data Preparation section, data for cases that are deemed unreliable are flagged, but still included in benchmark analyses. We will also conduct sensitivity analyses that involve running identical empirical models with the unreliable data excluded.

vi. **Without outliers**. As discussed in the 2.5.1 Data Preparation section, extreme data values are investigated and flagged as outliers. Our benchmark analytic approach is to include data flagged as outliers (i.e., extreme values that are not considered invalid) in analysis. We will also conduct sensitivity analyses that involve running identical empirical models with the unreliable data excluded.

vii. **Condensed data collection windows**. Our benchmark approach is to include follow-up data from all participants who completed a questionnaire during their open data collection window, regardless of the time point in that window when it was completed. Data collection windows are broad to minimize attrition from the analytic sample. To examine whether or not this influences our results – and, in particular, whether or not study participants who respond later report different outcomes from those who respond earlier – we will conduct an analysis that examines the difference, if any, in response time between treatment and control participants and compares impact estimates for analytic samples without late responders. Late responders will be defined as those participants who complete their long-term questionnaire more than one month after the initiation of the three-month data collection window.

viii. **Statistical modeling.** We have proposed using OLS regression as the benchmark statistical method for producing impact estimates. We will conduct analyses to test the robustness of this choice and to assess whether there are substantive differences in the point estimates of interest produced by OLS and alternative estimators.[42]

[40] Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics: An empiricist's companion* (1st ed.). Princeton University Press. Lin, W. (2013). Agnostic notes on regression adjustments to experimental data: Re-examining Freedman's critique. *The Annals of Applied Statistics*, 7(1), 295–318.

[41] Lin, W. (2013). Agnostic notes on regression adjustments to experimental data: Re-examining Freedman's critique. *The Annals of Applied Statistics*, *7*(1), 295–319.

[42] To account for potential violations of model assumptions (e.g., heteroskedasticity), we will use robust standard errors in all analyses.

Specifically, for each research question, we will compare OLS estimates with those derived from models that may fit the distribution of the data better. For the count outcomes, the treatment effect will be estimated with an appropriate count model (using Stata); for the dichotomous outcomes, the effect will be estimated using a logit model.[43]

2.6 TIMELINE

Table 9 details the timeline of study activities.

Table 9. Timeline of Study Activities

Impact Evaluation Activity	Start Date	End Date
IRB submission	April 2022	Ongoing
Baseline data collection	October 10, 2022	April 30, 2025
2-month follow-up data collection	December 1, 2022	July 31, 2025
5-month follow-up data collection	March 1, 2023	December 31, 2025
14-month follow-up data collection	December 1, 2023	September 30, 2026
Analysis	May 1, 2025	September 30, 2026
Reporting	April 1, 2026	September 30, 2026
Dissemination	April 1, 2026	September 30, 2026

3. OTHER EVALUATION ACTIVITIES

In addition to the primary and secondary research questions identified in this *Impact Evaluation Plan*, we intend to explore a number of other research questions to better understand how and for whom the program may be working. As an example, we will consider exploratory analyses that assess: (a) the relationship between theoretical antecedents and behavioral/health outcomes identified in the program's theory of change and logic model; (b) receipt of core components and the role of program dosage on outcomes of interest; and (c) subgroup effects.

[43] For count models, we will assess model fit using diagnostic model-fit methods, including the Stata command countfit, AIC and BIC model fit statistics, and by assessing predicted versus observed count probabilities for competing models. See Hilbe, J. M. (2014). *Modeling count data*. Cambridge University Press.

4. APPROVALS AND DATA SECURITY

4.1 PLAN FOR IRB APPROVAL

The IRB of record for this study is Sterling IRB. Preliminary study materials were submitted to Sterling on April 19, 2022. Study approval was granted on April 26, 2022. All PRG study staff have completed CITI training on human subjects' protection.

As study plans are tested and refined, PRG submits modification requests to Sterling as needed. As new study staff have been hired, we ensured that they completed (or have completed) training on human subjects' protection.

4.2 PLAN FOR FEDERALWIDE ASSURANCE

PRG obtained an IRB authorization agreement with initial study approval from Sterling IRB on April 26, 2022, with federal-wide assurance number 00010318. PRG will rely on Sterling IRB for review and continuing oversight of the study. The review performed by Sterling IRB meets the human subject protection requirements of 45 CFR 46 and 21 CFR 50 and 56, as applicable. Sterling IRB will follow written procedures for reporting its findings and actions to the Principal Investigator and Sponsor. PRG is responsible for ensuring compliance with Sterling IRB's determinations and with the terms of its Office for Human Research Protections approved FWA.

4.3 DATA SECURITY AND PRIVACY

Informed consent procedures are described above in the Identification and Selection of Individuals section PRG research coordinators administer all participant questionnaires. All questionnaire data obtained by PRG, as a result of participation in the study, are labeled by unique ID number rather than by participant name. Only study staff (research coordinators) access the identifiable study enrollment and *Locator Form* data, which are stored in a secure database separate from outcome data. Any paper study forms are entered digitally and stored in a secure (locked) location. These instruments are kept for a period of two years after project completion, after which they will be securely destroyed (shredded). Only ID numbers (no names or contact information) are kept in the questionnaire dataset that contains all individual-level questionnaire response data. Analysis and administrative data are housed separately but are linkable by the participant ID numbers. Detailed protocols are used to ensure consistency across all study staff in study procedures; PRG research coordinators undergo training in data management prior to being granted access to any participant records.

In the event of a data breach, our first priority would be to notify our IRB within 24 hours to determine next steps. We would also notify the individual(s) whose data may have been compromised within 48 hours of the breach. Additionally, we use Prey, a remote security program that enables laptops to be locked and data wiped in case of theft or hacking.

5. PRG EVALUATION ROLES AND RESPONSIBILITIES

Table 10 details the specific roles and responsibilities of PRG staff in conducting this evaluation.

Table 10. PRG Evaluation Roles and Responsibilities

Name	Role in Evaluation
Eric Jenner, PhD Sarah Walsh, PhD	Co-Evaluation Leads and Principal Investigators: Develop study processes and evaluation-related plans, procedures, and materials for all phases of the project; train program staff and partners on evaluation and study processes; obtain IRB approval; develop and oversee a continuous quality improvement process that is informed by data; work with program staff to develop approaches, strategies, and materials to clearly explain the study to key stakeholders such as program partners, parents, and youth; designate specific staff for participant recruitment, screening, and enrollment; designate specific staff for retention, tracking, and follow-up for both intervention and control/comparison groups throughout the study. Design and conduct analyses to assess the impact of the program.
Hilary Demby, MPH	Project Director: Main point of contact for ACF, along with Project Manager. Oversee Project Manager; ensure quality and consistency in monitoring tasks, instrument development and administration, data collection, and execution of research plans and protocols; design data collection instruments, data collection methods, and develop data collection protocols and training materials.
Catherine Henley, PhD	Senior Research Analyst: Prepare initial drafts of impact and implementation evaluation/analysis plans including instrumentation (questionnaire content), research design, analytic sample, research questions, RCT methods, analytic methods. Oversee execution of the implementation and impact studies and monitor overall study design. Manage datasets and conduct analyses. Conduct regular data monitoring and data quality checks.
Elyse Mason, MPH	Project Manager: Manage all aspects of the project; facilitate team meetings and trainings; oversee work of Research Coordinators and contractors; serve as liaison with Sentient; develop and coordinate external communications; address implementation obstacles; ensure adequate participation numbers; supervise follow-up data collection; monitor response rates; ensure adherence to grant requirements; prepare required progress reports; monitor grant budget; review fidelity monitoring reports.
Ashley Fondo, BA	Research Analyst: Support all aspects of the project; facilitate team meetings and trainings; oversee work of Research Coordinators; serve as liaison with Sentient; develop and coordinate external communications; address implementation obstacles; monitor response rates; prepare required progress reports; monitor grant budget; review fidelity monitoring reports.
Sarah Taft, BA Alice Julliard, MA Jordyn Mecher, BA Shanielle Taylor, BS	Research Coordinators: Execute participant recruitment plan via social media; maintain high follow-up response rates; assist with obtaining consent, administering questionnaires, and data entry.

APPENDIX A. *GUIDED* YUP! LOGIC MODEL

Intervention Activities/Key Components

Participants will engage with the YUP! website for an 8-week period to access the following YUP! components:

- Written/video website content on 4 topics:*
  - Sexual health and birth control
  - Healthy relationships
  - Self-care
  - Reaching your goals
- Biweekly check-ins with near-peer mentors trained in motivational interviewing who will use the YUP messaging system to do the following:
  - Help the participant to choose a short-term goal and track progress toward achievement in the goal-setting tool
  - Guide participants to appropriate YUP! content relevant to their needs and their short-term goal
  - Encourage the participant to engage with the online YUP! community
  - Provide referrals as needed
- Goal-setting tool that will allow participants to set and track progress toward a short-term goal
- Online community of young parents, with the ability to set up a profile, message community members, and post content
- Links and referrals to resources for young parents
- Daily tips, reminders, and motivational messages

*In addition to the four core topics listed, participants will also have access to content on the following topics, but they will not be specifically directed to these topics as part of *Guided* YUP!:

  - Pregnancy and birth
  - Parenting

Outputs

Participants are expected to:

- View at least 50% of the assigned video and written website content
- Attend at least 2 of the 5 check-in sessions with near-peer mentors

Mediators

Sexual behavioral antecedents

- Increase condom knowledge
- Increase contraceptive knowledge
- Increase STI knowledge
- Increase condom negotiation self-efficacy
- Increase contraceptive use self-efficacy
- Increase STI testing self-efficacy
- Increase condom use outcome expectations
- Increase contraceptive use outcome expectations
- Decrease pregnancy fatalism

Self-care/well-being antecedents

- Increase self-care self-efficacy

Goal achievement antecedents

- Increase goal-setting self-efficacy

Short-Term Health Outcomes/Behaviors

Sexual behaviors

- Increase use of effective non-barrier contraception**
- Decrease frequency of condomless vaginal sex**
- Increase STI testing
- Decrease frequency of completely unprotected vaginal sex

Healthy Relationships

- Increase social support

Self-Care/Well-Being

- Increase well-being – optimism
- Decrease stigma

Goal Achievement

- Increase goal attainment
- Increase parenting competence

**Confirmatory outcome measures for study

Long-Term Health Outcomes/Behaviors

Sexual Behaviors

- Decrease repeat pregnancy
- Decrease STI infection

Healthy Relationships

- Increase social support

Self-Care/Well-Being

- Increase well-being – optimism
- Decrease stigma

Goal Achievement

- Increase goal attainment
- Increase parenting competence

APPENDIX B. CONTRAST TABLE

Table B.1. Contrast Table

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 1 Primary	Randomized Control Trial (RCT)	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported current use of effective non-barrier contraception	5 months after random assignment	Individual participant: participant questionnaire – reported current use of effective non-barrier contraception	Immediately prior to random assignment
RQ 2 Primary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times having vaginal sex without condoms in the past 3 months	5 months after random assignment	Individual participant: participant questionnaire – reported times having vaginal sex without condoms in the past 3 months	Immediately prior to random assignment
RQ 3 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Knowledge Scale* score	2 months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Knowledge Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 4 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Knowledge Scale* score	5 months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Knowledge Scale* score	Immediately prior to random assignment
RQ 5 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United Sates who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Knowledge* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Condom Knowledge Scale* score	Immediately prior to random assignment
RQ 6 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United Sates who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Knowledge* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Condom Knowledge Scale* score	Immediately prior to random assignment
RQ 7 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Negotiation Self-Efficacy* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Condom Negotiation Self-Efficacy Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 8 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Negotiation Self-Efficacy* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Condom Negotiation Self-Efficacy Scale* score	Immediately prior to random assignment
RQ 9 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Use Self- Efficacy* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Use Self- Efficacy Scale* score	Immediately prior to random assignment
RQ 10 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Use Self- Efficacy* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Use Self- Efficacy Scale* score	Immediately prior to random assignment
RQ 11 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Use Outcome Expectations* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Condom Use Outcome Expectations Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 12 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Condom Use Outcome Expectations* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Condom Use Outcome Expectations Scale* score	Immediately prior to random assignment
RQ 13 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Use Outcome Expectations* scale score	2months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Use Outcome Expectations Scale* score	Immediately prior to random assignment
RQ 14 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – mean *Contraceptive Use Outcome Expectations* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Contraceptive Use Outcome Expectations Scale* score	Immediately prior to random assignment
RQ 15 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported consistent use of effective non-barrier contraception in past 3 months	5 months after random assignment	Individual participant: participant questionnaire – reported consistent use of effective non-barrier contraception in past 3 months	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 16 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported consistent use of effective non-barrier contraception in past 3 months	14 months after random assignment	Individual participant: participant questionnaire – reported consistent use of effective non-barrier contraception in past 3 months	Immediately prior to random assignment
RQ 17 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided YUP!*	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times using emergency contraception after vaginal sex in past 3 months	5 months after random assignment	Individual participant: participant questionnaire – reported times using emergency contraception after vaginal sex in past 3 months	Immediately prior to random assignment
RQ 18 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided YUP!*	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times using emergency contraception after vaginal sex in past 3 months	14 months after random assignment	Individual participant: participant questionnaire – reported times using emergency contraception after vaginal sex in past 3 months	Immediately prior to random assignment
RQ 19 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of effective non-barrier contraception at last vaginal sex	5 months after random assignment	Individual participant: participant questionnaire – reported use of effective non-barrier contraception at last vaginal sex	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 20 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of effective non-barrier contraception at last vaginal sex	14 months after random assignment	Individual participant: participant questionnaire – reported use of effective non-barrier contraception at last vaginal sex	Immediately prior to random assignment
RQ 21 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of condoms during last vaginal sex	5 months after random assignment	Individual participant: participant questionnaire – reported use of condoms during last vaginal sex	Immediately prior to random assignment
RQ 22 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of condoms during last vaginal sex	14 months after random assignment	Individual participant: participant questionnaire – reported use of condoms during last vaginal sex	Immediately prior to random assignment
RQ 23 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times having completely unprotected vaginal sex in the past 3 months	5 months after random assignment	Individual participant: participant questionnaire – reported times having completely unprotected vaginal sex in the past 3 months	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 24 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times having completely unprotected vaginal sex in the past 3 months	14 months after random assignment	Individual participant: participant questionnaire – reported times having completely unprotected vaginal sex in the past 3 months	Immediately prior to random assignment
RQ 25 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of no effective contraception during last vaginal sex	5 months after random assignment	Individual participant: participant questionnaire – reported use of no effective contraception during last vaginal sex	Immediately prior to random assignment
RQ 26 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of no effective contraception during last vaginal sex	14 months after random assignment	Individual participant: participant questionnaire – reported use of no effective contraception during last vaginal sex	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 27 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of dual methods of protection during last vaginal sex	5 months after random assignment	Individual participant: participant questionnaire – reported use of dual methods of protection during last vaginal sex	Immediately prior to random assignment
RQ 38 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported use of dual methods of protection during last vaginal sex	14 months after random assignment	Individual participant: participant questionnaire – reported use of dual methods of protection during last vaginal sex	Immediately prior to random assignment
RQ 29 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported times having vaginal sex without condoms in the past 3 months	14 months after random assignment	Individual participant: participant questionnaire – reported times having vaginal sex without condoms in the past 3 months	Immediately prior to random assignment
RQ 30 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Contraceptive use	Individual participant: participant questionnaire – reported current use of effective non-barrier contraception	14 months after random assignment	Individual participant: participant questionnaire – reported current use of effective non-barrier contraception	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 31 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – mean *STI Knowledge* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *STI Knowledge Scale* score	Immediately prior to random assignment
RQ 32 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – mean *STI Knowledge* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *STI Knowledge Scale* score	Immediately prior to random assignment
RQ 33 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – mean *STI Testing Self-Efficacy* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *STI Testing Self-Efficacy Scale* score	Immediately prior to random assignment
RQ 34 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – mean *STI Testing Self-Efficacy* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *STI Testing Self-Efficacy Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 35 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – reported receipt of STI testing in past 3/12 months	5 months after random assignment	Individual participant: participant questionnaire – reported receipt of STI testing in past 3/12 months	Immediately prior to random assignment
RQ 36 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – reported receipt of STI testing in past 3/12 months	14 months after random assignment	Individual participant: participant questionnaire – reported receipt of STI testing in past 3/12 months	Immediately prior to random assignment
RQ 37 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – reported positive STI test in past 3/12 months	5 months after random assignment	Individual participant: participant questionnaire – reported positive STI test in past 3/12 months	Immediately prior to random assignment
RQ 38 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	STIs or HIV	Individual participant: participant questionnaire – reported positive STI test in past 3/12 months	14 months after random assignment	Individual participant: participant questionnaire – reported positive STI test in past 3/12 months	Immediately prior to random assignment
RQ 39 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Self-care self-efficacy	Individual participant: participant questionnaire – mean *Self-Care Self- Efficacy* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Self-Care Self- Efficacy* scale score	Immediately prior to random assignment

Table B.1. *Contrast Table (Continued)*

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 40 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Self-care self-efficacy	Individual participant: participant questionnaire – mean *Self-Care Self- Efficacy* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Self-Care Self- Efficacy* scale score	Immediately prior to random assignment
RQ 41 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Goals	Individual participant: participant questionnaire – mean *Goal-Setting Self-Efficacy* scale score	2 months after random assignment	Individual participant: participant questionnaire – mean *Goal-Setting Self-Efficacy* scale score	Immediately prior to random assignment
RQ 42 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Goals	Individual participant: participant questionnaire – mean *Goal-Setting Self-Efficacy* scale score	5 months after random assignment	Individual participant: participant questionnaire – mean *Goal-Setting Self-Efficacy* scale score	Immediately prior to random assignment
RQ 43 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Goals	Individual participant: participant questionnaire – mean *Goal Attainment Scale* score	2 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Goal Attainment Scale* score	Immediately prior to random assignment
RQ 44 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Goals	Individual participant: participant questionnaire – mean *Goal Attainment Scale* score	5 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Goal Attainment Scale* score	Immediately prior to random assignment

Table B.1. *Contrast Table (Continued)*

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 45 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Goals	Individual participant: participant questionnaire – mean *Goal Attainment Scale* score	14 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Goal Attainment Scale* score	Immediately prior to random assignment
RQ 46 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Pregnancy	Individual participant: participant questionnaire – Pregnancy fatalism item	2 months after random assignment	Individual participant: participant questionnaire – Pregnancy fatalism item	Immediately prior to random assignment
RQ 47 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Pregnancy	Individual participant: participant questionnaire – Pregnancy fatalism item	5 months after random assignment	Individual participant: participant questionnaire – Pregnancy fatalism item	Immediately prior to random assignment
RQ 48 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Pregnancy	Individual participant: participant questionnaire – report of being pregnant in past 12 months	14 months after random assignment	Individual participant: participant questionnaire – report of being pregnant in past 12 months	Immediately prior to random assignment
RQ 49 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Pregnancy	Individual participant: participant questionnaire – report of having unintended pregnancy in past 12 months	14 months after random assignment	Individual participant: participant questionnaire – report of having unintended pregnancy in past 12 months	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 50 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Parenting competence	Individual participant: participant questionnaire – mean *Parenting Competence Scale* score	2 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Parenting Competence Scale* score	Immediately prior to random assignment
RQ 51 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Parenting competence	Individual participant: participant questionnaire – mean *Parenting Competence Scale* score	5 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Parenting Competence Scale* score	Immediately prior to random assignment
RQ 52 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Parenting competence	Individual participant: participant questionnaire – mean *Parenting Competence Scale* score	14 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Parenting Competence Scale* score	Immediately prior to random assignment
RQ 53 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15-20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Stigma	Individual participant: participant questionnaire – mean *Stigma Scale* score	2 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Stigma Scale* score	Immediately prior to random assignment
RQ 54 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15-20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Stigma	Individual participant: participant questionnaire – mean *Stigma Scale* score	5 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Stigma Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 55 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15-20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Stigma	Individual participant: participant questionnaire – mean *Stigma Scale* score	14 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Stigma Scale* score	Immediately prior to random assignment
RQ 56 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Social support	Individual participant: participant questionnaire – mean *Social Support Scale* score	2 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Social Support Scale* score	Immediately prior to random assignment
RQ 57 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Social support	Individual participant: participant questionnaire – mean *Social Support Scale* score	5 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Social Support Scale* score	Immediately prior to random assignment
RQ 58 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Social support	Individual participant: participant questionnaire – mean *Social Support Scale* score	14 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Social Support Scale* score	Immediately prior to random assignment
RQ 59 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Well-being	Individual participant: participant questionnaire – mean *Well-Being Scale* score	2 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Well-Being Scale* score	Immediately prior to random assignment

Table B.1. Contrast Table (Continued)

Research Question: Primary/ Secondary	Design	Target Population	Sample Eligibility Criteria	Treatment Group	Comparison Group	Outcome			Baseline (if applicable)	
				Treatment Description*	Condition/ Description*	Domain	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurements	Unit of Assignment/ Observation: Measure (Scale)	Timing of Measurement
RQ 60 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Well-being	Individual participant: participant questionnaire – mean *Well-Being Scale* score	5 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Well-Being Scale* score	Immediately prior to random assignment
RQ 61 Secondary	RCT	Adolescent mothers ages 15–20	Parenting biological females ages 15–20 living in the United States who report recent vaginal sex in the past 3 months, are not currently pregnant or intending to become pregnant, and have access to a personal device with internet access	*Guided* YUP!	Nutrition website	Well-being	Individual participant: participant questionnaire – mean *Well-Being Scale* score	14 months after random assignment	Individual participant: participant questionnaire – reported positive mean *Well-Being Scale* score	Immediately prior to random assignment

APPENDIX C. DETAILED SPECIFICATION OF MEASURES TO BE ANALYZED

Table C.1. Outcomes Used for Primary Research Questions

Outcome Domain	Outcome Measure	Constructed Measure	Timing of Measure
Contraceptive use	Current use of effective non-barrier contraception	The protective outcome is operationalized as a dichotomous variable indicating whether a person reports currently using effective non-barrier contraception or not. The measure is calculated from the following item: • Please indicate which method of highly effective birth control you are currently using. Select only one. ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ The implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena, Kyleena, Liletta) ○ None of the above A person who selects *oral contraceptives, patch, shot/injection, ring, implant,* or *IUD* is given a value of 1 for the measure. A person who selects *None* is given a value of 0 for the measure. The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who does not currently use effective non-barrier contraception and 1 indicates a person who does currently use effective non- barrier contraception. Note: All participants are asked this question, regardless as to whether or not they have had recent vaginal sex. All respondents who have 3-month post-intervention follow-up data and have provided a response to this question will be included in the construction of this measure.	3 months post intervention (5 months post baseline)
Contraceptive use	Frequency of having vaginal sex without condoms in the past 3 months	The risk outcome is operationalized as the number of times in the past 3 months a person reports having vaginal sex *without* using a condom. The measure is calculated from the following item: • In the past 3 months, how many times have you had vaginal sex without using a condom? The resulting variable is continuous with values that range from 0 to *k*, where 0 indicates that a person has not engaged in vaginal sex without a condom in the past 3 months, and *k* indicates the number of times the person has engaged in vaginal sex without a condom (risk behavior) in the past 3 months. Note: All respondents who have 3-month post-intervention follow-up data and have provided a response to either this question or have indicated they have not had vaginal sex in the past 3 months will be included in the construction of this measure. Persons who indicate that they have not had vaginal sex in the past 3 months are coded as having vaginal sex without a condom zero times.	3 months post intervention (5 months post baseline)

Table C.2. Outcomes Used for Secondary Research Questions[44]

Outcome Domain	Outcome Measure	Constructed Measure	Timing of Measure
Contraceptive Use	Contraceptive knowledge	Participants are provided with the following series of statements and asked to indicate whether each is *True* or *False*. Participants may also indicate they *Don't know*: • If a person is having side effects with one birth control method, switching to another method might help. • People using the birth control shot, Depo-Provera, must get an injection every 3 months. • Taking birth control pills can help to reduce the possibility of getting a STI/STD. • Long-acting birth control methods like the implant or IUD cannot be removed early, even if person changes their mind about wanting to get pregnant. Correct answers are coded as 1; incorrect answers, skipped items, or responses of *Don't know* are all coded as 0. The measure is constructed as the proportion of correct responses out of the total 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Contraceptive Use	Condom knowledge	Participants are provided with the following series of statements and asked to indicate whether each is *True* or *False*. Participants may also indicate they *Don't know*: • It is okay to use the same condom more than once. • Condoms have an expiration date. • Condoms are effective at preventing all types of sexually transmitted infection (STIs). • Using a condom along with another form of birth control offers extra protection against an unplanned pregnancy. Correct answers are coded as 1; incorrect answers, skipped items, or responses of *Don't know* are all coded as 0. The measure is constructed as the proportion of correct responses out of the total 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Contraceptive Use	Condom negotiation self- efficacy	Participants are asked the following series of questions and asked to rate on a 7-point scale, how confident or sure are they that they could: • Tell a partner you plan to have sex with that you want to use condoms • Convince a partner to use condoms, even if you are using some kind of highly effective birth control (e.g., the pill) • Insist that a condom be used • Refuse to have sex if a partner won't use a condom Response values range from 1 to 7, where 1 indicates that the respondent is *not at all confident*, and 7 indicates the respondent is *extremely confident*. The measure is calculated as the average response to all 4 items. The scale is only calculated for individuals who provide a response to all 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)

[44] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[45]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	Contraceptive use self-efficacy	Participants are asked the following series of questions and asked to rate on a 7-point scale, how confident or sure are they that they could: • Use highly effective birth control correctly (e.g., taking it at the correct time, using it as directed by your health care provider, etc.) • Go to a health care provider to get a new birth control method • Use birth control consistently (e.g., without forgetting pills/injections) even if you are out of town or not staying at your house • Talk openly with your sexual partners about birth control Response values range from 1 to 7, where 1 indicates that the respondent is *not at all confident*, and 7 indicates the respondent is *extremely confident*. The measure is calculated as the average response to all 4 items. The scale is only calculated for individuals who provide a response to all 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Contraceptive Use	Condom use outcome expectations	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • Saying to a sexual partner that you want to use a condom is like saying, "I don't trust you." (reverse-coded) • Sex doesn't feel good when you use condoms. (reverse-coded) • Condoms ruin the mood. (reverse-coded) • I feel good when I use condoms because they protect me from STIs/STDs. • I would feel guilty if we didn't use a condom. Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. Three statements will be reverse-coded (where marked) so that higher scores all correspond to outcome expectations in the desired direction. The measure is calculated as the average response to all 5 items. The scale is only calculated for individuals who provide a response to all 5 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Contraceptive Use	Contraceptive use outcome expectations	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • I would feel like I did the right thing if I used highly effective birth control when I have sex. • I am afraid of side effects that might come from using birth control. (reverse-coded) • I would lose respect for myself if I didn't use birth control when I was having sex. • Using birth control gives me the ability to prevent pregnancy when I want to. Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. One statement will be reverse-coded (where marked) so that higher scores all correspond to outcome expectations in the desired direction The measure is calculated as the average response to all 4 items. The scale is only calculated for individuals who provide a response to all 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)

[45] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[46]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	Consistent use of effective non-barrier contraception in past 3 months	Participants are provided with the statement and asked to indicate whether it is *Yes* or *No.* Participants may also indicate they are *Not sure*: • Thinking about the past 3 months, would you say you have been protected by some form of highly effective birth control every single day? The resulting variable is dichotomous with values of either 1, which indicates consistent use of non-barrier contraception in the past 3 months, or 0, which indicates inconsistent use of non-barrier contraception in the past 3 months. Note: This will only be constructed for individuals who report they have been using non-barrier contraception in the past 3 months.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)
Contraceptive Use	Frequency of using emergency contraceptive use after vaginal sex in past 3 months	The measure is operationalized as the number of times in the past 3 months a person reports having vaginal sex using emergency contraception. The measure is calculated from the following item: • In the past 3 months, how many times have you used emergency contraception (e.g., ella or Plan B) after vaginal sex to prevent pregnancy? The resulting variable is continuous with values that range from 0 to *k*, where 0 indicates that a person has not engaged in vaginal sex in the past 3 months using emergency contraception, and *k* indicates the number of times the person has engaged in vaginal sex in the past 3 months using emergency contraception.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)

[46] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[47]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	Use of effective non-Barrier contraception during last vaginal sex	The measure is operationalized as a dichotomous variable indicating if someone used effective non-barrier contraception or not during last vaginal sex. The measure is calculated from the following item: • Considering the LAST time you had vaginal sex, which of the following did you use? ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ Implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena) ○ Emergency contraception (ella, Plan B) ○ Condoms ○ The sponge ○ Diaphragm ○ Spermicide (e.g., foam, gel, cream, film) ○ Cervical cap ○ Fertility-based awareness method (such as natural family planning or rhythm method) ○ Pull-out method (such as withdrawal) ○ Breastfeeding ○ Sterilization (e.g., tubal ligation) ○ Partner's vasectomy ○ I did not use any of these A person who selects *oral contraceptives, patch, shot/injection, ring, implant,* or *IUD* is given a value of 1 for the measure. A person who selects anything else is given a value of 0 for the measure. The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who did not use effective non-barrier contraception during last vaginal sex and 1 indicates a person who did use effective non-barrier contraception during last vaginal sex.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)

[47] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[48]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	Use of condoms at last vaginal sex	The measure is operationalized as a dichotomous variable indicating if someone used a condom or not during last vaginal sex. The measure is calculated from the following item: • Considering the LAST time you had vaginal sex, which of the following did you use? ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ Implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena) ○ Emergency contraception (ella, Plan B) ○ Condoms ○ The sponge ○ Diaphragm ○ Spermicide (e.g., foam, gel, cream, film) ○ Cervical cap ○ Fertility-based awareness method (such as natural family planning or rhythm method) ○ Pull-out method (such as withdrawal) ○ Breastfeeding ○ Sterilization (e.g., tubal ligation) ○ Partner's vasectomy ○ I did not use any of these A person who selects *Condoms* is given a value of 1 for the measure. A person who does not select that item is given a value of 0 for the measure. The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who did not use condoms during last vaginal sex and 1 indicates a person who did use condoms during last vaginal sex.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)
Contraceptive Use	Frequency of completely unprotected vaginal sex in the past 3 months	The measure is operationalized as the number of times in the past 3 months a person reports having completely unprotected vaginal sex (i.e., no use of birth control or condom). The measure is calculated from the following item: • In the past 3 months, how many times have you had vaginal sex that was completely unprotected? The resulting variable is continuous with values that range from 0 to *k*, where 0 indicates that a person has not engaged in completely unprotected vaginal sex in the past 3 months, and *k* indicates the number of times the person has engaged in completely unprotected vaginal sex in the past 3 months completely unprotected.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)

[48] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[49]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	No use of effective contraception during last vaginal sex	The measure is operationalized as a dichotomous variable indicating if someone used effective contraception or not during last vaginal sex. The measure is calculated from the following item: • Considering the LAST time you had vaginal sex, which of the following did you use? ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ Implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena) ○ Emergency contraception (ella, Plan B) ○ Condoms ○ The sponge ○ Diaphragm ○ Spermicide (e.g., foam, gel, cream, film) ○ Cervical cap ○ Fertility-based awareness method (such as natural family planning or rhythm method) ○ Pull-out method (such as withdrawal) ○ Breastfeeding ○ Sterilization (e.g., tubal ligation) ○ Partner's vasectomy ○ I did not use any of these A person who selects *oral contraceptives, patch, shot/injection, ring, implant, IUD,* or *condoms* is given a value of 0 for the measure. A person who selects anything else is given a value of 1 for the measure. The resulting variable is dichotomous with values 0 or 1, where 1 indicates a person who did not use effective contraception during last vaginal sex and 0 indicates a person who did use effective contraception during last vaginal sex.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)

[49] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[50]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Contraceptive Use	Use of dual methods of protection during last vaginal sex	The measure is operationalized as a dichotomous variable indicating if someone used dual methods of contraception or not during last vaginal sex. The measure is calculated from the following item: • Considering the LAST time you had vaginal sex, which of the following did you use? ○ Oral contraceptives (e.g., the pill) ○ The patch (e.g., Ortho Evra) ○ The shot/injection (e.g., Depo-Provera) ○ The ring (e.g., NuvaRing) ○ Implant (e.g., Implanon or Nexplanon) ○ IUD (e.g., Paragard, Skyla, Mirena) ○ Emergency contraception (ella, Plan B) ○ Condoms ○ The sponge ○ Diaphragm ○ Spermicide (e.g., foam, gel, cream, film) ○ Cervical cap ○ Fertility-based awareness method (such as natural family planning or rhythm method) ○ Pull-out method (such as withdrawal) ○ Breastfeeding ○ Sterilization (e.g., tubal ligation) ○ Partner's vasectomy ○ I did not use any of these A person who selects *both condoms* AND one of the following is given a value of 1 for the measure: *Oral contraceptives, patch, shot/injection, ring, implant, IUD*. A person who selects any other combination of responses is given a value of 0 for the measure. The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who did not use dual methods of protection during last vaginal sex and 1 indicates a person who did use use dual methods of protection during last vaginal sex.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)
Contraceptive Use	Frequency of having vaginal sex in the past 3 months without condoms	The measure is operationalized as the number of times in the past 3 months a person reports having vaginal sex without using a condom. The measure is calculated from the following item: • In the past 3 months, how many times have you had vaginal sex without using a condom? The resulting variable is continuous with values that range from 0 to *k*, where 0 indicates that a person has not engaged in vaginal sex in the past 3 months without using a condom, and *k* indicates the number of times the person has engaged in vaginal sex in the past 3 months without using a condom.	12 months post intervention (14 months post baseline)

[50] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[51]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure

Contraceptive Use	Current use of effective non-barrier contraception	The protective outcome is operationalized as a dichotomous variable indicating whether a person reports currently using effective non-barrier contraception or not. The measure is calculated from the following item:
		• Please indicate which method of highly effective birth control you are currently using. Select only one.
		  ○ Oral contraceptives (e.g., the pill)
		  ○ The patch (e.g., Ortho Evra)
		  ○ The shot/injection (e.g., Depo-Provera)
		  ○ The ring (e.g., NuvaRing)
		  ○ The implant (e.g., Implanon or Nexplanon)
		  ○ IUD (e.g., Paragard, Skyla, Mirena, Kyleena, Liletta)
		  ○ None of the above
		
		A person who selects *oral contraceptives, patch, shot/injection, ring, implant,* or *IUD* is given a value of 1 for the measure. A person who selects *None* is given a value of 0 for the measure.
		The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who does not currently use effective non-barrier contraception and 1 indicates a person who does currently use effective non- barrier contraception.
		Note: All participants are asked this question, regardless as to whether or not they have had recent vaginal sex. All respondents who have 3-month post-intervention follow-up data and have provided a response to this question will be included in the construction of this measure.
			12 months post intervention (14 months post baseline)

STIs or HIV	STI knowledge	Participants are provided with the following series of statements and asked to indicate whether each is *True* or *False*. Participants may also indicate they *Don't know*: • It is easier to get HIV if a person has another STI/STD. • Some STIs/STDs can be passed from the mother to the baby during childbirth. • You can always tell if you have a STI/STD because you will have symptoms (e.g., changes in your body). • Not all STIs/STDs can be cured. • Most STIs/STDs will go away on their own, even without treatment. • The only way to know for sure if you have a STI/STD is to get tested. Correct answers are coded as 1; incorrect answers, skipped items, or responses of *Don't know* are all coded as 0. The measure is constructed as the proportion of correct responses out of the total 6 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)

[51] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[52]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
STIs or HIV	STI testing self-efficacy	Participants are asked the following series of questions and asked to rate on a 7-point scale, how confident or sure are they that they could: • Go to a health care provider to get tested for STIs/STDs • Get a STI/STD test each time you have a new sexual partner • Get STI/STD testing every year, even if you don't have symptoms Response values range from 1 to 7, where 1 indicates that the respondent is *not at all confident*, and 7 indicates the respondent is *extremely confident*. The measure is calculated as the average response to all 3 items. The scale is only calculated for individuals who provide a response to all 3 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
STIs or HIV	Recent STI testing	The measure is operationalized as a dichotomous variable indicating if a person has been STI tested in the last 12 months. The measure is calculated from the following item: • Have you been tested for sexually transmitted infections/diseases (STIs/STDs) in the past 12 months? The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person has not been tested for STIs in the last 12 months, and 1 indicates a person who has been tested for STIs in the last 12 months.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)
STIs or HIV	Recent STI acquisition	The measure is operationalized as a dichotomous variable indicating if a person has tested positive for a STI in the last 12 months. The measure is calculated from the following item: Have you tested positive for any sexually transmitted infections/diseases (STIs/STDs) in the past 12 months? The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person has not tested positive for a STI in the last 12 months and 1 indicates a person who has tested positive for a STI in the last 12 months. Note: This will only be constructed for individuals who report they have had a STI test in the past 12 months and thus results in the formation of an endogenous subgroup.	3 months post intervention (5 months post baseline) and 12 months post intervention (14 months post baseline)

[52] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[53]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Self-Care	Self-care self-efficacy	Participants are asked the following series of questions and asked to rate on a 7-point scale, how confident or sure are they that they could: • Find ways to alleviate your stress • Find ways to help you cope with challenges • Find ways to help yourself feel better if you are feeling blue Response values range from 1 to 7, where 1 indicates that the respondent is *not at all confident*, and 7 indicates the respondent is *extremely confident*. The measure is calculated as the average response to all 3 items. The scale is only calculated for individuals who provide a response to all 3 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Goals	Goal-setting self-efficacy	Participants are asked the following series of questions and asked to rate on a 7-point scale, how confident or sure are they that they could: • Set realistic goals for yourself • Set goals that will challenge you • Make plans for your future • Make goals for which you can measure (see) progress and achievement Response values range from 1 to 7, where 1 indicates that the respondent is *not at all confident*, and 7 indicates the respondent is *extremely confident*. The measure is calculated as the average response to all 4 items. The scale is only calculated for individuals who provide a response to all 4 items.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)
Goals	Perceived ability to achieve personal goals	Participants are asked to indicate on a 5-point scale, how much they are like each of the following statements: • If I set goals, I take action to reach them. • It is important to me that I reach my goals. • I know how to make my plans happen. Response values range from 1 to 5, where 1 indicates that the statement is not at all like me and 5 indicates that the statement is exactly like me. The measure is calculated as the average response to all 3 items. The scale is only calculated for individuals who provide a response to all 3 items.	Post intervention (2 months post baseline), 3 months post intervention (5 months post baseline), and 12 months post intervention (14 months post baseline)

[53] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[54]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Pregnancy	Pregnancy fatalism	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statement: • It doesn't matter whether I use birth control, when it is my time to get pregnant, it will happen. Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. The measure is a single-item measure.	Post intervention (2 months post baseline) and 3 months post intervention (5 months post baseline)

Pregnancy	Repeat pregnancy	The measure is operationalized as a dichotomous variable indicating if the participant reported being pregnant at any point during the evaluation period. The measure is calculated using the following items:
		• Are you currently pregnant?
		  ○ Yes
		  ○ No
		  ○ Not sure
		• When was the last time you were pregnant?
		  ○ Month: Year:
		
		The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person who did not report being pregnant at any point during the evaluation period and 1 indicates a person who did report being pregnant during the evaluation period.
			12 months post intervention (14 months post baseline)

[54] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[55]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure

Pregnancy	Repeat unintended pregnancy	The measure is operationalized as a dichotomous variable indicating if the participant reported being pregnant with an unintended pregnancy at any point during the evaluation period. The measure is calculated using the following items:
		• Are you currently pregnant?
		  ○ Yes
		  ○ No
		  ○ Not sure
		• When was the last time you were pregnant?
		  ○ Month: Year:
		• Thinking back to just before your pregnancy, how did you feel about becoming pregnant?
		  ○ I wanted to be pregnant sooner.
		  ○ I wanted to be pregnant then.
		  ○ I wanted to be pregnant later.
		  ○ I didn't want to be pregnant then or at any time in the future.
		
		We first construct a dichotomous with values 0 or 1, where 0 indicates a person who did not report being pregnant at any point during the evaluation period and 1 indicates a person who did report being pregnant during the evaluation period.
		
		For people who report being pregnant during the evaluation period, we then construct a measure indicating whether the pregnancy was intended or not. A person selecting *I wanted to be pregnant later* or *I didn't want to be pregnant then or at any time in the future* is given a value of 1 indicating that the pregnancy was unintended. A person selecting *I wanted to be pregnant sooner* or *I wanted to be pregnant then* is given a value of 0 indicating that the pregnancy was intended.
		
		The resulting variable is dichotomous with values 0 or 1, where 0 indicates a person with a repeat intended pregnancy and 1 indicates a person with a repeat unintended pregnancy during the reporting period.
		Note: This measure is only calculated for individuals who report being pregnant during the evaluation period.
			12 months post intervention (14 months post baseline)

[55] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[56]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Parenting Competence	Parenting competence	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • I honestly believe I have all the skills necessary to be a good mother to my child. • I am doing a good job as a parent. • If anyone can find the answer to what is troubling my child, I am the one. • I think I am a good role model for mothers who are trying to learn how to be a parent. • Being a parent makes me tense and anxious. (reverse-coded) Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. One statement will be reverse-coded (where marked) so that higher scores all correspond to perceptions in the desired direction. The measure is calculated as the average response to all 5 items. The scale is only calculated for individuals who provide a response to all 5 items.	Post intervention (2 months post baseline), 3 months post intervention (5 months post baseline), and 12 months post intervention (14 months post baseline)
Stigma	Perceived stigma	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • I have been hurt by how people have reacted to learning that I am a young parent. • I have stopped socializing with some people because of their reactions to my being a young parent. • I have lost friends because I am a young parent. Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. The measure is calculated as the average response to all 3 items. The scale is only calculated for individuals who provide a response to all 3 items.	Post intervention (2 months post baseline), 3 months post intervention (5 months post baseline), and 12 months post intervention (14 months post baseline)
Social Support	Perceived social support	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • There are people in my life who really care about me. • I have close and secure relationships. • There are people with whom I can discuss intimate and personal matters. • I ask for help and support from others when I need it. • I often feel isolated from other people. (reverse-coded) Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. One statement will be reverse-coded (where marked) so that higher scores all correspond to perceptions in the desired direction. The measure is calculated as the average response to all 5 items. The scale is only calculated for individuals who provide a response to all 5 items.	Post intervention (2 months post baseline), 3 months post intervention (5 months post baseline), and 12 months post intervention (14 months post baseline)

[56] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.

Table C.2. Outcomes Used for Secondary Research Questions (Continued)[57]

Outcome Domain	Outcome Name	Constructed Measure	Timing of Measure
Well-Being	Perceived sense of well-being related to optimism	Participants are asked to indicate on a 7-point scale, how much they agree or disagree with the following statements: • At this moment, I feel very optimistic about my future. • My future looks very bright to me. • I am always optimistic about my future. Response values range from 1 to 7, where 1 indicates the respondent *strongly disagrees* with the statement and 7 indicates the respondent *strongly agrees* with the statement. The measure is calculated as the average response to all 3 items. The scale is only calculated for individuals who provide a response to all 3 items.	Post intervention (2 months post baseline), 3 months post intervention (5 months post baseline), and 12 months post intervention (14 months post baseline)

[57] For each of the scale measures listed in this table, while we detail the items we have included in the participant questionnaire that we intend to use to construct each measure, we plan to assess the dimensionality and internal consistency of each scale before using it in analysis to ensure they are reliable measures.