

Testing the Impact of Two Posters on Contraceptive Knowledge, Contraceptive Preferences, and Perceived Pregnancy Risk

NCT number NCT03372369

Document Date December 22, 2017

Primary Investigator Seri Anderson, MPH PhD

Co-Primary Investigator Kristen Hassmiller Lich, PhD

Co-Investigators Stephanie Wheeler, PhD; Leah Frerichs, PhD;
Alexander Kaysin, MD; Carolyn Tucker
Halpern, PhD

Study Design

We survey women before and after random administration of one of two educational posters informing readers about contraception. Baseline data for both groups will be collected on our three outcomes: contraceptive knowledge, willingness to use effective contraception, and perceived pregnancy risk. Participants will then be randomly shown one of the two fact sheets. Then post-exposure questions on the three outcomes will be asked.

Comparators

Shown in Figures 1 and 2 are the two posters that will be tested in this clinical trial.

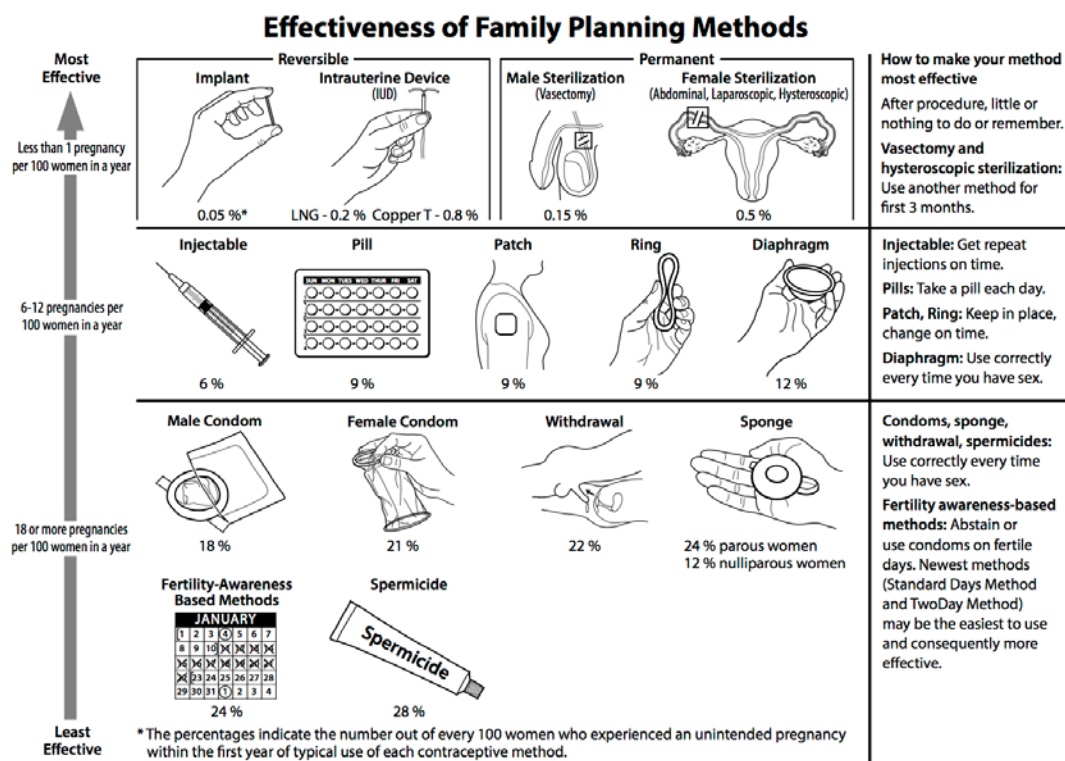
Procedures

We will use Amazon Mechanical Turk to recruit participants.

The survey will first be tested with N=20 participants using the procedures described below. This will be done to estimate the length of time necessary to complete the survey so that accurate time estimates can be provided to potential participants. This will also enable the researchers to ensure that any technical problems with the survey are corrected before the main research data is collected. Data collected in this phase will not be analyzed unless no changes are made to the study materials after reviewing the data.

Once the survey procedures are tested, we will recruit approximately N=1000 participants to complete the survey (final N=990).

Figure 1: CDC Contraceptive Poster



CS 242797



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

CONDOMS SHOULD ALWAYS BE USED TO REDUCE THE RISK OF SEXUALLY TRANSMITTED INFECTIONS.

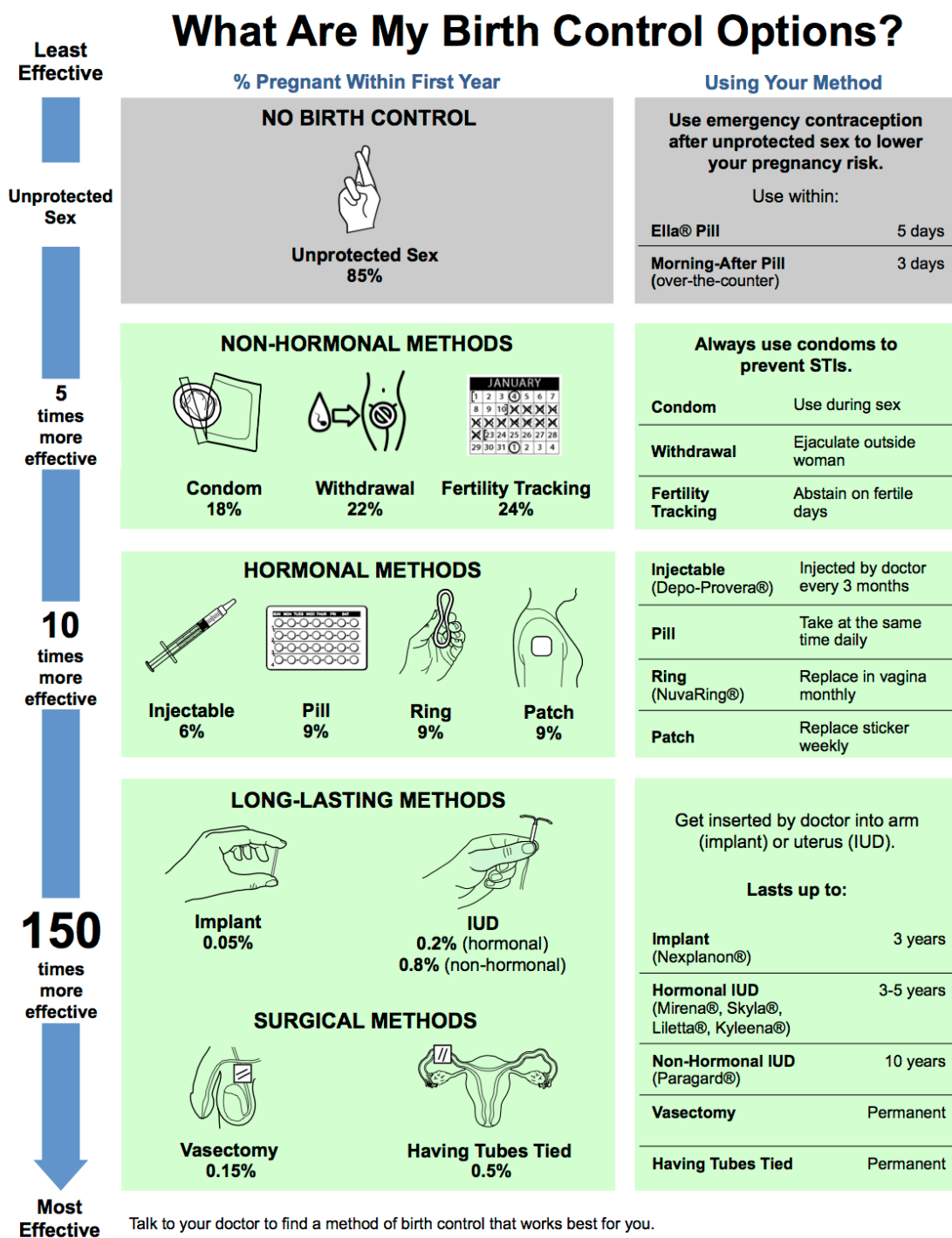
Other Methods of Contraception

Lactational Amenorrhea Method: LAM is a highly effective, temporary method of contraception.

Emergency Contraception: Emergency contraceptive pills or a copper IUD after unprotected intercourse substantially reduces risk of pregnancy.

Adapted from World Health Organization (WHO) Department of Reproductive Health and Research, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP). Knowledge for health project. Family planning: a global handbook for providers (2011 update). Baltimore, MD; Geneva, Switzerland: CCP and WHO; 2011; and Trussell J. Contraceptive failure in the United States. Contraception 2011;83:397-404.

Figure 2: New Contraceptive Poster



The study uses an online survey. Subjects will be recruited through Amazon Mechanical Turk's website. Amazon Mechanical Turk is an online service, which allows individuals to post surveys to be completed for a small amount of money. The job posting will include a very general description of the study, but no indications about the eligibility criteria. If a person is interested in participating, they will click on a link, which will take them to a short screening Qualtrics survey. If the person is eligible based on the screening survey, they will be given permission to view and complete the full survey. Data from the screening survey will not be downloaded or kept. The full survey will also be posted on Amazon Mechanical Turk, with the same general description of the study methods. If an eligible person is interested in completing the full survey, they will click on the link in the posting, which will take them to the full Qualtrics survey. There they will see the informed consent information and will be required to give their informed consent before they participate in the survey. We expect that the survey will take 30 minutes, on average, to complete.

After completing the survey, the survey will show the participant a unique code that they can enter into the Amazon Mechanical Turk form. This will be used to ensure that study participants are compensated for completing the survey. This code will not be recorded in our data set.

Study compensation \$0.05 for the screening survey and \$3.60 for the full survey. This is approximately equivalent to the federal minimum hourly wage, which should be a reasonable but not coercive incentive for participants.

The study was approved by the University of North Carolina at Chapel Hill Institutional Review Board (IRB number 17-2955).

Measures

This study measured change in the mean scores for three primary outcomes: contraceptive knowledge, effectiveness of most likely contraceptive method used in the next year, and accuracy of perceived pregnancy risk. We gathered baseline and follow-up measures for each of these outcomes immediately before and after the intervention, respectively.

Contraceptive knowledge was measured objectively using the 25-item Contraceptive Knowledge Assessment.¹ This produced a score between 0 (0% correct) and 25 (100% correct). Our contraceptive knowledge outcome was the change in this score between baseline and follow-up.

Effectiveness of most likely contraceptive method was operationalized using a woman's intention to continue using her current contraceptive method and the contraceptive method she reported being most likely to switch to were she to change methods in the next year. This measure was intended to be a realistic measure of the contraceptive method that women were most likely to use in the next year. We first asked women at both baseline and follow-up: "Do you intend to use the same birth control method(s) that you are currently using for the next year?" If the woman said she intended to keep her contraceptive method(s), the effectiveness of the most effective method she used in the past three months was used as her most likely method of contraception. The effectiveness of contraceptive methods was scored using the following WHO-defined categories²: IUDs, implants, and sterilization were considered highly effective (score = 3, 0-1% annual failure rate); the pill, patch, ring, and injection were considered effective (2, 2-9% annual failure rate); condoms, withdrawal, fertility tracking, and other methods were considered less effective (1, 10-30% annual failure rate); and no method

was its own category (0, 85% annual failure rate). If a woman said she did not intend to keep her current contraceptive method, we used the effectiveness of the most likely alternative contraceptive she would use. We measured this with the question, “If you had to change to a new birth control method in the next year, which of the following methods would you consider using?” Participants selected each method they would consider and then ranked the selected methods from most to least likely method. Our “effectiveness of most likely contraceptive method” outcome was the difference between a woman’s score at baseline and follow-up.

Finally, accuracy of perceived pregnancy risk was assessed by comparing a woman’s current contraceptive method to her perceived pregnancy risk. Perceived pregnancy risk was measured using the following question: “What is your chance of getting pregnant this year?” with possible responses being very high (score = 5, annual pregnancy risk >50%), high (4, annual pregnancy risk 25-50%), moderate (3, annual pregnancy risk 5-25%), low (2, annual pregnancy risk 1-5%), and very low (1, annual pregnancy risk $\leq 1\%$). We assessed the accuracy of perceived risk based on the most effective birth control method a woman used in the past three months. In accordance with the WHO categories², for highly effective methods, we coded an accurate perception to be very low risk; for effective methods, an accurate perception was low or moderate risk; for less effective methods, an accurate perception was moderate or high risk; for no method, an accurate perception was very high risk. An accurate perception was assigned a score of 1 and an inaccurate perception, 0. Our accuracy in perceived pregnancy risk outcome was the change in this score between baseline and follow-up.

Baseline data were collected on factors that might influence these outcomes. We measured prospective pregnancy intentions with the question, “Are you currently trying to get

pregnant or avoid pregnancy?”³ We measured past pregnancy scares by asking: “Have you ever had a pregnancy scare; that is, thought you were pregnant when you didn’t want to be, but later discovered that you weren’t pregnant after all?” We measured numeracy using the Berlin single item numeracy scale.⁴ This scale has been tested and validated to show that people who answer this question correctly are in the top 50% of the population in numeracy.⁴ Data were also collected on the sexes of the woman’s past sex partners, whether she had ever seen the poster before, and whether there were any types of birth control the woman could not use for health/safety or cost reasons. The following variables were measured using questions from the National Survey of Family Growth (NSFG): biological sex, age, whether the participant was trying to conceive or was currently pregnant, sexual intercourse in the past three months, education, time since first sex, and marital status. Finally, the following variables were measured using questions from the National Longitudinal Survey of Adolescent to Adult Health (Add Health): race/ethnicity (Wave V), income (Wave IV), relationship status (Wave IV), and health insurance type (Wave IV).

Analysis

We first tested whether the demographic and other factors were balanced between our randomized groups using two-sample t-tests and likelihood-ratio tests as appropriate. We did not find any statistically significant imbalances for any of the variables. We conducted two-sample t-tests on the change in the mean score for each of our outcomes to test whether each poster improved the three primary outcomes relative to baseline and in comparison to the other poster. We used the Bonferroni correction to account for multiple comparisons. Using the

same methods, we also tested the hypothesis that the three pre-specified subgroups (low numeracy, pregnancy scares, and no birth control) had greater increases in their mean scores for the patient-centered poster versus the CDC poster. We chose these subgroups because the patient-centered poster was designed to appeal to the needs of these groups. Finally, because correct answers to some of the questions on the Contraceptive Knowledge Assessment were not given by either poster, we could determine the proportion of the change in contraceptive knowledge that was attributable to the posters. We did this by analyzing the change in contraceptive knowledge separately for questions that did and did not have the correct answer provided by either poster. All analyses were conducted in Stata (Stata/SE 15, College Station, TX, US).

For our power calculations, we assumed an alpha of 1% and a power of 80%. For our final analysis sample of N=936, comparing the two posters we can detect a 3 percentage point difference in mean change in contraceptive knowledge (standard deviation of 0.18¹), a 0.8 percentage point difference in accuracy of perceived pregnancy risk (standard deviation of 0.05), and a 6 percentage point difference in the mean change in effectiveness of most likely contraceptive method (standard deviation of 0.35⁵).

References

1. Haynes MC, Ryan N, Saleh M, Winkel AF, Ades V. Contraceptive Knowledge Assessment: Validity and reliability of a novel contraceptive research tool. *Contraception*. 2017; 95:190-7.

2. Steiner MJ, Dalebout S, Condon S, Dominik R, Trussell J. Understanding risk: A randomized controlled trial of communicating contraceptive effectiveness. *Obstetrics & Gynecology*. 2003; 102:709-17.
3. Schwarz EB, Lohr PA, Gold MA, Gerbert B. Prevalence and correlates of ambivalence towards pregnancy among nonpregnant women. *Contraception*. 2007; 75:305-10.
4. Cokely ET, Galesic M, Schulz E, Ghazal S, Garcia-Retamero R. Measuring risk literacy: The Berlin numeracy test. *Judgment and Decision Making*. 2012; 7:25.
5. Antonishak J, Kaye K, Swiader L. Impact of an online birth control support network on unintended pregnancy. *Social Marketing Quarterly*. 2015; 21:23-36.