Does access to no-cost contraception change method selection among individuals who report difficulty paying for health-related care?

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Abstract

Background: Out-of-pocket costs continue to be a barrier to accessing necessary healthcare services, including contraception. We explored how eliminating out-of-pocket cost affects contraceptive method choice among people reporting difficulty paying for healthcare in the previous year, and whether method satisfaction differed by method choice.

Methods: We used data from the HER Salt Lake Contraceptive Initiative. This prospective cohort study provided participants with no-cost contraception (April 2016–March 2017) following a control period that provided no reduction in cost for the contraceptive implant, a reduced price for the hormonal IUD, and a sliding scale that decreased to no-cost for the copper IUD (September 2015–March 2016). We restricted the study population to those who reported difficulty paying for healthcare in the past 12 months. For our primary outcome assessing changes in method selection between intervention and control periods, we ran simultaneous multivariable logistic regression models for each method, applying test corrections for multiple comparisons. Among participants who continued their method for 1 year, we explored differences in method satisfaction using multivariable logistic regression.

Results: Of the 1,029 participants reporting difficulty paying for healthcare and controlling for other factors, participants more frequently selected the implant (aOR 6.0, 95% CI 2.7, 13.2) and the hormonal IUD (aOR 3.2, 95% CI 1.7, 5.9) during the intervention than control period. Comparing the same periods, participants less frequently chose the injection (aOR 0.5, 95% CI 0.3, 0.8) and the pill (aOR 0.4, 95% CI 0.3, 0.6). We did not observe a difference in uptake of the copper IUD (aOR 2.0, 95% CI 1.0, 4.1). Contraceptive satisfaction scores differed minimally by contraceptive method used among contraceptive continuers (n = 534). Those who selected LNG IUDs were less likely to report low satisfaction with their method (aOR 0.5, 95% CI 0.3, 0.97).

Conclusion: With costs removed, participants who reported difficulty paying for healthcare were more likely to select hormonal IUDs and implants and less likely to select the injectable or contraceptive pills. Among continuers, there were few differences in method satisfaction.

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Background

Uptake of long-acting reversible contraceptive (LARC) methods in the United States has increased dramatically over the last two decades, especially in the years since enacting the Affordable Care Act’s (ACA) contraceptive coverage mandate [1]. While this coverage has made LARC methods more affordable for many [2], there is still evidence that in states with imperfect implementation of the ACA, many others still have difficulty affording the highly effective methods that they want. A post-ACA evaluation found that more than 200,000 women¹ in Utah were still in need of subsidized family planning services [3]. Results from contraceptive access initiatives across the nation, indicate that removing costs leads to increased utilization of LARCs [4–7]. Utah’s HER Salt Lake Contraceptive Initiative (HER Salt Lake) found the odds of LARC uptake to increase as much as 2.5 times during the intervention period compared to the control period [5].

HER Salt Lake launched in 2015 through a partnership between the University of Utah Family Planning Division and Planned Parenthood Association of Utah (PPAU), and assessed the impact of removing cost on method selection for eligible study subjects in Salt Lake County, Utah [5]. In this secondary analysis, we explored the impact of cost removal on the subset of HER Salt Lake study participants reporting trouble paying for health-related care. Additionally, recognizing that cost is only one factor that may influence method satisfaction (or dissatisfaction), we assessed whether satisfaction differed by method selected across study periods (routine care vs. provision of no-cost contraceptive care for all methods).

Methods

Study population

HER Salt Lake is a prospective quasi-experimental observational cohort study that enrolled eligible women at four participating Planned Parenthood Association of Utah (PPAU) clinics in Salt Lake County, between September 2015 and March 2017 [5]. Prior to beginning the control period, staff at all PPAU health centers throughout the state were trained to offer clients standardized, patient-centered counseling; the method effectiveness chart and counseling discussion guide used during these counseling sessions are available as Additional file 1 and 2. During the six-month control period and consistent with clinic protocol prior to study implementation, contraceptive services costs for three years starting with a patient’s enrollment visit, regardless of the patient’s income. Those receiving care during the no-cost intervention period could return as often as they liked for three years and switch to any other method without cost. Details of HER Salt Lake study eligibility and methodology are reported elsewhere [5].

Data collection

To be eligible for the prospective survey arm of the study, patients had to (1) be between 18 and 45 years; (2) be fluent in English or Spanish; (3) desire to prevent pregnancy for at least one year; (4) have a working mobile phone; and (5) have incomes under 300% FPL. During the 18-month study period, 4,425 patients consented to participate in the prospective study and agreed to complete detailed questionnaires at enrollment and eight subsequent timepoints (1-, 3-, 6-, 12-, 18-, 24-, 30- and 36-months post-enrollment). This secondary analysis is restricted to HER Salt Lake prospective study participants who answered ‘Yes’ to the question “In the past 12 months, have you had trouble paying for medical care or medications?” in the enrollment survey. The one participating abortion clinic offered low- and no-cost contraception prior to the initiation of HER Salt Lake; we thus excluded participants served at this clinic from this analytic sample. Selection of our study sample is detailed in Fig. 1. We utilized both survey data and medical record data. We collected and stored survey data through the secure, web-based Research Electronic Data Capture (REDCap). We extracted participants’ health records, including contraceptive method selected at enrollment and changes in contraceptive method during the course of the study, from the PPAU electronic medical record system and linked these data to enrollment data.

Statistical methods and analyses

Our primary outcome assessed changes in method selection between the control and intervention periods among HER participants that reported difficulty paying for healthcare, asked as a Yes/No question. Our secondary outcome compared one-year method satisfaction among contraceptive continuers. We compared baseline differences in participant demographics between the control

¹ We use the term “women” and participants interchangeably throughout this article but acknowledge that not all individuals who need contraceptive services (or who were served by this initiative) identify as women. Transgender men and gender-nonconforming individuals were eligible for all aspects of participation.
and intervention period using chi-square tests and two-sample t-tests. Our baseline comparison presents the complete list of race and ethnicity categories found on the HER Salt Lake study enrollment form; due to small numbers, we collapsed these categories in our primary and secondary analyses using methodology consistent with previously published literature from the HER Salt Lake study [5]. Although we included all methods in our denominator, both primary and secondary analyses assess only the six most popular contraceptive methods (copper and hormonal IUDs, contraceptive implant, contraceptive shot, vaginal ring, and oral contraceptive pills) due to low rate of selection of other methods (2.6%).

We assessed our primary outcome by conducting simultaneous multivariate logistic regression models comparing differences in method uptake by study period and across methods. To develop our full model, we first conducted unadjusted regression analyses on all variables proposed for inclusion in the final multivariable models. We used a cut-off of 0.25 to determine covariate inclusion in the final models, as is supported by literature [8, 9]. Our covariates included variables known to influence contraceptive choice, including age, race and ethnicity, education, employment status, insurance type, federal poverty level, and parity. Additionally, we controlled for health center enrollment site, ever-use of LARC, and history of abortion, as these were significant in unadjusted analyses. Upon determining our final covariates, we ran six multivariable logistic models to assess predictors of method selection for each of the six most popular contraceptive methods. Accordingly, we applied the Benjamini–Hochberg Procedure as a test correction for multiple comparisons.

For our secondary outcome looking at method satisfaction among contraceptive continuers at one year, we defined “continuers” as those who reported continuation of same method selected at enrollment in their three-, six-, and twelve-month follow-up surveys. We made an exception when participants reported using male or female condoms, fertility awareness-based methods, withdrawal, or emergency contraception in these follow-up surveys: if a participant reported using any of these methods but later reported using the same method they
selected at enrollment, we categorized them as a contin-
uer with supplemental method use.

To assess predictors of method satisfaction within this
cohort, we utilized reported method satisfaction at the
12-month survey (measured on a Likert scale with the
choices completely satisfied, somewhat satisfied, neu-
tral, somewhat dissatisfied, and completely dissatisfied).
To ensure sufficient numbers for analyses, we aggregated
responses into three categories: completely satisfied,
somewhat satisfied/neutral, somewhat/completely dis-
satisfied, and compared distribution of responses in the
original categories and our aggregated categories. We
conducted a single multivariable model assessing pre-
dictors of method satisfaction among continuers. We
hypothesized that users using the same method for one
year would be ‘completely satisfied’ with that method,
and therefore used this category as our referent. We per-
formed all analyses in Stata 15.0 or higher (StataCorp
LP, College Station, TX). The Unviersity of Utah IRB
approved this study.

Results
A total of 1,029 individuals seen at the three clinics
included in our sample reported difficulty paying for
healthcare over the past year. This accounts for 26.9%
(n = 170) of all those enrolled in the control period and
27.1% (n = 859) of all intervention subjects. Partici-
pant demographics did not differ significantly between
study periods (Table 1). Nearly one-third of our sample
reported incomes above the federal poverty level, indicat-
ing that this sample represents a wide range of socioeco-
nomics statuses. Chi-square tests assessing the difference
in method selection between study periods identified sig-
nificant differences for each method except the vaginal
ring. Distribution of method selection across study peri-
ods is highlighted in Fig. 2.

Predictors of method selection
We found differences in method selection at enrollment
between study periods in our unadjusted logistic regres-
sion models: participants in the intervention period had
increased odds of selecting the implant, the copper IUD,
and the hormonal IUD compared to the control period.
Conversely, participants selected oral contraceptive
pills or the injectable less frequently in the intervention
period than the control period. Table 2 presents unad-
j usted results for all methods.

In adjusted models, the relationship between study period and certain LARC devices strengthened: com-
pared to the control period, we observed a six-fold increase in the likelihood of selecting an implant dur-
ing the intervention period (adjusted odds ratio (aOR)
6.0, 95% Confidence Interval (CI): 2.7, 13.2), and a

Table 1  Participant characteristics

| Variable                | Control   | Intervention | p-value |
|-------------------------|-----------|--------------|---------|
| No. (%)                 | (n = 170) | (n = 859)    |         |
| Age, years              |           |              |         |
| 18–19                   | 22 (12.9) | 129 (15.0)   | 0.338   |
| 20–24                   | 81 (47.7) | 352 (41.0)   |         |
| 25–29                   | 42 (24.7) | 216 (25.2)   |         |
| 30–34                   | 17 (10.0) | 89 (10.4)    |         |
| 35+                     | 8 (4.7)   | 73 (8.5)     |         |
| Race/Ethnicity          |           |              | 0.874   |
| American Indian or Alaska Native | 2 (1.2) | 12 (1.4)    |         |
| Asian                   | 3 (1.8)   | 22 (2.6)     |         |
| Black                   | 4 (2.4)   | 29 (3.4)     |         |
| Hispanic or Latina      | 33 (19.5) | 163 (19.2)   |         |
| Native Hawaiian or Pacific Islander | 0 | 7 (0.8)   |         |
| White, non-Latine       | 112 (66.3)| 542 (63.7)   |         |
| Other                   | 15 (2.4)  | 76 (8.9)     |         |
| Education               |           |              | 0.984   |
| High school or less     | 88 (52.4) | 447 (52.5)   |         |
| Any college             | 80 (47.6) | 405 (47.5)   |         |
| Employment status       |           |              | 0.739   |
| Full or part-time       | 102 (60.7)| 506 (60.2)   |         |
| Student                 | 22 (13.1) | 113 (13.4)   |         |
| Out of workforce        | 8 (4.8)   | 58 (6.9)     |         |
| Unemployed              | 36 (21.4) | 164 (19.5)   |         |
| Federal poverty level   |           |              | 0.426   |
| < 138%                  | 124 (73.8)| 598 (70.8)   |         |
| ≥ 138%                  | 44 (26.2) | 247 (29.2)   |         |
| Insurance type          |           |              | 0.514   |
| Private                 | 44 (28.2) | 204 (24.7)   |         |
| Public                  | 7 (4.5)   | 29 (3.5)     |         |
| None                    | 105 (67.3)| 592 (71.8)   |         |
| Parity                  |           |              | 0.492   |
| Nulliparous             | 118 (69.4)| 573 (66.7)   |         |
| Parous                  | 52 (30.6) | 286 (33.3)   |         |
| Ever-use of LARC        |           |              | 0.207   |
| Yes                     | 44 (25.9) | 264 (30.7)   |         |
| No                      | 126 (74.1)| 595 (69.3)   |         |
| History of abortion     |           |              | 0.155   |
| Yes                     | 30 (17.8) | 115 (13.6)   |         |
| No                      | 139 (82.3)| 733 (86.4)   |         |
the injectable in the intervention period compared to the control period in adjusted models (aOR 0.4, 95% CI: 0.3, 0.6), and similarly observed decreased odds of selecting injectable contraception (aOR 0.5, 95% CI: 0.3, 0.8). Once again, the likelihood of selecting the vaginal ring did not change significantly between study periods.

Results from all adjusted models are presented in Table 3. Compared to Latine participants, non-Latine, white participants had lower odds of choosing an implant (aOR 0.5, 95% CI: 0.3, 0.8), and had higher odds of choosing a hormonal IUD (aOR 1.9, 95% CI: 1.2, 3.0). Participants who reported any previous use of a LARC method were more likely to select a hormonal IUD (aOR 1.7, 95% CI: 1.2, 2.5), but not the copper IUD nor the implant. Participants without insurance were more likely to choose the pill during the intervention period compared to those with private insurance (aOR 2.2, 95% CI: 1.5, 3.3).

Method satisfaction

Of the 860 participants who provided one year of method use data, 62.1% (n = 534) reported using the same method continually since enrollment. We found the highest continuation rates among hormonal and copper IUD users, and contraceptive implant users (78.1% 76.9% and 68.1%, respectively). We observed lower continuation rates for the injectable, the vaginal ring, and the pill (55.5%, 44.3%, and 49.1%, respectively).

Compared to contraceptive pill continuers, continuers of the hormonal IUD were less likely feel neutral or somewhat satisfied with their method. Participants in their late 20s were less likely to feel dissatisfied with their method than those in other age groups, while participants with a history of abortion were more likely to feel dissatisfied. Participants in both their late 20s and late 30s were also less likely to feel somewhat satisfied with their method than those in other age groups. Table 4 presents unadjusted model results, and Table 5 details the results of our adjusted model.
Table 3  Factors associated with method selection in simultaneous multiple regression models

| Study period          | Implant       | Copper IUD    | Hormonal IUD | Contraceptive Pills | Injectable | Vaginal Ring |
|-----------------------|---------------|---------------|--------------|--------------------|------------|--------------|
|                       | aOR [95% CI] | aOR [95% CI] | aOR [95% CI] | aOR [95% CI]       | aOR [95% CI]| aOR [95% CI]  |
| Control (Referent)    |               |               |              |                    |            |              |
| Intervention          | 6.00 [2.72, 13.24]*** | 2.02 [0.98, 4.14] | 3.15 [1.68, 5.90]*** | 0.43 [0.29, 0.63]*** | 0.47 [0.30, 0.75]** | 1.40 [0.62, 3.19]  |
| Enrollment Site       |               |               |              |                    |            |              |
| Clinic 1 (Referent)   |               |               |              |                    |            |              |
| Clinic 2              | 1.32 [0.88, 1.99] | 0.68 [0.42, 1.10] | 0.74 [0.50, 1.11] | 0.94 [0.66, 1.34] | 1.71 [1.06, 2.76]* | 0.98 [0.49, 1.96]  |
| Clinic 3              | 0.92 [0.57, 1.49] | 0.62 [0.35, 1.11] | 1.02 [0.66, 1.58] | 0.88 [0.59, 1.32] | 1.29 [0.74, 2.25] | 2.51 [1.29, 4.90]**  |
| Race & Ethnicity      |               |               |              |                    |            |              |
| Latine (with any other race) (Referent) |               |               |              |                    |            |              |
| Non-White, Other, non-Latine | 0.56 [0.31, 1.01] | 1.39 [0.69, 2.81] | 1.15 [0.59, 2.23] | 0.84 [0.49, 1.46] | 1.70 [0.85, 3.40] | 1.42 [0.62, 3.24]  |
| White, Non-Latine     | 0.50 [0.33, 0.76]*** | 0.93 [0.53, 1.61] | 1.86 [1.16, 2.98]** | 1.09 [0.74, 1.60] | 1.51 [0.90, 2.56] | 0.65 [0.33, 1.26]  |
| Education level       |               |               |              |                    |            |              |
| High school or less   | 0.91 [0.61, 1.34] | 0.98 [0.61, 1.56] | 1.26 [0.86, 1.83] | 1.26 [0.90, 1.75] | 0.70 [0.46, 1.08] | 0.85 [0.47, 1.54]  |
| Any college           |               |               |              |                    |            |              |
| Employment status     |               |               |              |                    |            |              |
| Full- or part-time    | 0.98 [0.57, 1.68] | 0.81 [0.42, 1.58] | 1.27 [0.77, 2.09] | 0.93 [0.58, 1.47] | 0.91 [0.48, 1.76] | 1.32 [0.60, 2.86]  |
| Student               | 0.90 [0.40, 2.00] | 1.46 [0.67, 3.19] | 0.49 [0.20, 1.16] | 0.78 [0.39, 1.58] | 1.61 [0.77, 3.39] | 1.21 [0.39, 3.74]  |
| Out of Workforceb     | 1.17 [0.74, 1.85] | 0.55 [0.29, 1.05] | 0.85 [0.53, 1.37] | 1.13 [0.76, 1.69] | 1.26 [0.77, 2.08] | 1.00 [0.48, 2.10]  |
| Unemployed            |               |               |              |                    |            |              |
| Insurance type        |               |               |              |                    |            |              |
| Private (Referent)    | 1.34 [0.53, 3.40] | 0.86 [0.26, 2.90] | 0.59 [0.19, 1.87] | 1.55 [0.59, 4.05] | 1.09 [0.41, 2.92] | 1.00 [1.00, 1.00]  |
| Medicaid or Medicare  | 0.71 [0.47, 1.08] | 0.75 [0.45, 1.24] | 0.90 [0.61, 1.35] | 2.19 [1.48, 3.25]** | 0.70 [0.44, 1.14] | 0.93 [0.50, 1.75]  |
| None                  |               |               |              |                    |            |              |
| Federal poverty level (FPL) |               |               |              |                    |            |              |
| Up to 138%            | 1.15 [0.76, 1.72] | 0.58 [0.34, 0.99]** | 1.37 [0.94, 2.00] | 1.11 [0.78, 1.57] | 0.53 [0.32, 0.87]** | 1.53 [0.85, 2.75]  |
| 138% and greater      |               |               |              |                    |            |              |
| Parity                |               |               |              |                    |            |              |
| Nulliparous           | 1.18 [0.74, 1.88] | 0.97 [0.55, 1.73] | 1.49 [0.95, 2.34] | 0.74 [0.49, 1.13] | 0.99 [0.59, 1.65] | 0.93 [0.46, 1.88]  |
| Parous                |               |               |              |                    |            |              |
| Ever-use of LARC     |               |               |              |                    |            |              |
| No (Referent)         | 1.02 [0.68, 1.53] | 1.50 [0.93, 2.41] | 1.70 [1.17, 2.48]** | 0.62* [0.43, 0.89] | 0.49 [0.30, 0.80]** | 0.92 [0.49, 1.71]  |
| Age category          |               |               |              |                    |            |              |
| 18–19 (Referent)      |               |               |              |                    |            |              |
| 20–24                 | 1.15 [0.67, 1.95] | 1.06 [0.52, 2.16] | 0.96 [0.55, 1.68] | 1.17 [0.73, 1.87] | 1.00 [0.54, 1.88] | 1.05 [0.42, 2.62]  |
| 25–29                 | 0.97 [0.53, 1.77] | 1.35 [0.62, 2.95] | 0.75 [0.41, 1.40] | 0.96 [0.57, 1.64] | 1.49 [0.75, 2.99] | 1.68 [0.64, 4.42]  |
| 30–34                 | 0.50 [0.21, 1.18] | 1.60 [0.63, 4.03] | 0.91 [0.43, 1.93] | 0.88 [0.45, 1.74] | 1.88 [0.83, 4.26] | 1.62 [0.49, 5.31]  |
| 35+                   | 0.41 [0.16, 1.05] | 0.96 [0.32, 2.85] | 1.43 [0.64, 3.17] | 1.21 [0.57, 2.60] | 1.53 [0.60, 3.92] | 1.61 [0.41, 6.38]  |
| History of abortion   |               |               |              |                    |            |              |
| No (Referent)         |               |               |              |                    |            |              |
| Yes                   | 0.69 [0.39, 1.23] | 1.22 [0.68, 2.18] | 1.12 [0.69, 1.83] | 0.80 [0.50, 1.27] | 1.30 [0.77, 2.21] | 1.36 [0.65, 2.84]  |

Exponentiated coefficients; 95% confidence intervals in brackets

* p < 0.05, ** p < 0.01, *** p < 0.001

* Clinic 1 represents PPAU’s Salt Lake location, 2 is the West Valley City clinic, 3 is the South Jordan clinic

* Includes participants who reported they are on leave, retired, homemakers, or ‘other’
did not see hypothesized differences in method selec-
tion when comparing our subset of participants report-
ing for many Americans [11–13]; this may explain why we
for contraception care on method selection exclusively
has on contraception method selection [4, 5].

Table 4 Unadjusted logistic regression results comparing
method satisfaction across methods among continuers

| Method Selected          | Not Satisfied (n = 40) OR [95% CI] | Somewhat Satisfied or Neutral (n = 148) OR [95% CI] |
|-------------------------|-----------------------------------|-----------------------------------------------|
| Contraceptive Pills     | 0.6 [0.2, 1.2]                   | 0.9 [0.5, 1.6]                               |
| Implant                 | 0.9 [0.3, 2.4]                   | 0.7 [0.5, 1.3]                               |
| Copper IUD              | 0.4 [0.2, 1.2]                   | 0.6 [0.3, 1.0]                               |
| Hormonal IUD            | 0.2 [0.05, 1.1]                  | 0.5 [0.2, 1.0]                               |
| Injectable              | 0.3 [0.2, 1.2]                   | 0.5 [0.2, 1.3]                               |
| Vaginal Ring            | 3.0 [0.7, 13.4]                  | 2.3 [1.1, 4.7]                               |

*p < 0.05, **p < 0.01, ***p < 0.001

Discussion

Adjusted models for our primary outcome demonstrated
distinct findings for changes in uptake of each LARC
method when patient costs were completely removed
during the intervention period. The copper IUD was the
one LARC method available for some people at no cost
during the control period and did not increase in use dur-
ing the intervention period. The hormonal IUD, offered
at a reduced cost during the control period, saw a three-
fold increase in selection during the intervention. Mean-
while, the only LARC method not available at a reduced
cost in the control period, the contraceptive implant,
showed a six-fold increase in selection with cost removal.
These changes in the primary outcome make economic
sense at the individual level and align with existing litera-
ture demonstrating the significant influence method cost
has on contraception method selection [4, 5].

In this study, we assessed the effect of removing cost
for contraceptive care on method selection exclusively
among study participants reporting prior difficulty pay-
ing for healthcare and healthcare-related services. With
cost removal, people more frequently chose the implant
and hormonal IUD, and less frequently chose oral contra-
ceptive pills and the injectable.

Importantly, we found that reports of difficulty paying
for healthcare were not limited by socioeconomic sta-

The 340B drug pricing program, administered by
the federal government, is meant to help non-profit
hospitals and clinics purchase outpatient medications
at reduced costs [15]. During the control period, the
hormonal IUD was available at reduced cost through
the 340B drug pricing program; participants paid for
the insertion, plus $50 for the device itself. In spite of
this, we still observed an increased rate of hormonal
IUD selection when it was available at no cost during
the intervention period. This increase, however, was
much smaller in magnitude than that of the contra-
ceptive implant, which was not available at a reduced price
during the control period.

Our results, similar to results of prior research, sug-
gest that more people choose these methods when cost
is not a barrier [4, 5, 16]. Participants in our study were
twice as likely to choose a hormonal IUD with removal of
costs during the intervention period as compared to the
control period. However, the six-fold increase we found
in selection of the contraceptive implant during the inter-
vention period suggests high demand for an affordable
option for this device. After a July 2020 Supreme Court
ruling undermined the ACA’s contraceptive coverage
mandate by allowing employers to limit access to contra-
ception under their employer-sponsored insurance plan,
the dearth of ‘low cost’ LARC methods on the market is
especially relevant [17].

Similar to other contraceptive initiatives such as
CHOICE, HER Salt Lake participants could select from the
full range of contraceptive methods at enrollment
free of charge [4, 5]. Any HER Salt Lake participant was
also able to switch methods at no cost, and as frequently
as desired, during the duration of the study’s intervention
period. While we observed higher one-year continua-
tion rates among those who selected a LARC device than
those who chose a short-acting method, we found very
few differences in method satisfaction among contracep-
tive continuers. Future research could explore the types
of considerations that impact method continuation.

Strengths of this study include its large cohort who
provided baseline information and prospectively pro-
vided regular follow-up data. Participating clinics are all
in the same health system and staff at all clinics received
the same contraceptive counseling training prior to the
control period. Another strength is use of both EHR and
survey data to assess method selection, as these data
sources allow for data quality assurance.

Our study findings may be limited by the fact that par-
ticipants self-identified as having difficulty paying for
healthcare. The concept of “difficulty” was not specifically
Table 5  Predictors of being less than completely satisfied at one-year among continuers

|                              | Not satisfied at one year (n = 40) | Somewhat satisfied or neutral at one year (n = 148) |
|------------------------------|-----------------------------------|-----------------------------------------------|
|                              | aOR 95% Confidence Interval       | aOR 95% Confidence Interval                   |
| **Method**                   |                                   |                                               |
| Hormonal implant             | 0.49 [0.14, 1.66]                 | 0.85 [0.44, 1.64]                             |
| Copper IUD                   | 0.99 [0.32, 3.09]                 | 0.64 [0.30, 1.35]                             |
| Depo shot                    | 0.19 [0.04, 1.06]                 | 0.45 [0.20, 1.01]                             |
| Vaginal ring                 | 0.24 [0.02, 2.45]                 | 0.39 [0.13, 1.19]                             |
| LNG IUDs                     | 0.38 [0.12, 1.19]                 | 0.51* [0.27, 0.97]                            |
| OC Pills                     | (Referent)                        |                                               |
| **Study period**             |                                   |                                               |
| Control                      | 2.51 [0.52, 12.03]                | 1.97 [0.91, 4.26]                             |
| Intervention                 | (Referent)                        |                                               |
| **Enrollment Site**a         |                                   |                                               |
| Clinic 1                     | (Referent)                        |                                               |
| Clinic 2                     | 0.66 [0.27, 1.62]                 | 0.72 [0.43, 1.20]                             |
| Clinic 3                     | 1.01 [0.39, 2.64]                 | 0.91 [0.53, 1.57]                             |
| **Race/Ethnicity**           |                                   |                                               |
| Latine (with any other race) | (Referent)                        |                                               |
| Non-White, Other, non-Latine | 0.89 [0.20, 4.03]                 | 0.96 [0.42, 2.18]                             |
| White, non-latine            | 0.90 [0.31, 2.61]                 | 0.89 [0.50, 1.59]                             |
| **Insurance type**           |                                   |                                               |
| Private                      | 1.68 [0.21, 13.31]                | 0.94 [0.20, 4.41]                             |
| Medicaid or medicare         | 0.93 [0.39, 2.24]                 | 1.08 [0.66, 1.76]                             |
| None                         | (Referent)                        |                                               |
| **Federal poverty level**    |                                   |                                               |
| Up to 138%                   | 1.11 [0.47, 2.62]                 | 1.36 [0.84, 2.20]                             |
| 138% and greater             | (Referent)                        |                                               |
| **Parity**                   |                                   |                                               |
| Nulliparous                  | (Referent)                        |                                               |
| Parous                       | 0.96 [0.34, 2.66]                 | 1.55 [0.88, 2.75]                             |
| **Ever-Use of LARC**         |                                   |                                               |
| No                           | (Referent)                        |                                               |
| Yes                          | 1.28 [0.54, 3.05]                 | 0.97 [0.58, 1.61]                             |
| **Age category**             |                                   |                                               |
| 18–19                        | (Referent)                        |                                               |
| 20–24                        | 0.60 [0.19, 1.85]                 | 0.62 [0.30, 1.28]                             |
| 25–29                        | 0.18* [0.04, 0.80]                | 0.44* [0.19, 0.98]                            |
| 30–34                        | 1.22 [0.28, 5.29]                 | 1.00 [0.38, 2.59]                             |
| 35 +                         | 0.26 [0.03, 1.96]                 | 0.27* [0.08, 0.93]                            |
| **History of abortion**      |                                   |                                               |
| No                           | (Referent)                        |                                               |
| Yes                          | 3.45* [1.28, 9.34]                | 1.46 [0.73, 2.92]                             |
| **Education level**          |                                   |                                               |
| High school or less          | (Referent)                        |                                               |
| Any college                  | 0.81 [0.36, 1.83]                 | 1.61 [0.99, 2.60]                             |
| **Employment status**        |                                   |                                               |
| Full- or part-time           | (Referent)                        |                                               |
| Student                      | 0.00 [0.00, ]                    | 1.11 [0.61, 2.03]                             |
| Out of workforceb            | 0.60 [0.10, 3.55]                 | 1.24 [0.49, 3.19]                             |
| Unemployed                   | 1.53 [0.55, 4.25]                 | 1.06 [0.54, 2.06]                             |
Table 5 (continued)

| Exponentiated coefficients; 95% confidence intervals in brackets
|---|
| *p < 0.05

*a Clinic 1 represents PPAU’s Salt Lake location, 2 is the West Valley City clinic, 3 is the South Jordan clinic

*b Includes participants who reported they are on leave, retired, homemakers, or ‘other’

defined, meaning the implications of this categorization are likely broad. Further research is needed to more accurately define how different difficulties in paying for healthcare may manifest with respect to contraceptive access. Additionally, survey data is not well-suited to the task of teasing apart the factors that contribute to someone’s subjective definition of satisfaction broadly, and specifically what it means to be satisfied with their contraceptive method. Relying on these data could potentially lead to misclassification of method satisfaction results. Conducting HER Salt Lake in the urban area of Utah possibly limits the generalizability of our findings to people outside of Utah, or people living in rural areas. We do note that two-thirds of our population identified as non-Latine white, reflective of the 61% of the U.S. population in that group.

Conclusion

Despite the existence of sliding scale fees and patient assistance programs in the control period, a no-cost contraceptive intervention still increased utilization for long-acting methods, specifically hormonal IUDs and implants, among study participants who reported prior difficulty paying for healthcare. Additionally, method satisfaction did not differ across methods among participants with continued method use. Finally, and perhaps most importantly, people across income levels report difficulty paying for healthcare.

Abbreviations

LARC: Long-acting removable contraception; ACA: Affordable Care Act; HER Salt Lake: HER Salt Lake Contraceptive Initiative; PPAU: Planned Parenthood Association of Utah; FPL: Federal poverty level, REDCap: Research Electronic Data Capture; IUD: Intrauterine Device, OR: Odds Ratio, aOR: Adjusted Odds Ratio, CI: Confidence Interval.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12905-022-01911-x.

Additional file 1: Method Effectiveness Chart.
Additional file 2: Counseling Discussion Guide.
Additional file 3: De-identified dataset used in analyses.

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Author contributions

DKT, JNS and RS were responsible for study design and oversight. AG conducted data analysis, composed the manuscript and prepared it for publication. All authors participated in the revision of the final manuscript and approved the final version.

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Availability of Data and Materials

A de-identified dataset of the data generated and analyzed during this study is included in this published article and its supplementary information files (Additional file 3).

Declarations

Ethics approval and Consent to participate

Our research was approved by the University of Utah’s Institutional Review Board on 08/08/2013 (IRB #65794). Participants who formally enrolled in the survey arm of the study provided written informed consent. Those under 18 were not eligible to enroll in the survey portion of the study and thus parental consent is not applicable. All methods were performed in accordance with the Helsinki declaration.

Consent for publication

Not applicable.

Competing interests

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