



Original research article

Shared negative experiences of long-acting reversible contraception and their influence on contraceptive decision-making: a multi-methods study^{☆,☆☆}

Benjamin P. Brown^{*,1}, Julie Chor, Luciana E. Hebert², M. Elizabeth Webb³, Amy K. Whitaker

University of Chicago Medicine, Department of Obstetrics and Gynecology, Section of Family Planning and Contraceptive Research, 5841 S. Maryland Ave. – MC2050, Chicago, IL 60637.



ARTICLE INFO

Article history:

Received 10 April 2018

Received in revised form 11 January 2019

Accepted 16 January 2019

Keywords:

Long-acting reversible contraception

Counseling

Multi-methods

Qualitative

Contraceptive decision-making

ABSTRACT

Objectives: We explored how negative stories about long-acting reversible contraception (LARC) — defined as a firsthand negative experience with LARC shared directly with the study participant — were involved in participants' decisions about whether to use LARC following abortion, and how counseling affected the influence of negative LARC stories on contraceptive choices.

Study design: We performed a multi-methods study, embedded within a trial examining the impact of a theory-based counseling intervention on LARC uptake post-abortion. Participants completed a baseline survey to determine the influence of negative LARC stories. We subsequently invited respondents who reported having heard negative LARC stories to participate in a semi-structured qualitative interview. We analyzed quantitative data with univariate statistics. We analyzed qualitative data using thematic content analysis.

Results: Among the 60 participants, 16 (27%) reported having heard negative LARC stories. Two of the 16 (13%) planned to initiate LARC prior to counseling, compared to 18 of 44 women (41%) who had not heard negative LARC stories ($p=0.06$). Prior to counseling, 69% of participants with negative LARC stories reported that these stories made them less likely to use LARC. In qualitative interviews with 9 women, we identified several key themes: (1) negative LARC stories deterred LARC use; (2) friends and family were valued informants; (3) potential side effects were important to LARC decision-making; and (4) positive and negative features of the counseling encounter influenced the effect of negative LARC stories.

Conclusions: Negative LARC stories are common among women presenting for abortion at our institution and may influence patient uptake of these methods.

Implications

This study uses a multi-methods approach to examine the influence of negative stories about long-acting reversible contraception (LARC) on decision-making about LARC. These findings can help providers elicit patients' needs in contraception counseling and generate hypotheses for future counseling research.

© 2019 Elsevier Inc. All rights reserved.

[☆] Declarations of interest: None.

^{☆☆} This trial was prospectively registered on [ClinicalTrials.gov](https://clinicaltrials.gov) (NCT01881321).

* Corresponding author. Tel.: +1 401 274 1122x41514.

E-mail addresses: benjamin_brown@brown.edu (B.P. Brown), jchor@bsd.uchicago.edu (J. Chor), luciana.hebert@wsu.edu (L.E. Hebert), mwebb@bsd.uchicago.edu (M.E. Webb), amyw@ppil.org (A.K. Whitaker).

¹ Present affiliation: Alpert Medical School of Brown University, Department of Obstetrics and Gynecology, Women and Infants Hospital of Rhode Island, Division of Emergency Obstetrics and Gynecology, 101 Dudley St., Providence, RI 02905.

² Present affiliation: Initiative for Research and Education to Advance Community Health (IREACH), Washington State University, 1100 Olive Way, Suite 1200, Seattle, WA 98101.

³ Present affiliation: University of Chicago, Student Health and Counseling Services, 860 E. 59th St. Suite R-100, Chicago, IL 60637.

1. Introduction

Informal sources of contraceptive information, such as friends, family members and partners influence women's use of contraception, including uptake of long-acting reversible contraception (LARC) such as contraceptive implants and intrauterine devices (IUDs) [1–4]. Some prior studies suggest that receipt of information from informal sources is associated with uptake of LARC [1,3], while other studies show the opposite [5,6]. Studies have shown that shared negative experiences decrease patient interest in LARC and other contraceptive methods [7–11], while shared positive experiences are associated with intention to use LARC [11,12]. Qualitative studies exploring the conversations women have with friends and family about contraception have found that women more frequently recall past negative stories compared to

positive stories and that these negative stories influence story recipients' contraceptive decision making more than positive stories [4,13]. However, these papers do not examine how common negative LARC stories are. They also do not fully address the process by which such stories affect contraceptive decisions or the contraception counseling encounter. Such information could help guide providers as they explore patients' values and concerns when they are choosing a contraceptive method.

We sought to explore how negative LARC stories — defined as a firsthand negative experience with LARC shared directly with the participant — were involved in participants' decisions about whether to use a method of LARC among abortion patients at our institution. We also sought to explore how contraception counseling affected the influence of negative LARC stories on contraceptive choices.

2. Materials and methods

We performed a multi-methods study, embedded within, and designed to further contextualize the findings of a randomized controlled trial (parent RCT) examining the impact of a structured counseling intervention on uptake of LARC [14–16]. Our sample included 60 women presenting for induced abortion at an urban, academic, hospital-based family planning clinic. The clinic provided access to the full spectrum of post-abortion contraception.

We recruited participants for the parent RCT and for the present sub-study between June, 2013 and March, 2014. Inclusion criteria were: aged 15–29 years and able to consent in English. We excluded participants if the abortion was for medical or fetal indications; if they had received any sedatives or cervical ripening agents; if they intended to become pregnant again within 12 months; or if the pregnancy was the result of sexual assault. Staff obtained written consent from all participants. The University of Chicago Biological Sciences Division Institutional Review Board approved the protocol and granted a waiver of parental consent for minors. Participants received up to \$40 in compensation for their time.

When a research assistant enrolled participants in the parent RCT, participants also completed an additional REDCap-hosted baseline survey, administered via tablet, to elicit a history of exposure to negative LARC stories and to assess the influence of negative LARC stories on decision-making. We measured influence by asking how negative LARC stories affected interest in methods of LARC, with responses framed by a five-point Likert scale anchored by “Made me much less interested in using this method” and “Made me much more interested in using this method.” The baseline survey also included demographic information and items to assess contraceptive preferences prior to the clinic visit. We then randomized participants to receive a structured contraception counseling intervention in addition to usual care or to the control arm of usual care alone, followed by their abortion procedures. Intervention-trained physicians performed counseling in both arms of the RCT. Usual care in this clinic ensures that women have time to speak one-on-one with a physician about contraceptive options, following the individual physician's standard practice.

Unique to this sub-study, at a three-month follow-up contact, research team members invited participants who had reported hearing negative LARC stories to participate in semi-structured qualitative telephone interviews to understand better how negative LARC stories and counseling influenced contraception decision-making. Interviews were conducted by one of two team members trained in interviewing for qualitative studies by a more senior qualitative researcher (SLM): one male resident physician (BPB) and one female research assistant (CHM, bachelor's-level training). We used an interview guide for all interviews, which included questions about participants' sources of contraceptive information; the content of negative contraceptive stories shared by friends, family members and partners; and participants' opinions about the study counseling session.

The sample size for the parent RCT was pre-determined at 60. Our primary hypothesis, based on previous literature [7,9] was that 25% of participants would report negative LARC stories. We attempted to contact and invite all study participants who reported encountering negative LARC stories to participate in a qualitative interview. With our small sample size, our goal was not to reach thematic saturation. Rather, our intent was to interview an adequate number of participants in our convenience sample to develop a set of meaningful descriptive hypotheses to enrich the quantitative data presented here and those gathered in the parent RCT, otherwise known as reaching theoretical sufficiency [17].

We analyzed quantitative data with Stata 14.2 (StataCorp LP, College Station, TX). We compared categorical variables using chi-squared and Fisher's exact tests and continuous variables using t-tests. Qualitative interviews, which lasted approximately 30 minutes to 1 hour each, were audio-recorded, transcribed, iteratively coded and analyzed for salient themes and co-occurring topics. We managed our qualitative data using Atlas.ti 7 (Atlas.ti Scientific Software Development GmbH, Berlin). We developed the analysis codebook based on the interview guide, then refined and expanded it during coding. We subsequently used the codebook to conduct thematic content analysis [18]. Two researchers (BPB and MEW) coded each transcript independently and subsequently resolved disagreement through discussion and code refinement until they reached consensus. Our most experienced qualitative researcher (LEH) oversaw codebook development and coding. We used qualitative data to contextualize the quantitative data from this sub-study and the parent RCT. Representative quotes from the qualitative data are identified by pseudonyms for participants.

3. Results

3.1. Participant characteristics

Our study population was majority black, and most of our respondents were single, living alone and had annual household incomes of \$30,000 or less. The majority of participants had at least some college education. Of the 60 participants in the parent RCT, 16 (27%) reported having heard negative LARC stories: 13 about the IUD (22%) and three about the implant (5%). Demographic characteristics were similar between those who reported negative LARC stories and those who did not (Table 1).

3.2. Quantitative data

Among the participants who had heard negative LARC stories, two of 16 (13%) had planned to initiate a method of LARC prior to counseling, while 18 of the 44 women who had not heard negative LARC stories (41%) had intended to obtain LARC prior to counseling ($p=0.06$). Prior to counseling, 69% of participants with negative LARC stories (11/16) reported that these stories made them less likely to use a method of LARC.

3.3. Qualitative data

Of the 16 participants who reported hearing negative LARC stories, we reached 11 participants and invited them to participate in a qualitative interview. Nine participants agreed to participate in an interview (Fig. 1). We identified several key themes in the qualitative data: (1) negative LARC stories deterred LARC use; (2) friends and family were valued informants; (3) perceived or potential side effects were important to the LARC decision-making process; and (4) positive and negative features of the counseling encounter influenced the effect of negative LARC stories.

Table 1
Participant characteristics

	Total (n=60)	Heard negative LARC stories (n=16)	No negative LARC stories (n=44)	p-Value
Age (years)				
Mean ± SD	22.8 ± 3.8	24.1 ± 3.9	22.3 ± 3.7	.11
Range	16–29	16–29	16–29	
Race (n, %)				
Black, non-Hispanic	47 (78)	14 (88)	33 (75)	.42
White, non-Hispanic	4 (7)	1 (6)	3 (7)	
Hispanic	6 (10)	0 (0)	6 (14)	
Other	3 (5)	1 (6)	2 (5)	
Marital status (n, %)				
Single, living alone	47 (78)	14 (88)	33 (7)	.81
Single, living with partner	9 (15)	2 (13)	7 (16)	
Married	3 (5)	0 (0)	3 (7)	
Divorced or separated	1 (2)	0 (0)	1 (2)	
Maximum level of education (n, %)				
High school or less	22 (37)	7 (44)	15 (34)	.85
Some college	27 (45)	7 (44)	20 (46)	
College grad	10 (17)	2 (13)	8 (18)	
Declined / Missing	1 (2)	0 (0)	1 (2)	
Annual household income (n, %)				
Less than \$10,000	24 (42)	5 (31)	19 (43)	.75
\$10,001 to \$30,000	21 (37)	7 (44)	14 (32)	
\$30,001 to \$50,000	6 (11)	2 (13)	4 (9)	
More than \$50,000	6 (11)	2 (13)	4 (9)	
Declined / Missing	3 (5)	0 (0)	3 (7)	
Parity (n, %)				
Nulliparous	28 (47)	6 (38)	22 (50)	.56
Parous	32 (53)	10 (63)	22 (50)	

Legend: Baseline demographic data.

3.3.1. Negative LARC stories deterred LARC use

Participants reported that negative LARC stories deterred use of methods of LARC. Key themes of these stories centered on the device becoming lost, causing pain, resulting in hospitalization, or failing to prevent pregnancy. One respondent summarized the effect of a negative story saying, “About the IUD I said no automatically. [...] Because of [my friend’s] experience [...] she can’t find her IUD, like you can’t find it, they don’t know where it went, so I said no,” (Alessandra, 29 years old, Black, Non-Hispanic). Another participant explained, “One of [my closest friends] ended up mentioning to me that she had an IUD and it got moved, I think she said, and it caused her a lot of pain and she ended up having to go to the hospital [...] I didn’t get all of the story but it [was] scary [and] I didn’t want to hear the rest of it.” (Frederica, 20 years old, Biracial, Non-Hispanic)

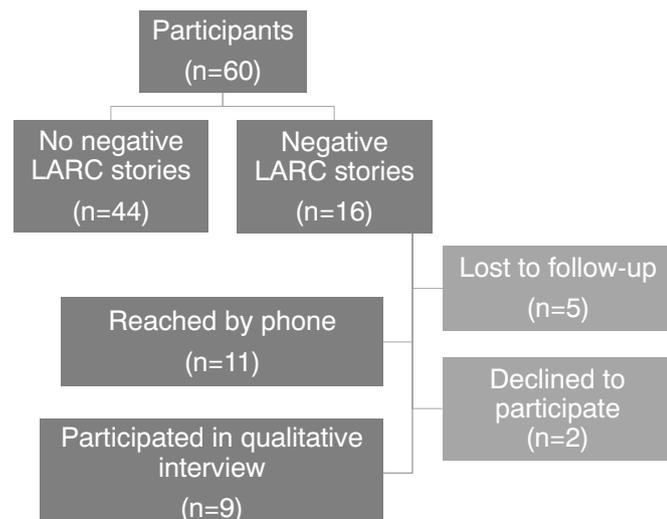


Fig. 1. Participant recruitment for qualitative interviews.

3.3.2. Friends and family members were valued informants

The weight of stories from informal sources was reinforced by the fact that participants frequently identified friends and family members as their most important informants for contraception decisions. In particular, they emphasized the importance of close personal relationships: “these people that I knew and know [...] it’s not just people that I see and we holdin’ a conversation. No, these are people that I actually know and had these experiences with birth control.” She went on to underscore, “these are close friends, not just ‘oh, that’s a friend.’ No, these are close friends and family members,” (Robin, 27 years old, Black, Non-Hispanic). Participants also underscored the value of experiential information in their thought process, and identified a tension between the firsthand knowledge shared by a friend or family member and physician counseling: “I do base my decisions on my closest friends and family who have gone through stuff. [...] I try to keep it as true to what the doctor tells me of course, but hearing it like that firsthand really helps,” (Frederica, 20 years old, Biracial, Non-Hispanic).

3.3.3. Side effects were important to the LARC decision-making process

Respondents consistently identified perceived and feared side effects as deterrents to LARC use, whether they arose from negative LARC stories or not. Concerns ranged from less-severe side effects, such as bleeding changes, weight gain, pain and hair loss, to serious health consequences such as infertility and thrombosis. As one woman explained about hearing friends’ negative LARC stories, “It makes me less want to try it [contraception]. Especially if they had some type of really bad reaction that may not necessarily be specific to that person.” She went on to highlight concerns specific to longer-acting methods, saying, “[I]f it’s something that’s more of a permanent method or extreme – I guess extreme is not the word I’m looking for – but if it’s one of those other types of methods I’ll be less likely to – I’ll have a strong reaction to [the story],” (Jamie, 25 years old, Black, Non-Hispanic).

3.3.4. Positive and negative features of counseling influenced the effect of negative LARC stories

A number of participants expressed that counseling moderated the influence of negative LARC stories when the counseling resulted in the

sharing of new or comprehensive information, and when providers tailored the discussion to their individual needs. However, several participants also expressed that they valued second-hand experiential information from negative LARC stories more strongly than contraception counseling. Participants disliked feeling like the provider was minimizing their concerns. Conflicting themes emerged about perceived provider promotion of particular methods.

As one woman described the way contraception counseling moderated the influence of negative LARC stories:

Interviewer: Did [the counseling] make you feel better about the [negative LARC] stories you'd heard?

Respondent: Yes. Yes, it definitely did. [...] [W]ith the counseling [at the study visit], I had all of the time in the world, I could ask questions. Like, I felt at ease, you know? And this was a doctor who was specialized in birth control also so she knew everything about it, answered all of my questions that I could even think of, so I thought it was really great. (Frederica, 20 years old, Biracial, Non-Hispanic)

Participants had negative responses when they perceived the provider had minimized their concerns. One woman remarked, "Don't try to play it down. These people get fat off the shot," (Jamie, 25 years old, Black, Non-Hispanic). Some participants identified unwanted pressure toward adoption of certain contraception options: "Honestly, sometimes the doctors say any birth control is good so you can just get on, and I want to know everything about why I should choose that birth control," (Alessandra, 29 years old, Black, Non-Hispanic). Others, however, saw a role for promoting contraception based on the life situation of the patient.

4. Discussion

The results of this study support our primary hypothesis that approximately one quarter of participants would report shared negative LARC stories. Moreover, both the survey and interview data suggested that participants valued negative LARC stories in the contraception decision-making process. Our quantitative analysis revealed a notable trend toward participants with negative LARC stories being less likely than those without negative LARC stories to plan on starting a method of LARC at presentation for their abortion.

Interview data corroborated the survey findings by underscoring the value participants place on experiential information and the deterrent effect of negative LARC stories. Interview data suggested that these misgivings may be mitigated by empathetic counseling that validates patient concerns.

These results are both consistent with prior qualitative research and contribute additional nuance to our understanding of contraceptive decision-making. While Gilliam and colleagues found that negative experiences shared by friends or family were barriers to uptake of contraception [10], a study led by Benson found a positive association between shared positive experiences of IUD use by an informal informant or a provider and IUD uptake [12]. Furthermore, Anderson and colleagues found that, compared to positive ones, women more commonly reported negative IUD stories from social contacts and television commercials and that negative stories had a greater influence on contraceptive decision making [4].

With regard to the role of contraception counseling on women's contraceptive decision-making, a mixed-methods study by Levy and colleagues analyzed audio recordings of contraception counseling visits with 342 women [13]. The authors found that 42% of the sessions included mention of discussions that participants had had with members of their social network about contraception. Of these discussions, 95 (70%) included negative stories and 57 (40%) included positive stories. During counseling, providers frequently avoided directly addressing patients' concerns elicited through the reported negative stories [13]. In

contrast, several participants in our study appreciated counseling that responded to their individual needs and concerns and expressed that such counseling helped to counter the influence of negative LARC stories. Therefore, our study's findings echo those by Elwyn and colleagues who found that women desire a balance of autonomy and shared decision-making, so long as provider advice respects the woman's values and needs [19].

Our study reaffirms that women value shared negative experiences in the contraceptive decision making process, and provides new insights regarding the role that contraception counseling may play in mitigating such concerns. These findings may help inform contraception counseling in several ways. First, those patients who have heard negative LARC stories may weigh them heavily. Therefore, addressing the concerns raised by such stories is an important part of clinical care and should form the basis for future research. Second, counseling that aims to validate patient experiences and concerns is likely to be viewed positively by patients. Third, providers may wish to focus on sharing comprehensive information about the contraception methods under discussion, clearly articulating both positive and negative attributes.

This study has a number of limitations, including the small sample size. In particular, the limited number of participants means that we likely have not reached saturation for all potential themes in the qualitative data. However, the consistency of responses in the qualitative data has allowed us to generate meaningful hypotheses to enrich the quantitative data collected and form the basis for future work. An additional limitation of the study is the fact that participants came from a convenience sample recruited at the time of an abortion, which limits transferability.

A key strength of our study is the multi-methods approach, which provides both quantitative and qualitative data that offer information about the context of our participants' decisions. Additionally, while other authors have begun to unpack the influence of informal informants on contraception choices in general, our study focuses on how negative LARC stories influence the counseling encounter specifically, offering insight that may help providers as they work with patients. These data also indicate directions for future research: importantly, some domains within the qualitative data would benefit from additional investigation, specifically, the exact nature of patients' fears about the side effects of contraception, the sources of these concerns, and how to improve patient understanding of contraceptives' safety profiles.

5. Conclusions

Negative LARC stories are common among women presenting for abortion at our institution and have a negative effect on patient uptake of these methods. These findings can help providers elicit patients' needs in contraception counseling and generate hypotheses for future counseling research.

Acknowledgements

The authors wish to thank Catherine Hagbom Ma (CHM), Summer Martins (SLM), and Sara Newton for their assistance in study design, data collection and transcript coding.

Funding

This work was supported by the Society of Family Planning [Trainee Research Grant number SFPRF7-S4] and the National Institutes of Health [grant numbers K23 HD067403-01A1, UL1 RR024999].

References

- [1] Mears CJ, Hediger ML, Martin SS, Scholl TO, Kramer JP. Social factors predicting postpartum choice of Norplant among African-American and non-Hispanic white adolescents. *J Adolesc Health* 1997;21(3):167–71.

- [2] Fleming KL, Sokoloff A, Raine TR. Attitudes and beliefs about the intrauterine device among teenagers and young women. *Contraception* 2010;82(2):178–82.
- [3] Forrest JD, Frost JJ. The family planning attitudes and experiences of low-income women. *Fam Plan Perspect* 1996;28(6):246–77.
- [4] Anderson N, Steinauer J, Valente T, Koblentz J, Dehlendorf C. Women's social communication about IUDs: A qualitative analysis. *Perfect Sex Reprod Health* 2014;46(3):141–8.
- [5] Campo S, Askelson NM, Spies EL, Losch M. Ambivalence, communication and past use: Understanding what influences women's intentions to use contraceptives. *Psychol Health Med* 2012;17:356–65.
- [6] Hodgson EJ, Collier C, Hayes L, Curry LA, Fraenkel L. Family planning and contraceptive decision-making by economically disadvantaged, African-American women. *Contraception* 2013;88(2):289–96.
- [7] Asker C, Stokes-Lampard H, Beavan J, Wilson S. What is it about intrauterine devices that women find unacceptable? Factors that make women non-users: A qualitative study. *J Fam Plann Reprod Health Care* 2006;32:89–94.
- [8] Glasier A, Scorer J, Bigrigg A. Attitudes of women in Scotland to contraception: A qualitative study to explore the acceptability of long-acting methods. *J Fam Plann Reprod Health Care* 2008;34:213–7.
- [9] Brown KE, Arden MA, Hurst KM. A qualitative analysis of accounts of hormonal contraceptive use: Experiences and beliefs of British adolescents. *Eur J Contracept Reprod Health Care* 2007;12:269–78.
- [10] Gilliam ML, Warden M, Goldstein C, Tapia B. Concerns about contraceptive side effects among young Latinas: A focus-group approach. *Contraception* 2004;70(4):299–305.
- [11] Weston MRS, Martins SL, Neustadt AB, Gilliam ML. Factors influencing uptake of intrauterine devices among postpartum adolescents: A qualitative study. *Am J Obstet Gynecol* 2012;206(1):40.e1–7.
- [12] Benson LS, Perrucci A, Drey EA, Steinauer JE. Effect of shared contraceptive experiences on IUD use at an urban abortion clinic. *Contraception* 2012;85:198–203.
- [13] Levy K, Minnis AM, Lahiff M, Schmittiel M, Dehlendorf C. Bringing patient's social context into the exam room: an investigation of the discussion of social influence during contraceptive counseling. *Womens Health Issues* 2015;1(25):13–21.
- [14] Whitaker AK, Quinn MT, Martins SL, Tomlinson AN, Woodhams EJ, Gilliam ML. Motivational interviewing to improve postabortion contraceptive uptake by young women: Development and feasibility of a counseling intervention. *Contraception* 2015;92(4):323–9.
- [15] Whitaker AK, Quinn MT, Munroe E, Martins SL, Mistretta SQ, Gilliam ML. A motivational interviewing-based counseling intervention to increase postabortion uptake of contraception: A pilot randomized controlled trial. *Patient Educ Couns* 2016;99(10):1663–9.
- [16] Brewer J, Hunter A. *Foundations of Multimethod Research: Synthesizing Styles*. Thousand Oaks, CA: Sage Publications; 2006.
- [17] Andrade AD. Interpretive research aimed at theory building: Adopting and adapting the case study design. *Qual Rep* 2009;14(1):42–60.
- [18] Green J, Thorogood N. *Qualitative Methods for Health Research*. 3rd ed. Los Angeles: Sage Publications; 2004.
- [19] Elwyn G, Dehlendorf C, Epstein RM, Marrin K, White J, Frosch DL. Shared decision making and motivational interviewing: Achieving patient-centered care across the spectrum of health care problems. *Ann Fam Med* 2014;12(3):270–5.