Contraception 100 (2019) 420–423

Contents lists available at ScienceDirect

Contraception

journal homepage: www.elsevier.com/locate/con

Original research article

A mixed-methods study of provider perspectives on *My Birth Control*: a contraceptive decision support tool designed to facilitate shared decision making ☆,☆☆

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ARTICLE INFO

Article history:
Received 14 March 2019
Received in revised form 27 June 2019
Accepted 4 August 2019

Keywords:
Contraceptive counseling
Shared decision making
Family planning
Contraception
Patient-centered care, decision support

ABSTRACT

Objectives: Barriers to the provision of patient-centered contraceptive counseling include time limitations, frequent misconceptions and misinformation about methods among patients, and the availability of numerous contraceptive options, which increases the complexity of contraceptive decision making. Decision support tools are interventions designed to facilitate quality decision making in preference-sensitive decisions. We evaluated the impact of a contraceptive decision support tool, *My Birth Control,* on providers' experience with contraceptive counseling.

Study design: We interviewed 15 providers who participated in the intervention arm of a cluster randomized controlled trial of *My Birth Control* to obtain their impressions of their patients' interactions with the tool. We analyzed the interviews using thematic analysis, compared appointment lengths of patients in each arm (n=749) and assessed provider burnout in each arm (n=28).

Results: Providers reported that incorporating *My Birth Control* into their practice helped them allocate time more efficiently, enabling them to hone in on patients' areas of interest. They also reported that patients who interacted with the tool appeared more informed about contraception options and features, and took a more active role in method selection. All providers described using the tool as acceptable and feasible, and indicated they would like to incorporate it into their practice. There was no difference in provider burnout scores comparing before and after the trial of *My Birth Control.*

Conclusion: Providers had a positive impression of the impact of *My Birth Control* on contraceptive counseling, including the quality of counseling, and perceived the tool to be a feasible intervention to use in the clinical setting.

Implications: Family planning clinics should consider incorporating *My Birth Control* into their clinical services as a means of improving contraceptive care and provider experience of counseling.

1. Introduction

In the United States, the vast majority of women will use a prescription contraceptive method during their lifetime [1]. The choice of which contraceptive method to use can be complex, as many women have over 10 methods that are medically appropriate for them. These methods vary across a range of characteristics, and women have strong and varied preferences for these characteristics [2,3]. When faced with preference-sensitive health decisions such as choice of contraceptive method, providers can support patients' decision making by helping them to consider their preferences, as well as how these preferences relate to the available options.

The contraceptive counseling visit therefore represents an important opportunity for providers to support women to achieve their reproductive goals. However, studies have found that women report dissatisfaction with their contraceptive counseling due to receiving insufficient information, perceiving provider coercion

☆ Declarations of interest: none

☆☆ Funding: The research reported in this publication was funded through a Patient-Centered Outcomes Research Institute (PCORI) Award (CE-1304-6874). The statements presented in this publication are solely the responsibility of the authors and do not necessarily represent the views of PCORI, its Board of Governors or Methodology Committee.

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https://doi.org/10.1016/j.contraception.2019.08.001
0010-7824/

and not feeling able to voice all of their concerns during these visits [4–11]. Additionally, providers themselves have identified barriers to the provision of quality contraceptive counseling, including prevalent misconceptions about contraceptive methods among patients, insufficient time to counsel about a range of options and lack of training in the provision of contraceptive counseling [12,13]. These challenges leave many providers feeling structurally impeded from providing quality contraceptive counseling [13,14].

Little research has considered how to implement patient-centered contraceptive counseling [15]. In the health communication literature more broadly, recent attention has focused on "shared decision making" (SDM), a patient-centered approach that accounts for the importance of patients' preferences and values, alongside the provider's medical expertise, in choosing an outcome for preference-sensitive decisions [16]. Studies have found that while patients' report of engaging in SDM is associated with increased satisfaction with their family planning experiences [17], strategies consistent with SDM are infrequently used in the context of contraceptive counseling [18]. Patient decision aids have been demonstrated to successfully support SDM in other preference sensitive areas of healthcare, including prenatal testing and orthopedic care [19,20].

We developed a contraceptive decision support tool, *My Birth Control*, designed to facilitate the implementation of the best practices of shared decision making in family planning services [21]. Evaluations of the effects and patient satisfaction with the tool are reported elsewhere [22]. Here, we report on how patients' use of the contraceptive decision support tool, *My Birth Control*, impacts provider experience of contraceptive counseling, including provider resistance and burnout, and influence on appointment time. Specifically, we examined whether providers felt using *My Birth Control* impacted their counseling, whether it was acceptable and feasible for use in the clinic setting and whether they perceived any negative effects or had concerns.

2. Materials and methods

This analysis is part of a cluster randomized controlled trial designed to evaluate the effects of the contraceptive decision support tool *My Birth Control*. The interactive tool includes a contraception education module, solicits user preferences and relevant medical history, and then creates a list of recommendations based on the user's answers, which are included on a final printout along with the user's questions, for the provider to view prior to the contraceptive counseling visit [23].

Between 2014 and 2016, we conducted a cluster randomized controlled trial at four safety-net clinics in San Francisco. We invited licensed and nonlicensed providers who performed contraceptive counseling to participate, and after they completed informed consent, we randomly assigned them to counseling patients who interacted with *My Birth Control* or control patients who received usual care. Patient participants gave informed consent and then interacted with *My Birth Control* prior to their visit or received usual care, according to the assignment of their provider. Providers were eligible to participate if they conducted contraceptive counseling at one of the study sites and were planning to remain in their job for 6 months postenrollment. Patients were eligible if they were female, 15 to 45 years old, were not pregnant or desiring pregnancy within 7 months of enrollment, and wanted to discuss starting or switching a contraceptive method during their visit with one of the study providers.

Prior to randomization, provider participants (n=28) completed a survey, which included demographic questions, as well as the Maslach Burnout Inventory (MBI) to assess provider burnout. The MBI [24] is a validated, 22-item measure of workplace burnout among human services workers with subscales in three domains: emotional exhaustion (subscore range 0–54), depersonalization (subscore range 0–30) and personal accomplishment (subscore range 0–48). Providers also completed a survey at the completion of the study in which they repeated the MBI. We measured this construct to test our hypothesis, developed through qualitative interviews with providers and consultation with our provider stakeholders, that providing contraceptive counseling in a time-limited environment contributes to job stress [13]. Through providing contraceptive decision support to patients, we hypothesized that family planning providers would feel less frustrated and have greater job satisfaction. All providers who were randomized to the intervention arm (n=15) participated in a standardized 30-min orientation to *My Birth Control*, which included a brief description of how it works, the motivation for its creation, and time to play with the tool and view sample birth control profile printouts. We asked providers in the intervention arm not to discuss the content of the tool, its motivation or printouts, with providers randomized to the control arm in order to avoid contamination.

Research staff measured total patient visit time and time the providers spent with the patients using direct observation. Finally, following completion of the providers' participation in the cluster randomized controlled trial, two research staff, J.F., who is trained in global health, and R.R., who is trained in public health, conducted semistructured interviews with all providers assigned to the intervention arm to explore their experiences with patients who had interacted with *My Birth Control*. J.F. and R.R. conducted in-person interviews with providers, who they did not know personally and had not interacted with during implementation, between March 2015 and June 2017. We developed the interview guide with input from a multidisciplinary provider stakeholder group and included questions aimed at understanding the providers' perception of the tool's influence on counseling, clinic flow and patient experience. Interviews averaged just under half an hour in length, were audio recorded and were transcribed verbatim. The Institutional Review Board at the University of California, San Francisco, approved all study protocols.

2.1. Analysis

Transcripts were coded using thematic analysis [25]. We started with open coding informed by initial themes of interest to the overall study: the impact, acceptability and feasibility of using *My Birth Control* in contraceptive counseling. C.D., K.K. and R.R. read all transcripts and collectively developed a draft codebook based on the focal interests of this analysis. Codes were intentionally broad to allow for a parsimonious codebook (e.g., "impact" entailed discussion of any and all perceived impacts of the tool, not simply those related to contraceptive selection). Using Dedoose, a qualitative analytical software package, R.R. coded three interviews using the draft codebook, identifying ambiguous, redundant and emergent codes to achieve thematic saturation. K.K. reviewed this coding, and R.R. and K.K. refined the codebook based on this application. During this stage of the analytical process, through discussion with K.K., who brought an outside perspective, having not been involved in the data collection phase, R.R. engaged in robust consideration of how her and J.F.'s positionalities had impacted the interviews. Of particular relevance, R.R. identified points in the interview transcripts where the interviewers' familiarity with the field of contraceptive counseling provision had led them to limit their probing of respondent responses. This occurrence — and recognition of how it affected the data — led R.R. and K.K. to further narrow the codebook to areas most fully explored in the interviews. R.R. then coded all transcripts using the refined codebook, taking notes about overall themes across the data.

C.D., K.K. and R.R. discussed R.R.'s identified themes and selected several broad codes for further subcoding to illuminate patterns in the data. K.K. and R.R. iteratively developed unique subcodes and collectively applied them to all relevant excerpts. All disagreements were resolved through discussion. We considered coding complete when no new codes emerged. Finally, we tallied the presence or absence of each subcode in every transcript.

For the regression analysis of provider burnout subscale scores, we controlled for site and used bootstrapping for inference given small sample sizes (n=28). Finally, we conducted t tests to compare appointment time as well as patient time spent with the provider between intervention and control arms (n=758).

3. Results

3.1. Sample characteristics

We randomized 15 providers to the intervention arm; all eligible providers completed an interview. Seven were nurse practitioners, six were health educators, one was a physician's assistant, and one was a certified nurse midwife. All the providers were women, aged 20–29 (4), 30–39 (3), 40–49 (4), 50–59 (3) and 60–69 (1), with the following racial ethnic distribution: Asian (2), Latino (4), multiracial (1) and white (8). Each provider conducted a mean of 24 visits with patients who had used *My Birth Control*, with a range of 6–41 visits.

3.2. Qualitative results

3.2.1. Influence on time

In the interviews, providers repeatedly emphasized the impact of using *My Birth Control* on their allocation of time during contraceptive counseling sessions with patients, with all but one reporting that the tool made their counseling more efficient and all but two describing *My Birth Control* as improving how they allocated time during counseling. One provider explained, "You can kind of get to the core of your contraceptive counseling faster because you have more context and that's been very helpful." Another said, "I think [*My Birth Control*] made [counseling] a lot easier, it made it a little more concise [...] So that [patients'] time with me would be used more efficiently." Some providers even shared their perception that the tool shortened their visits with patients. One said, "The actual visits themselves were either shorter or the same [as without *My Birth Control*]."

Other providers elaborated on how the use of *My Birth Control* enabled better allotment of counseling time. One explained that receiving the printout meant she could dispense with much of the general education she typically provided her patients: "I would say it cuts down on counseling time a little bit and it [...] let me focus counseling time on what they [patients] wanted to talk about versus having to run through the whole gamut of birth control methods and get the foundation layered down." Another provider echoed the idea that the tool helped focus her counseling, saying, "it made it faster for me to narrow things down for the patients because they already had in their mind what they really wanted to go over." When patients used *My Birth Control* prior to the contraceptive counseling visit, providers reported that they were able to be more structured in their counseling and use the session time better in terms of educating the patient and ensuring her method selection best met her preferences. No provider reported negative impacts of *My Birth Control* on their use of counseling time.

3.3. Benefits to patients' knowledge and confidence

From providers' perspectives, *My Birth Control* also improved patient's precounseling contraceptive knowledge, including their knowledge of method options and features. One provider explained that this helped jumpstart the counseling discussion as patients were already reflecting on their values and preferences. She said, "[they were] aware of more methods off the bat, which was helpful, and then [it inspired] inward thinking on patients [...] 'What do I actually want? I know I want birth control, but what does that mean to me?'"

Providers also described patients who used *My Birth Control* as more confident in their method preferences, which allowed them to play a more active role during their contraceptive counseling. One reflected on this with the following statement:

"It allowed me to give the client the floor first to talk about what they had learned and what was interesting to them and what stuck out to them as something that they might be interested in versus me starting off giving my spiel about birth control methods. I feel like it gave them a little bit more agency in the process."

With respect to method choice, providers also reported that they felt patients had more clarity in their final decision, as reflected in this quote, in which the provider stated that *My Birth Control* enabled her "to move the conversation further along the path of her actually making an active choice in the matter and then making a decision with a clinician [...] with a better idea of why they're choosing that method."

3.4. Acceptability

Every respondent reported that incorporating *My Birth Control* into their counseling practice was both acceptable and feasible. Most went further, describing the tool as beneficial to their practice. Specifically, they found interacting with patients who were more informed and engaged with the decision making process provided greater satisfaction and fit better into the model of care to which they aspired. One provider, for instance, was enthusiastic in her support for the tool: "It's [counseling with *My Birth Control* is] better. I'm much more satisfied. I feel like I've done a better job because I don't have to go over that initial information and I [can focus on giving] information on what she likes, what she doesn't like." Another said, "it provides some great, like basic education, and really gets women thinking and kind of focusing their thoughts and questions before they see us. I'm a big fan." Some, however, noted challenges that had to be overcome to successfully integrate the tool. One explained that having patients interact with the tool prior to the visit could hamper clinic flow: "Sometimes, it did definitely slow things down and back things up some. [So] you just had to kind of figure it out, do something else, see another patient, kind of switch things up, depending on how the patients arrive. So, I mean, it did change things up." Nonetheless, all respondents voiced support for integrating the tool into their practices, even when they noted challenges.

When asked if patients commented on using *My Birth Control* during their contraceptive visit, 13 of the 15 providers reported that their patients said positive things about it. The remaining two providers shared that they believed their patients liked the using tool, but did not report patients talking about their experience using the tool during their visits. When asked if they believed that using the tool influenced contraceptive decision making, 14 of the providers stated that they perceived use of the tool to be acceptable to patients and that it positively affected contraceptive decision making. One explained, "Not all of [my patients] commented about it a lot, but those that did said that they found it useful and that they also thought that it was really user-friendly." Another similarly related, "Almost every patient that I had dealt with said something positive about it. I never had anybody say anything negative at all." These experiences suggest that patients, like providers, found the tool helpful in their contraceptive counseling visit. As with the acceptability to providers, some respondents identified challenges to full implementation of the tool for patients, such as difficulty for patients unfamiliar with technology, but none that providers thought could not be overcome. None of the providers reported any patient sharing a negative experience of the tool with them.

3.5. Quantitative results

Overall visit time was on average 11.81 minutes longer in the intervention arm compared with the control arm [confidence interval (CI): 8.54–18.66; p<.001], while the providers' patient-facing time was not different (β=1.05; CI: −3.19 to 5.29; p=.63).

On the MBI, there was no significant change on the emotional exhaustion (β=−3.97; CI: −10.62 to 2.68; p=.24), depersonalization (β=−1.52; CI: −4.76 to 1.72; p=.36) or personal accomplishment (β=−1.64; CI: −4.61 to 1.34; p=.28) scales.

4. Discussion and conclusion

We found that providers seeing patients who had interacted with *My Birth Control* had positive experiences. Providers perceived that incorporating the tool affected the way they used their time during the visit, specifically that it made their counseling more direct or focused, and therefore more relevant to patients. Providers also reported feeling that using the tool made many of their

patients more informed about available methods. While our quantitative analysis did not find a significant impact of the implementation of *My Birth Control* on provider burnout, our ability to detect a difference was limited by our small sample size.

Overall, the providers in this study were universally enthusiastic about using the tool in their family planning services. Few identified any negative impacts of the tool or even complications to their clinic flow and patient care of implementing the tool. Providers' positive impressions of the tool are of particular importance given that previous research investigating the dissemination of decision support tools has identified provider resistance as a prominent barrier [26,27]. Our findings indicate that provider resistance would not be an obstacle in the integration of *My Birth Control* into practice, which has the potential to ease more widespread uptake of the tool. Our analysis of visit time further indicates the feasibility of use of *My Birth Control*, as there was no effect on time spent with the provider. However, the significantly increased overall visit time suggests that clinics implementing this tool may need to alter clinic flow to accommodate patients' interaction with the tool.

Limitations of this study include the small number of providers included in our sample, which resulted from the fact that our study was powered to find an effect on patient-level, and not provider-level, outcomes. We therefore had limited ability to detect a difference in our analysis of burnout between providers in different study arms. In addition, this small sample may limit our ability to identify problems or poor fit of the tool with some providers. We also emphasize that this study evaluated provider perspectives on the tool, not patient perspectives. However, by gathering different perspectives on the experience of integrating *My Birth Control* into contraceptive counseling, providers' perspectives reported here and patients' perspectives reported elsewhere [22], we are able to triangulate our findings to increase the trustworthiness of these results. Another limitation of the study is that the study took place at only four sites in a single geographical area that is known for welcoming technology, which limits its transferability to sites outside of this area. The impact of incorporating the tool in populations that are less comfortable with technology may be different. Future research should also examine the larger structural and administrative requirements for successful implementation. Finally, while the interviewers' affiliation with the evaluation study of *My Birth Control* facilitated access to and initial rapport with the interviewed providers, it may also have affected what they shared in the interviews. For example, they may not have elaborated on elements of their experience they believed the interviewers already knew and they may have been less inclined to be critical of the tool.

In a cluster randomized controlled trial evaluating *My Birth Control*, use of the tool was associated with positive impacts on patients' experience of counseling and perception of decision quality [22,23] without increasing patient-facing time for the providers. Together, both quantitative analyses of patient experience reported elsewhere [22] and mixed-method analyses of provider experience demonstrate the tool's efficacy in encouraging a patient-centered, shared decision-making approach to contraceptive counseling without increasing provider burden. Given that use of *My Birth Control* improved patient experience of contraceptive counseling and decision quality, [22] and that providers identified no negative consequences to the incorporation of the tool into their counseling, clinics and systems providing contraceptive counseling should strongly consider utilizing this tool.

Acknowledgments

We thank our provider stakeholders for their invaluable support on this project. The success of this project would not have been possible without their willingness to share their experiences and insights. We wish to thank Elizabeth Johns, Alissa Perucci, Shivaun Nestor, Sarah Siebold, Elizabeth Steinfield and Dafna Wu.

References

[1] Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. Natl Health Stat Rep 2012;60:1–25.
[2] Jackson AV, Karasek D, Dehlendorf C, Foster DG. Racial and ethnic differences in women's preferences for features of contraceptive methods. Contraception 2016;93:406–11.
[3] Lessard LN, Karasek D, Ma S, Darney P, Deardorff J, Lahiff M, et al. Contraceptive features preferred by women at high risk of unintended pregnancy. Perspect Sex Reprod Health 2012;44:194–200.
[4] Dehlendorf C, Levy K, Kelley A, Grumbach K, Steinauer J. Women's preferences for contraceptive counseling and decision making. Contraception 2013;88:250–6.
[5] Yee LM, Simon MA. Perceptions of coercion, discrimination and other negative experiences in postpartum contraceptive counseling for low-income minority women. J Health Care Poor Underserved 2011;22:1387–400.
[6] Guendelman S, Denny C, Mauldon J, Chetkovich C. Perceptions of hormonal contraceptive safety and side effects among low-income Latina and non-Latina women. Matern Child Health J 2000;4:233–9.
[7] Becker D, Koenig MA, Kim YM, Cardona K, Sonenstein FL. The quality of family planning services in the United States: findings from a literature review. Perspect Sex Reprod Health 2007;39:206–15.
[8] Becker D, Tsui AO. Reproductive health service preferences and perceptions of quality among low-income women: racial, ethnic and language group differences. Perspect Sex Reprod Health 2008;40:202–11.
[9] Amico JR, Bennett AH, Karasz A, Gold M. "She just told me to leave it": women's experiences discussing early elective IUD removal. Contraception 2016;94:357–61.
[10] Mann ES, White AL, Rogers PL, Gomez AM. Patients' experiences with South Carolina's immediate postpartum long-acting reversible contraception Medicaid policy. Contraception 2019;100:165–71.
[11] Stevens LM. "We have to be mythbusters": clinician attitudes about the legitimacy of patient concerns and dissatisfaction with contraception. Soc Sci Med 2018;212:145–52.
[12] Lohr PA, Schwarz EB, Gladstein JE, Nelson AL. Provision of contraceptive counseling by internal medicine residents. J Womens Health (Larchmt) 2009;18:127–31.
[13] Akers AY, Gold MA, Borrero S, Santucci A, Schwarz EB. Providers' perspectives on challenges to contraceptive counseling in primary care settings. J Womens Health (Larchmt) 2010;19:1163–70.
[14] Rubin SE, Winrob I. Urban female family medicine patients' perceptions about intrauterine contraception. J Womens Health (Larchmt) 2010;19:735–40.
[15] Dehlendorf C, Krajewski C, Borrero S. Contraceptive counseling: best practices to ensure quality communication and enable effective contraceptive use. Clin Obstet Gynecol 2014;57:659–73.
[16] Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: what does it mean? (or it takes at least two to tango). Soc Sci Med 1997;44:681–92.
[17] Dehlendorf C, Grumbach K, Schmittdiel JA, Steinauer J. Shared decision making in contraceptive counseling. Contraception 2017;95:452–5.
[18] Dehlendorf C, Kimport K, Levy K, Steinauer J. A qualitative analysis of approaches to contraceptive counseling. Perspect Sex Reprod Health 2014;46:233–40.
[19] Kuppermann M, Norton ME, Gates E, Gregorich SE, Learman LA, Nakagawa S, et al. Computerized prenatal genetic testing decision-assisting tool: a randomized controlled trial. Obstet Gynecol 2009;113:53–63.
[20] Sepucha K, Atlas SJ, Chang Y, Dorrwachter J, Freiberg A, Mangla M, et al. Patient decision aids improve decision quality and patient experience and reduce surgical rates in routine orthopaedic care: a prospective cohort study. The Journal of bone and joint surgery American 2017;99:1253–60.
[21] Dehlendorf C, Fitzpatrick J, Steinauer J, Swiader L, Grumbach K, Hall C, et al. Development and field testing of a decision support tool to facilitate shared decision making in contraceptive counseling. Patient Educ Couns 2017;100:1374–81.
[22] Dehlendorf C, Fitzpatrick J, Fox E, Holt K, Vittinghoff E, Reed R, et al. Cluster randomized trial of a patient-centered contraceptive decision support tool, my birth control. Am J Obstet Gynecol 2019;220:565.e1–565.e12.
[23] Dehlendorf C, Henderson JT, Vittinghoff E, Grumbach K, Levy K, Schmittdiel J, et al. Association of the quality of interpersonal care during family planning counseling with contraceptive use. Am J Obstet Gynecol 2016;215:78.e1–9.
[24] Maslach C, Jackson S, Leiter M. The Maslach burnout inventory manual 1997.
[25] Braun V, Clarke V. Thematic analysis APA handbook of research methods in psychology. In: Research designs: quantitative, qualitative, neuropsychological, and biological, 2. Washington, DC, US: American Psychological Association; 2012. p. 57–71.
[26] Hsu C, Liss DT, Frosch DL, Westbrook EO, Arterburn D. Exploring provider reactions to decision aid distribution and shared decision making: Lessons from two specialties. Medical decision making : an international journal of the Society for Medical Decision Making, 37, 2017. p. 113–26.
[27] Silvia KA, Ozanne EM, Sepucha KR. Implementing breast cancer decision aids in community sites: barriers and resources. Health expectations: an international journal of public participation in health care and health policy 2008;11:46–53.