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Intrauterine device self-removal practices during the COVID-19 pandemic among family planning clinics

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Abstract

Objectives: To explore the prevalence of intrauterine device self-removal practices before and during the COVID-19 pandemic among family planning clinics.

Study Design: This is a secondary analysis of data from a descriptive, longitudinal study using a clinic-based convenience sample from the Abortion Clinical Research Network assessing baseline and pandemic-adaptive family planning practices.

Results: Of the 63 sites that provided contraception, five (7.9%) reported providing guidance on intrauterine device self-removal at baseline. Sixteen sites (25.4%) provided guidance on self-removal by the end of the study period. Self-removal counseling was associated with being an academic center and reporting a median lower number of monthly contraceptive encounters.

Conclusions: Endorsement of IUD self-removal increased to one-quarter of sites by the final timepoint.

Key words

contraception, contraceptive counseling, COVID-19 pandemic, delivery of health care, intrauterine device, self-removal

Implications: Twenty-five percent of family planning clinics reported provision of intrauterine device self-removal guidance by eight months into the COVID-19 pandemic, a three-fold increase from baseline; these findings suggest clinician support for patient autonomy in contraceptive self-management and limited concern for safety issues with self-removal during a public health emergency.

1.1 Introduction

Intrauterine device (IUD) users may face obstacles to device removal, including scheduling difficulties, financial hurdles, and clinician obstructionism [1-3]. For these reasons, self-removal is an important option for some users [4]. In data sourced from internet videos and forums, individuals report self-removal as a positive experience and means of retaining reproductive autonomy [4-6]. When given the opportunity, more than half of IUD users are willing to attempt self-removal and approximately 20% are successful with little guidance [7].

An unknown proportion of IUD users already discontinue their own IUD, and an unknown proportion of clinicians provide guidance on self-removal. One qualitative study that examined clinician opinion of self-removal highlighted that while clinicians were not concerned about the safety of self-removal and may plan to remove their own IUDs, there is an expectation to be involved in the decision-making for IUD removal for their patients [8]. Indeed, clinician biases towards IUD continuation and lack of comfort with self-removal likely undermines uptake of this practice but has not been measured.

The coronavirus disease of 2019 (COVID-19) pandemic prompted significant changes in family planning care, such as the no-test medication abortion protocol [9]. The pandemic may have also impacted other means of remotely supporting family planning needs, including IUD self-removal, although we hypothesized there would be little change in endorsement of this practice given data showing clinician preference for in-clinic removal. Thus, we evaluated IUD self-removal practice patterns among the Society of Family Planning Abortion Clinical Research

Network over three time points, in comparison to other potential predictors, clinic demographics, and COVID practices adaptations.

2.1 Material and methods

Details of the parent study are presented elsewhere [10]. In brief, this was a longitudinal survey-based study administered at three time points between April and October 2020 using a convenience sample drawn from clinics in the Society of Family Planning Abortion Clinical Research Network following study advertisement via listserv. Participating sites completed surveys online via Qualtrics. The first survey (T1) included baseline abortion and contraception clinical practices as well as adaptations to COVID-19 by May 2020. Items from the second (T2) and third (T3) surveys focused on adaptations to COVID-19 by August 2020 and October 2020, respectively. No protected health information or patient outcomes data were collected. Advarra Institutional Review Board reviewed this study and found it to be exempt.

For this secondary analysis, we submitted a data request to the Society of Family Planning (SFP) with a data analysis plan. Following approval of the request, SFP securely transferred de-identified datasets to the study team. We utilized Stata 15.1 (College Station, TX) for data cleaning and analysis. From an original data set of 66 sites that responded to T1, we excluded clinics that solely provided abortion services and did not provide contraceptive services ($n=3$). We also excluded one site that did not contribute to the T1 baseline data and only responded to the T2 survey. We classified sites as already integrating practices into clinical care if the site reported performing them at baseline, prior to the start of the pandemic. Sites were considered new integrators of a practice if a COVID-19 change was reported in T1, T2, or T3 with no

baseline endorsement of this practice. We classified sites as self-removal adopters if they ever reported providing IUD self-removal guidance, including at baseline. Sites did not have the opportunity to report more details regarding implementation or discontinuation during the study period.

Per our predetermined analysis plan, we conducted statistical analyses (Chi-squared, Fishers exact test, and Wilcoxon Rank Sum) to describe differences noted between contraceptive adaptations and to identify significant correlates to self-removal practices, such as clinic demographics and impactful clinic changes, including in-clinic availability of long-acting reversible contraception (LARC) services (placements, removals, and replacements) and implementation of COVID-19 infection control practices. The parent study determined the sample size; thus, we did not perform a power calculation. Furthermore, there are no existing data to estimate the proportion of family planning clinicians who are currently counseling individuals about IUD self-removal.

3.1 Results

Seventy-four sites were selected to participate in the parent study; 66 (89%) responded to the first survey invitation (Supplementary Material). Of the 66 sites that provided baseline data, 63 reported provision of contraceptive services. Fifty-six sites provided data for all three surveys (89%); all 63 provided at least one metric of baseline and pandemic-responsive contraceptive services. Sites had equal representation between academic and community-based clinics.

Participating clinics were situated across all four regions of the United States, greater in the West and Northeast. Approximately half of clinics provided 26-250 unique contraceptive encounters

per month at baseline and a remaining quarter provided 251-1000 encounters (Supplementary Materials).

Prior to the pandemic, five (7.9%) sites reported providing guidance on IUD self-removal. Four of these sites were urban and academic; one site located in the West was an independent clinic in a rural county. There was an increase in guidance on IUD self-removal across the three survey time periods (Figure 1). Sixteen sites (16/63, 25.4%) reported providing guidance on IUD self-removal at some point by the end of study period. Other changes to contraceptive practices by T3 included 23 sites (23/63, 36.5%; pre-pandemic 5/63, 7.9%) that reported support for self-administration of depot medroxyprogesterone acetate (DMPA), and 59 sites (59/63, 94.0%; pre-pandemic 53/63, 84.1%) reported providing guidance for extended use of LARC.

Adopting self-removal counseling before or during the pandemic (n=16) was associated with being an academic center (adopters 13/16 vs. never adopters 20/47, $p = 0.04$) and reporting a median lower number of contraceptive encounters in February 2020 (adopters: 60 vs. never adopters: 154, $p = 0.02$) and thereafter (adopters: 33 vs never adopters: 105, $p = 0.01$). IUD self-removal guidance was not associated with site region ($p = 0.28$), adoption of face mask policies ($p = 0.32$), or discontinuation of IUD placement, replacement or removal services ($p = 1.0, 0.76, 0.77$, respectively). There was also no association between adoption of self-removal counseling and DMPA self-administration or extended IUD policy ($p = 0.55$ and 1.0 , respectively).

4.1 Discussion

These data show low baseline endorsement of IUD self-removal among 63 family planning

centers within the Society of Family Planning Abortion Clinical Research Network. In the context of a worldwide pandemic limiting access to care in 2020, a quarter of clinical sites in this sample reported providing guidance on IUD self-removal, in parallel with increases in other innovative contraceptive practices.

Because more family planning research and clinical care initiatives are dedicated toward LARC initiation, compared to removal, we suspected, incorrectly, that support for IUD self-removal would remain near the starting prevalence of less than 10% [11, 12]. Unlike our findings showing an increase over the study period, a different study among general obstetrician-gynecologists, administered between March and September 2020, demonstrated only 2% counseled on IUD self-removal [13]. Family planning specialists may be more willing to provide self-removal guidance.

We found no association between adoption of IUD self-removal and discontinuation of IUD placement, removal, and/or replacement services. Other factors may have prompted adoption of innovative contraceptive services. In our sample, academic centers and centers with median fewer contraceptive encounters were more likely to endorse IUD self-removal. We suspect that academic centers may be more likely to adopt the risks and benefits of innovation, and centers with fewer contraceptive visits may be less dependent on contraceptive volume for financial stability.

This study is limited by the small sample size. In addition, the use of dichotomous questions did not allow for nuance about how often or for how many patients these recommendations were

provided. Additionally, questions regarding practices during the pandemic asked about changes in practices *in response to* the pandemic; this wording may have led to exclusion of changes due to other factors.

While IUD users are typically advised to return to a clinician for removal, self-removal guidance may be an important practice for patient autonomy, and, during a pandemic, a means of reducing exposure risk. In the context of public health demand to innovate remote contraceptive care delivery, family planning clinics demonstrated increasing endorsement of IUD self-removal. Shifts in contraceptive care to support receipt of services outside of the health care setting may continue to grow, particularly now that SFP's pandemic-responsive clinical recommendations endorse IUD self-removal counseling [14]. This study's findings quantify a starting point for subsequent study regarding the role of IUD self-removal in future, routine contraceptive counseling and practice.

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References

- [1] Kaneshiro B, Kon Z, Tschann M, Williams A, Kajiwara K, Soon R. Meeting Women's Requests for Intrauterine Device and Contraceptive Implant Discontinuation: An Exploratory Survey of Physicians. *Hawai'i Journal of Health & Social Welfare*. 2020;79:296-301.
- [2] Higgins JA, Kramer RD, Ryder KM. Provider Bias in Long-Acting Reversible Contraception (LARC) Promotion and Removal: Perceptions of Young Adult Women. *Am J Public Health*. 2016;106:1932-7.
- [3] Manzer JL, Bell AV. The limitations of patient-centered care: The case of early long-acting reversible contraception (LARC) removal. *Soc Sci Med*. 2022;292:114632.
- [4] Amico JR, Stimmel S, Hudson S, Gold M. "\$231 ... to pull a string!!!" American IUD users' reasons for IUD self-removal: An analysis of internet forums. *Contraception*. 2020;101:393-8.
- [5] Stimmel S, Hudson SV, Gold M, Amico JR. Exploring the experience of IUD self-removal in the United States through posts on internet forums. *Contraception*. 2022;106:34-8.
- [6] Broussard K, Becker A. Self-removal of long-acting reversible contraception: A content analysis of YouTube videos. *Contraception*. 2021;104:654-8.
- [7] Foster DG, Grossman D, Turok DK, Peipert JF, Prine L, Schreiber CA, et al. Interest in and experience with IUD self-removal. *Contraception*. 2014;90:54-9.
- [8] Amico JR, Bennett AH, Karasz A, Gold M. Taking the provider "out of the loop:" patients' and physicians' perspectives about IUD self-removal. *Contraception*. 2018;98:288-91.
- [9] Raymond EG, Grossman D, Mark A, Upadhyay UD, Dean G, Creinin MD, et al. Commentary: No-test medication abortion: A sample protocol for increasing access during a pandemic and beyond. *Contraception*. 2020;101:361-6.
- [10] Tschann M, Ly ES, Hilliard S, Lange HLH. Changes to medication abortion clinical practices in response to the COVID-19 pandemic. *Contraception*. 2021;104:77-81.

- [11] Bergin A, Tristan S, Terplan M, Gilliam ML, Whitaker AK. A missed opportunity for care: two-visit IUD insertion protocols inhibit placement. *Contraception*. 2012;86:694-7.
- [12] Papic M, Wang N, Parisi SM, Baldauf E, Updike G, Schwarz EB. Same-day intrauterine device placement is rarely complicated by pelvic infection. *Womens Health Issues*. 2015;25:22-7.
- [13] Weigel G, Frederiksen B, Ranji U, Salganicoff A. How OBGYNs Adapted Provision of Sexual and Reproductive Health Care During the COVID-19 Pandemic. 2020 KFF National Physician Survey on Reproductive Health. San Francisco, CA: Kaiser Family Foundation; 2020.
- [14] Stifani BM, Madden T, Micks E, Moayed G, Tarleton J, Benson LS. Society of Family Planning Clinical Recommendations: Contraceptive Care in the Context of Pandemic Response. *Contraception*. 2022;113:1-12.

Table 1. Factors associated with providing intrauterine device self-removal guidance

	Adopters (n=16)	Never adopters (n=47)	P value
Region			0.28
Northeast	7	14	
Midwest	2	9	
West	1	9	
South	5	15	
Canada	1	0	
Clinic type			0.04
Academic/hospital-based	13	20	
Independent clinic	2	13	
National nonprofit organization	1	14	
Total contraceptive encounters per month, February 2020 (median)	60	154	0.02
Total contraceptive encounters per month, April or May ¹ 2020 (median)	32.5	105	0.01
Adoption of face mask policies ²			0.32
Enacted April or earlier	14	36	
Enacted May or later	0	6	
Discontinuation of IUD ³ services			
Discontinuation of IUD placement	6	17	1.0
Discontinuation of IUD replacement	4	15	0.76
Discontinuation of IUD removal	5	17	0.77
Adoption of DMPA ⁴ self-administration	7	16	0.55
Adoption of extended LARC ⁵ policy	16	43	0.56

¹Reported last month of service preceding date of survey completion

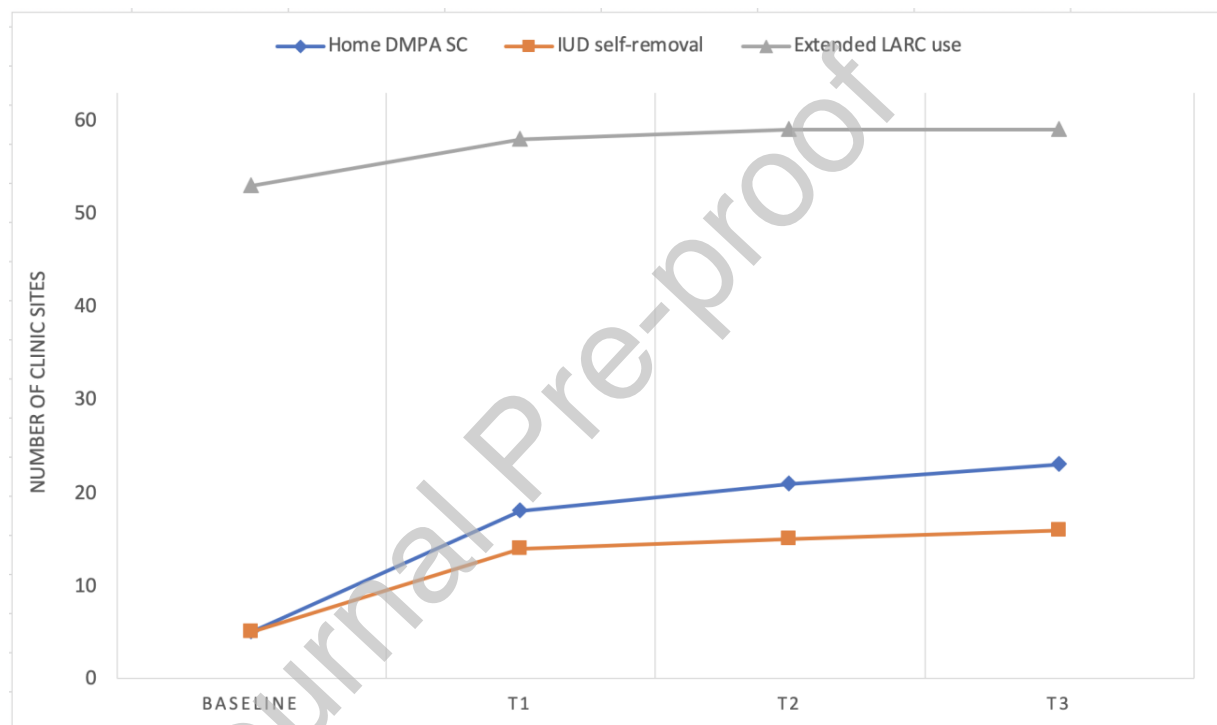
²n adopters = 14, never adopters = 42

³IUD, intrauterine device

⁴DMPA, depot medroxyprogesterone acetate

⁵LARC, long-acting reversible contraception

Figure 1. Clinics reporting guidance on and/or supplies for home depot medroxyprogesterone administration, intrauterine device self-removal, and extended long-acting reversible contraception use at baseline and three pandemic time points.



DMPA SC, depot medroxyprogesterone acetate, subcutaneous

IUD, intrauterine device

LARC, long-acting reversible contraception

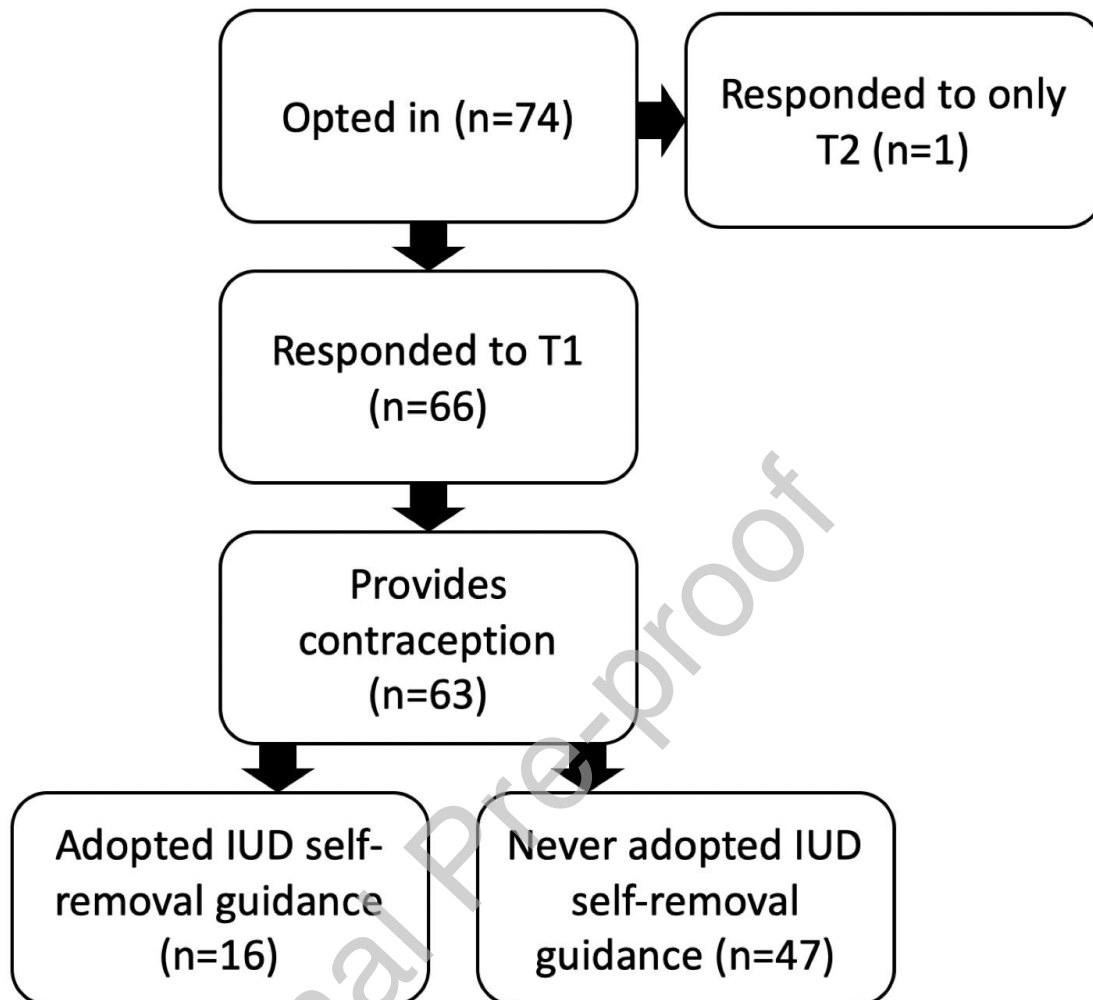
Supplementary Table A.1 – Demographic characteristics of clinics providing contraception

	n (%)
Region	
Northeast	21 (33.3)

Midwest	11 (17.5)
West	19 (30.1)
South	11 (17.5)
Canada	1 (1.6)
Clinic type	
Academic/hospital-based	33 (52.4)
Independent clinic	15 (23.8)
National nonprofit organization	15 (23.8)
Total contraceptive encounters per month ¹	
<25	9 (15.8)
26-100	16 (28.0)
101-250	15 (26.3)
251-1000	14 (24.6)
>1000	3 (5.3)

¹n=57, figures based on clinics' self-reported estimates of volume from February 2020

Supplementary Figure A.1: Flow chart of clinic participants



IUD, intrauterine device

T1, initial survey

T2, second survey