

Review article

The effect of follow-up visits or contacts after contraceptive initiation on method continuation and correct use[☆]

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Abstract

Background: We conducted a systematic review to assess whether follow-up visits or contacts after a woman begins using contraception improve method continuation and correct use.

Study Design: We searched the PubMed database for all peer-reviewed articles in any language published from database inception through May 2012 that examined the effect of a structured follow-up schedule of visits or contacts on contraceptive use. We included studies that compared women who initiated a method of contraception with a certain follow-up schedule compared to women with a different follow-up schedule or no follow-up at all. To be included, studies must have compared groups on a measure of contraceptive use (e.g., pregnancy, correct use, consistent use, method discontinuation including expulsion). Though not ideally suited to answer our review question, studies in which women used a variety of contraceptive methods but results were not stratified by method type were included.

Results: Four studies met our inclusion criteria (Level I, poor to II-2, poor). Two studies examined the effect of a specific follow-up visit schedule on intrauterine device (IUD) continuation: one examining frequency of visits and one examining the timing of the first follow-up visit. Women with more frequent follow-up visits did not have a statistically significant difference in proportion of removals for medical reasons compared with women who had fewer follow-up visits; among women who had their IUDs removed for medical reasons, those who had more frequent follow-up visits had a longer mean time of use prior to removal. The other study found more removals and shorter continuation among women with a follow-up visit at 1 week compared to women with a follow-up visit at 1 month after IUD insertion (no statistical tests reported). Two studies examined the effect of follow-up phone calls compared to no follow-up phone calls after an initial family planning visit among adolescents initiating a variety of contraceptive methods. Neither of the two studies found any differences in method continuation or correct use between study groups.

Conclusions: It is difficult to determine what effect, if any, follow-up visits or contacts have on contraceptive method continuation or correct use. Few studies were identified, and those that were identified were mostly of poor quality, were not method specific and had either poor patient compliance with follow-up visits or poor phone contact completion rates.

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Keywords: Contraception; Continuation; Correct use; Follow-up; Service use

1. Introduction

After a woman initiates a contraceptive method, she is often asked to return to the provider for a follow-up visit. These routine return visits are used to check for side effects

(e.g., bleeding or headache) or adverse events. For intrauterine device (IUD) users, follow-up visits after IUD insertion provide a chance to check for IUD strings and potentially discover occult expulsions. Theoretically, the chance for women to discuss unwanted side effects or other concerns related to their contraceptive method during a follow-up visit or contact could improve continuation of use. In addition, interaction with providers during follow-up might reinforce motivation or dosing instructions which could lead to more correct use. On the other hand, follow-up visits or contacts require time and resources for both the

[☆] Disclaimer: The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Table 1

Studies that assess the effect of a follow-up visit or contact on contraceptive continuation or correct use

Author, year/country	Sources of support	Study design	Population	Outcome	Results	Strengths	Weaknesses	Grade																				
Neuteboom et al., 2003[4] Netherlands	None stated	Prospective cohort study	280 women who had IUD insertions at a medical center between January 1981 and April 2002 Group A: 199 women who had an IUD inserted with a follow-up schedule of 6 wks and 3, 6 and 12 mo, and annually thereafter Group B: 81 women who had an IUD inserted with a follow-up schedule of 6 wk and annually	Discontinuation for medical reasons within the first 12 mo Unnoticed expulsions	<table><tr><td></td><td>N (%)*</td><td>Mean**</td><td>95% CI</td></tr><tr><td>Group A</td><td>26 (14%)</td><td>6.9</td><td>5.3–8.6</td></tr><tr><td>Group B</td><td>18 (24%)</td><td>2.1</td><td>0.7–3.5</td></tr><tr><td>Total</td><td>44</td><td>5.0</td><td>3.6–6.3</td></tr></table> <p>* RR 0.6; 95% CI 0.3–1.0. ** p<.05.</p> <p>2 women, both in group B, did not notice the expulsion of their IUD. Their expulsion was detected during a standard follow-up visit at, respectively, 6 wk and 13 mo after insertion of the IUD.</p> <p>Overall risk of an unnoticed expulsion was 0.27 per 100 women-years (95% CI 0.02–0.8).</p>		N (%)*	Mean**	95% CI	Group A	26 (14%)	6.9	5.3–8.6	Group B	18 (24%)	2.1	0.7–3.5	Total	44	5.0	3.6–6.3	Multiple follow-up schedules assessed Unnoticed expulsions measured	Used medical records and sampled women over a long period of time A greater proportion of women in group B used a levonorgestrel IUD than group A Completeness of medical records not described One center	II-2, poor				
	N (%)*	Mean**	95% CI																									
Group A	26 (14%)	6.9	5.3–8.6																									
Group B	18 (24%)	2.1	0.7–3.5																									
Total	44	5.0	3.6–6.3																									
Bang, 1971[3] Korea	None stated	Controlled trial No specific follow-up schedule to determine IUD removal or expulsion was described, 91% of women were followed up either at the clinic or at home	175 women who were asked to return 1 wk after IUD insertion 126 women who were asked to return 2 wks after IUD insertion 190 women who were asked to return 1 mo after insertion All insertions occurred between February and June 1967	Removal, expulsion	<table><tr><td></td><td>1 wk</td><td>2 wk</td><td>1 mo</td></tr><tr><td>Group</td><td></td><td></td><td></td></tr><tr><td>Removal</td><td>19.4</td><td>15.7</td><td>12.9</td></tr><tr><td>Continuation</td><td>73.8</td><td>75.9</td><td>83.5</td></tr><tr><td>Expulsions</td><td>4.5</td><td>4.8</td><td>2.0</td></tr></table>		1 wk	2 wk	1 mo	Group				Removal	19.4	15.7	12.9	Continuation	73.8	75.9	83.5	Expulsions	4.5	4.8	2.0	Multiple follow-up schedules assessed	Some women followed up in clinic (39%), and other women were followed up at home by a health worker (52%) Women-years contributed by each woman varied greatly	II-2, poor
	1 wk	2 wk	1 mo																									
Group																												
Removal	19.4	15.7	12.9																									
Continuation	73.8	75.9	83.5																									
Expulsions	4.5	4.8	2.0																									
Herceg-Baron et al., 1986[6] USA	None stated	Randomized controlled trial Interview was conducted at the first clinic visit, and 2 follow-up phone interviews occurred at 6 and 18 mo	469 adolescent females aged 12–17 years assigned to 4 different groups 83 adolescent females in the eriodic support group who received 2–6 phone calls (mean of 2.6 calls) from study staff 4–6 wk after initial clinic visit Control A: 201 adolescent females who completed the same three interviews as the intervention groups	Consistency of contraceptive use (always, sometimes, rarely/never) Pregnancy	<table><tr><td>Group</td><td>Always N (%)^b</td><td>Sometimes N (%)^b</td><td>Rarely/never N (%)^b</td></tr><tr><td>Periodic support</td><td>22 (40.7)</td><td>9 (16.7)</td><td>23 (42.6)</td></tr><tr><td>Control A</td><td>68 (47.6)</td><td>36 (25.2)</td><td>39 (27.3)</td></tr></table> <p>^aAmong adolescents who were sexually active at some time during follow-up and who provided complete contraceptive histories at both 6 and 15 mo</p>	Group	Always N (%) ^b	Sometimes N (%) ^b	Rarely/never N (%) ^b	Periodic support	22 (40.7)	9 (16.7)	23 (42.6)	Control A	68 (47.6)	36 (25.2)	39 (27.3)	Adolescents were randomized to treatment groups 84% of those agreeing to participate in the periodic support group were successfully followed up Multiple clinics	Data not assessed using intent to treat analysis Impact of calls on use was not stratified by method type	I, poor								
Group	Always N (%) ^b	Sometimes N (%) ^b	Rarely/never N (%) ^b																									
Periodic support	22 (40.7)	9 (16.7)	23 (42.6)																									
Control A	68 (47.6)	36 (25.2)	39 (27.3)																									

Kirby et al., 2010[5] USA	William and Flora Hewlett Foundation	Randomized controlled trial Follow-up telephone calls at 6, 12 and 18 mo	805 adolescent females between 14–18 years who visited the clinic between July 2005 and August 2007 Group 1: 402 adolescent females who received study intervention (follow-up calls from counselors who were trained on family planning methods, adolescent risk behavior and counseling techniques): 1 call per mo for 6 mo and bimonthly calls for 6 mo Group 2: 403 adolescent females in a control group	Condom use Hormonal contraceptive use	Control B: 61 adolescent females who only had third interview	bAuthors report that none of the differences were statistically significant, but results of statistical tests were not reported. Percent of adolescents who became pregnant during the 15 mo following the initial clinic visit				Authors conducted power calculation 78% completed the 6-mo follow-up survey, 74% completed the 12-mo survey, and 75% completed the 18-mo survey	Counselors only completed 30% of the 9 scheduled calls. Only 11% of intervention group participants received 6 or more completed calls. Single clinic	I, poor																
					<table><tr><td>Group</td><td>N</td><td>%</td></tr><tr><td>Periodic support</td><td>65</td><td>11</td></tr><tr><td> Contacted</td><td>53</td><td>6</td></tr><tr><td> Not contacted</td><td>12</td><td>29</td></tr><tr><td>Control A</td><td>166</td><td>14</td></tr><tr><td>Control B</td><td>53</td><td>9</td></tr></table>			Group	N				%	Periodic support	65	11	Contacted	53	6	Not contacted	12	29	Control A	166	14	Control B	53	9
					Group	N	%																					
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					Control A	166	14																					
					Control B	53	9																					
					Percent of condom and hormonal contraceptive use at last sex																							
					<table><tr><td></td><td colspan="2">6 mo</td><td colspan="2">12 mo</td></tr><tr><td></td><td>Group</td><td>Group 2</td><td>Group</td><td>Group</td></tr><tr><td></td><td>1</td><td></td><td>1</td><td>2</td></tr></table>				6 mo				12 mo			Group	Group 2	Group	Group		1		1	2				
	6 mo		12 mo																									
	Group	Group 2	Group	Group																								
	1		1	2																								
Percent used condom at last sex			53	60	55	57																						
Percent used hormonal contraceptive at last sex			44	44	43	43																						
			<table><tr><td colspan="2">18 mo</td></tr><tr><td>Group 1</td><td>Group 2</td></tr></table>				18 mo		Group 1	Group 2																		
18 mo																												
Group 1	Group 2																											
Percent used condom at last sex			58		55																							
Percent used hormonal contraceptive at last sex			43		42																							
Differences between intervention and control group were not statistically significant at any time point. The authors report that the intervention did not have any effect on pregnancy and that 25% of women in the total sample became pregnant.																												

Abbreviations: wks=week; mo=month; OR=odds ratio.

woman and the provider. In this review, we define follow-up as a clinic visit, a telephone call or some other means of communication during which a provider discusses side effects and any other concerns that a woman may have related to her contraceptive method. We conducted a systematic review to assess whether follow-up visits or contacts after a woman begins using contraception improve method continuation or correct use.

2. Methods

We searched the PubMed database for all peer-reviewed articles in any language published from database inception through May 2012 using the following search strategy: (oral contraception OR progestin only pills OR dmpa OR depo provera OR depot medroxyprogesterone acetate OR IUD OR intrauterine device OR IUS OR mirena OR (contracept* AND implant) OR (contracept* AND injectable) OR (contracept* AND patch) OR (contracept* AND ring) OR contraception [MESH]) AND (follow-up visit OR phone call OR return visit OR follow-up OR check up). Reference lists from articles identified by the search strategy and review articles were hand-searched in order to identify additional articles. We did not attempt to identify abstracts from scientific conferences. We did not contact study authors for clarification.

2.1. Study selection

We included studies that compared women who initiated any method of contraception with a certain follow-up schedule of visits or contacts compared to women with a different follow-up schedule or no follow-up at all. To be included, studies must have compared groups on a measure of contraceptive use (e.g., pregnancy, correct use, consistent use, method discontinuation including expulsion). Though not ideally suited to answer our review question, studies in which women used a variety of contraceptive methods but results were not stratified by method type were included. These studies were included because we found very few method-specific studies. We excluded studies that examined the effect of daily text messages used to remind women to take their pill as this intervention was not considered equivalent to a follow-up visit or call.

2.2. Study quality assessment

The evidence was summarized and systematically assessed through the use of standard abstraction forms [1]. The quality of each individual piece of evidence was assessed by two independent reviewers using the United States Preventive Services Task Force grading system [2], and results are presented in the evidence table (Table 1).

2.3. Data synthesis

Summary measures of association were not computed due to heterogeneity among studies with respect to study design, subject characteristics and outcomes.

3. Results

Four studies assessed the effect of one follow-up schedule compared with another or a follow-up telephone contact compared with no follow-up among women who began using contraception. Two of these studies — one controlled trial and one cohort study — examined the effect of a specific follow-up visit schedule after IUD insertion on method continuation, as measured by removals and expulsions [3,4]. Two randomized controlled trials examined the effect of follow-up telephone calls as part of interventions to improve correct and consistent contraceptive use and decrease pregnancy rates [5,6]. Both of these studies compared women receiving follow-up telephone calls with a control group that did not receive telephone calls [5,6]. Both randomized controlled trials were conducted among adolescents, who used several types of contraceptive methods; however, none stratified their results by contraceptive method used.

The first of the two studies that assessed the effect of different follow-up schedules was a prospective cohort study that examined the effect of frequency of follow-up visits after IUD insertion [4]. This study included women who had an IUD inserted between January 1981 and April 2002 at a single clinic. Prior to 2001, women who had an IUD inserted at the clinic were asked to return after 6 weeks and 3, 6 and 12 months after insertion, and annually thereafter. After 2001, the clinic's policy changed, and women were asked to return at 6 weeks and annually after insertion. Group A included 199 women who had an IUD inserted with a follow-up visit schedule of 6 weeks, 3 months, 6 months, 12 months and annually thereafter, and group B included 81 women who had an IUD inserted with a follow-up visit 6 weeks after insertion and annually thereafter. Outcomes of the study were assessed during the intervention follow-up visit during which both a standardized questionnaire and a physical exam were completed. Seventy-five percent of IUDs in group A and 37% of IUDs in group B were copper; the remaining were levonorgestrel-releasing IUDs. Because the women who had IUDs inserted after 2001 contributed considerably fewer years to the analysis, the authors compared discontinuation in both groups within the first 12 months after insertion. The proportion of IUDs removed in the first 12 months for medical reasons was lower in group A than in group B; however, this difference was not statistically significant [group A vs. group B: 26 (14%) vs. 18 (24%); RR: 0.6; 95% CI: 0.3–1.0]. Among women who had their IUDs removed in the first 12 months for medical reasons, the mean time to removal was greater in group A (6.9 months) than in group B (2.1 months) ($p < .05$). Though a greater proportion of women in group A had copper IUDs, this difference in time to removal remained statistically significant after stratifying by IUD type ($p < .05$, mean times to removal not reported). In addition, two women in group B with expulsions did not notice the expulsion of their IUD; the expulsion was instead recognized during the standard follow-up visit at 6 weeks and 13 months, respectively.

The authors do not report the proportion of women in each group who returned for their scheduled follow-up visit.

The second study was a controlled trial that investigated the effect of the timing of the first follow-up visit on IUD continuation and included 175 women who were asked to return 1 week after IUD insertion, 126 women who were asked to return 2 weeks after insertion and 190 who were asked to return 1 month after insertion [3]. Women were assigned a follow-up schedule based on the day of the week that they received the IUD. IUD type was not specified; however, all insertions took place between February and June 1967. Outcome data were assessed during the return visit; some women returned to the clinic for follow-up, and those who did not come into the clinic for their scheduled appointment were followed up at home; 5%, 31% and 69% of women were followed up at home in the 1-, 2- and 3-week groups, respectively. As of July 15, 1967, 73.8% of women in the 1-week group, 75.9% in the 2-week group and 83.5% in the 1-month group were still using their IUD. The authors do not report any statistical tests. Among women who returned to the clinic for follow-up, many did not return on the date of their scheduled date; 50%, 40% and 46% of women in the 1-, 2- and 3-week groups, respectively, returned on the scheduled date.

The first study, conducted in the early 1980s, that examined the effect of follow-up telephone calls on continued contraceptive use was a randomized controlled trial that enrolled female adolescents (aged 12–17 years) who were seeking contraception at several different family planning clinics [6]. It is unclear whether all the study participants were initiating a new contraceptive method, but they were making their first visit to the clinic, and the authors stated that most of the adolescents used withdrawal and douching as contraceptive methods prior to visiting the clinic. Eighty-three adolescents were assigned to a group referred to as the “periodic support group” that was intended to receive two to six phone calls from study staff during the 4–6 weeks after their initial clinic visit; these adolescents were interviewed during the initial clinic visit, as well as 6 and 15 months later. Two hundred and one adolescents served as one control group (control group A) who did not receive telephone calls but completed three interviews to collect outcome data (one in-person interview at the initial clinic visit and two telephone interviews 6 and 15 months later), and 61 adolescents served as a second control group (control group B) who did not receive telephone calls and only completed an interview at 15 months. After the initial visit, 82% of adolescents chose to use the pill, 8% chose foam and condoms, 5% chose the diaphragm, and 1% selected an IUD. Measures of contraceptive use assessed included consistency of use (i.e., always, sometimes and never), as well as prevalence of pregnancy 15 months after initial visit. Among sexually active adolescents who completed an interview at both 6 and 15 months, 40.7% of adolescents in the periodic support group and 47.6% of those in control group A reported that they always used

contraception. Related to pregnancy, results for those in the periodic support group were stratified by whether or not they had received at least one follow-up phone call (only 84% of women in the group were contacted at least once). For those that had received at least one telephone call, 6% ($n=53$) became pregnant during the 15 months following the initial visit, and for those who had not received a phone call, 29% ($n=12$) become pregnant; these rates are compared to 14% ($n=166$) in control group A and 9% ($n=53$) in control group B. The authors report that there were no statistical differences between groups; however, they do not report p values. Eighty-four percent of adolescents in the periodic support group received at least one telephone call; 2.6 calls were received on average.

The second study that examined the effect of telephone follow-up, conducted between 2005 and 2007, was a randomized controlled trial that included 805 adolescent females aged 14–18 years who attended a reproductive health clinic and were followed for 18 months [5]. The study population was randomized into two groups: 402 adolescent females in the intervention group and 403 adolescents in the control group. The intervention group received follow-up telephone calls from counselors who were trained in family planning methods, adolescent risk behavior and counseling techniques. The protocol called for one follow-up telephone call per month for 6 months, followed by bimonthly calls for 6 months. Participants in the control group did not receive any regular follow-up calls; however, they did complete surveys used to assess outcome data. Data used for this analysis were collected through surveys administered at 6, 12 and 18 months either in-person or by telephone. In-person surveys were completed at a community center located a few blocks away from the clinic site using a computer that accessed the online survey. More than 75% of adolescents completed a survey during each follow-up period. There were no statistically significant differences in the percent of adolescents reporting contraception use at last sex between those in the intervention and control groups at 6, 12 or 18 months of follow-up. The authors report that the intervention did not have any effect on pregnancy and that 25% of women in the total sample became pregnant; however, they do not report pregnancy rates stratified by control and comparison groups. Of note, counselors attempting to make follow-up contact with adolescents in the intervention group only completed 30% (an average of 2.7 calls per adolescent) of the nine scheduled telephone calls, and only 11% of the intervention group adolescents received six or more completed calls.

4. Discussion

Two studies examined the effect of different follow-up visit schedules on IUD continuation [3,4]. In one study, the proportion of removals at 12 months for medical reasons was not statistically significantly different among women who had more frequent follow-up visits compared with women who had

fewer follow-up visits; however, among women who removed their IUD for medical reasons, women with more frequent follow-up continued using their IUDs for a longer period of time prior to removal than women with fewer scheduled follow-up visits [4]. The other study found more removals among women with follow-up visits at 1 week compared to women with follow-up visits at 1 month after IUD insertion (no statistical tests) [3]. Neither of the two studies that examined the effect of a follow-up telephone call compared to no follow-up telephone call found significant differences between groups in measures of contraceptive use [5,6].

The studies included in the review are limited in answering our systematic review question for several reasons. Two studies were conducted before 1990 and therefore may not be generalizable to the contraceptive methods and service settings available today [3,6]. In addition, one study used data from IUD insertions that occurred at one clinic between January 1981 and April 2002 [4]. This clinic changed policies in 2001 to reduce the number of follow-up visits recommended after IUD insertion. As the number of follow-up visits recommended was determined based on year of IUD insertion rather than a random procedure, it is possible that the outcome was confounded by temporal trends. The other IUD study used a randomized procedure to determine follow-up schedule; however, most women did not return at their designated time. Because most women did not return for their scheduled visit, we are unable to determine whether a follow-up visit at a certain period of time after IUD insertion improved continuation. Additionally, some women had to be reached in their home much later than their scheduled follow-up visit, indicating that the intervention of interest did not take place for a large proportion of participants; for those who had removed their IUDs, timing of removal was not reported. Even further complicating interpretation of this study's findings, the assessment of outcome data likely relied on self-report among women followed up at home as opposed to clinical exam when women were followed up in the clinic. As the proportion of women followed up at home differed in each group, these measurement issues may have biased the results.

Studies that examined the effect of a follow-up phone call vs. no follow-up phone call included women who began using a variety of contraceptive methods, but those studies did not stratify results by method type. Therefore, we are unable to determine whether a follow-up contact had a differential effect on women who used one method compared to another. Also, follow-up telephone calls were

not always completed according to protocol in the studies that examined the effect of a follow-up telephone contact. For example, in one study, women in the follow-up group should have received two to six follow-up contacts, and only 84% of women in the group were contacted at least once [6]. In another study, counselors only completed 30% of the nine scheduled follow-up calls to the women in the follow-up group [5]. In addition to this issue, outcomes in the studies examining the effect of telephone follow-up were assessed through in-person, online and telephone surveys. Control groups may have been biased when assessment of outcome data involved some contact with a health care provider or health system. Finally, these two studies were conducted among adolescents, and therefore, results may not be generalizable to adult women.

5. Conclusions

5.1. Direct evidence

5.1.1. Body of evidence grade: Level I to II-2, fair

It is difficult to determine what effect, if any, follow-up visits or contacts have on contraceptive method continuation or correct use. Few studies were identified, and those that were identified were mostly of poor quality, were not method specific and had either poor patient compliance with follow-up visits or poor phone contact completion rates.

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