

Final Report

The Impact of Clinician Education on IUD Uptake, Knowledge, and Attitudes: Results of a Randomized Trial

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Abstract

Context

Despite having ample supplies of the intrauterine device (IUD), many health clinics have few clients requesting it. Though many family planning program managers would like more widespread use of the IUD, efforts to stimulate interest in the method have not been rigorously tested; providers may play an important role in generating renewed awareness.

Methods

We conducted a randomized trial among 40 clinics in Nicaragua to test the impact of medical education on IUD uptake and provider knowledge/attitude toward the method. We used two types of interventions: face-to-face medical training/education of providers and/or provision of an IUD checklist to assess medical eligibility of clients. To measure changes in IUD uptake, we compared the number of pre-intervention IUD insertions to post-intervention statistics. A survey of providers was used to measure attitude and knowledge. Ten clinics that did not receive either intervention, constituted the control group.

Results

Clinics that received the education interventions (medical training and/or IUD checklist) did not experience increased uptake of the IUD. Likewise, clinicians who were exposed to these interventions did not show higher knowledge or better attitude toward the IUD compared to clinicians at control clinics.

Conclusions

Many ministries of health worldwide would like to increase use of the IUD, since it is very safe, effective, and inexpensive to provide. While medical education and job tools (such as a checklist) for providers are indispensable, they may not be enough to stimulate interest in the IUD on the part of clients.

INTRODUCTION

Ensuring choice and offering a variety of contraceptive methods improves reproductive health, yet in some areas of the world, access to and availability of the intrauterine device (IUD) is limited. Areas with high unmet need for family planning services, high discontinuation rates of hormonal/barrier methods of contraception, and/or high rates of unintended pregnancy, can benefit from more widespread use of a method such as the IUD. In addition, wider use in resource-poor countries will help sustain reproductive health programs, since the IUD is far less expensive to provide as a longer-term option than any other reversible method.¹

The IUD is used by approximately 150 million women worldwide and is the most commonly used form of reversible contraception.² The global popularity of the method is driven by China, where approximately 36% of married women of reproductive age use it; the prevalence of IUD use, however, varies tremendously worldwide. Though only 1.9% of married US women use an IUD,³ the method is more widely accepted in Europe (15%), Mexico (14%), and numerous other regions/countries.²

In Nicaragua, IUD use has dropped in recent years, from 9% prevalence in 1998 to 6% in 2001.⁴ During this same period, unintended pregnancies¹ rose from 33% to 48% and the latest estimate of unmet need for family planning services is 15%.^{4,5} Moreover, 49% of oral contraceptive users and 60% of injectable users in Nicaragua discontinue using their method within 12 months of starting.⁵ IUD use in Nicaragua varies greatly by region, health district, and even by clinic within a health district. Though the reasons for the variability of IUD use in Nicaragua are not clear, numerous factors that have been cited elsewhere are likely explanations. For example, in El Salvador, previous research on the reasons for low interest in IUDs included rumors and myths about the method, insufficient attention to the method during counseling sessions, and insufficient provider experience with it.⁶

Many international agencies and ministries of health are actively trying to increase IUD use, but there is no concrete understanding on how to accomplish this. Outreach interventions that

¹ As estimated by the percentage of births in the last 5 years that were either ill-timed or not wanted; these are standard concepts captured in Demographic and Health Surveys. See <http://www.measuredhs.com/>

involve peer group educators,⁷ social marketing,⁸ rural midwives,⁹ and community-based distribution of family planning methods^{10 11} have been used to promote and distribute many contraceptive methods, but it is unclear how/if similar strategies can increase clinic-based uptake of the IUD. Efforts to build consensus among ministry officials/program managers (stakeholders) on the need to re-introduce the IUD into clinic-based programs is a top-down approach,¹² however, little is known about its effectiveness. Continuing medical education can involve numerous strategies¹³ and family planning providers may be the key to stimulating interest in IUDs, since they interact directly with clients. Because some providers lack experience and technical competence/confidence with the IUD, they may not be able to correctly describe the method's advantages/disadvantages to women seeking a contraceptive method; this may prevent women from making an informed choice. While on-the-job IUD training can improve the quality of services,¹⁴ its role as a stimulus in IUD uptake is unknown.

With this backdrop, we conducted an experiment to test two types of interventions aimed at expanding access to the IUD at Nicaraguan Ministry of Health (MOH) clinics where the method is available but scarcely used. The purpose of the effort was to re-educate clinicians on medical aspects of IUD provision, inform them of the latest research confirming safety, and to provide them with material to stimulate discussion with potential users. This research project was approved by the Nicaraguan Ministry of Health and was considered exempt from review by the institutional review board at Family Health International (FHI). It is also important to note that clinicians at selected facilities were not required to participate or increase the number of new IUD users in their clinics.

METHODS

We conducted this research in three MOH districts in Nicaragua and randomly assigned 40 facilities to one of four intervention groups (Table 1).

Number of Facilities	Type of Intervention	Brief Description of Intervention
10	Medical education only	Trained MOH physicians visited the facilities to meet with family planning providers and discuss IUD benefits/risks, distribute educational/promotional material, and demonstrate proper insertion techniques using a plastic pelvic model.
10	IUD checklist* only	Laminated guide sent to participating facilities to help providers identify women who are medically eligible to receive an IUD.
10	Medical education + IUD checklist	Both interventions applied simultaneously**
10	No intervention	

* developed by FHI, <http://www.fhi.org/en/RH/Pubs/servdelivery/checklists/index.htm>
** the trained physicians hand-delivered the IUD checklists and explained its use.

Description of Interventions

- *Medical Education*

We hired eleven MOH physicians and trained them using an FHI-developed curriculum that covered the following topics: review of all common family planning methods, in-depth review and focus on the IUD (advantages/disadvantages of the method and the new WHO eligibility criteria¹⁵), advocacy and communication in the field of reproductive health, communication methods for providing medical education, use of pelvic models to practice IUD insertions, and practice presentations/talks for visits.

The trained physicians visited their assigned facilities on four separate occasions to educate family planning providers on the IUD. In addition, they distributed family planning pamphlets, IUD promotional items (key chains, badges, and pens) to prompt them to counsel their clients about the IUD whenever appropriate. Finally, the trained physicians used pelvic models to demonstrate proper IUD insertion techniques and allow providers to practice insertions

themselves. In some cases, the pelvic models were left at the clinics for providers to use during their client consultations.

- *IUD Checklist*

District MOH program managers sent an introductory cover letter along with several copies of the laminated guide to the head of services at the participating clinics. The IUD checklist developed by FHI enables clinicians to determine which women would be appropriate candidates for IUD use, based on the latest medical eligibility criteria from WHO.¹⁵ For clinics that received both the IUD checklist and the medical education intervention, the trained physicians hand-delivered the introductory cover letter and copies of the IUD checklist; they explained its use as appropriate.

Sampling Frame, Selection, Randomized Assignment

In consultation with Ministry of Health officials, we decided to conduct this study in the health districts of Managua, Masaya, and Carazo. Ministry of Health supervisors gave us service statistics and other information on the 106 health centers and posts² in these districts. We removed 49 facilities from the sample because they either already had an active IUD program in place or to prevent contamination problems (many facilities had rotating or shared health workers assigned to them). Our final sampling frame consisted of 57 facilities with low IUD use: 12 health centers and 45 health posts (Table 2). To ensure better comparability after randomization, we stratified the 57 facilities by type of facility (center versus post) and by client volume (mean number of new family planning clients per month). For centers, the three client volume categories were: ≤ 35 , 36-49, and 50+. For posts, the categories were: 1-6, 7-9, 10-15, 16-19, 20-29, 30-69, and 70+. For each stratification level of health center, we randomly assigned the 4 facilities to one of four intervention groups. For each stratification level of health post, we randomly picked four facilities and randomly assigned them to one of four intervention groups. In total, 40 facilities were included in the study.

² Health centers may have up to a dozen clinicians providing family planning services, whereas health posts generally have only a few.

Number of Facilities in Sampling Frame		Number of Facilities Selected for Study, by Randomly Assigned Intervention Group				
Type/New Client Volume	N	N	Medical Education + IUD Checklist	Medical Education Only	IUD Checklist Only	No Intervention
Health Centers	12	12	3	3	3	3
<=35	4	4	1	1	1	1
36-49	4	4	1	1	1	1
50+	4	4	1	1	1	1
Health Posts	45	28	7	7	7	7
1-6	7	4	1	1	1	1
7-9	7	4	1	1	1	1
10-15	5	4	1	1	1	1
16-19	6	4	1	1	1	1
20-29	6	4	1	1	1	1
30-69	6	4	1	1	1	1
70+	8	4	1	1	1	1
Total	57	40	10	10	10	10

Evaluating the Intervention

The intervention period began in November 2004, when trained IUD experts began making visits to talk with clinicians and when the IUD checklists were sent/delivered to the appropriate facilities. The last medical education visits occurred in February 2005.

To evaluate the intervention, we focused on three areas: impact of the intervention, usefulness of the IUD medical education and materials, and potential for scale-up (Table 3). Each indicator and the data used for evaluation are discussed below.

Concept	Indicators	Data
Impact of the intervention	Changes in uptake of the IUD	Service statistics*
Usefulness of medical education/materials	Provider knowledge and attitudes	Provider survey**
Potential for Scale-Up	Intervention costs	Financial
* as provided by the Ministry of Health, for pre- and post-intervention months		
** primary data collection, post-intervention only		

Changes in IUD Uptake

To measure the impact of the intervention, we used family planning service statistics from all 40 clinics, over the period July 2004 through May 2005. We used the same service statistics that are routinely collected and compiled regionally/nationally for internal purposes at the Ministry of Health. The data included the number of new and continuing family planning users who received services each month for the IUD, oral contraceptives, injectables, and condoms.

Provider Knowledge and Attitude

We conducted a post-intervention survey of providers in the 40 Ministry of Health clinics to measure IUD knowledge and attitude (concepts that might have been influenced by the interventions); in all, 152 clinicians were interviewed in April 2005. Informed consent was obtained prior to each privately administered interview. Providers were assured that the interview was voluntary and that they could terminate the interview at any time. The attitude and knowledge questions (material covered in the training) addressed the following topics: appropriate times for IUD insertion, recommended follow-up schedules, inserting tarnished IUDs, IUD efficacy/duration, side effects, safety, appropriate user profiles, comparisons to other methods, self-confidence in providing IUD services, recommending IUDs to family/friends, and barriers to provision (lack of time/client fear). In addition, we collected information on provider demographics, training and experience with the IUD, and feedback on the interventions (if applicable). Prior to the survey, trained interviewers pre-tested the eight page questionnaire and we made modifications as necessary.

Intervention Costs

Finally, we collected information necessary for estimating the costs of the intervention; our efforts focused on training and implementation (Table 4).

Table 4: Items Included in Estimating the Costs of the Interventions	
Training Costs	Implementation Costs
<ul style="list-style-type: none">▪ Trainer fees▪ International travel costs▪ Facility rental costs▪ Meals▪ Travel reimbursement for participants	<ul style="list-style-type: none">▪ Transportation, per diem, and stipends paid to IUD experts for medical education visits▪ Supervision of intervention activities

<ul style="list-style-type: none"> ▪ Training materials (including pelvic models) ▪ Mid intervention 1 day refresher training 	
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Data Analysis

Our study was designed to detect a mean increase of 5 monthly IUD insertions in the intervention clinics (compared to the control group of clinics) with 80% power using a one-sided t-test at the $\alpha = 0.05$ level. We grouped the service statistics according to the following definitions: pre-intervention period (July 2004 through October 2004); intervention period (November 2004 through February 2005), and post-intervention period (March 2005 through May 2005). For each facility, we calculated the mean number of IUD insertions performed per month over each period. We subtracted the pre-intervention statistics from the post-intervention statistics and computed a summary value for each intervention group to determine the impact on IUD uptake.

To further determine whether the interventions had an impact on the number of IUD insertions, we used linear regression techniques where,

$$\Delta IUD = \beta_0 + \beta_1 MEDED + \beta_2 CHECKLIST + \beta_3 MEDED * CHECKLIST + \beta_4 BASE,$$

In this model, ΔIUD is the change in the number of IUD insertions in a particular clinic, MEDED and CHECKLIST are indicator variables for the medical education and checklist interventions, respectively, and BASE is the baseline number of IUD insertions performed per month. To determine if there was a significant interaction effect of the combined medical education/checklist intervention, we tested the hypothesis that $\beta_3 = 0$ at the 0.1 significance level (a higher significance level was used here due to expected low power to detect an interaction effect).

To analyze data from the provider survey, we summarized the 10 IUD knowledge questions and the 16 attitude questions by creating two composite variables; one point was scored for each answer corresponding to correct knowledge and positive attitude. The mean score and the distribution of values was then divided into thirds and analyzed by intervention group. Our

hypothesis was that providers in the intervention clinics would score higher on both composite variables as compared to providers in the control clinics.

RESULTS

Quantifying the Interventions

- *Medical Education*

Over a four month period (November 2004-February 2005), the trained IUD experts made a total of 80 visits to the 20 facilities that were randomly assigned to receive the medical education intervention (4 visits per facility). During these visits, they led a total of 104 discussions on the IUD with family planning providers, either in one-on-one sessions (n=77) or in small groups (n=27). The IUD experts logged approximately 161 hours in total education time for the 104 sessions. When taking into account multiple providers at some sessions, the total training amounted to 568 hours involving interactions with the following number of clinic staff: 78 physicians, 154 nurses, 52 health promoters, and 36 others.

In addition to the teaching activities, these 20 facilities received 10,800 general family planning and 10,800 IUD pamphlets for clients and the following materials for providers: promotional pens, IUD pins, key chains (250 of each item), 30 IUD t-shirts, and 40 IUD insertion instructions.

- *IUD Checklists*

A total of 80 IUD checklists were distributed to the 20 facilities randomized to the IUD checklist intervention groups (checklist only and medical education + checklist). Health centers were given an average of 5 while posts were given 3 copies.

Impact of the Intervention

In terms of increasing the number of IUD insertions, the interventions had no detectable impact (Table 5). The mean number of monthly IUD insertions remained fairly constant between pre- and post-intervention periods, for each of the intervention groups. The largest observed change went in the negative direction; the clinics that received both medical education and the IUD checklist had a mean of 1.3 monthly insertions before the intervention and 0.8 after the

intervention. In relation to the “no intervention” group, the impact of the interventions appears nil. The findings do not change when different combinations of clinics are grouped for analysis (e.g., 20 clinics that received any medical education and 20 clinics that received the IUD checklist).

Table 5: Mean number of IUD insertions per clinic per month before and after the intervention, by intervention group				
Analysis Groups	Number of Facilities	Mean Number of IUD Insertions per Clinic per Month		Difference
		Before	After	
Core Intervention Groups				
Medical Education + IUD Checklist	10	1.3	0.8	-0.5
Medical Education Only	10	0.7	0.9	0.2
IUD Checklist Only	10	0.5	0.8	0.2
No Intervention	10	0.6	1.0	0.3
Different Combinations				
Any Medical Education	20	1.0	0.9	-0.1
Any IUD Checklist	20	0.9	0.8	-0.1
No Medical Education	20	0.6	0.9	0.3
No Checklist	20	0.7	0.9	0.3

Table 5 reveals only broad changes in the number of IUD insertions for each intervention group. We also conducted regression analysis (data not shown) to evaluate changes at the clinic level. In these analyses (controlling for the mean number of pre-intervention IUD insertions per month), none of the individual interventions had an impact on changes in IUD uptake. Likewise, the interaction term (combining the medical education and checklist variables) was not associated with changes in the number of IUD insertions and an overall test for any intervention versus no intervention was not significant.

Usefulness of Medical Education/Materials

Provider knowledge on the IUD and attitudes toward the method did not differ by intervention group (Table 6). Mean scores on knowledge were approximately the same for each intervention group (about 6 out of 10) while mean scores on positive attitudes toward the IUD were also the same for each group (about 11 out of 16 possible points). If instead the distribution of scores is compared, no clear association between intervention group and knowledge/attitude is seen.

Concept	Medical Education + IUD Checklist	Medical Education Only	IUD Checklist Only	No Intervention	Total
Number of Providers	35	46	36	35	152
Mean Score (SD)					
Knowledge ¹	5.6 (1.9)	6.0 (1.4)	5.3 (1.5)	5.3 (1.5)	5.6 (1.6)
Attitude ²	11.1 (1.8)	11.7 (1.9)	10.4 (1.8)	11.0 (2.1)	11.1 (1.9)
Distribution of Knowledge					
High	29% (n=10)	35% (n=16)	17% (n=6)	23% (n=8)	26% (n=40)
Medium	46% (n=16)	52% (n=24)	56% (n=20)	46% (n=16)	50% (n=76)
Low	26% (n=9)	13% (n=6)	28% (n=10)	32% (n=11)	24% (n=36)
Distribution of Attitude					
High	20% (n=7)	33% (n=15)	14% (n=5)	23% (n=8)	23% (n=35)
Medium	66% (n=23)	54% (n=25)	61% (n=22)	54% (n=19)	59% (n=89)
Low	14% (n=5)	13% (n=6)	25% (n=9)	23% (n=8)	18% (n=28)
¹ Based on 10 knowledge questions, 1 point for each correct answer ² Based on 16 attitude questions, 1 point for each positive attitude * SD=standard deviation					

Costs of the Intervention-Potential for Scale-up

The total cost of the medical education intervention was \$28,338. This included \$15,595 for the training, \$6,555 for materials (including the pelvic models for demonstrating proper IUD insertion), and \$6,188 for the implementation costs. The total cost includes items such as international travel that would not be incurred if the intervention were led locally.

An additional economic cost that is not included in the above figure is the time that the IUD experts spent in training since they were actually paid by their own salaries during this time and not through the study expenditures. Although this is not included in the total intervention costs, it totaled 490 hours or \$3,920 (average salary for a clinician working in the Ministry of Health is \$8 per hour).

The IUD checklist intervention costs were minimal, since the checklist itself was already developed by Family Health International for a past project. Therefore the cost of this intervention was minimal, including only photocopying and mailing/delivery costs.

Because the interventions did not have any impact on increasing IUD uptake or on ensuring better provider knowledge/attitudes toward the IUD, the planned analysis involving potential for scale-up is moot.

DISCUSSION

We attempted to change provider practice through two distinct interventions: medical educational (outreach visits supplemented by provision of printed/promotional material) and a job aid (checklist) on the IUD. Our randomized trial showed that these efforts failed, since no measurable increase in IUD provision was detected in the intervention clinics compared to the control clinics. No intervention alone or in combination had any demonstrable impact on the number of IUD inserted per month. In terms of our secondary objective, better provider knowledge/attitudes toward the IUD did not correlate well to the interventions; providers at control clinics had approximately the same scores as providers at control clinics.

Our effort had several methodological strengths: stratified random sample of clinics, random assignment to an intervention group, and pre/post measures necessary to evaluate our primary outcome (changes in the number of IUDs provided). Any seasonal variation in the volume of services provided would not have affected our interpretation of the results, since all clinics would have experienced the same fluctuations. Because of both time and resource constraints, we were not able to measure changes in provider knowledge/attitudes; consequently, we collected only post-intervention data for this secondary objective. We have no reason to think that providers in control clinics had higher baseline levels on these measures than providers in the other groups. The material presented during training was voluminous, yet the 26 items used to measure attitude and knowledge on the IUD were very specific. We did not require the trained physicians to cover specific topics during their visits; they were free to focus on the material that seemed appropriate and needed at the time.

Our negative trial showing no impact appears to be in the minority of published research results measuring the effect of medical education on clinical practice. Also referred to as educational outreach visits or academic detailing, a recent systematic review of 18 randomized trials on the topic suggests that such efforts have a positive impact overall.¹⁶ Most of the trials in this review assessed impact by measuring changes in prescribing practices, which is analogous to what we did. In the field of family planning research, a review of previously published work also suggests that quality of services can be improved with targeted interventions.¹⁷ While most published research shows a positive impact of interventions in many different applications, publication bias may have prevented many negative trials from balancing out the true picture of whether such interventions really work.

Similar work was recently undertaken in Kenya; in that study, an intervention involving both community-based distribution agents and clinic-based providers had some apparent short-term impact, but the effect dissipated somewhat in the subsequent reporting period (Jennifer Wesson, FHI, personal communication). Based on the study in Nicaragua, we conclude that it is very difficult to increase uptake of the IUD, at least in the short-term. We cannot speculate how providers will use their experiences with these interventions to stimulate discussion and uptake of the IUD among future clients. Nor can we speculate how other approaches to medical education and other ways of measuring changes in uptake could produce different results. Poor clinician knowledge or negative attitudes as addressed in this study, and related, unfounded medical barriers¹⁸ are obstacles to more widespread use of many contraceptives, including the IUD. In addition, clinicians may simply be too busy to spend the time necessary to provide IUD counseling and services. The insertion procedure may be too invasive for both clinicians and potential clients. Lack of basic training and/or IUD insertion materials/equipment may explain poor uptake in other settings, but not in our sample of clinics in Nicaragua. On the user side, perhaps deep-rooted fears/suspicious about negative health effects of the IUD (that cannot be overcome via discussions with informed clinicians) simply prevents women from considering the method. Maybe the women who sought a birth control method at our study clinics had all the information they needed and simply had no interest in the IUD; this seemingly plausible explanation would be more convincing if nearby clinics (the ones excluded from our study) also had low IUD use.

Based on our results, it is difficult to provide concrete guidance to others who may attempt to use medical education or job aids (such as the IUD checklist) as a means of increasing IUD use. Using a similar approach in settings comparable to Nicaragua, the results would suggest that our interventions did not work. This generalization can help prevent waste of scarce resources and instead direct those resources to other activities. Medical education on all forms of contraception is critical toward improving reproductive health and such activities are compulsory. However, intensive training on a particular method may not be a cost-effective way of increasing uptake.

Appendix 1: Statistical Analysis Tables

The following eleven tables include the statistical results from the study “The Impact of Clinician Education on IUD Uptake, Knowledge, and Attitudes: Results of a Randomized Trial”

Profile of Respondent (n=152)

1. Respondent Profile by Type of Job			
	Nurse (n=95)	Physician (n=57)	Total (n=152)
601. Gender			
Male	16% (15)	33% (19)	22% (34)
Female	84% (80)	67% (38)	78% (118)
602. Age (mean)	37	35	36
603. Years experience as health care provider (mean)	15	9	13
605. Length of time working at current job			
0 to 6 months	12%	16%	13%
7-12 months	2%	16%	7%
1-5 years	46%	47%	47%
Over 5 years	40%	21%	33%
606. Provides the following services			
Family planning	94%	89%	92%
Antenatal care	79%	93%	84%
Labor and delivery care	5%	18%	10%
Postnatal care	79%	90%	83%
Diagnosis of HIV/AIDS	26%	54%	37%
Child health	83%	91%	86%
116. Percent who report they are authorized to insert an IUD	82%	96%	88%
117. Percent who received IUD insertion training	95%	98%	96%
121. Percent who ever inserted an IUD	82%	93%	86%
122. Percent who report inserting an IUD in the last 30 days	28%	32%	30%

1. Respondent Profile by Type of Job (continued)			
	Nurse (n=95)	Physician (n=57)	Total (n=152)
607. Current birth control method used:			
Oral contraceptive pills	5%	2%	4%
Injectable/Depo	16%	9%	13%
Condoms	11%	11%	11%
IUD	4%	14%	8%
Norplant/Implants	0%	0%	0%
Female Sterilization	38%	28%	34%
Male sterilization	0%	0%	0%
Withdrawal	1%	0%	1%
Lactational amenorrhea	0%	0%	0%
Periodic abstinence	3%	4%	3%
608. Percent with previous personal or partner use of the IUD	56%	42%	51%
609. Percent who would consider using an IUD again or recommend spouse/partner to use one	39%	54%	45%

2. Profile of clinic sites (n=152)			
Provider responses to questions about IUD supplies and instruments by type of facility where they work			
	Center	Post	Total
% of respondents who claim that the clinic has ...			
101. IUDs	99%	94%	97%
102. Rubber gloves	100%	96%	98%
103. Cotton wool	100%	99%	99%
104. Antiseptic solution	91%	85%	88%
105. A speculum	100%	97%	99%
106. A tenaculum	91%	83%	88%
107. A uterine sound	93%	70%	82%
108. Forceps or sponge forceps	98%	96%	97%
109. Scissors	98%	90%	94%
110. Bowl for antiseptic solution	93%	83%	88%
111. Sterilizing or high level disinfecting equipment	99%	34%	68%

3. Profile of clinic sites (n=152)			
Provider responses to questions about lacking supplies in the last 6 months by type of facility where they work			
	Center	Post	Total
% who have lacked ...			
112. IUDs	0%	3%	1%
113. Rubber gloves	1%	7%	4%
114. Cotton wool	0%	3%	1%
115. Other (n=37)	15%	35%	24%
115a. Tenaculum	7%	11%	9%
115b. Scissors	1%	7%	4%
115c. Light	0%	4%	2%
115d. Histerometro	10%	18%	14%
115e. Speculum	1%	3%	2%
115f. Forceps	1%	1%	1%
115g. Water	2%	0%	1%
115h. Table	1%	0%	1%
115i. Gases	0%	1%	1%

4. Clinic site capability regarding IUD insertion			
% of sites who have	Center (n=12)	Post (n=28)	Total (n=40)
116. At least one provider authorized to insert an IUD	100%	100%	100%
117. At least one provider reports having been trained in IUD provision	100%	100%	100%
121. At least one provider reported previously inserting an IUD	100%	100%	100%

5. Provider IUD training and counseling			
% of providers who	Nurse (n=95)	Physician (n=57)	Total (n=152)
118. Received IUD training as part of . . . (n=146) ¹			
Nursing/medical school	87%	91%	88%
Residency	0%	4%	1%
As part of previous job	22%	29%	25%
As part of current job	71%	48%	62%
119. If training received as part of current job, received the training from . . . (n=91) ²			
MOH	77%	89%	80%
Supervisor	0%	0%	0%
Colleague at the clinic	13%	7%	11%
Colleague from other clinic	9%	15%	11%
124. Reported time needed for preparing the patient, materials, IUD insertion, and post insertion counseling (n=152).			
0-15 mins	17%	28%	21%
16-30 mins	62%	56%	60%
31-45 mins	16%	14%	15%
46-60 mins	5%	2%	4%
More than 60 mins	0%	0%	0%

¹ 6 respondents did not receive provider IUD training and counseling (P117).

² 55 respondents did not receive IUD training and counseling as part of actual work (P118).

6. Provider experience with IUD provision					
% of providers who	Both Int (n=35)	Detailing (n=46)	Checklist (n=36)	None (n=35)	Total (n=152)
120. Report including IUDs in contraceptive counseling sessions					
All the time	63%	63%	75%	63%	66%
Most of the time	31%	20%	14%	17%	20%
Some of the time	3%	15%	11%	17%	12%
Almost never	3%	2%	0%	0%	1%
Never	0%	0%	0%	3%	1%
121. Never inserted an IUD	9%	13%	22%	11%	14%
122. Report inserting an IUD in the last 30 days	31%	28%	19%	40%	30%
123. Number of IUDs inserted in the past month. (n=152)					
None/never inserted one in career	69%	72%	81%	60%	71 %
1 in last month	17%	11%	6%	20%	13%
2 in last month	9%	11%	11%	9%	10%
3-4 in last month	3%	2%	0%	9%	3%
5 or more in last month	3%	4%	3%	3%	3%
125. Perceive IUD use in clinic to be					
Increasing	26%	50%	11%	17%	28%
Decreasing	23%	17%	34%	29%	25%
Staying the same	51%	30%	53%	54%	47%

7. Provider knowledge					
% who correctly knew that...	Both Int (n=35)	Detailing (n=46)	Checklist (n=36)	None (n=35)	Total (n=152)
201. A woman does not have to be menstruating to begin IUD use	34%	35%	19%	17%	27%
202. Only one follow-up visit about a month after insertion is necessary if there are no complications	31%	37%	11%	23%	26%
203. A tarnished or discolored IUD that has not yet expired can still be inserted	32%	27%	28%	30%	29%
204. In general, the IUD does not significantly raise the risks of PID	26%	35%	19%	26%	27%
205. The copper IUD is effective for at least 10 years	88%	89%	91%	74%	86%
206. The IUD is more effective at preventing pregnancy than oral contraceptives	80%	87%	83%	86%	84%
207. Over 5 years, the IUD is as effective as female sterilization	65%	76%	69%	66%	70%
208. The IUD does not cause abortions	83%	91%	89%	77%	85%
209. An HIV-infected woman can use an IUD	37%	41%	35%	37%	38%
210. Increased menstrual blood loss and pain are the two most common side effects of the copper IUD	91%	93%	94%	97%	94%

8. Provider attitude (n=152)					
% with positive attitudes about the IUD	Both Int (n=35)	Detailing (n=46)	Checklist (n=36)	None (n=35)	Total (n=152)
301. Would recommend an IUD to a friend/family member	97%	93%	97%	97%	96%
302. Do not think the IUD causes infertility	94%	98%	94%	89%	94%
303. Think the IUD is an appropriate method for unmarried women	34%	43%	32%	43%	39%
304. Think that even women who are not finished with childbearing can use an IUD	71%	85%	81%	83%	80%
305. Think that the best IUD candidates are not necessarily those who simply have contraindications to hormonal methods	34%	28%	17%	17%	24%
306. Think that more Nicaraguan women should use the IUD	89%	93%	92%	100%	93%
307. Feel that the IUD can be an appropriate method for nulliparous women	32%	40%	21%	28%	31%
308. Think that the IUD is worthwhile for clients, even though it takes more time to provide than other methods	100%	98%	97%	100%	99%
309. Do not worry about getting infected with STIs/HIV when inserting an IUD	66%	82%	69%	63%	71%
310. Do not feel overburdened with reviewing a clients potential contraindications prior to insertion of the IUD	29%	26%	17%	14%	22%

8. Provider attitude (continued)					
% with positive attitudes about the IUD	Both Int (n=35)	Detailing (n=46)	Checklist (n=36)	None (n=35)	Total (n=152)
311. Feel comfortable explaining IUD matters to clients	97%	100%	100%	100%	99%
312. Always have ample time to offer and insert an IUD to clients	80%	91%	81%	88%	85%
313. Do not find it difficult to dispel client myths & rumors about the IUD	17%	26%	22%	43%	27%
314. Feel capable and comfortable inserting an IUD	94%	98%	85%	94%	93%
315. Feel capable and comfortable removing an IUD	97%	98%	88%	94%	95%
316. Feel that women under 20 years of age can use an IUD	86%	83%	63%	74%	77%

9. Provider feedback on the Detailing intervention			
% of providers who...	Both Int (n=35)	Detailing (n=46)	Total (n=81)
401. Received detailing intervention	54%	83%	70%
402. Number of discussion visits with detailer			
Never received (0)	46%	17%	30%
1 visit	0%	11%	6%
2 visits	17%	15%	16%
3 visits	11%	17%	15%
4 visits	26%	40%	33%
% of those providers who received the detailing intervention (n=57)			
403. Length (minutes) of longest discussion (mean)	45	51	49
404. Received promotional IUD materials	95%	97%	96%
405. Received brochures about the IUD and family planning	95%	97%	96%
406. Learning new information about the IUD during detailing visit	100%	87%	91%
407. Found materials distributed by detailer useful	100%	95%	96%
408. Felt more positive about the IUD after detailer's visit	100%	97%	98%
409. Used some information from detailer's visit in subsequent counseling sessions	100%	100%	100%
410. Observed the detailer use a pelvic model to demonstrate IUD insertion	84%	95%	91%
411. Practiced inserting the IUD in pelvic model (of those who observed the detailer using a pelvic model) n=52	88%	78%	81%
412. Detailer left pelvic model with provider for a short amount of time(of those who observed the detailer using a pelvic model) n=52	25%	42%	37%
413. Provider used the pelvic model during IUD counseling with clients (of those who had a detailer leave a pelvic model) n=19	100%	27%	42%

10. Provider feedback on the IUD checklist intervention			
% of providers who...	Both Int (n=35)	Checklist (n=36)	Total (n=71)
501. Received IUD checklist intervention	46%	31%	38%
% of those providers who received an IUD checklist (n=27)			
502. Learned new information about the IUD from the checklist	100%	73%	89%
503. Used the checklist to determine if client was a good candidate for the IUD	94%	91%	93%
504. Finds checklist easy to use	88%	82%	85%
505. Checklist has changed perception of the IUD	63%	0%	37%
506. Checklist has been helpful at work	94%	91%	93%
507. Feels more comfortable screening potential IUD clients using the checklist	94%	91%	93%

11. Provider knowledge and attitude score					
	Both Int	Detailing	Checklist	None	Total
Knowledge score ³					
low (≤ 4)	26%	13%	28%	31%	24%
medium(5-6)	46%	52%	55%	46%	50%
high(≥ 7)	28%	35%	17%	23%	26%
Attitude score ⁴					
low(≤ 9)	14%	13%	25%	23%	18%
medium(10-12)	66%	54%	61%	54%	59%
high(≥ 13)	20%	33%	14%	21%	23%
Combined attitude and knowledge score ⁵ (mean)	17	18	16	16	17

³ Based on 10 knowledge questions, 1 point for each correct answer

⁴ Based on 16 attitude questions, 1 point for each positive attitude

⁵ Based on 10 knowledge and 16 attitude questions, 1 point for each item

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