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Intrauterine contraception in Saint Louis: A Survey of Obstetrician and Gynecologists' knowledge and attitudes

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Abstract

Background—Many obstacles to intrauterine contraception use exist, including provider and patient misinformation, high upfront cost, and clinician practice patterns. The aim of our study was to investigate knowledge and attitudes about intrauterine contraception among obstetricians and gynecologists in the area of Saint Louis.

Study Design—We mailed a self-administered, anonymous survey to 250 clinicians who provide obstetric and gynecologic care in Saint Louis City and County which included questions about demographics, training, family planning visits, and intrauterine contraceptive knowledge and use.

Results—The overall survey response rate among eligible clinicians was 73.7%. Clinicians who had recently finished training or saw higher numbers of contraceptive patients per week were more likely to insert intrauterine contraception than clinicians who completed training prior to 1989 or saw fewer contraceptive patients. Several misconceptions among clinicians were identified, including an association between intrauterine contraceptives and an elevated risk of pelvic inflammatory disease.

Conclusions—Physician misconceptions about the risks of intrauterine contraception continue to occur. Improved clinician education is greatly needed to facilitate the use of these highly effective, long-acting, reversible methods of contraception.

Keywords

Intrauterine contraception; intrauterine device; clinician knowledge; obstacles; survey

1. Introduction

Unintended pregnancy continues to be a substantial public health problem in the United States; over 3 million unintended pregnancies occur annually with poor and minority women disproportionately affected. Inconsistent and incorrect use of contraception is associated with unintended pregnancy [1]. Intrauterine contraception (IUC) is safe, highly effective with failure rates of less than 1%, [2] and does not require regular compliance from the user. Two types of IUC are available in the United States, the levonorgestrel intrauterine system (Mirena®, Bayer

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HealthCare Pharmaceuticals, Wayne, NJ) and the copper T380A (Paragard®, Barr Pharmaceuticals, Montvale, NJ). These methods are associated with minimal side effects [3, 4], and have been shown to be safe when inserted immediately post-abortion [5,6]. Despite the many advantages of this “forgettable” contraception, only 1.3% of women aged 15 to 44 years currently use IUC [7]. In fact, use in the United States is substantially lower than many European and Asian countries with reported rates as high as 27% in Norway [8] and 30% in China [9]. Factors that contribute to the low uptake of IUC in the United States include knowledge and attitudes among clinicians and women, practice patterns among providers, and high initial cost.

A 2002 survey of Fellows of the American College of Obstetricians and Gynecologists regarding knowledge, attitudes, and practices about IUC found that while 95% of respondents agreed IUC was safe, the majority stated that nulliparous patients, and patients with a history of sexually transmitted infections (STIs) and pelvic inflammatory disease (PID) were not candidates for IUC [10]. Another study of over 800 California family planning providers found that fewer than 50% of respondents considered nulliparous women, teenagers, women who were immediate postpartum or postabortion, or women with a history of PID within the past 5 years to be candidates for IUC [11].

Increased use of highly effective methods of contraception such as IUC has been shown to decrease the rate of unintended pregnancies [12]. However, to increase uptake, physicians must be willing to provide these most effective methods of contraception to a wide range of patients. The purpose of this cross-sectional survey was to describe local clinician attitudes, knowledge and practice patterns about IUC; factors greatly influencing access to these contraceptive methods.

2. Materials and methods

We created a written, self-administered questionnaire to assess knowledge and attitudes about IUC among practicing providers of obstetrics and gynecology in the Saint Louis area. The questionnaire included demographics items such as age, race, and ethnicity, as well as questions about graduate medical training, contraceptive patients seen, and willingness to insert IUC. The survey was pretested among three clinician researchers.

Our goal was to obtain 100 completed surveys which would represent approximately 30% of practicing obstetrician-gynecologist clinicians in the area. Prior response rates for surveys mailed to physicians have been reported to be 34 to 51% [13,14]; we estimated a 40% response rate, requiring [250] mailed surveys. We compiled a list of providers of obstetrics and gynecology in the Saint Louis area using publically available data sources such as faculty listings, the yellow pages of the telephone book, and Internet listing of obstetrician-gynecologist offices. We then performed a simple random sample using computer-generated numbers and mailed 250 questionnaires to the randomly selected clinicians between April and June of 2008. Surveys were mailed a second time to non-responders. All mailings contained a \$20 gift card as an incentive.

All respondents were practicing in Saint Louis City or County, English-speaking, and willing to complete the survey. Written consent was waived, and completion and return of the survey implied consent to participate. This study was approved by the Washington University in Saint Louis Human Research Protections Office.

2.1. Statistical methods

Clinician characteristics were compared using the χ^2 test statistic. Unfortunately, we had no information regarding the characteristics of the clinicians who did not respond to the survey.

Low IUC rate was defined as having both inserted IUC and referred for IUC insertion zero to 10 times in the past year. We created this variable to capture clinicians who were both inserting none or few IUCs and referring none or few patients to another provider. Fisher exact tests were used for contingency tables with small cell size ($N \leq 5$). Since the outcomes of interest were common ($> 10\%$), odd ratios are computed using Poisson regression as logistic regression would overestimate the odd ratios [15,16]. Univariable and multivariable odd ratios were estimated for the outcomes of interest. Statistically significant covariates in the univariable model were included in the final model. All statistical analyses were conducted using SAS version 9.1 (SAS Institute Inc., Cary, NC).

3. Results

3.1. Clinician characteristics

A total of 137 (54.8%) surveys were completed and returned. Fig. 1 shows the outcome of the 250 mailed surveys. Our final response rate among eligible clinicians with a valid mailing address was 73.7%. Table 1 shows the characteristics of the clinician respondents. The mean age of respondents was 49 years and they were mostly physicians (98.5%), predominantly white, and non-Hispanic.

3.2. IUC training and use

Thirty-six percent of clinicians were not trained in IUC insertion during their residency or advanced practice nurse core clinical training. Clinicians who trained at a Catholic institution were less likely to have received training in insertion during residency than clinicians who trained at secular institutions (OR 0.49 95% CI 0.36-0.68). Table 2 shows factors associated with low IUC rate; clinicians who finished training after 1999 (OR 0.13, 95% CI 0.02-0.85) or who saw a greater number of contraceptive patients per week (OR 0.36, 95% CI 0.19-0.69) were less likely to have low rates of IUC insertion and referral than clinicians who finished training before 1989 or saw fewer contraceptive patients.

Eighteen percent of respondents reported that they “always” discussed IUC with their patients, 76% reported that they discussed IUC most or some of the time. The majority of providers (67.9%) reported they had counseled more than 50 patients about IUC in the past year, and almost 66% reported that they had inserted greater than 10 IUCs in the past year. Less than 2% reported not counseling patients about intrauterine contraception within the past year and 12.4% reported not inserting IUC. Most respondents (79.6%) reported that they did not refer patients for IUC insertion; while 17.6% reported that they had referred 1 or more patients for IUC insertion. Only 2.9% of providers had neither inserted nor referred for IUC insertion in the past year. Forty percent of clinicians reported “always” and 52% reported “sometimes” testing for gonorrhea and chlamydia prior to insertion of IUC.

3.3. Clinician knowledge

Most respondents “strongly agreed” or “agreed” that IUC was safe (98.5%); however, 29% of clinicians reported that IUC causes an increased risk of PID other than at the time of insertion. The majority of clinicians correctly stated that antibiotics should not be given prophylactically at the time of insertion (78.1%), and that IUC does not cause abortion (86.1%). Seventy-eight percent of clinicians routinely recommended a follow-up visit after insertion. Table 3 shows the typical side effects emphasized by the clinician for each IUC type.

When asked about patient characteristics and the appropriateness of IUC, 62.0% agreed IUC was appropriate for a nulliparous patient; 30.7% for a teenaged patient, 45.3% for a patient with a STI in the past 2 years, 36.5% for a patient with PID in the past 5 years, and 36.5% for a patient in a non-monogamous relationship. The vast majority of clinicians (97.8%) reported

that they would offer IUC to a 35-year-old patient, who was married, monogamous and had 3 children; 67.1% reported they would offer intrauterine contraception to a 30 year old who was unmarried, had 2 children, and had a boyfriend; 49.6% said they would offer IUC to a 17-year-old who was unmarried, monogamous and had 1 child. Only 19% would be willing to offer IUC to an unmarried 17-year-old who had never been pregnant.

4. Discussion

This survey was designed to collect information about providers' attitudes and knowledge about IUC. Our results suggest that physicians who completed training after 1999 are more likely to insert IUC than physicians who completed training prior to 1989. The overwhelming majority of clinicians (98%) believed IUC is safe, however, almost one third reported incorrectly that IUC is associated with an increased risk of PID other than the increased peri-insertional risk. Table 3 also suggests some providers may not appropriately emphasize the most common side effects encountered with IUC; 75.9% reported counseling patients about an increase in spotting and breakthrough bleeding with both levonorgestrel IUC (LNG-IUC) and copper IUC (copper-IUC); this side effect can be seen with both types of IUC; however, is more commonly associated with LNG-IUC and is typically limited to the first 3 to 6 months of use. Eleven percent reported counseling patients about cessation of menstruation with both LNG-IUC and copper-IUC; however, copper-IUC should not cause amenorrhea. Thirty-three percent reported that both LNG-IUC and copper-IUC can be associated with painful menstruation; however, the use of LNG-IUC has been shown to decrease the incidence of menorrhagia and dysmenorrhea [17].

Most of the clinicians surveyed were willing to offer IUC to a 35-year-old multiparous patient who is married. However, we find it worrisome that the number of clinicians who will offer IUC declines dramatically with patients of decreasing age, parity, and non married status. For example, only 19% would offer IUC to a 17 year old who is not married and has never been pregnant. This suggests the misconceptions about associations between IUC, PID, and infertility continue to persist. The World Health Organization states only current cervicitis and recent PID within 3 months are contraindications to IUC. They do not consider age less than 20 years or nulliparity to be contraindications [18]. A recent editorial identified limited education and outdated beliefs as one of the main provider-based barriers to contraception among teens and young adults and called for the increased education and training of health-care providers [19]. Since young women are at high risk for unintended pregnancy, it is imperative that we increase this population's access to the most effective methods of contraception.

Our study has similarities to the study by Stanwood et al. [10] However, there are several important differences: 1) The prior study was administered before the introduction of LNG-IUC in the United States; in comparison, our survey obtains knowledge and attitudes about both types of IUC available, 2) In 2005, the copper-IUC FDA labeling was liberalized to not restrict insertion in nulliparous women, and in the immediate postabortion and postpartum time period. In addition, having more than one sexual partner was removed as a contraindication. Since we surveyed physicians after the new labeling was introduced, our survey adds new information about clinician knowledge about and attitudes towards IUC.

This study is limited by its relatively small sample size and has limited power to detect statistically significant differences. Additionally, because our findings are from a single geographical area, they may not be generalizable to clinicians in other geographical regions. Strengths of our study include a random sample of practicing obstetrician-gynecologists rather than a convenience sample, and a high response rate, which strengthens the generalizability of our findings.

Despite the introduction of LNG-IUC and liberalization of the current package labeling of copper-IUC, our survey has identified several potential barriers that remain to increasing the use of IUC: 1) inadequate training of clinicians (more than one-third of physicians were not trained in residency); 2) misperceptions regarding appropriate candidates for IUC; and 3) inaccurate knowledge of IUC and possible side effects. These barriers may influence contraceptive counseling and subsequent method choice. Targeted education and training programs to clinicians should dispel these pervasive myths and inaccuracies and encourage the use of these highly effective and safe contraceptive methods.

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Figure 1.
Schematic of mailed and returned questionnaires.

Table 1

Characteristics of the 137 Clinician Respondents

Characteristic	N (%)
Job Title	
Physician	135 (98.8)
Advanced Practice Nurse	2 (1.5)
Race	
White	117 (85.4)
Black	6 (4.4)
Other	14 (10.2)
Ethnicity	
Hispanic	6 (4.4)
Year Completed Residency	
Before 1989	59 (43.7)
1989 – 1999	55 (40.7)
After 1999	21 (15.6)
Catholic Institution for Residency	
Yes	61 (55.5)
No	76 (44.5)
IUC Insertion Included During Residency	
Yes	88 (64.2)
No	49 (35.8)
Avg. Number of Contraceptive Patients/Week	
0 – 25	45 (35.43)
26 – 50	63(49.61)
51 +	19(14.96)
Not Ascertained	10 (7.30)

Table 2

Univariable and Multivariable Models of Provider Characteristics Associated with Low IUC Rate

Characteristic	Univariable OR (95%CI)	Multivariable OR (95% CI)*
Year residency completed		
Before 1989	Reference	Reference
1989 – 1999	0.66 (0.3 –1.17)	0.62 (0.36–1.07)
After 1999	0.13 (0.02–0.92)	0.13 (0.02–0.85)
Catholic institution		
Yes	0.68 (0.37–1.26)	1.23 (0.71–2.13)
No	Reference	Reference
Trained to insert IUC in residency		
Yes	1.53 (0.78–3.01)	1.16 (0.62–2.15)
No	Reference	Reference
Average Contraceptive Patients Seen per Week		
0 – 25	Reference	Reference
26 – 50	0.36 (0.19–0.69)	0.34 (0.19–0.65)
51 +	0.24 (0.06–0.93)	0.20 (0.05–0.77)

* Adjusted for year residency completed, training at a Catholic institution, training in IUC insertion during residency, and average number of contraceptives seen per week

IUC – Intrauterine contraception

Table 3

Clinician Report of Side Effects Commonly Associated with Levonorgestrel IUC and Copper IUC

Side Effect	LNG-IUC Only	% Copper-IUC Only	Both	Neither
Spotting or breakthrough bleeding	15.3	4.4	75.9	8.7
Heavy or prolonged menstruation	0.7	63.5	24.8	8.8
No menstruation	83.2	0	11.0	3.7
Painful menstruation	0.7	46.0	33.6	17.5

LNG-IUC – levonorgestrel intrauterine contraception; Copper-IUC – copper intrauterine contraception