IUD-Related Knowledge, Attitudes and Practices Among Navajo Area Indian Health Service Providers

CONTEXT: *The IUD once accounted for about half of contraceptive use among Navajo women but is now little used in this population, which has a high rate of unintended pregnancy. Identifying barriers to use—including those stemming from providers' IUD-related knowledge, attitudes and practices—could help expand use of the method.*

METHODS: *In 2000, 107 Navajo Area Indian Health Service providers who offer contraceptive services completed a mailed survey. Responses of women's health providers and other types of providers were compared, using the Cochran-Mantel-Haenszel method.*

RESULTS: *Overall, 69–78% of providers had good factual knowledge about the IUD and felt adequately prepared to insert a device or counsel women about it; considerably larger proportions of women's health providers than of others felt able to counsel about and insert IUDs. Sixty-five percent of providers (88% of women's health providers and 50% of others) currently inserted IUDs, and only 8% (none of them women's health providers) never recommended the method. The main reasons providers cited for not recommending the IUD were concerns about its safety and about side effects (mentioned by 69% and 44%, respectively); these concerns did not differ by provider type.*

CONCLUSIONS: *Provider education and training should focus on insertion techniques and on the safety of available IUDs. Training should be targeted not only to women's health providers, but to family practice physicians, nurse practitioners and other providers who offer family planning counseling and services.*

Perspectives on Sexual and Reproductive Health, 2003, 35(4):169–173

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The IUD is a safe, effective form of contraception, whose widespread use could decrease the high rate of unintended pregnancy in the United States. Forty-nine percent of pregnancies in the United States are unintended, the highest proportion in any industrialized country.[1] Lack of an ideal reversible contraceptive, the methods women choose and the effectiveness with which they use their chosen method are among the factors that contribute to this high level of unintendedness. The two most commonly used reversible contraceptives in the United States are the pill and condoms.[2] Both methods are highly user-dependent and have large differences between perfect and typical effectiveness.[3]

Navajo women have rates of unintended pregnancy that are at least as high as those in the general U.S. population. The majority of Navajo women receive their care from Indian Health Service (IHS) facilities, and a central Navajo Area IHS maternal and child health committee periodically reviews prenatal records to assess the proportion of women who said that their pregnancy was unplanned. Estimates from these reviews indicate that 50% of pregnancies among Navajo women are unplanned.[4] Moreover, because women who elect pregnancy termination are not included, these reviews underestimate the unintended pregnancy rate.

Records from the tribally operated Navajo Family Resource Network, an agency that contracts with the Navajo Area IHS to provide family planning services at IHS facilities, show that the predominant reversible contraceptive choices among Navajo women are oral contraceptives and hormonal injectables.[5] Although both methods offer reliable contraceptive protection, unintended pregnancy remains common, pointing to the need for other methods. The IUD, which requires a single act of motivation, offers cost-effective long-term protection[6] and once enjoyed wide popularity in the Navajo community, could help fill this gap.

The IUD became available to Navajo women through the IHS in 1962 and rapidly became their preferred method of reversible contraception. Forty percent of Navajo women of reproductive age who practiced contraception in the 1970s and early 1980s used the IUD.[7] A unique combination of factors led to a heavy dependence among Navajo women on the IUD: Cultural attitudes favored this method for women who wished to use some contraceptive; access to health care was limited because of long distances to providers and unavailability of transportation; and a single health care delivery system, the IHS, served the community. The critical mass of Navajo women using IUDs most likely helped perpetuate the method's predominance by advocating its use to friends and family members. Although the full range of contraceptive choices—including sterilization, oral contraceptives, condoms and the diaphragm—was available to Navajo women, the IUD maintained a favored position.

However, in the wake of litigation involving the Dalkon Shield, all IUDs except the Progestasert were removed from

the U.S. market in 1986 amid concerns about an association between IUD use and pelvic inflammatory disease. The Navajo Area IHS had never offered the Progestasert because it was more expensive than other IUDs; therefore, IUDs ceased to be a choice for Navajo women. A 1993 publication suggested that the Navajo birthrate increased by 4–5% following the cessation of IUD placement.[8]

The TCu 380A, an IUD with an excellent efficacy and safety record, has been available to Navajo women through the IHS since 1993; nevertheless, IUD use among Navajo women remains low, and the number of IUDs inserted yearly has declined over the last decade. According to the Gallup Regional Supply Service Center, a centralized storehouse through which all IUDs are purchased for Navajo IHS units, the number of IUDs distributed to the service units in 2000, the year our study was conducted, was 550; this was the smallest number of IUDs purchased since the method was reintroduced to the IHS in 1993.[9] Additionally, the Navajo Family Health Resource Network reports that IUDs are rarely used.[10] The population of Navajo women aged 15–44, however, has grown over this time period and is estimated at 47,200.[11]

A number of barriers may limit expanded use of the IUD; while some of these relate to women, others relate to providers. For example, providers' practices with regard to recommending and inserting IUDs may affect use. Removing such barriers could increase IUD use and thereby substantially decrease the unacceptably high unintended pregnancy rates among Navajo women.

This study examined factors related to providers, by examining their IUD-related knowledge and current practice, and their attitudes toward recommending or inserting the IUD. We included several types of providers, as a variety of providers counsel about and prescribe contraception in the IHS. The Navajo Area IHS provides care for approximately 225,000 people in five full-service hospitals (Gallup, Chinle, Fort Defiance, Northern Navajo and Tuba City Medical Centers), as well as a number of smaller community hospitals and outpatient clinics. All full-service hospitals include women's health providers—those who have received training specifically and exclusively directed toward women (obstetrician-gynecologists and certified nurse-midwives). The community hospitals and outpatient clinics, where a sizable proportion of women requesting family planning services seek care, are often staffed by other types of providers—those whose training includes women's health but whose practice is more general (e.g., family practice physicians and certified nurse practitioners).

Two of the authors worked for six years as staff obstetrician-gynecologists at one of the full-service hospitals and served as consultants to three smaller facilities; their perception was that "other providers" had less training and experience with IUDs than women's health providers, were more restrictive with regard to recommending IUD use and were less comfortable inserting IUDs. We distinguished women's health providers from other providers to test the hypothesis that the former have better knowledge about, more experience with and more favorable attitudes toward the IUD than other providers who offer family planning counseling and services.

METHODS

Study Design

Using mailing lists of active staff at all Navajo IHS facilities, supplied by the clinical director of each service unit, we identified 153 providers who would most likely include contraceptive counseling in their practice. These providers were selected as follows: At the full-service hospitals, all providers in the obstetrics and gynecology, family medicine and urgent care departments were included. At the community hospitals and outpatient clinics, all providers were included, since most perform all aspects of health care in these smaller, more remote facilities.

A 38-question survey instrument was developed to assess providers' knowledge, practices and attitudes related to the TCu 380A. The questionnaire was based on one used in a similar study of San Diego physicians,[12] and was modified on the basis of concerns expressed by the authors of that study and results of pretesting with 52 providers from a different area of the IHS. The study received institutional review board approval from the Navajo Nation, the University of New Mexico and the University of Washington.

The questionnaire was mailed to the selected providers in August 2000; a second questionnaire was mailed to nonrespondents after approximately three weeks. Eight questionnaires were returned because the providers no longer worked at the facilities, leaving 145 possible respondents; of these, 109 returned a survey, for a response rate of 75%. From the original lists of providers, we could identify the specialties of 25 of the 36 nonrespondents; the distribution of these providers by specialty was the same as that for respondents.

Since the survey was intended for providers who performed contraceptive counseling, the first question asked providers whether they offered this service. Two percent of respondents did not provide family planning counseling, and their responses were therefore excluded from the analysis. In addition, respondents who did not answer particular questions were omitted from the relevant analyses. The final sample consisted of 107 providers—42 women's health providers and 65 other provider types. All data were entered into an electronic database without personal identifiers, to maintain confidentiality.

Measures

We assessed knowledge through multiple-choice questions about the pregnancy rate associated with use of the TCu 380A (which is 1% or less) and the approved duration of continuous use (10 years). Additional questions asked providers whether they considered themselves knowledgeable enough to counsel about and insert the IUD.

Practice was assessed with questions about the number of IUDs providers had inserted during their career and within the last year. With regard to current practice, we asked providers to indicate whether they "recommend [the IUD]

to no one," "recommend to selected patients and refer for insertion," or "recommend to selected patients and insert."

The questionnaire included several types of questions assessing attitudes. A number of questions asked whether providers considered women with various characteristics appropriate candidates for IUD use. For example, it asked, "Assuming no contraindications for use of an IUD and all other factors are favorable for use, would you recommend the CuT380A to a patient who is 20–29 years old?"

Other questions used a Likert scale to determine providers' attitudes toward recommending the IUD in certain clinical situations—for example, "Do you recommend the IUD for women who desire more children in the future?" Possible responses, scored on a scale of 1–3, were "recommend routinely," "recommend only if other methods are unacceptable" and "never recommend"; providers who responded that they recommend routinely were considered to have favorable attitudes, and all others were considered to have unfavorable attitudes.

Finally, providers were given a list of factors (for example, "concerns about medical safety, including the risk of [pelvic inflammatory disease] and infertility," and "concern about side effects such as excessive bleeding and increased uterine cramping") and were asked to check those that negatively influenced their attitudes about recommending or inserting an IUD.

Analysis

We used SAS 8.02[13] for all analyses. We first compared women's health providers and other types of providers on basic demographic parameters (gender, age and years in practice), using a simple chi-square statistic to calculate the p-value. We then used the Cochran-Mantel-Haenszel method to test for associations between provider type and outcome variables while controlling for gender, the only demographic variable on which the two provider groups were statistically different. In addition, for dichotomous outcome variables, we calculated adjusted probability ratios, with confidence intervals, as a measure of association between provider type and outcome variable, again using the Cochran-Mantel-Haenszel method.

RESULTS

Sample Characteristics

Family practitioners made up the largest proportion of the sample (36%). These were followed by nurse-midwives (21%) and obstetrician-gynecologists (18%); a variety of other types of providers accounted for 24% of participants. A small number of respondents (1–3) did not provide various demographic data. Of those who did, the great majority (74%) were female (reflecting the large contribution of nurse-midwives to the provider mix); 44% were younger than 40, and 53% had been in practice for five or fewer years. Women's health and other providers had generally similar background profiles; the exception was that 88% of women's health providers were women, compared with 63% of other providers—a statistically significant difference.

TABLE 1. Percentage of Navajo Area Indian Health Service providers, by knowledge, practices and attitudes regarding the IUD; and probability ratios (and 95 percent confidence intervals) comparing outcomes among provider types—2000

Outcome	All (N=107)	Women's health (N=42)	Other (N=65)	Probability ratio
Knowledge				
Know effectiveness	69	79	62	1.3 (1.0–1.6)
Know duration of effectiveness	64	76	56	1.3 (1.0–1.8)
Sufficient experience to insert	70	93	54	1.8 (1.4–2.4)
Sufficient information to counsel	78	95	66	1.4 (1.2–1.8)
Practice				
Insertions in past year***				
0	35	12	50	na
1–10	48	52	45	na
>10	17	36	5	na
Insertions in career***				
0	14	0	23	na
1–14	37	21	47	na
>14	49	79	30	na
Approach to providing***				
Recommend to no one	8	0	13	na
Recommend but refer for insertion	26	7	39	na
Recommend and insert	66	93	48	na
Attitude about appropriate candidates				
Parity				
0	36	38	34	1.1 (0.5–2.8)
≥1	92	98	88	1.1 (1.0–1.2)
Age				
<20	51	62	25	2.2 (1.4–3.5)
>40	84	93	78	1.2 (1.0–1.4)
No. of partners				
1	97	100	95	1.1 (1.0–1.2)
≥2	6	7	5	1.1 (0.2–4.9)
Desire future fertility	79	93	54	1.7 (1.4–2.2)
Ever had abortion	61	85	45	1.7 (1.3–2.3)
Ever had ectopic pregnancy	20	24	17	1.6 (0.8–3.4)
Deterrent				
Concern about medical safety	69	64	72	0.8 (0.6–1.1)
Concern about side effects	44	52	39	1.2 (0.9–1.9)
Concern about liability	11	14	9	1.5 (0.5–4.5)
Expense	5	2	6	0.4 (0.0–4.4)

***Differences between provider types are significant at p<.001. *Notes:* Data are controlled for gender. na=not applicable.

Outcomes

• *Knowledge.* Providers' knowledge about the IUD was generally good (Table 1). The majority of all respondents gave correct answers to factual questions about the effectiveness of the TCu 380A (69%) and its duration of effectiveness (64%). Seventy percent of all providers reported having sufficient experience to insert IUDs, and 78% said that they had adequate information to counsel women about the method. Women's health providers were significantly more likely than other provider types to say that they had sufficient experience to insert IUDs and adequate information to counsel women about them (probability ratios, 1.8 and 1.4, respectively).

• *Practice.* Sixty-five percent of providers had inserted an IUD within the last year, but only 17% had inserted more than 10. The proportions who had done any insertions and more than 10 were larger among women's health providers (88% and 36%, respectively) than among others (50% and 5%). Similarly, while most providers had inserted an IUD at some point in their career, and half had inserted 15 or

more, women's health providers reported having inserted more IUDs than other providers.

Eight percent of providers—none of them women's health providers—reported that they recommended the IUD to no one. Twenty-six percent of all respondents reported that they recommended the method to selected patients but referred for insertion, and 66% said that they recommended and inserted the IUD. Nine in 10 women's health providers said that they inserted IUDs, compared with half of other providers.

• *Attitudes.* In several clinical situations, the two provider groups had similar attitudes regarding appropriate candidates for IUDs. Overall and in each group, fewer than four in 10 respondents had favorable attitudes about IUDs for nulliparous women, but the great majority had favorable attitudes about IUDs for parous women. Similarly, virtually all providers were favorable toward IUD use by monogamous women, whereas fewer than one in 10 favored the method's use by women with multiple partners. About one in five respondents, regardless of provider type, perceived previous ectopic pregnancy to preclude routine recommendation for the IUD.

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In other clinical situations, however, attitudes regarding appropriate candidates for the IUD varied by provider type. Women's health providers were significantly more likely than other providers to have a favorable attitude toward IUD use by women younger than 20 (probability ratio, 2.2), women who desired future fertility (1.7) and women with a history of abortion (1.7).

Two main factors deterred providers from recommending or inserting IUDs: concern about the safety of the IUD (69% cited this as a deterrent) and about its side effects (44%). No significant differences between specialties were found in safety and side effect concerns. Few providers cited concerns about legal liability (11%) or expense (5%) as deterrents.

DISCUSSION

Overall, Navajo Area providers had good factual knowledge about the IUD's duration of use and effectiveness. The majority also reported adequate knowledge to counsel women about the IUD and to insert it. Many held favorable attitudes toward IUD use by women in a variety of clinical situations. However, current practice—both self-reported by respondents and as reflected by pharmacy records from the IHS showing progressively smaller numbers of IUDs purchased yearly—involves the insertion of few IUDs relative to the population served. IUD insertions over the past year were low in both provider groups, particularly the group not specifically trained in women's health.

In marked contrast to a 1990 survey finding that 40% of physicians recommended the IUD to no one,[14] only 8% of providers in our survey recommended the IUD to no one. Though a substantial proportion of providers had inserted at least one IUD in the last year, few had inserted more than 10. Women's health providers were more likely to have inserted more than 10 IUDs, but even among this group, the proportion was only 36%. A discrepancy between favorable attitudes of providers and infrequent insertions was also evident in Stanwood and colleagues' 2000 national survey of practicing obstetrician-gynecologists' attitudes about IUDs.[15]

Barriers to recommending and inserting the IUD may partly relate to exaggerated concerns about the IUD's safety and side effect profile. Apprehension about risks has plagued the reputation of the IUD since the Dalkon Shield controversy, but several prospective studies have confirmed the safety of the IUD.[16] Despite these data, the majority of providers still appear concerned that the IUD causes pelvic infection and infertility. This unease may be the most important factor preventing providers from more strongly recommending IUD use.

Almost half of respondents noted the side effect profile as a factor that negatively influenced their decision to recommend an IUD. The most common side effects of the TCu 380A, increased menstrual bleeding and cramping, are often alleviated by use of nonsteroidal anti-inflammatory drugs. Furthermore, survey data indicate that women who use IUDs report very high levels of satisfaction with their method,[17] and continuation of IUD use at one year is high;[18] these findings may indicate that side effects are well tolerated overall. Providers' concerns about side effects appear to be out of proportion to users' actual experience and may needlessly present a barrier to more widespread IUD use among Navajo women.

Some factors that may deter providers from recommending or inserting IUDs for women in the general population are less likely to account for low use in the Navajo Area IHS facilities. Survey respondents seldom cited expense as an important factor in decision-making. Because the IHS makes IUDs available to all eligible patients, insurance coverage is not the significant barrier that affects many women in the general population. Similarly, fear of litigation was minimal, most likely reflecting the relative immunity felt by government providers, who are covered under the Federal Tort Claims Act.*

Our survey revealed significant discrepancy in knowledge and experience between women's health providers and other providers; this disparity is important, because many women receive counseling and services from these primary care providers. Clearly, changing obstetrician-gynecologists' attitudes and practice alone will not remove all the barriers to expanded IUD use in this population (or, in all likelihood, in others). Our findings suggest that education and training about IUDs must specifically target the many primary care providers who deliver women's health services both in the IHS and to the broader population of U.S. women.

This survey has several limitations. The questionnaire

*Under the Federal Tort Claims Act, a malpractice claim involving an IHS physician is reviewed by a Public Health Service panel and then the Department of Health and Human Service's Office of General Counsel, which decides whether to settle or deny the claim. If a claim is denied, the plaintiff may sue the government—not the physician—in federal court. (Such suits are relatively uncommon, because they are not likely to be won.)

was adapted from one used in a previous study, but it has not been assessed for internal validity. Another limitation is that some providers who offer contraceptive counseling or IUD insertion may have been overlooked because of the method we used to select providers. And although the overall response rate was high, nonrespondents may have given different answers from respondents. In addition, since the survey was limited to Navajo Area IHS providers, the results may not be generalizable to other health care providers.

Whereas providers obtain ongoing education from journals, conferences and exposure to other health care professionals, patients have limited access to medical information. Patients often report friends, relatives and media as primary sources of information and opinions.[19] Women of reproductive age in the 1970s and 1980s, when negative publicity about IUDs was pervasive, are now mothers and grandmothers of women of reproductive age. They may be a source of negative information to these young women. A survey of attitudes and knowledge of Navajo women of reproductive age might help explain why IUD use remains low. Patient attitudes may present as great a barrier to widespread IUD usage as provider attitudes.

Our findings are consistent with those of Stanwood and colleagues:[20] The most important barriers for clinicians are lack of experience and knowledge, combined with misperceptions that too narrowly define appropriate candidates for IUD use. Additionally, providers such as family physicians and nurse practitioners, who are important providers of contraceptive counseling and services, have less experience and knowledge than obstetrician-gynecologists and nurse-midwives.

In 2001, 45 international experts developed a consensus statement about the IUD, which emphasized the relative underutilization of this very effective long-term contraceptive method and proposed a comprehensive set of recommendations to decrease barriers to IUD use.[21] Providing educational opportunities for providers through workshops and mentoring may liberalize their attitudes about appropriate candidates for IUD use as well as improve their technical competence; more liberal attitudes and greater competence, in turn, could stimulate providers to include IUDs more frequently in their counseling of patients and thereby increase demand for the method. Efforts to expand IUD use may be particularly well suited to Navajo women, among whom this method was previously so popular.

We conclude that providers should receive education and training that emphasize the medical safety and high acceptability of current IUDs. Inaccurate perceptions, such as the perception of a causal relationship between IUD use and pelvic inflammatory disease or of an increased risk of ectopic pregnancy associated with IUD use, should be specifically addressed in evidence-based education and training sessions. Accurate information and adequate training must target not only obstetrics and gynecology residents and nurse-midwife students, but also other providers who offer contraceptive counseling and may insert IUDs.

REFERENCES

1. Henshaw SK, Unintended pregnancy in the United States, *Family Planning Perspectives*, 1998, 30(1):24–29.

2. Piccinino LJ and Mosher WD, Trends in contraceptive use in the United States: 1982–1995, *Family Planning Perspectives*, 1998, 30(1):4–10 & 46.

3. Fu H, Contraceptive failure rates: new estimates from the 1995 National Survey of Family Growth, *Family Planning Perspectives,* 1999, 31(2):56–63.

4. Hu D, Maternal Child Health Program, Navajo Area Indian Health Service, Tuba City, AZ, personal communication, Nov. 17, 2002.

5. Crawford G, Navajo Nation Family Resource Center, Window Rock, AZ, personal communication, Dec. 9, 2002.

6. Trussell J et al., The economic value of contraception: a comparison of 15 methods, *American Journal of Public Health,* 1995, 85(4):494–503.

7. Slocumb JC et al., The use-effectiveness of two contraceptive methods in a Navajo population: the problem of program dropouts, *American Journal of Obstetrics and Gynecology*, 1974, 122(6):717–726.

8. Williams WL, Effects on Navajo birthrate from loss of the intrauterine device, *Journal of Health Care for the Poor and Underserved*, 1994, 5(1): 47–54.

9. Zurita D, Gallup Regional Supply Service Center, Window Rock, AZ, personal communication, June 20, 2001.

10. Crawford G, 2002, op. cit. (see reference 5).

11. Espey D, Demographic profile of Navajo Area IHS, Albuquerque, NM: Indian Health Service Epidemiology Program, 2002.

12. Kooiker CH and Scutchfield DF, Barriers to prescribing the Copper T380A intrauterine device by physicians, *Western Journal of Medicine*, 1990, 153(3):279–282.

13. SAS Institute, *SAS Version 8.02,* Cary, NC: SAS Institute, 2001.

14. Kooiker CH and Scutchfield DF, 1990, op. cit. (see reference 12).

15. Stanwood NL et al., Obstetrician-gynecologists and the intrauterine device: a survey of attitudes and practice, *Obstetrics & Gynecology*, 2002, 99(2):275–280.

16. Farley TMM et al., Intrauterine devices and pelvic inflammatory disease: an international perspective, *Lancet*, 1992, 339(8796):785–788; Ho J et al., A randomized comparative trial of the MLCu375, TCu220C, steel ring and uterine cavity–shaped IUDs, *Advances in Contraception*, 1992, 8(2):161–166; Sastrawinata et al., A comparative trial of the TCu380A, Lippes Loop D and Multiload Cu375 IUDs in Indonesia, *Contraception*, 1991, 44(2):141–153; and Grimes DA, Intrauterine device and upper-genital-tract infection, *Lancet*, 2000, 356(9234):1013–1019.

17. Forrest JD and Fordyce RR, Women's contraceptive attitudes and use in 1992, *Family Planning Perspectives*, 1993, 25(4):175–179.

18. World Health Organization, The TCu380A, TCu220C, Multiload 250 and Nova T IUDs at 3, 5 and 7 years of use–results from three randomized multicenter trials, *Contraception*, 1990, 42(2):141–158.

19. Nicholson WK et al., The relationship of race to women's use of health information resources, *American Journal of Obstetrics and Gynecology,* 2003, 188(2):580–585.

20. Stanwood NL et al., 2002, op. cit. (see reference 15).

21. Rivera R and Best K, Current opinion consensus statement on intrauterine contraception, *Contraception*, 2002, 65(6):385–388.

Acknowledgments

The research on which this article is based was supported in part by a grant from the University of New Mexico Department of Obstetrics and Gynecology. The authors thank Tom Becker for his assistance in developing the project and Curtis Hunt for assisting with the analysis.

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