Complications With Use of IUD and Oral Contraceptives Among Navajo Women

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OF THE APPROXIMATELY 800,000 American Indians in the United States, about 130,000, or 15 to 20 percent, are Navajos living on or near a 24,000-square mile reservation in northern Arizona, New Mexico, and southern Utah. Demographically, this population is similar to the populations of developing countries, with a rapid population growth resulting from a high birth rate and a declining death rate over the past 20 to 30 years. The Navajo population is, for the most part, rural, dependent upon subsistence livestock raising, welfare, and occasional wage work and has a low per capita income and slow rate of economic growth. Health facilities, administered by the Bureau of Indian Affairs until 1955, are now administered by the Public Health Service.

The use of birth control by the Navajo population was minimal up to 1963. Between 1963 and 1966, the oral contraceptive and the intrauterine device (IUD) were used primarily in medically indicated cases, but since 1966 they have been offered increasingly to post partum patients and the general hospital population. Other characteristics of Navajo contraceptive users are that the women are older and have larger families than other U.S. populations of contraceptive users. Among the Navajos, 2 of 3 choose the IUD, whereas in the entire American Indian population only 1 of 3 contraceptive users chooses the IUD; in the United States as a whole, only 1 in 10 chooses the IUD (*1,2*).

Because several studies have revealed high lost-to-

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followup rates among Navajo contraceptive users (*3,4*), a retrospective review of medical records and family planning records was coupled with a survey of a random sample of clinic dropouts to estimate use-effectiveness rates for the IUD and oral contraceptives in a rural Navajo population at Fort Defiance, Ariz. (*1*).

In our previous study (*1*), we showed that the bias in gross rates of use effectiveness could be accurately estimated by using the sample survey to calculate the risk of those not returning for followup. Of 291 pill users, 41 percent were dropouts. The sample survey of dropouts revealed that while most pill dropouts did indeed discontinue the method (84 percent closures), most IUD dropouts were continuing users (56 percent) who did not return to the clinic because of lack of complications or difficulty in getting followup services.

Continuation rates of IUD users were reported for 1-, 2-, and 3-year intervals and were similar to IUD continuation rates for other populations reported in the literature (table 1). Gross continuation rates for the oral contraceptive, however, were lower than among any other populations reported in the literature and two to three times lower than for the IUD in the same population.

Knowledge of why Navajo pill users discontinue at such high rates and fail to return for followup is needed by the Indian Health Service if it is to develop services that are effective and responsive to the needs and values of the populations being served. Our intention is to report some specific complications and causes for termination for this population of IUD and oral contraceptive users.

Table 1. Summary from the population literature on gross cumulative continuation rates and years of contraceptive use [1]

Contraceptive	Number of populations studied	Range of rates	Mean rate	Navajo rate
IUD:				
1 year	10	57–82	70	72
2 years	7	38–74	52	51
3 years	3	48–69	61	40
Oral:				
1 year	10	47–82	64	35
2 years	7	26–71	48	19
3 years	4	25–58	43	12

[1] For specific breakdown of these populations see table 4, reference 1.

NOTE: For discussion of differences between gross and net cumulative rates, see Methods in reference 1.

Methods

The study population, as previously reported (*1*), was selected from patients who entered the family planning program of the Public Health Service Indian Hospital at Fort Defiance between July 1963 and June 1971. The medical and family planning records of all women who received contraception were reviewed and coded with the following information: race, tribal affiliation if Indian, age, parity, gravidity, marital status, religion, community of residence, date of beginning contraceptive use, method of use, date of termination of use, and reasons for termination. Women were categorized as dropouts when they were 3 or more months overdue for a scheduled visit, a procedure similar to the one used by the Population Council (*5,6*). Return visits were scheduled at 3-month intervals for pill users and 6-month intervals for IUD users. Lost-to-followup patients were defined as those who could not be found by home visit or telephone after dropping out of the program.

For this survey, 291 first-time pill users and 543 first-time IUD users who lived in the Fort Defiance area were selected. Of these, 121 (41.6 percent) pill users and 99 (18.2 percent) IUD users dropped out of the study. A 26 percent random sample of each dropout group was chosen for interview to determine the following information: whether they were using contraception as of June 30, 1971; if not, when they stopped; and if they had stopped, why. The methodology of combining clinic data with sample populations is discussed.

Results

The cumulative net rates of failure to continue to use contraceptives are categorized by the reason for withdrawal reported by the patient. These rates are computed from a life table (*5,6*) to adjust for different exposures to contraceptives of our study population. We have chosen to report cumulative net rates at 1, 2, and 3 years. The advantage of cumulative net rates is that they sum to the total rate of failure from all causes; the disadvantage is that they do not adjust for the effects of competing risks.

The cumulative net rates of complications for oral contraceptives and the IUD among Navajo users are shown in tables 2 and 3. By the end of the first year, 67.3 percent of the oral contraceptive users and 26.9 percent of the IUD users had terminated. The cumulative rate of unplanned pregnancies with correct use of the method (physiological method failure) is 1.9 percent for oral contraceptives and 3.9 percent for the IUD. Inclusion of unplanned pregnancies because of incorrect

pregnancy among pill users (10.4 percent in the first year of use). This combined pregnancy rate, based on correct use and incorrect use (clinical failure) of oral contraceptives suggests that they are far less effective than they are generally taught to be in the clinics that provide these contraceptives or than acceptors of the method desire them to be. Thus, Navajo women who choose the oral contraceptive seem to have considerable difficulty in following through with medication instruction or in obtaining information when problems or questions arise.

Since from year 1 to year 3, the cumulative pregnancy rate increases minimally because of incorrect use of contraceptives (10.4 to 12.0 percent), it seems that the high-risk patient who cannot or will not use the pill drops out of the study in the first year and the more motivated patient stays. The pregnancy rate for women who use the pill correctly continues to increase in the second and third years by progressively smaller increments (1.9 to 2.8 to 3.0 percent), and these smaller increments suggest a declining but continuing risk due to physiological failures.

Table 2. Cumulative net rates of complications among Navajo first-time users of oral contraceptives, by reason for discontinuation

Reason	Cumulative rates at—		
	1 year	2 years	3 years
Medical complications	4.7	6.1	7.5
Subjective symptoms	8.7	12.1	12.1
Unplanned pregnancy:			
Correct use	1.9	2.7	3.0
Incorrect use	8.5	8.5	9.0
Desire for pregnancy	4.5	7.4	8.5
Personal and other	33.9	42.5	44.2
Unknown and lost to followup	5.1	5.9	6.2
Total terminating	67.3	85.3	90.5
Continuing users	32.7	14.7	9.5

Table 3. Cumulative net rates of complications for Navajo first-time IUD users, by reason for discontinuation

Reason	Cumulative rates at—		
	1 year	2 years	3 years
Medical complications (bleeding, cramps, infection)	7.6	13.6	15.9
Expulsion	5.7	6.8	7.4
Unplanned pregnancy	3.9	4.3	6.0
Personal and other	3.6	6.6	11.0
Desire for pregnancy	3.5	11.9	14.3
Lost to followup and moved out of area	2.6	4.2	4.5
Total terminating	26.9	48.2	59.1
Continuing users	73.1	51.8	40.9

Medical complications that are basically due to the psychological effects of the method, with minimal influence on the patient's motivation for oral contraceptive use, include discontinuation due to bleeding, cramps, pain, amenorrhea, hypertension, and worsening medical conditions (such as diabetes, hypertension, varicose veins, and thrombophlebitis). Medical complications for IUD users include discontinuation due to bleeding, cramps, pain, infection, and perforation. Although expulsion is included under general medical complications, it is considered to be a separate category because of its lack of danger to the patient and because the IUD can be reinserted easily.

For the IUD, cumulative net rates of medical complications plus expulsion are nearly three times those for the oral contraceptive in the first year of use (13.3 percent for the IUD compared with 4.7 percent for the pill). The medical complications for the IUD's increase at a high rate in the second year (13.3 to 20.4 percent), while the increase is minimal for the oral contraceptive (4.7 to 6.1 percent).

Interpretation of the significance of the category "subjective symptoms" is more difficult. In the case of the oral contraceptive, there is a pharmacological basis for such symptoms as weight gain or weight loss, libido change, nausea, chloasma, swelling, and breast soreness, but they also are affected by the patient's motivation to continue using the method and by the patient's understanding and acceptance of minor symptoms that do not have a damaging effect on the body. If we include this category with the other medical complications, the overall net discontinuation rate for the oral contraceptive and the IUDs are similar in the first year of use (15.3 percent for pills versus 17.2 percent for IUDs).

Most of the medical discontinuations of oral contraceptives (57 percent), however, are because of symptoms that are affected by a lack of understanding of the side effects of the drug and a lack of resources for consultation as to the meaning of the symptoms. As reported in the oral contraceptive literature, most of the side effects that appear in the first 3 months seem to remit in 6 months (*11*). Seemingly, most of the oral contraceptive users who discontinue in

the first year do so for reasons that are minor and amenable to improved programs, education, and followup.

Discontinuations for personal reasons are high among oral contraceptive users (33.9 percent) as compared with IUD users (3.6 percent) in the first year of use. Such reasons include fear of side effects, misunderstandings, misinformation and rumors, family attitudes, and inability to return to the clinic because of no transportation, weather, lack of babysitter, or occupation. Reasons grouped under "other" include no further need for method, religion, and none given. The lower rates for IUD users for personal and other reasons possibly reflect better patient education, stronger motivation to use that method, and to some extent, patient self-selection in choosing a method that requires a clinic visit to have the IUD removed.

As with unplanned pregnancy because of incorrect use, the oral contraceptive rate for discontinuation for personal and other reasons does not increase much in the second year, 33.9 percent to 42.5 percent, a result again suggesting that the high-risk patients discontinue early in the course of medication, whereas the more motivated continue to be users.

The rates for discontinuation because of the patient's desire to get pregnant are low for both methods in the first year (4.5 percent and 3.9 percent), but increase fourfold for IUD users in the second year (to 11.9 percent)—possibly because the IUD is used as a child-spacing method. The lack of increase in this category for oral contraceptive users (4.5 percent to 7.4 percent), suggests that this method is not used for child spacing or, more likely, that more than 86 percent of the women who first accepted the method have discontinued for other reasons by the second year—one of seven because of an unplanned pregnancy. The unknown and lost-to-followup categories are small for both methods and primarily represent patients who moved out of the area or could not be contacted at the home visit. The dropouts have been allocated to other categories according to the methods described elsewhere (*1*).

Table 4 compares net rates for Navajo users of oral contraceptives with the rates found in other studies (*7–9*). Although the unplanned pregnancy rate with correct use of the method is similar, when the unplanned pregnancy is included with incorrect use, the Navajo pregnancy rate is considerably higher than the others. Medical complications appear to be much lower for the Navajos than the other groups; however, if subjective symptoms are incorporated, the rates are within similar bounds. Rates for personal and other reasons are somewhat higher than in other studies, while the desire for pregnancy is about the same.

In table 5 the net rates for the reasons that IUD users terminated after 1 year are compared with data from other populations. Rates of discontinuation due to pregnancy, personal and other reasons, and desire for pregnancy are similar. The medical complications and expulsion rates for Navajos, however, are lower than those reported for other populations, possibly because of the greater motivation of the Navajo IUD users, self-selection of oral contraceptives by the less highly motivated patients, and the tolerance of minor side effects of the IUD by the population.

Discussion and Conclusion

Navajo women who choose to use oral contraceptives for the first time, although they do not differ by standard demographic measures from Navajo first IUD users (*11*), have far less success in continuing their method of choice than other populations.

The reasons for discontinuation do not fall in the standard categories of medical complications, lost-to-followup, desired pregnancy, or unplanned pregnancy with correct use. The discontinuation rates are as low as, or lower than, rates for pill users observed in other populations. Of particular importance, however, is that

Table 4. Net rates for reasons for termination of oral contraceptive use within 1 year, by different populations

Population and reference No.	Unplanned pregnancy	Medical complications	Personal and other	Desire for pregnancy
New York City (7) ..	4.9	19.4	10.6	..
Taiwan (*8*)	1.0	49.4	17.8	3.5
Hong Kong (*9*)	2.3	8.2	26.7	4.5
Navajo	10.4	13.4	33.9	4.5
Median for other studies	2.3	19.4	17.8	4.0

Table 5. Net rates for reasons for termination of IUD use within 1 year for different populations

Population and reference No.	Unplanned pregnancy	Medical complications	Expulsion	Personal and other	Desire for pregnancy
United States (*12*) ..	2.4	14.0	9.1	2.1	0.9
California (*10*)	2.5	17.8	8.0	2.0	0.7
Taiwan (*8*)	4.5	15.1	12.2	..	2.6
New York City (7) ..	5.8	14.3	14.0	1.6	1.1
Hong Kong (*9*)	2.2	19.0	7.2	4.0	1.5
Navajo	3.9	7.6	5.7	3.6	3.5
Median for other studies	2.5	15.1	9.1	2.0	1.1

of those who discontinue the oral contraceptive, 76 percent do so because of incorrect use, minor side effects, misinformation, rumors, family influence, and inability to obtain followup services.

Some of these factors can be changed by improved program services and patient education; all of them affected by family organization, cultural values, and personal motivation. Clinic personnel offering the oral contraceptive believe that, based on physiological effectiveness, it is the safest and most effective method, but that belief does not correspond with the actual clinical experience of the persons who choose the oral contraceptive. One in 10 has an unplanned pregnancy within the first year.

Several factors may lead to ineffective use of the oral contraceptives. First, if post partum patients who receive family planning instruction feel that they have to please the counselor or physician by accepting a method, then the pill is the one they will most likely choose because it can be discarded at a later date (*1*). Second, patients may have greater difficulty concealing pills than a IUD from a husband or a parent who might not approve of contraception. Third, taking the pills requires more motivation and more frequent visits to the clinics than IUD use. Finally, pill users are more likely to discontinue for reasons of misinformation and rumors, since they can stop such contraception without returning to the clinic.

IUDs account for a greater proportion of contraceptive users among Navajos than among other populations (70 percent versus 10 percent) (*1*). The use effectiveness and complication rates are similar to those observed elsewhere, with the exception of lower medical complication rates and high dropout rates. However, a majority of the dropouts from the study continued to use the IUD.

Several conclusions may be drawn from the study findings in terms of program implementation and patient's needs. First, to claim that the pill is 99 percent effective misleads the Navajo population. It would be more realistic to present the IUD and pill failure rates to this population.

Second, women who choose the oral contraceptive tend to discontinue in the first 6 months at a high rate and probably should have 3-month return appointments. Those who do not return at 3 months then are at a high risk of not understanding the method, of not returning because of difficulty in getting to a clinic, or of being adversely influenced by their families or rumors.

Obviously, a patient has the right to discontinue a contraceptive method. However, if she discontinues because of misinformation, rumor, or fear of side effects, then a program with an active out-reach effort can have a significant impact on the effectiveness of family planning services.

Third, because a sizable proportion of first-year pill users are unable to prevent pregnancy (10.7 percent) or to continue use (67 percent)—many never return for followup—one must question whether the initial entry into the family planning program was for the purpose or with the understanding that the program staff intended. Among hospital medical personnel, the concept of and need for anti-fertility may indeed be a significantly different cultural set than for the majority of pill acceptors.

Further study and communications are needed to help family planning programs better relate to the cultural needs of the woman who chooses oral contraceptives.

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