Contraceptive Method Continuation According to Type of Provider

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Abstract: A study was undertaken at the main PROFAMILIA clinic in Bogota, Colombia to compare the effectiveness of nurses and physicians in the delivery of family planning services. Contraceptive method continuation was the major outcome variable in this analysis. Clients were randomly assigned to physicians or nurses on their first visit and for the duration of care. On all revisits, data were collected pertaining to method prescribed, side effects, pregnancy, and method changes. There was a field survey at eight months to locate clinic drop-outs and determine their contraceptive use status. There were no significant differences in method continuation between clients who received services from physicians and those who received services from nurses. At nine months, the overall continuation of the first method prescribed was 79.1 per cent in the physicians' group and 75.8 per cent in the nurses' group ($t = 1.057$, $p > .20$). When controlling for first method used, the IUD users in the physicians' group had a continuation rate of 86.1 per cent and in the nurses' group 84.0 per cent ($t = 0.556$, $p > .50$). Of the pill users who received services from physicians, 78.1 per cent were continuing at nine months and 74.3 per cent of the pill clients in the nurses' group were continuing at nine months ($t = 0.573$, $p > .50$). There were no differences in pregnancy rates, side effects rates, and method change rates between the two groups. It may be concluded that these nurses were as effective as physicians in the delivery of family planning services. (Am. J. Public Health 67:1157–1164, 1977)

Introduction

Recently, there has been a considerable amount of interest in expanding the roles of non-physician health professionals for delivery of health services.[1–4] This interest has been prominent in the field of family planning where studies of this topic have included comparisons of IUD insertions or pill prescriptions by a wide variety of non-physician personnel. The findings of all of these reports suggest that delivery of family planning services by non-physician personnel is generally as effective and safe as those services delivered by a physician.[5–10]

The utilization of non-physician workers has been especially important in family planning for several reasons. First of all, in the face of rapid population growth around the world, developing countries are in need of additional health professionals for the delivery of all types of health care. The delivery of family planning services by specially trained nurses helps to alleviate this personnel shortage as well as to make needed contraceptives more readily available in these countries.

Secondly, the cost of delivering medical services has increased so dramatically over the past 15 years as to impede the provision of care. A major cost of this care is physician salaries, and this is particularly true in countries where incentives are needed to encourage practitioners to work in rural areas.

Thirdly, the population served by family planning programs is essentially a healthy population of women in their childbearing years. Complicating illnesses in this age group are infrequent. In addition, the medical histories and physical examinations often required before the prescription of contraceptive methods are routine and usually repetitious.

Finally, it has been shown that although women in developing countries desire to use contraceptives, the conventional means employed to deliver these services are often unacceptable to them.[11] This is especially true in societies where there are cultural restrictions against physical examinations of women by male physicians.[6, 10]

These have been the rationales for the employment of non-physician personnel in several countries. However, the evaluation techniques used to determine the effectiveness of non-physicians have often been incomplete and not designed to draw causal inferences. This has been due to the nature of the data available,[6, 8, 10] the inherent weaknesses of the research designs,[1, 7] and the reluctance of program directors to undertake randomized clinical trials.

Most of the studies to date have focused on the delivery of a particular type of contraceptive by paramedical workers, i.e., insertions of intrauterine devices *or* prescription of oral contraceptive pills. In such designs the results can be relevant only in situations where one type of contraceptive is being offered. The ability of the family planning nurse to exercise her judgment in deciding which contraceptive is most

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appropriate for the patient, and subsequently managing that patient, has rarely been tested.

In the study reported here, an experimental design has been used to compare the effectiveness of physicians and nurses in the delivery of a wide variety of methods. This evaluation occurred in the main clinic of PROFAMILIA (International Planned Parenthood affiliate) in Bogota, Colombia. Although several criteria were used for the measurement of effectiveness, the major focus of this report will be the success of use of the first contraceptive prescribed as reflected by method continuation.

Methodology

The Clinic and Patient Flow

The facilities of one PROFAMILIA family planning clinic in Bogota were utilized for the duration of the study.

All new clients were randomly assigned to either a family planning nurse or physician for the initial physical examination through an even/odd systematic numbering procedure. Clients returning to PROFAMILIA for change of method, routine revisits, or re-enrollment in the program were excluded from the sample.

The client's clinic record was then flagged to identify the type of health provider to be assigned on subsequent visits. The clinic policy, as it then existed, made provisions to assign clients to the same individual on revisits if: 1) the client requested this, and 2) the same individual was present in the clinic at the time. This policy was maintained throughout this study. It should be noted that 12 clients who were assigned to physicians requested to be seen by nurses, while nine clients assigned to nurses asked to be seen by physicians.

All women in the sample were scheduled to return one month after their initial visit. Following the one month visit, revisits were scheduled at 6 months and 12 months after the initial visit. This revisit schedule permitted a complete collection of data within a relatively short period of time.

Data Collection

The PROFAMILIA intake interview includes most of the demographic information that was necessary for the study. Therefore, only minor modifications were made. All clients included in the study were initially recruited in a six-week period extending from May 1 to June 15, 1975. This case-series approach facilitated the determination of clients as continuers or discontinuers, the modification of clinic operations, and the scheduling of follow-up visits to drop-outs in the field. For purposes of follow-up, clinic discontinuers were defined as such if they did not return to the clinic or reschedule an appointment within 30 days after a missed appointment.

Field interviews of discontinuers were done in February 1976. At that time, drop-outs from the one-month and six-month visits were located and interviewed in their homes. The purpose of the follow-up was to determine if, when, and why the client stopped using contraception, the reasons for clinic discontinuation, and the client's attitudes toward the clinic and clinic personnel. Segments of use for the original method and the switching of methods were determined. Similar interviews were undertaken in the clinic with continuing clients at their six-month revisit for verification of method use.

Personnel

There are three types of non-physician personnel employed in the PROFAMILIA program. They include:

1. "auxiliar de consultorio" or examining room auxiliary
2. "auxiliar de enfermería" or nursing auxiliary
3. "enfermera licenciada" or licensed (registered) nurse.

The duties of the "auxiliar de consultorio" are similar to those of a nurse's aide. Specifically, she works with the physician or the family planning nurse in the examining room by handing equipment to the health provider, directing clients to the next appropriate staff member, etc. The "auxiliar de consultorio" at PROFAMILIA does not receive any extramural training, but is trained on-site at the clinics.

The "auxiliar de enfermería" is primarily concerned with patient education. She has approximately one year of formal training, and is given additional "on-the-job" training at PROFAMILIA. Thus she is comparable in training to a practical nurse in the United States.

The "enfermera licenciada" at PROFAMILIA is an educated professional comparable to a registered nurse in the U.S.A. It was her comparative performance which was evaluated in this study. In addition to standard nursing training, these nurses have received special training provided by PROFAMILIA in the delivery of general gynecological and family planning services to women. In the PROFAMILIA clinics, they prescribe oral contraceptives, insert IUDs, perform breast, pelvic, speculum, and abdominal examinations, and treat vaginitis.

Results

Description of the Sample

The sample selected for this study was composed of all the women who came for a first visit to the PROFAMILIA central clinic in Bogota during the six weeks following May 1, 1975. Table 1 shows the comparability of the sample with the total clinic population for the year 1975. There were no significant differences between the sample and the population when comparing age, number of living children, education, previous use of contraception, and last method used.

As can be seen from Table 1, the women utilizing PROFAMILIA services are young with a mean age of 25.7 years. However, only 6.5 per cent of the sample had no living children. The mean number of living children was 2.3.

Only 2.7 per cent of the women had no formal education, and 62.4 per cent of the sample had at least a complete elementary school education (five years or more). The mean number of years of education was 5.1

Almost one-half of the women (708) had terminated a pregnancy within the four-month period prior to admission into the program. Another 20 per cent of the women had

TABLE 1—Comparison of the Distribution of Demographic Characteristics of the Sample with the Population of Clients Seen at the PROFAMILIA, Clinica Piloto, Bogota, Colombia, in 1975.

Variable	Sample (1,532)	Population (12,651)	Chi-Square
1. Age			
0-19	201 (13.1%)	1526 (12.1%)	$x^2 = 6.34$ NS
20-24	568 (37.1%)	4539 (35.9%)	
25-29	417 (27.2%)	3495 (27.6%)	
30-34	195 (12.7%)	1780 (14.1%)	
35-39	108 (7.0%)	878 (6.9%)	
40-44	30 (2.0%)	324 (2.6%)	
45-55	12 (0.8%)	97 (0.8%)	
Unknown	1 (0.1%)	12 (0.1%)	
2. Number of Living Children			
0	100 (6.5%)	895 (7.1%)	$x^2 = 5.69$ NS
1	503 (32.8%)	3932 (31.1%)	
2	382 (24.9%)	3311 (26.2%)	
3-5	452 (29.5%)	3654 (28.9%)	
6+	95 (6.2%)	843 (6.7%)	
Unknown	0 (0%)	16 (0.1%)	
3. Education			
None	42 (2.7%)	420 (3.3%)	$x^2 = 5.90$ NS
Some Elementary School	929 (60.6%)	7471 (59.0%)	
Some Secondary School	491 (32.0%)	4212 (33.3%)	
Some University	70 (4.6%)	528 (4.2%)	
Unknown	0 (0%)	20 (0.2%)	
4. Previous Use of Contraception			
Yes	980 (64.0%)	8165 (64.5%)	$x^2 = 3.12$ NS
No	549 (35.8%)	4424 (35.0%)	
Unknown	3 (0.2%)	62 (0.5%)	
5. Last Method Used			
IUD	240 (24.9%)	1971 (24.4%)	$x^2 = 0.17$ NS
Pills	360 (37.3%)	3002 (37.2%)	
Other	364 (37.8%)	3092 (38.3%)	

terminated a pregnancy in 1974. We were unable to determine whether those terminations were live births, spontaneous abortions, or induced abortions because of the sensitivity of the question.

Over 60 per cent of the clients had used a contraceptive method in the 30 days prior to their initial visit to PROFAMILIA. Of the women who had ever used a method before, 25 per cent had used the IUD, 37 per cent had used pills, and 38 per cent had used other methods such as foam and condoms. Over 50 per cent (777) of the new admissions to PROFAMILIA desired at least one more child.

Randomization

In order to determine the accuracy of the randomization procedure used for assignment of the 1,532 clients to nurses or physicians, a series of chi-square analyses was performed. Table 2 summarizes the results.

There were no significant differences between the physician and nurse groups as to age, education, previous use of contraception, and desire for more children. However, there is a statistically significant difference in the distribution of the number of living children within the two groups ($x^2 = 24.309$, $p < .001$). The greatest difference was in the no living children category where 73 per cent of these women were assigned to nurses. Since 81 per cent of the women with no children were also nulligravidous, there is a possibility that for cultural reasons these women were assigned purposefully to nurses by the interviewers. This difference should not affect the interpretation of the results of the study except in the analyses involving parity. We have removed the clients with no living children from the life table analysis.

Finally, it should be noted that the final sample was not biased by differential discontinuation. A series of analyses of the characteristics of the final sample showed no statistically significant difference between those found and those lost to follow-up.

Method Continuation

After the intake interview and the assignment to service providers was completed, the clients were examined by either a physician or a nurse. On this initial visit, there were no clients assigned to nurses who also needed to be examined by physicians because of complicating problems. The decision on the contraceptive method to be prescribed was made by the health provider in cooperation with the client.

Table 3 shows the distribution of prescribed methods. It seems that nurses were more reluctant to insert IUDs than were physicians under the same circumstances. In addition, twice as many women who were seen by nurses received less effective methods such as foam and condoms (25 per

TABLE 2—Chi-square Analyses of the Randomization Procedure*

Variable	No. to Physicians	No. to Nurses	Chi-square	p-Value
1. Overall Assignment**	773	759	0.128	NS
2. Age				
0-19	92	109	14.842	NS
20-24	263	305		
25-29	220	197		
30-34	117	78		
35-39	60	48		
40-44	21	22		
3. No. of Living Children				
0	21	73	28.309	$p < .001$
1	251	252		
2	209	173		
3-5	229	223		
6+	57	38		
4. Education				
None	27	15	5.908	NS
Some Elementary	432	405		
Some Secondary	278	291		
Some University	36	47		
Unknown	0	1		
5. Previous Use of Contraceptives				
Yes	501	479	0.456	NS
No	270	279		
Unknown	2	1		
6. Desire for More Children				
Yes	374	403	3.644	NS
No	395	348		
Unknown	4	8		

* Note: Unknown values are included in the table for clarity. They were not, however, included in the chi-square computation.

** In theory, there should have been an equal split of 766 clients assigned to each type of provider. However, there were approximately 20 clients who were assigned to providers at the intake interview but left the clinic before being examined and receiving supplies.

cent) as compared to physicians (13 per cent). This difference may be partially attributed to the previously stated bias toward nulligravidous women in the nurses' group. However, it may also reflect less confidence by the nurses in inserting IUDs.

For the analysis of the first method continuation rates (all segments), a multiple decrement life table approach was used.[12-13] Although the original sample contained 1,532 new clients, the analysis was carried out for only 921 clients. Of the 611 clients excluded from the analysis, 195 were either already using a contraceptive method prior to the first visit or they were not prescribed any contraceptive method at all; 306 clients never had subsequent contact with the clinic or clinic personnel in the field; 57 discontinued contraceptive use within the first month; and 53 were clients with no living children.

TABLE 3—Contraceptive Methods Prescribed by Physicians and Nurses

Method	Physician	Nurse	Total
None	30	39	69*
IUD	422 (56.3)	328 (43.7)	750 (100.0)
Pills	215 (52.1)	198 (47.9)	413 (100.0)
Other	105 (35.2)	193 (64.8)	298 (100.0)
Unknown	1	1	2*
Total	773	759	1532

$X^2 = 38.115$ df = 2 $p < .001$

* These cases were not included in the calculation of X^2.

An age-parity grid was constructed to derive weights for the life table analysis. The weights were based on all women in the sample who received a method on the first visit. This was compared to those women who received a method but never returned to the clinic or had any contact in the field with clinic personnel. This weighting technique was used in an attempt to compensate for missing data of approximately 300 clients. When the life tables were generated, the termination and continuation rates were virtually equal with and without weights, so the life tables presented here are the unweighted tables.

Table 4 summarizes the life table analysis for contraceptive continuation of clients receiving services from physicians and nurses. For the physicians, at six months, there is a cumulative continuation rate of 85.8 per cent. Of the clients in the nurses' group, 79.6 per cent were continuing to use the first method prescribed for them on their initial visit. The difference between these two continuation rates is

TABLE 4—Life Table Analysis of Method Continuation (All Methods) of Clients Receiving Services from Physicians or Nurses

Ordinal Period	No. Observed	Terminations	Withdrawals	Total Decrement	Pregnant	Changed Method	Planning Pregnancy	Side Effects	Other Reasons	Adjusted Exposed	Total Term. Rate	Cumulative Rate of Continuation	Cumulative Rate of Pregnancy	Cumulative Rate of Change	Cumulative Rate of Planning Pregnancy	Cumulative Rate of Side Effects	Cumulative Rate of Other Reasons
x + 1	N (x)	T (x)	W (x)	W + T	A (x)	C (x)	G (x)	S (x)	O (x)	N′ (x)	Q (x)	P (x)	Q_{xa}	Q_{xc}	Q_{xg}	Q_{xs}	Q_{xo}
								Physicians									
1	493	33	54	87	2	26	0	4	1	466	.0708	.9292	.0043	.0558	0	.0086	.0022
2	406	12	20	32	1	8	0	3	0	396	.0303	.9010	.0066	.0746	0	.0156	.0022
3	74	4	0	4	0	0	0	1	3	374	.0107	.8914	.0066	.0746	0	.0180	.0094
4	370	5	0	5	1	0	0	3	1	370	.0135	.8793	.0090	.0746	0	.0253	.0118
5	365	3	12	15	1	1	0	1	0	359	.0034	.8720	.0115	.0770	0	.0277	.0118
6	350	5	54	59	0	0	0	5	0	323	.0155	.8585	.0115	.0770	0	.0412	.0118
7	291	6	41	47	0	1	0	5	0	270	.0222	.8395	.0115	.0802	0	.0508	.0118
8	244	2	47	49	0	1	0	1	0	220	.0091	.8314	.0115	.0840	0	.0609	.0118
9	195	8	61	69	0	4	1	0	3	164	.0486	.7914	.0115	.1042	.0051	.0609	.0270
								Nurses									
1	428	45	54	99	2	33	0	8	2	401.0	.1122	.8878	.0050	.0823	0	.0200	.0050
2	329	9	11	20	1	4	0	4	0	323.5	.0278	.8631	.0077	.0933	0	.0309	.0050
3	309	4	3	7	0	1	0	1	2	307.5	.0130	.8519	.0077	.0961	0	.0337	.0106
4	302	5	0	5	0	1	0	2	2	302.0	.0166	.8378	.0077	.0989	0	.0394	.0162
5	297	8	7	15	1	1	0	4	2	293.5	.0273	.8149	.0106	.1018	0	.0508	.0220
6	282	6	48	54	0	1	0	3	2	258.0	.0233	.7960	.0106	.1049	0	.0603	.0283
7	228	3	31	34	0	0	0	3	0	212.5	.0141	.7847	.0106	.1049	0	.0715	.0283
8	194	0	56	56	0	0	0	0	0	166.0	0	.7847	.0106	.1049	0	.0715	.0283
9	138	4	45	49	0	3	0	1	0	115.5	.0346	.7576	.0106	.1253	0	.0783	.0283

statistically significant ($t = 2.46 < .01$ $p < .05$). However, at nine months the gap in the continuation rates lessens to 79.1 per cent for physicians and 75.8 per cent for nurses and is not statistically significant ($t = 1.06$, $p > .20$). The difference in the first six months of contraceptive use is probably due to the greater tendency of nurses to prescribe interim methods on the first visit, and to change the method for the client on subsequent visits. At six months 10.5 per cent of the women in the nurses group had changed a method, whereas the physicians had prescribed new methods for only 7.7 per cent of their clients.

Pregnancy, planning of a pregnancy, side effects, and a category of "other reasons" were also considered when examining the reasons for termination of contraceptive use. At nine months, there was only one client who stopped using contraception because of a desire to become pregnant and only 15 clients who stopped using because of "other reasons". Therefore, the discussion of termination of use will be limited to those clients who terminated their first method because of pregnancy, side effects, or change of method.

The overall pregnancy rates for women receiving methods from physicians or nurses were 1.2 per cent and 1.1 per cent, respectively, at both six and nine months. These comparative rates are virtually the same and are very low failure rates. Side effects were also quite low. Only 6.1 per cent of the physicians' group and 7.8 per cent of the nurses' group terminated use because of side effects, including expulsions. There were no perforations reported in any of the 591 IUD insertions. It should be noted that the major reason for "leaving the life table" was not termination of a method, but rather withdrawal or "lost to follow-up". This means that when last seen in the clinic or interviewed in the field, a majority of the clients were continuing to use a contraceptive method. Months of use were determined as of the last contact with the client after the initial visit. However, since these clients were unable to be subsequently contacted, they are considered "lost to follow-up".

Over 70 per cent of all the discontinuers were withdrawals about whom it is difficult to determine their contraceptive use status. It is possible, then, that the continuation rates generated by the life table are underestimations of actual contraceptive practice. Conversely, the termination rates may be underestimations of actual pregnancies, side effects, method changes, and planning of pregnancies. In any event, it is important to note that the continuation rates presented here can be considered to be accurate estimates, if not underestimates.

Another set of life tables was calculated controlling for first method prescribed. The rates for the IUD and oral contraceptive users only are reported here, since the majority of interim method users were likely to have switched to more effective methods. Tables 5–6 present the results of these analyses.

The continuation rate at six months for IUD users receiving services from physicians was 92.8 per cent and for clients receiving services from nurses was 87.5 per cent. This difference was statistically significant ($t = 2.034$, $.01 < p < .05$). Again, however, the difference in contin-

TABLE 5—Life Table Analysis of IUD Continuation of Clients Receiving Services from Physicians or Nurses

Ordinal Period	No. Observed	Terminations	Withdrawals	Total Decrement	Pregnant	Changed Method	Planning Pregnancy	Side Effects	Other Reasons	Adjusted Exposed	Total Term. Rate	Cumulative Rate of Continuation	Cumulative Rate of Pregnancy	Cumulative Rate of Change	Cumulative Rate of Planned Pregnancy	Cumulative Rate of Side Effects	Cumulative Rate of Other Reasons
x + 1	N (x)	T (x)	W (x)	W + T	A (x)	C (x)	G (x)	S (x)	O (x)	N (x)	Q (x)	P (x)	Q_{xa}	Q_{xc}	Q_{xg}	Q_{xs}	Q_{xo}
								Physicians									
1	321	6	30	36	1	3	0	2	0	306.0	.0196	.9804	.0033	.0098	0	.0065	0
2	285	4	15	19	1	1	0	2	0	277.5	.0144	.9663	.0068	.0133	0	.0136	0
3	266	2	0	2	0	0	0	1	1	266.0	.0075	.9590	.0068	.0133	0	.0172	.0036
4	264	3	0	3	1	0	0	2	0	264.0	.0114	.9481	.0104	.0133	0	.0245	.0036
5	261	2	12	14	0	1	0	1	0	255.0	.0078	.9407	.0104	.0170	0	.0282	.0036
6	247	3	42	45	0	0	0	3	0	226.0	.0133	.9282	.0104	.0170	0	.0407	.0036
7	202	2	34	36	0	0	0	2	0	185.0	.0108	.9181	.0104	.0170	0	.0507	.0036
8	166	2	28	30	0	1	0	1	0	152.0	.0132	.9061	.0104	.0231	0	.0568	.0036
9	136	6	33	39	0	2	1	0	3	119 5	.0502	.8606	.0104	.0383	.0076	.0568	.0264
								Nurses									
1	270	14	38	52	1	8	0	4	1	251.0	.0558	.9442	.0040	.0319	0	.0159	.0040
2	218	4	8	12	0	0	0	4	0	214.0	.0187	9266	.0040	.0319	0	.0336	.0040
3	206	2	2	4	0	1	0	1	0	025.0	.0098	.9175	.0040	.0364	0	.0381	.0040
4	202	2	0	2	0	0	0	2	0	202.0	.6099	.9084	.0040	.0364	0	.0472	.0040
5	200	5	5	10	0	0	0	4	1	197.5	.0253	.8752	.0040	.0364	0	.0656	.0086
6	190	2	35	37	0	0	0	2	0	172.5	.0116	.8752	.0040	0364	0	.0758	.0086
7	153	2	23	25	0	0	0	2	0	141.5	.0141	.8628	.0040	.0364	0	.0882	.0086
8	128	0	37	37	0	0	0	0	0	109.5	0	.8628	.0040	.0364	0	.0882	.0086
9	128	0	37	37	0	0	0	0	0	77.0	.0260	.8404	.0040	.0476	0	.0994	.0086

TABLE 6—Life Table Analysis of Pill Continuation of Clients Receiving Services from Physicians or Nurses

Ordinal Period	No. Observed	Terminations	Withdrawals	Total Decrement	Pregnant	Changed Method	Planning Pregnancy	Side Effects	Other Reasons	Adjusted Exposed	Total Term. Rate	Cumulative Rate of Continuation	Cumulative Rate of Pregnancy	Cumulative Rate of Change	Cumulative Rate of Planning Pregnancy	Cumulative Rate of Side Effects	Cumulative Rate of Other Reasons
x + 1	N (x)	T (x)	W (x)	W + T	A (x)	C (x)	G (x)	S (x)	O (x)	N′ (x)	Q (x)	P (x)	Q_{xa}	Q_{xc}	Q_{xg}	Q_{xs}	Q_{xo}
								Physicians									
1	126	5	23	28	0	2	0	2	1	114.5	.0437	.9563	0	.0175	0	.0175	.0087
2	98	5	5	10	0	4	0	1	0	95.5	.0525	.9062	0	.0575	0	.0275	.0087
3	88	1	0	1	0	0	0	0	1	88.0	.0114	.8960	0	.0575	0	.0275	.0190
4	87	2	0	2	0	0	0	1	1	87.0	.0230	.8754	0	.0575	0	.0379	.0293
5	85	0	0	0	0	0	0	0	0	85.0	0	.8754	0	.0575	0	.0379	.0293
6	85	2	12	14	0	0	0	2	0	79.0	.0253	.8532	0	.0575	0	.0599	.0293
7	71	4	6	10	0	1	0	3	0	68.0	.0568	.8030	0	.0701	0	.0976	.0293
8	61	0	15	15	0	0	0	0	0	53.5	0	.8030	0	.0701	0	.0976	.0293
9	46	1	20	21	0	1	0	0	0	36.0	.0279	.7807	0	.0924	0	.0976	.0293
								Nurses									
1	102	8	11	19	0	3	0	4	1	96.5	.0829	.9171	0	.0312	0	.0414	.0104
2	83	4	3	7	1	3	0	0	0	81.5	.0491	.8721	.0112	.0648	0	.0414	.0104
3	76	2	1	3	0	0	0	0	2	75.5	.0265	.8490	.0112	.0648	0	.0414	.0335
4	73	2	0	2	0	0	0	0	2	73.0	.0274	.8257	.0112	.0648	0	.0414	.0567
5	71	1	2	3	0	0	0	0	1	70.0	.0143	.8139	.0112	.0648	0	.0414	.0685
6	68	2	13	15	0	0	0	1	1	61.5	.0325	.7875	.0112	.0648	0	.0568	.0818
7	63	1	6	7	0	0	0	1	0	50.0	.0200	.7717	.0112	.0648	0	.0704	.0818
8	46	0	13	13	0	0	0	0	0	39.5	0	.7717	.0112	.0648	0	.0704	.0818
9	33	1	13	13	0	1	0	0	0	26.5	.0377	.7426	0112	.0939	0	.0704	.0818

uation between the physician and nurse groups diminishes at nine months; 86.1 per cent and 84.0 per cent, respectively. This difference is not statistically significant.

Pregnancy rates among the IUD users were low. At six months and nine months the rates were the same, 1.0 per cent of the IUD users in the physicians' group and 0.4 per cent of the IUD users in the nurses' group were pregnant. Terminations due to method change were also similar in the physicians' and nurses' groups; 1.7 per cent and 3.6 per cent, respectively, at six months. At nine months, the difference was less pronounced: 3.8 per cent and 4.8 per cent, respectively. None of these differences was statistically significant.

In both groups, terminations due to side effects were more frequent than for method change. At six months, 4.1 per cent of the physicians' group and 7.6 per cent of the nurses' group terminated IUD use because of side effects. At nine months, the rates were 5.8 per cent and 9.9 per cent respectively. It appears that either the nurses were more likely to remove an IUD because of patient complaints than were physicians, or nurses' patients were more likely to experience side effects.

As would be expected, the method continuation rates for clients using oral contraceptives were lower than the rates for IUD users in both groups. Six-month pill continuation rates for the physicians' group was 85.3 per cent and for the nurses' group was 78.8 per cent. At nine months, the difference is smaller: 78.1 per cent for clients receiving services from physicians and 74.3 per cent for clients receiving services from nurses. Neither of these differences was statistically significant.

Pregnancy rates among the pill users were very low. No women who were managed by physicians became pregnant and only one woman managed by nurses was pregnant at the end of nine months. Terminations due to change of method at nine months were 9.2 per cent and 9.4 per cent for the physicians' and nurses' groups, respectively. These rates are twice as high as method change terminations in the IUD groups. Finally, at six months, side effects caused terminations in 6.0 per cent of the women in the physicians' group and 5.5 per cent of the women in the nurses' group. This difference increased at nine months to 9.8 per cent and 7.0 per cent respectively. This difference was not statistically significant.

Discussion

In this study, the method continuation rates for clients receiving services from nurses were consistently lower than those rates for the physicians' group. However, the differences were often not statistically significant and were small enough in absolute terms as to be inconsequential from an administrative point of view. In both groups the continuation rates were good, and the pregnancy and side effects rates were acceptable.

Actually, the method continuation rates in the physicians' group and the nurses' group were higher than expected. As is shown in Table 7, the lowest rate of continuation was found in the nurses' group among the clients using oral contraceptives. Even in this group after nine months, however, nearly 75 per cent of all clients were still using the first method prescribed for them on their initial visit.

There are limitations to the generalizability of this study. First of all, the type of non-physician employed in the present study was a very highly trained worker. In many developing countries there are fewer highly trained nurses than there are physicians. In addition, utilization of nurse practitioners poses the same problem as utilization of physicians: it is difficult to motivate highly trained professionals to work in the rural areas.

Research is needed on the effectiveness of less highly trained health professionals (e.g., nursing auxiliaries) in the delivery of family planning services. The employment of less highly trained personnel for the delivery of the majority of family planning services would help to alleviate the problem of providing contraception, which is currently hindered by the lack of financial support and lack of trained personnel.

The second limitation is in the representativeness of the sample. As was previously stated, the sample was young, of low parity, fairly well educated and experienced with contraceptives before first coming to PROFAMILIA.

The third consideration is the possible sources of bias in the study. It has already been shown that there was a possible bias in the assignment of nulligravidous women to nurses, although life table results with or without this group are virtually the same. However, this possible bias needs to be considered when generalizing results to all parity groups.

TABLE 7—Summary of Life Table Analyses for Method Continuation at Nine Months

	Physician	Nurse
A. Overall Continuation Rate (Standard Error)	.7914 (.0217)	.7576 (.0235)
Pregnancy Rate	.0115 (.0053)	.0106 (.0055)
Method Change Rate	.1042 (.0178)	.1253 (.0209)
Side Effects Rate	.0609 (.0136)	.0783 (.0172)
B. IUD Continuation Rate (Standard Error)	.8606 (.0183)	.8404 (.0267)
Pregnancy Rate	.0104 (.0038)	.0040 (.0040)
Method Change Rate	.0383 (.0169)	.0476 (.0170)
Side Effects Rate	.0568 (.0137)	.0994 (.0243)
C. Pill Continuation Rate (Standard Error)	.7807 (.0331)	.7426 (.0500)
Pregnancy Rate	.0000 (.0055)	.0112 (.0117)
Method Change Rate	.0924 (.0276)	.0939 (.0422)
Side Effects Rate	.0976 (.0235)	.0704 (.0306)

Finally, the "Hawthorne Effect" also needs to be considered as in any social experiment. To what extent did the health providers alter their routine of delivering services because of the knowledge that they were being studied?

Was this a random effect in both groups or did either the nurses or physicians try especially hard to be even more thorough than usual? These possibilities are always present and difficult to measure, but must be considered before drawing conclusions.

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7th World Congress of Social Psychiatry Announced

The Seventh World Congress of Social Psychiatry will be held in Lisbon, Portugal, October 8–16, 1978, under sponsorship of the Social Psychiatry World Society, and hosted by the Social Psychiatry Section of Portuguese Neuropsychiatric Society.

The theme of the Congress is "The Impact of Accelerated Change on Man and His Context." Official languages of the Congress are Portuguese, English, French, German, Spanish, and Italian.

Advance registration for the Congress will be accepted until May 31, 1978; fees are $60 for program participants; $25 for accompanying persons. The registration fee after June 1, 1978 is $100 for program participants; $50 for accompanying persons.

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