Evaluation of the Use of Rural Health Clinics: Knowledge, Attitudes, and Behaviors of Consumers

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THE RURAL HEALTH INITIATIVE (RHI), begun by the Public Health Service (PHS) in July 1975, was an attempt to combine the strengths of the Community Health Center (CHC) and the National Health Service Corps (NHSC) programs. The RHI's goal was to increase the availability and accessibility of primary health care services in rural areas where services were nonexistent or insufficient (*1*).

In 1980, there were 25 primary care projects in Mississippi that were funded through the RHI and CHC programs. During 1979, services were delivered through these projects to approximately 80,000 Mississippians. However, less than half of the Mississippians who live in medically underserved areas have obtained services through these programs. Two reasons are that many such areas do not have PHS-funded facilities and that many of the RHI clinics experienced unexpectedly low utilization rates during their first years of operation. These problems are not limited to Mississippi; rather, they are national in scope.

Almost all of the rural health clinics in Mississippi were relatively new in 1980; few had been delivering services for more than a year. Thus, it was expected that utilization rates would be lower than desired. However, many RHI project directors were concerned that utilization rates were not increasing as rapidly as anticipated. In response to their concerns, the University of Mississippi's Research Institute of Pharmaceutical Sciences joined the Mississippi Medicaid Commission's Rural Health Clinics Project in funding a study, which was conducted by the research institute, to evaluate the clinics' utilization.

The purpose of the study was to identify factors affecting the use of rural health clinics and to draw up recommendations for increasing their use. Because of the limited time frame (6 months) in which the study had to be completed, an extensive investigation covering a large number of clinics could not be conducted. Instead, an exploratory study focusing on several major areas of concern was carried out on a small sample of clinics, all of which used nurse practitioners

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as the principal providers of primary care. Within these clinics, the precepting physician's services were limited to followup visits and chart review.

Many factors affect the acceptance and use of a new medical facility. Three that have received attention with regard to rural health clinics are the size of the target population, the proximity of the clinics to other medical providers, and the degree of acceptance of nurse practitioners as primary care providers by both consumers and other medical providers. In this study, the relationships between these factors and the use of four rural health clinics in Mississippi were examined.

The primary objectives of the study were (*a*) to estimate the size of the target populations and the expected utilization rates for each clinic; (*b*) to compare the estimates of the target population and the utilization rates reported by the RHI project directors with the estimates in objective (*a*); (*c*) to identify knowledge, attitudes, and behaviors of consumers that might affect their use of the clinics; and (*e*) based on the study results, to recommend policies and actions to increase use of the clinics. The focus of this report is on objective (*c*)—identifying the knowledge, attitudes, and behavior of consumers that might be related to clinic use.

Many factors determine whether a health care consumer residing in a clinic's target area will actually become a patient of the clinic. Two important prerequisites are a knowledge of the clinic and of the services it provides and a favorable attitude toward the medical personnel, such as nurse practitioners, that the clinic employs. Other consumer behaviors that can facilitate use include shopping patterns for other goods and services in the same vicinity and positive experiences in previous use of the clinics services.

It is difficult to determine what minimum population base will provide the critical mass that is necessary for a rural health clinic to be financially viable. Even if the clinic serves only a small target population, it can be successful provided that enough of the target population uses its services. When an adequate target population appears to exist, but utilization rates are too low to maintain a viable clinic, several factors may be involved. Assessment of these factors requires direct information from and about the target area's consumers. Information from both users and nonusers of the clinic is necessary in order to identify the factors that influence utilization (and nonutilization). Therefore a population-based methodology was used to identify the knowledge, attitudes, and behaviors of consumers that might be related to clinic use.

Methods

Rural health clinics in study. Four rural health clinics, selected to represent different geographic areas in Mississippi as well as different utilization rates, were evaluated. All four clinics had been providing services for at least 9 months at the time that data collection began. Three of the clinics were funded through the RHI program; the fourth was a freestanding NHSC site. The clinics were designated by the letters A, B, C, and D to protect their identity and that of the other medical providers studied. The letters were assigned according to the clinics' daily utilization rates; clinic A had the highest and clinic D, the lowest. The staff of each clinic was asked to provide utilization data for a 2-month period and an estimate of its target population. The target populations were also independently estimated.

Characteristics	*Clinic A*	*Clinic B*	*Clinic C*	*Clinic D*
Population of community (based on 1970 U.S. Census data)	450	275	1,125	600
Estimated target population (based on data supplied by clinic)	(1)	5,329	2,041	5,106
Estimated target population (calculated by Research Institute of Pharmaceutical Sciences)	7,857	5,478	4,017	3,637
Average daily utilization rate	16.3	8.9	3.9	2.9

[1] Clinic did not have the information.

With the exception of clinic B, the target population estimates provided by the clinics differed considerably in the current study. No relationship appeared to exist between the population estimates provided by the clinics and the utilization rates reported by the same clinics. However, there was a strong relationship between the study estimates of the target populations and the utilization rates reported by the RHI project directors.

As would be expected, clinics with smaller target populations had lower utilization rates. The differences in the target population estimates, however, were not great enough to explain fully the differences in utilization rates.

Data collection. Information about consumers' knowledge, attitudes, and behaviors was obtained by telephone interviews with 100 users and 100 nonusers of the services of each of the four study clinics. Two professional interviewers administered an interview schedule prepared by the research institute.

The questionnaire used in the telephone interview

took approximately 10 minutes to complete. It contained questions pertaining to the following characteristics of the consumer:

1. Willingness to use a female medical provider

2. Location and length of travel time to regular source of medical care

3. Knowledge of and attitude toward nurse practitioners

4. Knowledge of the location and services of the local rural health clinic

5. Use of the local rural health clinic

a. If clinic was used, was respondent satisfied with services, and what were respondent's attitudes about future use of the clinic?

b. If clinic was not used, why not, and how satisfied was respondent with regular source of medical care and what was his or her attitude about future use of the regular source of care?

6. Family demographic information.

Each clinic administrator provided a list of 150 randomly selected telephone numbers of clinic users without identifying them by name. A second list consisted of 150 telephone numbers randomly drawn for each clinic from the local telephone exchanges serving each clinic's service area.

Interviewers were instructed to complete 100 interviews based on each of the two lists for each clinic. Thus, for each clinic site, a total of 200 telephone interviews were conducted among users and nonusers. A completed telephone call constituted a completed interview.

Persons answering the interviewers' calls were read the following introductory statement:

Hello, my name is _____. I am calling from the University of Mississippi as part of a survey to identify the health needs of the people in the area. We are calling randomly selected phone numbers, and your phone number was selected as part of our sample. If you participate in our survey, any information you give will be kept strictly confidential, and you may refuse to answer any question that you feel is too personal. Would you be the best person to answer questions about your family's use of medical services?

If no responsible adult who was willing and able to answer the questions was home, the respondent was asked to give a reason for not participating in the study, and the interview was terminated.

A total of 614 usable telephone interviews were completed. The number ranged from 135 (67.5 percent) for clinic D to 160 (80 percent) for clinics B and C. Among the 800 interviews attempted, the four most frequently reported reasons for unusable interviews were that (*a*) respondent did not want to participate (5.9 percent); (*b*) respondent was too busy, didn't have time (5.4 percent); (*c*) no responsible adult was at home to answer questions (3.5 percent); and (*d*) health problems, that is, with speech, hearing, and so forth (1.7 percent).

Results

Consumers' attitudes toward new types of health providers are an important determinant of the use of rural health clinics. Potential barriers to clinic use are negative attitudes about nurse practitioners as primary care providers.

The major questions asked to determine the consumers' knowledge about and attitudes toward nurse practitioners are summarized in table 1. It was assumed that clinic users were familiar with the nurse practitioner concept and were willing to use these professionals for routine medical care. Therefore, only nonusers were asked these questions about nurse practitioners.

Among the nonusers interviewed, 56.8 percent reported that they were acquainted with the term "nurse practitioner." The percentages varied somewhat among clinics, but they were not related to the utilization rates reported for each clinic. This problem of a relatively low level of consumer knowledge of the term is even further compounded by the observation that even among consumers who were acquainted with the term, only 58.9 percent reported that they understood the nurse practitioner concept. Thus, the study data indicate that there is a serious lack of consumer knowledge of nurse practitioners. Other study data indicate, however, that this potential problem can be overcome by educating consumers.

After the consumers in the survey were asked about their knowledge of nurse practitioners, they were read the following definition of a nurse practitioner:

The family nurse practitioner is a registered nurse who has taken additional training. The family nurse practitioner performs many health care tasks formerly performed only by the doctor. The nurse practitioner and the doctor work closely together, and this enables them to provide more comprehensive care to your family. The family nurse practitioner *may* work in a clinic *without* a doctor being present, but the nurse practitioner *always* has access to a doctor for consultation and has the training necessary to spot those people who need the attention of the doctor.

The consumers were then asked whether they would consider going to a nurse practitioner for routine

medical care. Among those nonusers interviewed, 83.2 percent answered that they would be willing to see a nurse practitioner (table 1). The consumers' acceptance of the nurse practitioner concept in these four target areas was similar to that found in a previous study of consumers in three rural Mississippi counties. In the previous survey of 603 Mississippi households, 91.9 percent of the respondents indicated they would be willing to see a nurse practitioner for routine medical care (*2*). The results of the current survey indicate that even with a limited understanding of the nurse practitioner concept, most consumers would be willing to use a nurse practitioner for their regular medical care. However, the data in table 1 also indicate that most consumers do not presently have even a limited understanding of the concept.

Other potential barriers to clinic use are consumers' attitudes about the use of female care providers. The majority of nurse practitioners working in rural health clinics are female. A study of Ackerman-Ross and Sochat has indicated that patients with most clinical problems may have a preference for physicians of the same gender (*3*). To determine whether the sex of the medical provider was a barrier to clinic use, the respondents in our study (both users and nonusers) were asked whether they, their spouses, and their children were willing to see a female doctor or other female medical provider for medical care.

Approximately 90 percent of the wives and children and almost three-fourths (74.3 percent) of the husbands were willing to see a female medical provider (table 1). Clinic C was the only one in which the level of acceptance was significantly lower. Clinic D, which had the lowest utilization rate, had the highest level of acceptance of female medical providers by wives, husbands, and children.

Clinic users and nonusers did not significantly differ in their willingness to see a female provider. Thus, it appears that the predominance of female medical providers in rural health clinics is not a significant barrier to clinic use, even though men are less willing than women to use female medical providers.

Consumers' awareness and knowledge of the local clinic is, of course, a prerequisite for use of its services. Again, because those who had used the clinics previously were considered to be knowledgeable about them, only the awareness and knowledge of the clinic that nonusers possessed was examined. Overall, only 56.8 percent of the nonusers reported that they had heard of the local rural health clinic (table 1). The percentages were slightly higher for clinics C and D, probably because they are located in smaller communities. No relationship was found between utilization rates and the level of consumer awareness of the local clinics.

The consumers' knowledge of the availability of medical services was determined by asking which of seven listed services were available at the local clinic. Clinic users and nonusers differed significantly in their responses for all services except "set a broken bone and apply a cast." Clinic users responded correctly more often than nonusers to all seven questions about services. Nonusers reported more frequently than users that they did not know if the services in question were available.

Both groups gave the fewest correct responses to the question as to whether "minor surgery such as removal of warts, etc." was available. Only 20.6 percent of the clinic users and 11.0 percent of the nonusers gave the correct response to this question. Both groups gave the most "don't know" responses to the question about this service; almost two-thirds (63.3 percent) of the clinic users and 77.9 percent of the nonusers responded, "Don't know." More than half of the users and nonusers also responded, "Don't know," when asked whether setting a broken bone was a service offered at the local clinic.

The responses of the clinic users indicated that they believed that basic uncomplicated medical services were available at the clinics, but they exhibited considerable misunderstanding or doubt about the more complicated procedures. The uncertainty about available services was even greater among clinic nonusers. The large number of "don't know" responses among them is even more disconcerting, because only those nonusers who had heard of the local clinic were included in the analysis. If the 43.2 percent of the nonusers who had not even heard of the local clinic had been included, the lack of consumer knowledge about available services that was found would have been greater.

The consumers' responses to questions about their use of the local rural health clinics are summarized in table 2. Of the consumers interviewed, 47.5 percent had used these clinics. However, the sample does not represent the total population. Since half of the study sample was drawn from families with at least one known clinic user, one would have expected at least half of the respondents to have used the clinic. The fact that less than half of the respondents reported that a family member had ever done so can be explained by the uneven distribution of unusable inter-

Table 1. Consumers' responses to questions about their knowledge of and attitudes toward nurse practitioners and female medical care providers and about their knowledge of rural health clinics

Response	Clinic A		Clinic B		Clinic C		Clinic D		All clinics	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Re nurse practitioners	Have you ever heard the term "nurse practitioner?" [1]									
Yes	42	60.9	41	58.6	49	50.5	43	59.7	175	56.8
No	27	39.1	29	41.4	48	49.5	29	40.3	133	43.2
Don't know	1	...	1	...	1	...	4	...	7	...
	If Yes, do you know what a nurse practitioner is? [1]									
Yes	26	61.9	22	53.7	30	61.2	25	58.1	103	58.9
No	16	38.1	19	46.3	19	38.8	18	41.9	72	41.1
	Would you consider going to a nurse practitioner for routine medical care? [1, 2]									
Yes	61	92.4	49	76.6	75	80.6	57	83.8	242	83.2
No	5	7.6	15	23.4	18	19.4	11	16.2	49	16.8
Don't know	4	...	7	...	5	...	5	...	21	...
Re female providers	Would you (your spouse, your children) be willing to see a female doctor or other female provider of medical care? [3]									
Wife:										
Yes	129	92.1	132	93.6	126	86.9	121	97.6	508	92.0
No	11	7.9	9	6.4	19	13.1	3	2.4	42	8.0
Don't know	6	...	11	...	5	...	2	...	24	...
Husband:										
Yes	87	77.7	78	78.0	50	56.8	66	79.5	281	74.3
No	25	22.3	22	22.0	33	43.2	17	20.5	97	25.7
Don't know	21	...	28	...	25	...	23	...	97	...
Children:										
Yes	71	94.7	83	95.4	54	81.8	83	97.6	291	93.9
No	4	5.3	4	4.6	12	18.2	2	2.4	22	7.0
Don't know	2	...	3	...	5	...	1	...	11	...
Knowledge of clinic	Have you ever heard of the clinic? [1]									
Yes	32	46.4	35	53.0	60	63.2	45	61.6	172	56.8
No	37	53.6	31	47.0	35	36.8	28	38.4	131	43.2
No response	1	...	5	...	3	...	0	...	9	...

[1] Question posed only to nonusers of clinic.
[2] Question was posed after definition of nurse practitioner had been read.
[3] Question was asked only if the response to question 1 was affirmative.

views between clinic users and nonusers and the fact that respondents were not always aware that other family members had used the local clinic.

Among families reporting that they had used the local clinic, 48.7 percent had used it four or more times (table 2). The data revealed no patterns to indicate that the overall utilization rates of the clinics were related to the average number of encounters reported by the clinic users.

When consumers were asked whether their family planned to continue using the clinic, 93.6 percent responded affirmatively. This percentage did not differ significantly from clinic to clinic. Almost all (97.5 percent) of the clinic users responded that they would recommend the clinic services to a friend. These two results suggest that once people use the local rural health clinic, they are generally satisfied with the services they receive.

To determine the relative strength of consumers' satisfaction with clinic services, however, clinic users must be compared with persons in the same area who are using private physicians for medical care. Responses from clinic users and nonusers to seven questions about their satisfaction with medical services were therefore compared. Clinic users were instructed to answer questions with respect to how satisfied they were with the services that their family had received at the local rural health clinic, and nonusers were asked to answer the

same questions with respect to how satisfied they were with the services they received from their regular doctor.

Clinic users and nonusers did not differ significantly in their satisfaction with four of the seven core components studied: (*a*) the number of days it usually took to get into the clinic or office when there was no emergency, (*b*) how friendly the doctors and nurses at the clinic or office were, (*c*) the hours that the clinic or office was open, and (*d*) the overall quality of the medical care supplied. Both the consumers using rural health clinics and those using private physicians appeared to be very satisfied, based on their mean satisfaction scores, with these four aspects of the services that they had received. Clinic users whose medical services were provided by nurse practitioners were as satisfied with the quality of their medical care as were the consumers in the same areas who received their medical care from private physicians.

Clinic users and nonusers, however, differed in their satisfaction with the other three components of care studied: (*a*) the distance traveled to the clinic or office, (*b*) the waiting time after getting to the clinic or office, and (*c*) the cost of medical care received.

The level of satisfaction of consumers with the medical services they received from the four rural health clinics and from private physicians in the same areas is compared in table 3, based on three indicators: distance traveled to clinic or office, waiting time at clinic or office, and cost of the medical care.

As mentioned in the introduction, one of the objectives of the RHI program was to make primary medical care services more accessible to rural residents. Table 3 shows their satisfaction with the distance they had to travel to the clinic or office. Overall, clinic users were significantly ($P < 0.01$) more satisfied than the users of private physicians with this distance. Similar significant differences in the level of satisfaction with this distance were found between these two groups of consumers at each of the four clinic sites.

Another indication of the accessibility of medical services is the time the patient has to wait in the clinic or office. Table 3 also shows consumers' satisfaction with this waiting time. Clinic users at three of the four locations studied were significantly ($P < 0.01$) more satisfied with the length of waiting time after getting to the treatment site than were the patients of private

Table 2. Consumers' responses to questions about use of their local rural health clinics

Response	Clinic A		Clinic B		Clinic C		Clinic D		All clinics	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1. Have you or any other member of your family been to the clinic for medical care? [1]										
Yes	73	51.0	88	55.3	60	38.0	61	45.5	282	47.5
No	32	22.4	35	22.0	60	38.0	45	33.6	172	29.0
Had not heard of clinic	38	26.6	36	22.6	38	24.0	28	20.9	140	23.6
Don't know	16	...	1	...	2	...	1	...	20	...
2. Approximately how many times have you and your family been to the clinic? [2]										
1	17	30.4	10	12.0	14	31.8	13	25.5	54	23.1
2	12	21.4	11	13.3	9	20.5	6	11.8	38	16.2
3	10	17.9	9	10.8	7	15.9	2	3.9	28	12.0
4 or more	17	30.4	53	63.9	14	31.8	30	58.8	114	48.7
Don't know	17	...	5	...	16	...	10	...	48	...
3. Do you plan to continue using this clinic for your medical care needs in the future? [2]										
Yes	70	95.9	83	95.4	57	95.0	52	86.7	262	93.6
No	3	4.1	4	4.6	3	5.0	8	13.3	18	6.4
Don't know	0	...	1	...	0	...	1	...	2	...
4. If a friend asked, would you recommend the services of this clinic? [2]										
Yes	71	90.6	87	100.0	57	96.6	56	91.8	271	97.5
No	0	9.4	9	0.0	2	3.4	5	8.2	7	2.5
Don't know	2	...	1	...	1	...	0	...	4	...

[1] Question was posed to both clinic users and nonusers.

[2] Question was asked only if the response to question 1 was affirmative.

Table 3. Consumers' satisfaction with distance traveled to clinic or private physician's office, length of waiting time after getting there, and cost of the medical care received

Source of services	Very satisfied		Somewhat satisfied		Somewhat dissatisfied		Very dissatisfied		Mean	Chi-square [1, 2]
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Distance traveled to clinic or office										
Clinic A	67	91.8	5	6.8	0	0	1	1.4	1.11	38.71
Private physicians in clinic A area	30	44.1	17	25.0	13	19.1	8	11.8	1.99	
Clinic B	83	94.3	3	3.4	1	1.1	1	1.1	1.09	25.56
Private physicians in clinic B area	42	61.8	17	25.0	6	8.8	3	4.3	1.56	
Clinic C	52	89.7	5	8.6	0	0	1	1.7	1.14	15.05
Private physicians in clinic C area	57	62.0	17	18.5	14	15.2	4	4.3	1.62	
Clinic D	44	74.6	9	15.3	3	8.2	3	5.1	1.41	23.10
Private physicians in clinic D area	25	36.8	24	35.3	13	19.1	6	8.8	2.00	
All clinics	250	89.3	21	7.5	6	2.1	3	1.1	1.15	98.84
Private physicians in all 4 clinic areas	154	52.0	75	25.3	46	15.5	21	7.1	1.78	
Waiting time at clinic or office										
Clinic A	69	94.5	4	5.5	0	0	0	0	1.05	20.27
Private physicians in clinic A area	46	67.6	7	10.3	6	8.8	9	13.2	1.68	
Clinic B	78	89.7	8	9.2	0	0	1	1.1	1.13	34.16
Private physicians in clinic B area	37	53.6	8	11.6	12	17.4	12	17.4	1.99	
Clinic C	44	74.6	10	16.9	4	6.8	1	1.7	1.36	5.07 (NS)
Private physicians in clinic C area	55	59.8	17	18.5	15	16.3	5	5.4	1.67	
Clinic D	44	74.6	9	15.3	3	5.1	3	5.1	1.41	24.14
Private physicians in clinic D area	21	30.9	28	41.2	12	17.6	7	10.3	2.07	
All clinics	235	84.5	31	11.2	7	2.5	5	1.8	1.22	70.82
Private physicians in all 4 clinic areas	159	53.5	60	20.2	45	15.2	33	11.1	1.84	
Cost of medical care										
Clinic A	59	80.8	12	16.4	1	1.4	1	1.4	1.23	16.70
Private physicians in clinic A area	37	55.2	13	19.4	7	10.4	10	14.9	1.85	
Clinic B	64	73.6	20	23.0	1	1.1	2	2.3	1.32	17.32
Private physicians in clinic B area	30	44.8	23	34.3	10	14.9	4	6.0	1.82	
Clinic C	42	76.4	8	14.5	3	5.5	2	3.6	1.36	1.84 (NS)
Private physicians in clinic C area	58	65.9	17	19.3	8	9.1	5	5.7	1.55	
Clinic D	43	71.2	14	23.3	2	3.3	1	1.7	1.35	17.10
Private physicians in clinic D area	26	38.2	24	35.3	13	19.1	5	7.4	1.96	
All clinics	208	75.6	54	19.6	7	2.5	6	2.2	1.31	46.01
Private physicians in all 4 clinic areas	151	52.1	77	26.6	38	13.1	24	8.3	1.78	

[1] The "somewhat dissatisfied" and very dissatisfied categories were combined for computing the chi-square statistic because of the small cell frequencies.

[2] Significant at the 0.01 level except when designated NS (not significant).

physicians. Only the patients of clinic C did not differ significantly from the patients of private physicians in this respect. Generally, mean satisfaction scores indicated that the clinic users were very satisfied with the waiting times, whereas the patients of private physicians were only somewhat satisfied.

Another barrier that the RHI program has attempted to address was the cost to the consumer of primary medical care services. Table 3 shows consumers' responses to a question about their satisfaction with the cost of the medical care they received. In three-fourths of the service areas, clinic users were significantly more satisfied with the cost of delivered care than were their counterparts, the patients of private physicians. Only in clinic C was there no significant difference between clinic patients and patients of private physicians with respect to satisfaction with costs. Overall, clinic users were very satisfied, and private physician users were somewhat satisfied, with the cost of the care received, as shown by their mean responses.

Characteristics of the clinics and the consumers were examined in relation to clinic use, and these data are summarized in table 4. As the table shows, race was not significantly associated with clinic use. There was, however, a significant ($P < 0.01$) relationship between family income and clinic use. Clinic users tended

Table 4. Relationships between consumers' characteristics and use of the rural health clinics in the study

Consumers' characteristics	Clinic users		Clinic nonusers	
	Number	Percent	Number	Percent
Race	$\chi^2=0.25$			
White	205	72.7	121	70.3
Black	77	27.3	51	29.7
Annual income	$\chi^2=14.73$ (significant at 0.01 level)			
0–$ 5,000	34	21.1	38	39.2
$ 5,000–$10,000	34	21.1	23	23.7
$10,001–$15,000	37	23.0	9	9.3
$15,001–$20,000	22	13.7	12	12.4
$20,001 or more	34	21.1	15	15.5
Number of miles to clinic	$\chi^2=7.66$ (significant at 0.05 level)			
1–5	216	78.5	112	66.7
6–10	41	14.9	39	23.2
11 or more	18	6.5	17	10.1

to have higher incomes than nonusers. This result (and the one concerning race) is interesting in the light of a common misconception that rural health clinics in Mississippi serve primarily the black poor. Table 4 indicates that a significant ($P<0.05$) relationship also existed between the distance to the clinic and use or nonuse of the clinic. Almost four-fifths (78.5 percent) of the clinic users lived within 5 miles of the clinic. Nonusers tended to live farther from the clinics than did clinic users.

Discussion

The results indicate that with respect to meeting several of the objectives listed at the beginning of this paper, the RHI program has been successful in the clinics studied. In general, those consumers who had received services from a rural health clinic were as satisfied as were their counterparts who received services from a local private physician with respect to getting appointments, the friendliness of personnel, the hours that services were available, and the overall quality of the medical care received. In addition, the rural health clinic users were significantly more satisfied than the patients of private physicians with respect to the distance they had to travel, the waiting time at the treatment site, and the cost of the care they received.

Thus, the consumers' satisfaction with rural health clinics can be considered to be a positive factor related to their utilization. In fact, more than 90 percent of the clinic users indicated that they planned to continue using the facility and would recommend it to a friend. However, the initial decision of consumers to use a rural health clinic is, of necessity, based on their current attitudes toward, and their knowledge about, the clinic and the medical care providers working there.

Based on the study, consumer attitudes toward nurse practitioners and toward female providers in general do not represent a significant barrier to the use of rural health clinics. The major problem areas are consumers' inadequate awareness of and knowledge about nurse practitioners and the clinics' services. These inadequacies can be effectively addressed through public relations efforts and public education, which previously have been shown to increase the financial viability of rural health clinics (*4,5*).

A clinic's public relations and public education efforts should specifically address its role as part of the local comprehensive primary health care system as well as the relationships between the roles of the clinic nurse practitioners and the private physicians in the area.

These public relations and public education efforts might include the following:

Provision of information

- at public meetings, such as community meetings, civic organizations, church gatherings, and so forth,
- through news and feature stories in local newspapers and on the radio,
- in clinic brochures that describe clinic services, personnel and the nurse practitioner concept.

Participation in public activities

- by providing volunteer emergency medical services for public events such as sports activities,
- through community health promotion activities such as screening programs, community health fairs, and school health education programs.

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