Acceptance of Auxiliary Health Workers in Rural Iran

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CREATION of an adequate health care delivery system is a problem for all countries. In the developing countries, the situation is particularly acute, partly because of the lack of physicians, funds, facilities, and equipment. Frequently such countries also must deal with people who live in remote areas, many of whom are distrustful of any medicine except traditional local medicine.

Iran, for example, presently has a physician to population ratio of 1 : 3,670, compared to about 1 physician for less than 1,000 in most developed countries (*1*). More than 45 percent of Iran's physicians are in Tehran (*2*). In many rural areas of the country, physician care is nonexistent—the distance to the nearest physician may be as much as 75 miles, and most people lack access to mechanized transportation. The use of local untrained medical practitioners is common. Those particularly widely used are the unsanctioned midwife, the Hakim (a local wise man who serves as the village doctor), the Shekasteband (a person who sets broken bones), and the local dispenser of medicine, usually homemade.

Few physicians will voluntarily serve in the rural areas where social amenities are lacking and no laboratory or hospital facilities are available. Thus, for a country such as Iran, the construction of any effective health care system must eventually depend heavily on the use of front-line auxiliaries.

In 1973, the Department of Community Medicine of Pahlavi University in Shiraz, Iran, launched a pilot program to train such auxiliary health workers, modeled in part after the Chinese "barefoot doctor" system. The program's concept and design have been described in earlier publications (*3, 4*). The first group of village health workers (VHWs) was recruited from 16 villages in an area about 55 kilometers from Shiraz. The group was composed of 11 men and 5 women, ranging in age from 15 to 45 years. The only educational requirement was the ability to read and write.

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During the autumn of 1973, this group was trained for 6 months at a rural site. Trainees were taught to treat certain simple medical conditions that could be recognized by a person of limited training, and they learned the fundamentals of preventive health measures. The measures included, for example, simple methods of improving village water supplies, proper human waste disposal, and separation of animals from living quarters. When the VHW is assigned, he is expected to implement these preventive measures, to carry out health education and home visit programs, as well as to conduct a village treatment clinic. He also provides oral contraceptives to the women in the village, and he is expected to conduct family planning education.

The VHWs are allowed to treat only simple, easily recognized ailments. When they see patients whose illness they cannot diagnose, they refer those patients to the health corps physician in the area.

The first group of VHWs was deployed to 16 villages in Fars Province in March 1974. Six of the VHWs returned to a village other than their own, and 10 returned to their home villages.

Any introduction of paramedical personnel should be accompanied by monitoring of the acceptance and effectiveness of such personnel. Casual field observation, of course, has provided a great deal of information on how well the VHWs are accepted. However, such observations can frequently be misleading, and opinions may differ among observers. Thus, some specific instrument was desired for measuring the villagers' perceptions and attitudes toward the VHWs and their work. More specifically, it was of interest to know if certain characteristics of the VHWs were associated with a higher level of acceptance in the villages. Previous observation during the selection and training phases of the program had raised questions about acceptance. There was some reason to fear that persons returning to their own villages as VHWs might have difficulty in winning the confidence of those who had known them previously (*4*). In addition, traditional Moslem attitudes toward the co-mingling of sexes made it questionable whether the VHWs of either sex could carry out, with complete success, the full range of activities being assigned to them. This was particularly true for women, because in the rural areas of Iran, traditional Moslem attitudes assigning a secondary status to women still prevail. During the recruiting phase, considerable difficulty had been encountered in recruiting eligible women, because the men in their families were unwilling to allow the women out of their control.

As a result of these questions, personnel of the Department of Community Medicine in August 1974, conducted a sample survey of residents in 15 of the 16 project villages. (The VHW in the 16th village had left the program temporarily, and his village was not included in the survey.) The survey was designed to determine the villagers' attitudes toward the VHW and the level of the respondents' knowledge about the VHWs training, his activities, and his capabilities.

Survey Design

For selection of the sample, the department's researchers numbered the houses in the villages and randomly chose one-tenth of the homes in each village. Each adult residing in those houses was interviewed, with the exception of a few persons who were not located. To avoid any possible influence among respondents, all the adults in a household were interviewed at the same time, but separately, by different members of the interview team. If one member of the household was away but in the vicinity, an interviewer traveled to that spot and interviewed that person. No return visit was made to those who were not located because of the possibility that responses would be discussed in the interim.

The final sample contained 117 men and 109 women. The age distribution in the two groups was similar. The number of persons interviewed ranged from 8 in the smallest village to 28 in the largest.

The questionnaire contained 17 items, including items concerning the villager's knowledge of the VHW, his attitude toward the VHW and his work, and his preference as to sex and previous residency status of the VHW. The knowledge and attitude items were interspersed in the questionnaire to avoid, as much as possible, the tendency of respondents to give similar answers to each question.

Interviewers were from the research unit's regular data collectors, supplemented by medical students who work part time as data collectors. All interviewers were instructed in the manner in which the interviews were to be conducted and in the exact manner in which each question was to be asked to avoid the possibility of influence by interviewers. All questions had prechosen responses, and the interviewer was instructed to read those responses and to instruct the interviewee to choose the one most nearly correct. The interviewer was not allowed to give additional explanation of questions or responses.

Each villager was given a knowledge and attitude score based on his responses to the questions. (The

scoring in each category may be obtained from the authors.)

To provide some index of the accuracy of responses, each person was asked the number of times he had visited the VHW and whether he had visited someone else for medical services. Twenty-four percent reported having visited the health corps station, which was close to the 22 percent observed in separate studies by the department. (Health corps stations are staffed by physicians doing army duty. The health corps station nearest the auxiliaries served, at the time, as the referral point for the auxiliary's patients and could also be visited independently.) Mean number of visits also corresponded closely to estimates made from records.

Results

The response to the presence of the VHW was generally favorable; 220 of the 226 persons responded that they were happy with the VHWs work.

The responses to the four attitude questions follow. The most negative responses were to the question: "Do you think the VHW knows enough?" Nineteen percent of the sample said they did not feel the VHW knew enough.

Question	*Number responding*
1. Are you happy with the VHWs work?	
Yes	220
No	6
2. In your opinion, the VHW:	
Knows as much as he needs to know for his work	175
Does not know enough	40
3. Since the VHW came, your village:	
Has become better	215
Has become worse	2
No change	7
4. Do you think every village should have a health worker?	
Yes	221
No	5

An analysis was made to see if known characteristics of the VHW were associated with the belief that the VHW "did not know enough." There was no difference between the responses of those with male VHWs and those with female VHWs, nor was there any difference in the response between those with a VHW from their own village and those with one from a different village. There was no relationship between the VHW's final ranking after classroom training and his constituents' perceptions of his knowledge. Superviser's ratings of the auxiliaries' activities did not correlate with mean knowledge or attitude scores of the villagers.

There was, however, a relationship between the age of the VHW and the percentage of persons in the sample of that village who did not feel that the VHW knew enough. The villages with a young health worker, on the average, had a considerably higher proportion of persons who felt that the VHW lacked adequate knowledge than did the villages with an older worker. The correlation coefficient for the linear relationship between the age of the VHW and the percentage of negative responses in the sample group was $r = -.60$.

Thus, the villager tends to place more confidence in the older health worker's knowledge than that of a very young health worker, even after some direct experience with the worker. The common belief in the village is that wisdom increases with age, particularly in matters concerning health. It is important to note, however, that the truly outstanding health worker can completely overcome these prejudices. The youngest VHW is a 15-year-old girl, who is serving a village of 976 persons. Clinical observations and evaluations have consistently rated her as excellent. The 23 persons interviewed in her village all responded that their VHW had enough knowledge.

The mean attitude score in each village was computed, and the values were analyzed according to various characteristics of the VHW. The possible range for any person's score was -4 to $+4$. Those villages with a male VHW had a somewhat higher average mean attitude score than those with a female VHW: 3.45 for males, compared with 2.99 for females. This difference was not significant ($t = 1.26$, $p > .10$). There was no difference between the attitude scores of those who had a VHW from their own village and those who did not.

Following are the responses to each of the knowledge questions. Each respondent was asked to give

Families wait to see village health worker

the most correct answer among those listed under question 6. Seventy-five percent said that the VHW knew more about medicine than most of the people in the village. Forty-seven persons overrated the VHWs knowledge—they responded that the VHW knew as much as the physician.

Question	Response: Correct	Response: Incorrect
1. Name of VHW	206	19
2. Where VHW is from	208	16
3. Length of VHW's training	100	110
4. Trained by whom	49	157
5. Measures taken to improve sanitation in the village:		
Talked about cleanliness	203	23
Talked about separating animals from houses	183	43
Talked about clean water	188	38
Cleaned his own house	171	55
Helped the villagers to clean their houses	198	28
6. In your opinion about medicine, the VHW knows:		
More than most of the people in the village	165	
As much as you know	9	
As much as a physician	47	

There was a high level of awareness of the preventive activities of the VHW, as the responses under question 5 show. All of these activities were known to have been carried out by the VHW. The greatest number of persons were aware that the VHW had talked about personal sanitation (washing hands after defecation, importance of regular baths, avoidance of placing hands in mouth, and so on). Fewer (171 of the 226) were aware that the VHW had taken measures to clean his own house. From these data, it appears that the activities of the auxiliary health worker in the areas of environment and health education have been widely noted and remembered. The mean knowledge score in the villages did not vary according to the VHW's age, sex, or previous residency status (whether the VHW was a native of the village where he or she now served or not), and showed no correlation with the attitude scores.

Each villager was asked whether he preferred the VHW to be male or female. The responses were analyzed by sex of the respondent and the VHW. As the following table shows, in percentages, men generally preferred males and women preferred females.

Respondent's sex	Preference: Male	Preference: Female	Preference: No difference
Male	50	20	30
Female	18	42	39
Both sexes	34	31	35

Preferred sex for auxiliary health worker among male and female villagers served in rural Iran, 1974

Sex of respondent	Sex of VHW	Preference	(percent)
Male	Male	Male	71
		No difference	24
		Female	5
	Female	Male	8
		No difference	43
		Female	49
Female	Male	Male	21
		No difference	44
		Female	35
	Female	Male	11
		No difference	25
		Female	64

Reference to the more detailed analysis, shown in the figure, reveals some interesting facts: Among those men who had a male VHW, 71 percent preferred a man; another 24 percent said that it made no difference. Among those men who had a female VHW, on the other hand, only 8 percent said they preferred a man. The remaining 92 percent said they actually preferred a female or that the sex of the VHW made no difference. Thus, the attitudes of men toward female health workers was heavily influenced by direct experience with a female VHW. Among female respondents, preference was also influenced by experience. Among those women who had a female VHW, 64 percent said they preferred a female VHW. However, among those with a male VHW, only 35 percent definitely preferred a female. Thus, while women were also influenced by experience, their opinions were less changeable than those of the men.

Persons participating in the survey were asked the question: "Do you prefer the VHW to be from your own village or from another village?" Eight-one percent said they preferred the VHW to be from their own village. However, the results show that there is little difference in actual attitude toward the VHW who returns to his home and one who does not. In an effort to obtain the best qualified personnel, the second group of VHWs has been more widely recruited without attempting to draw them from the same villages to which they will be sent.

Implications of the Findings

The use of the front-line auxiliary health worker is a feasible means of bringing at least most health services to persons living in scattered remote areas without physicians.

While programs to train auxiliary health workers have been undertaken in several countries, there is a paucity of concrete information concerning the reception that these health workers receive and which characteristics of health workers are, or are not, associated with success or difficulty in achieving acceptance. Such characteristics, of course, may vary according to the culture within which the health worker functions. However, many of the anticipated difficulties in such a program would be shared, even among disparate cultures. The purpose of this study was to provide the information needed for the development of this particular auxiliary program and to provide useful information to those considering similar programs.

In summary, rural Iranian villagers in their first experience with a local auxiliary health worker can and will accept that health worker, even when they may have had little experience with modern trained health personnel, little formal education, and no previous contact with that particular health worker. Further, even in a Moslem society where the separation of the sexes is strictly observed by custom, both men and women can function effectively as village health workers, performing all the duties of which such a worker is capable.

Certain findings of this survey were supported by a subsequent analysis of clinic use by the villagers in the same 6-month period. That study found no difference in the use of the VHW according to the worker's sex or previous place of residence, nor was there any apparent reluctance of persons to visit a VHW of the opposite sex.

The results presented show that direct experience with an auxiliary health worker of the opposite sex significantly affects the attitudes of persons toward the acceptability of that health worker. Thus, there is no reason for persons who are choosing front-line health workers in a culture similar to that of the Iranian village to be concerned about the acceptability of the health worker on the basis of sex. Nor is there any reason to limit the duties of the health worker unnecessarily because of fear of lack of acceptance. Both the male and the female VHWs in this program carry out the full range of activities, apparently without any resistance from those persons they serve.

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SYNOPSIS

ZEIGHAMI, BAHRAM (Pahlavi University School of Medicine, Shiraz, Iran), ZEIGHAMI, ELAINE, RONAGHY, HOSSAIN A., and RUSSELL, SHARON STANTON: Acceptance of auxiliary health workers in rural Iran. Public Health Reports, Vol. 92, May–June 1977, pp. 280–284.

A pilot project to train and deploy low-level rural health auxiliaries is being carried out in southern Iran. The first group of 16 village health workers (VHW) went to work in the initial 16 project villages early in 1974. The group consisted of 11 men and 5 women ranging in age from 15 to 45. These workers are taught to treat simple medical conditions, to practice preventive health measures, and to conduct health education and visit programs.

Six months after initial deployment to the villages, a sample survey of 226 villagers was carried out to determine what characteristics of the VHW and of the consumers were associated with greater acceptance of the VHW's work and his or her role in the village. The results indicated that both male and female health workers are accepted in an equivalent role, and that workers returning to their own villages are no more or no less likely to have difficulties in gaining acceptance than are those returning to a different village. It was found that experience with a VHW of a particular sex could significantly alter attitudes toward the preferred for the VHW. The age of the worker was the only variable closely associated with the villagers' confidence in the worker—the older the VHW, the higher the villagers tended to rate his or her knowledge.

In Iran, as in many developing countries, the rural village tends to be a closed, male-dominated group. The experience of the VHWs in Iran makes it apparent that the health worker, regardless of sex, age, or village of origin, can gain the confidence and respect of the villagers.