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**INTERPERSONAL EDUCATION BY RURAL YEMENI WOMEN FOR PROMOTING CHILD
SURVIVAL AND MATERNAL HEALTH**

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ABSTRACT

The present study reports the results of an evaluation of an education and training effort for promoting diarrheal control, nutritional health and general maternal and child health among rural Yemeni women. A total of 805 volunteer women and men were recruited from 20 Yemeni villages in the governorates of Al Beida and Hajja. These volunteers were educated in basic health messages and instructed to disseminate the information to friends and neighbors in their villages. Evaluators subsequently visited four villages which had received the training as well as two which did not to determine whether the dissemination had actually occurred. Mothers contacted by their recently trained neighbors correctly responded to all knowledge and practice questions related to diarrhea control, oral rehydration therapy and breast feeding, whereas mothers in control villages averaged 60% correct responses. The results of this quasi-experimental evaluation underscore the potential for interpersonal education for improving child survival and maternal health in countries such as Yemen.

INTRODUCTION

About five million infant deaths per year result from dehydration and other problems due to diarrhea[1] making diarrheal diseases the number one threat to children of this age group. Oral rehydration therapy (ORT), combining the replacement of fluids and electrolytes with nutritional therapy, can save a large proportion of children with diarrheal disease[2]. Nevertheless, while ORT was developed three decades ago, the dissemination of this technology from laboratories and clinics to villages and mothers has been slow and difficult[3]. As with many health behaviors, critical behavior change successes required to implement ORT on a population wide basis has lagged far behind the scientific and technological development of the therapy[1].

Previous efforts in diarrheal disease control emphasized mass media and impersonal instruction [4]. Recently, however, researchers have noted the importance of face-to-face (especially, health worker - mother) communication as an adjunct to or even the primary form of instructions to mothers about this complicated behavior[3]. Some studies have noted that health works may already have the skills to communicate about ORT but simply lack

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encouragement, while others have identified specific training techniques appropriate for helping health workers get the message out to their "audiences"[5,6].

The village level training evaluated in this report represents the culmination of a four level training program implemented by the General Directorate of Health Education, Yemeni Ministry of Public Health, with technical assistance by HealthCom/ACCS and funding from USAID.

METHODS

Setting

Yemen, a nation of 13,000,000 people, is situated on the southwestern tip of the Arabian peninsula. Its principal cities are Sana'a and Aden, located in the recently reunited northern and southern areas of the country, respectively. The infant mortality rate in 1989 was 116, representing a 50% reduction from 1960 but still making it one of the highest in the Arab world[7]. The GNP per capita is US\$600, the life expectancy is 51, the adult literacy is 32%, and the fertility rate is 7.7. In 1987, only seven percent of Yemeni mothers used oral rehydration when their children had

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diarrhea, contrasted to 83% in Egypt and 25 % in the Sudan [7].

The two governorates studied in this evaluation were Al Beidah, situated on a plain southeast of Sana'a and northeast of Aden, and Hajja, in a rugged mountainous area northwest of Sana'a. The populations of these governorates are 356,000 and 850,000 and the infant mortality rates stand at 114 and 140, respectively[8].

Education and Training

The primary strategy of the communication effort was to decentralize health education programs at governorate and village levels and involve the rural mothers as recipients of messages about diarrheal control, nutrition and maternal and child health. Prior to designing the communication interventions, HealthCom conducted the first ever communication study in the summer of 1991. Over 100 mothers were interviewed in 16 villages in the governorates of Hajja, Saada, Maarib and Al-Beida in focus groups settings. These interviews revealed that child diarrhea was a priority among these mothers, and many of them relied on health advisers (both female and male relatives and neighbors) for information regarding health practices. HealthCom therefore centered its communication strategy on these advisers.

In this effort (the first of its kind in Yemen), a central team of public health experts trained primary health care workers

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as instructors in maternal and child health messages. These PHCWs in turn trained village level "messengers", who were to serve as change agents for their respective villages' mothers, and later, as suppliers of ORS packets. An additional fifth level was implicit: the mothers who received the communication from the change agents were able to serve as multipliers of these messages by disseminating the information to her neighbors and relatives.

Village level training of change agents took place in the governorates of Maarib, Al Beida and Hajja for change agents from ten villages per governorate. Due to then-current difficult circumstances unrelated to the project, only the latter two training efforts were evaluated.

Participants came from ten villages in each of the two governorates. They included primary health care workers, midwives, teachers, students, religious leaders, and interested mothers and fathers who were recruited for the training or heard about it from others in the village. In all, 242 men and 184 women were (separately) educated in Hajja, with an additional 170 and 209 men and women trained in Al Beida. These figures are some 100% higher than the initial projections, reflecting the immense interest in the topics and education/training process evidenced among the villagers.

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The four hour workshops covered the following content areas: 1) the prevention of diarrhea; 2) how to detect diarrhea and dehydration; 3) the relationship between diarrhea and dehydration; 4) why and how to use oral rehydration solutions (ORS); 5) malnutrition nutrition and breast feeding; 6) communicable diseases and immunizations; 7) home accident prevention; and 8) neo- and post-natal care and nutrition. At the end of the educational session, the participants/change agents were instructed to disseminate the information to mothers in their respective villages.

Evaluation

In order to assess the short-term impact of the education/training of village change agents, the evaluation team visited two intervention villages and one control village in both the Hajja and Al Beida governorates. In each of the intervention villages, the team contacted any available recently trained change agents. These change agents in turn gave names of two or more mothers to whom they had spoken about the specific health topics, as well as estimates of the number of people they had contacted. The evaluation team stressed to these recent trainees that given the short (one-two week) period of time which had elapsed since the workshops, there were no major expectations regarding their efforts

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to-date. Instead, it was communicated that the team simply was interested in the process of communication which had transpired.

In many cases, it was difficult to locate change agents or mothers, given that many were absent from their homes due to work responsibilities. Also, change agents' lists were incomplete, as many had communicated their information informally in groups (e.g. at weddings; around village wells). In the two control villages, the female member of the evaluation team approached houses at random, requesting to speak with the woman of the house regarding health issues. Therefore, in both the intervention and control villages those interviewed comprised "convenience" samples.

Specific questions of all mothers emphasized knowledge (and attitudes) regarding breast feeding, hygiene, immunizations and oral rehydration therapy (ORT), as well as the source of this knowledge. Open-ended questions allowed mothers to expand on their responses and gave additional input for the evaluation.

RESULTS

Intervention Villages

In Al Beida, the two intervention villages were Al Rabat and Al Qurain. In Hajja, the intervention villages visited were Al Dhibah and Al Sayah.

In Al Rabat, two change agents (one a student and the other a teacher) were contacted, who indicated that between them they had shared their new health knowledge with about 25 mothers, comprising more than ten percent of those in the village. Most of these dissemination efforts were conducted in group settings. Two of these mothers were then contacted and given the knowledge-attitude-practice survey. Both of them performed perfectly on the knowledge portion, and indicated that they knew how to mix ORS. They both attributed this knowledge to the communication from the change agents. Additionally, one of the two mothers indicated that she had disseminated the information to an additional ten mothers who were friends and relatives.

In Al Qurain, one change agent (a mother from the village) indicated that she had communicated with seven mothers (in a village approximately the same size as Al Rabat). Again, one of these mothers was contacted, and attributed her perfect knowledge

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of the health practice issues to her contact with the change agent.

In Al Dhibah, the change agent (a secondary school student) was not sure how many mothers she had already spoken to, as she performed this function around a village gathering spot on an ongoing basis. Both mothers contacted had perfect knowledge about the health issues involved; however, in one case this was attributed largely to television programs. Nevertheless, this woman admitted that she had no idea how to mix ORS until trained to do so by the change agent. This was in spite of the fact that she had actually seen a TV spot depicting mixing. The other mother learned about diarrhea control from her sister, but the rest of the information from the change agent.

Finally, in Al Sayah ten mothers had been reached by the mother/change agent. Again, while attributing much of their perfect knowledge to television programs, they felt that the change agent provided them much more detail, especially about ORT. In fact, the second mother had been totally confused about ORT until the procedure was clarified for her by the change agent. This mother in turn spread the information to eight of her friends and relatives.

Control Villages

The two control villages were Jamallah in Al Beida and Al

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Ganam in Hajja. In Jamallah, one of the three mothers contacted admitted having no knowledge about the health issues mentioned, attributing all health, illness and death to acts of God. (One was derided by her father-in-law during the interview as being unintelligent.) One other mother had knowledge of all health issues except ORS mixing. She attributed this knowledge to television programs. Finally, a third mother who was originally from Aden was able to answer all questions perfectly, attributing her excellent command of health facts to primary health care programs there. (Her responses were given in the open air in front of several male villagers, who applauded her performance at its conclusion).

In Al Ganam, two of the three mothers had virtually no knowledge about preventive health practices. One of these claimed not even to know what diarrhea was, professing to be "ignorant". She felt that health was in the hands of God. The final mother interviewed had basic knowledge about hygiene and oral rehydration, which she had learned in Saudi Arabia from their television programs. However, she did not know how to administer ORS. Although she did know that the well water was unsafe to use, she was unable to boil it given that she could not afford and therefore did not have cooking fuel.

DISCUSSION

The results of this study must be interpreted with caution, given the evaluation's small scale and quasi-experimental nature. Nevertheless, the results in all villages were consistent and in the expected direction. Therefore, the following conclusions are offered.

First, the village level health communication program was effective. In villages where change agents had been trained, change agents had both sufficient skills and motivation to disseminate health information to fellow village residents. In general, the mothers receiving the information had a sufficient knowledge base to administer ORT and take other steps to protect their children's health and their own. In a few cases, they even took the next step and communicated this information to other neighbors, thereby further enhancing the public health potential of this effort.

In many cases, the face-to-face information complemented that already received through television. On the other hand, mothers in control villages who had heard health information only from television were inadequately prepared to implement suggested health changes. Television and other mass media require interpersonal

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communication to reinforce them; ideally, both mass and interpersonal communication should be used, with perhaps more emphasis given to the latter.

Third, it appears remarkable that the change agents accomplished so much in the brief period of time elapsed since their training. On the other hand, the change agents were undoubtedly more motivated immediately after their training than they will be some months or more from now. Maintaining their motivation through occasional visits to villages and periodic retraining would insure a continued high level of activity.

In summary, this program has yielded some very exciting and promising short term results. Expansion and maintenance of the program clearly seem warranted. However, future evaluation efforts will need to emphasize behavior change and skill development among health workers, other change agents, and parents/care givers as verification of the immediate impact of this and similar village level health educational efforts.

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Table 1

OVERALL SUMMARY: ORS QUESTIONS

	Correct	Incorrect
Intervention Villages	40	0
Control Villages	20	13

Table 2

OVERALL SUMMARY: DIARRHEA QUESTIONS

	Correct	Incorrect
Intervention Villages	23	0
Control Villages	11	12

Table 3

OVERALL SUMMARY: BREAST FEEDING QUESTIONS

	Correct	Incorrect
Intervention Villages	35	0
Control Villages	20	11