

Health education and agency: A comprehensive program for young women in the Mixteca region of Mexico

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Abstract

The *Si yo estoy bien, mi familia también* (“If I am OK then so is my family”) is a health and agency education program that was provided over a period of 3 years to 39,000 rural women in Oaxaca, Mexico. The purpose of the article is to describe the development, implementation and evaluation of the program. The theoretical rationale and strategy of this intervention are described, as well as the construction of the program and the implementation. Moreover, an evaluation of the various stages of the program is provided, to enable an assessment of its efficacy, and the scope for dissemination and scaling up.

Keywords: *Agency, community, cervical cancer, health rural, women*

Introduction

In the past few years, there has been a growing call for the publication of more detailed descriptions of the processes involved in developing and evaluating community-level programs. Consistent with this call, the present paper reports on the development, implementation and evaluation of a program that was designed to empower rural women in Mexico to take care of their own health as well as the health of their children.

The whole process—including the training of the women, advocacy and dissemination—was carried out over a period of 3 years. Thirty-nine thousand young women (12–20 years of age), from the Mixteca area of the state of Oaxaca in the South-East of Mexico, participated in 120 h of training designed to provide knowledge and promote the development of life skills.

IMIFAP (The Mexican Institute for the study of Family and Population) has long been involved in developing research-based interventions in health behavior. The strategy for the program and its theoretical basis is articulated in Pick, Givaudan and Poortinga (2003), Pick, Poortinga and Givaudan (2003) and Pick and Sirkin (in press).

The underlying theoretical framework is expressed in what we call the Framework for Enabling Agentic Empowerment (FENAE). Agentic empowerment represents the process

whereby an individual's develops the ability to make choices, to act autonomously in order to achieve goals, and to obtain a sense of control over one's environment. An individual who has been able to broaden his or her sense of agentic empowerment is able to create new opportunities and to improve access to existing ones through participation in the decision making process. As a result, he or she can assert more control over their own actions and better react to events as they occur and in the long run bring about major changes in more stable traits, namely agency. FENAE focuses on three areas of concern, namely (a) the context in which people live, (b) the demands of concrete situations with which a person is confronted and (c), the characteristics of the person that are more or less permanent.

The notion of context refers to the eco-cultural and socio-cultural environment in which people live. Most basic are economic factors and school education since they influence access to all kinds of information and often lead to an awareness that acceptable norms and beliefs exist that may be different from those common in one's own social environment. In part, our programmatic strategy is directed at bringing about changes in the context, which, in turn, are assumed to affect the individual. A supportive context facilitates changes in, and maintenance of, patterns of behavior.

The second major concern in FENAE refers to the demands of a situation, or the elements required for a person to cope with that situation. Here we focus on the development of life skills, such as decision making, communication, and negotiation that enable the individual to deal with a given situation according to his or her own standards and desired outcomes. Other important aspects include knowledge and beliefs. To bring about changes in the behavior of individuals, the acquisition of relevant skills, knowledge and practice are necessary conditions.

The third major concern of FENAE refers to those more permanent characteristics of individual functioning, such as agencies that are influenced by the two previous dimensions. In IMIFAP's programs, changes in personality are seen as a long-term process that occurs as a consequence of modifications in behavior across a sufficiently large array of situations relevant to the person. Agency refers to the capacities of people to accomplish their personal development goals, according to their own elections and decisions.

These three concerns guide our program strategy. More specifically, our program strategy includes a sequence of steps, namely (a) identification of needs and problem definition, (b) program development, (c) program implementation, (d) advocacy and dissemination, and (e) impact evaluation. For each of these steps specific goals and methods are formulated and at each step, achievements are assessed against these goals.

I. Identification of needs and problem definition

The process of program development began with the identification, by IMSS-Oportunidades, Mexico's Social Security System, of a predetermined population and geographic area of work. IMSS-Oportunidades is a country-wide government organization working in the poorest areas of Mexico, responsible for rural healthcare facilities, mainly hospitals and clinics. Due to the marginalized living conditions of its communities, the Mixteca region in Oaxaca was selected.

Definition of the target group

- Communities where the program would take place were also determined by IMSS-Oportunidades. Two highly marginalized areas, namely the municipalities of Tlaxiaco and Huajuapán de León were selected. Within these municipalities, 480 communities

were chosen. Since we wanted to reach groups that varied in their access to roads, work opportunities, schools, and health services, communities were selected:

- With populations both above and below 1,000 inhabitants;
- With and without access to medical services (hospital or Rural Medical Unit-UMR-, or Intensive Action Location-LAI-)
- With both indigenous and mestizo populations.

Within each community, all women between 12 and 20 years of age were eligible for participation. The number of prospective participants was 39,000.

Once the decision concerning population and geographic area had been made, the first step towards the development of an actual intervention was to gain more precise information about local customs, socio-cultural norms, the extent of specific knowledge relating to health practices and the position of women in the region.

Context: economic conditions and education

The state of Oaxaca has a population of approximately 3.5 million, equivalent to 3.5% of the Mexican total (INEGI, 2000a). Thirty seven percent of the population earns less than the minimum daily wage (43.65 pesos approximately 4.30 US\$ in 2001) and only 4% earns more than five times that amount. Oaxaca is one of the three poorest states in Mexico. Only 35% of the communities have a water distribution system, 75% of the homes have dirt floors and the Mixteca region of the state has the highest malnutrition index in the country (Red Oaxaqueña de Derechos Humanos, 2001). In Oaxaca, the infant mortality index is 14.27% of those born alive; the national index is 10.66%. Under-nourishment is present in 27% of the children between 0 and 5 years of age and 34/100 are illiterate (INEGI, 2000b). Officially, school attendance is mandatory, but the mode of teaching, emphasizing rote memorization and obedience to the teacher, is not conducive to the development of individuals who can and will think and act for themselves. In the OECD (Organization for Economic Co-Operation and Development) evaluation only 69% of Mexican students over 15 years of age were in the higher reading levels and in rural areas such as Oaxaca, less than 3% go on to university studies as compared with 80% in urban zones (Secretaría de Educación Pública (SEP), 2003). Despite the problematic picture of Mexico and Oaxaca emerging from these figures, they still seriously underestimate the problems in the Mixteca, which is one the poorest regions of the state. For example, in the Mixteca much of the soil has been completely eroded, making it very hard to harvest anything at all and access to adequate schooling and health services is extremely difficult.

Socio-cultural context

In order to understand the socio-cultural context, systematic data were collected in three ways, through focus groups and interviews with key respondents, a questionnaire study, and through observation.

Focus groups and interviews. Four focus groups and 60 semi-structured interviews were conducted by members of IMIFAP's research team. These included interviews with traditional healers, priests, midwives, teachers, students, local and federal authorities and health professionals in sixteen communities. The selection of participants was largely based on information from IMSS-Oportunidades. Interview questions concerned knowledge, beliefs and practices regarding nutrition (e.g., the need to boil drinking water, eating

vegetables), hygiene (e.g., not having animals inside the house, frequency of bathing, existence of trash cans, use of latrines), sexual and reproductive health (e.g., use of and access to contraception), and agency (e.g., communication and decision making).

Follow-up questions were asked to explore reasons for reported courses of action, advantages and disadvantages of engaging in those actions, and the role of family and community in the decisions. Examples of the kinds of findings obtained through the focus groups and face-to-face interviews include the following:

- Reasons for not growing vegetables: contagion with fertilizer, expense of seeds, vegetables eaten by loose animals.
- Reasons for not boiling drinking water: poor taste, not practiced in the family, loss of nutritional value.
- Disapproval of contraceptives: suspicion of unfaithfulness, susceptibility to risk of illness.

In addition to providing us with qualitative data to help us understand the socio-cultural context, these results were used to develop a questionnaire for more systematic data collection.

Questionnaire study and observations. As will be discussed in more detail below, the questionnaire, including the structured observations, dealt with knowledge, beliefs, attitudes and practices related to nutrition, hygiene, sexual and reproductive health, women's agency, and children's health. Retired teachers and teacher trainees from the local communities, who were given instruction and supervision, administered the questionnaires at the homes of the respondents. The occasion of their visits was also used for the observations, mainly of hygiene (garbage, personal cleanliness, animals around the house, latrines, family gardens).

The instrument was administered to 856 women and 360 men, ranging from 12 to approximately 30 years of age in 160 communities from the Huajuapán de León and Tlaxiaco municipalities. In order to select respondents, each house was visited and women and men in that age range were asked if they would be willing to answer a questionnaire. Almost all of those approached agreed to participate. Of the completed questionnaires, 14% were discarded because major parts of the answers were missing. The protocols of the remaining 741 women and 314 men were retained for analyses.

Analyses of these data provided a great deal of useful information that served as a basis for developing program contents. For example, we learned that knowledge of condoms as a means to prevent both sexually transmitted infections (STIs) and pregnancy is limited and that the use of oilseeds in the diet (the main source of protein in the area) is relatively low. In addition, the dependence of many women on their partner's permission to leave the home pointed to an alarming imbalance in power.

Generally speaking, the data suggested that social norms and expectations often amount to severe restrictions on the behavior of women. Girls tend to be kept from attending school, because formal education is considered irrelevant and their services are more useful at home. Once a woman is married, she is expected to stay at home most of the time; she will eat after her husband and abide by his decisions. Communication about any matter related to sexuality is usually absent; sexual hygiene, which amounts to touching one's body is frowned upon, and even going to a doctor is "not done", if this is likely to lead to exposure of intimate parts of the woman's body. Beliefs still found are, for example, that taking contraceptive pills will lead to prospective babies piling up in the abdomen, that cancer can

be transmitted by the blood of a deceased person, and that clean-looking people cannot be a source of STIs.

There is limited knowledge of the importance of illness prevention and general well-being. Relationships between domains such as nutrition or reproductive health and general well-being are poorly understood. In addition, it was clear that even if the population possessed relevant knowledge, women would still need to be empowered in order to make the decisions that allow them to take control of their own health and lives.

Even though Mexico has achieved considerable progress in controlling birth rates, increasing literacy rates and decreasing the death rate of young children, the data suggested that educational campaigns have largely failed to penetrate many rural areas and have not reduced gender inequalities. The harsh conditions of the people of Oaxaca (shortage of drinking water, undernourishment, parasites, etc.), the difficulties of access to health services, low level of education, the high birth rate, and restrictive socio-cultural norms and practices, all suggested an urgent need to address these problems.

Summary of accomplishments during the needs and problem definition stage

One of the strong points of the initial phase of the project was the extensive data collection to assess the needs of the population and identify the specific issues that should be included within an intervention program on health education and the improvement of the position of women. Although it is difficult to evaluate the extent to which we were able to identify all the critical issues facing this population, the findings from the first stage, and in particular, the findings from the survey, helped, in an objective way, to demonstrate to all stakeholders in the project, including the financial sponsors and government agencies, the need for extensive intervention. In addition to providing baseline data for an impact evaluation, the survey findings also helped to support and modify impressions gained from open-ended interviews and focus groups.

A very important finding of this stage was the initial difficulty in open and direct communication experienced in the focus groups and interviews. Initially, participants appeared to be shy and ashamed of expressing their opinions, especially when sexuality related issues were mentioned. In these cases, many women lowered their heads and did not answer. When discussing other topics, eventually someone would open up and a lucid account of difficulties and hardships would emerge; in the focus groups, others would follow once the ice was broken.

Our first contact with the communities also allowed us to assess the acceptance of an intervention program in the communities; almost without exception the idea for intervention was welcomed and a positive atmosphere prevailed.

II: Program development

In the actual development of the program the following aspects can be distinguished: (a) mode of teaching, (b) program content, (c) testing of program contents and materials, and (d) design of materials and assembly in program kits.

(a) Mode of teaching

The most important principle is that programs should not simply lecture participants, but instead should use interactive and participatory methods to focus on the development of psychosocial skills such as communication and decision making, and on clarifying beliefs

and providing knowledge. These can be seen as tools enabling the person to deal adequately with situations that are experienced as problematic. Teaching participants to perceive opportunities for healthy practices involves skills building (e.g., communication skills, non-violent problem solving, how to take advantage of opportunities), knowledge acquisition (e.g., how to prevent an unwanted pregnancy), and the fostering of social supports (e.g., healthcare providers, family and peers) (e.g., Durlak & Wells, 1997; Hamburg, 1997).

(b) Program content

The development of the program was based on the findings from the Stage I research and was informed by prior knowledge from the literature on living and health conditions of rural women, as well as by existing programs and materials developed for use in rural areas.

The program had two stages, the first focused on the women themselves, the second on their children. The first stage, which is the focus of this article, lasted 24 months and consisted of four modules. Each module provides information about different health aspects and promotes the development of life skills, which allow women to be agents of change of their own lives, i.e., to develop agency.

Module 1. Health and agency; provided knowledge about the right that everyone has to health and taught basic skills, such as decision making, communication, and assertiveness, all with a gender perspective.

Module 2. Nutrition, health and agency; provided knowledge about nutritional needs of women, especially pregnant women, emphasizing the importance of eating vegetables and oil-seeds to be healthy. It also promoted skills, so that women could communicate their nutritional needs and defend their right to a healthy diet.

Module 3. Hygiene, sanitation and agency; participants were made aware of hygienic measures for the prevention of the most common infectious diseases. They were encouraged to talk about and plan strategies to improve their personal hygiene as well as cleanliness in their house and community. Skills to negotiate the distribution of work related to hygiene were addressed.

Module 4. Sexuality, reproductive health and agency; provided knowledge on processes of fertility, pregnancy and breast-feeding. Workshop participants also learned about STIs, cervical cancer and contraceptive methods. This knowledge together with the life skills training was designed to allow women to gain control over their sexual and reproductive rights and health.

(c) Testing of program content and materials

Manuals and materials were developed for each module. All drafts of manuals were circulated and discussed among program staff. The first two modules were tested with 25 women in a poor rural area near the city of Oaxaca. Some adaptations were made, more in the instructions than in the actual program content. A few group exercises were also modified to consider the women's preferences in terms of duration. During the training of the community action promoters (Figure 1) their suggestions with respect to local animals, names of individuals and types of situations that occur in rural areas also led to some modifications. It was only thereafter that the manuals were printed. When the first modules

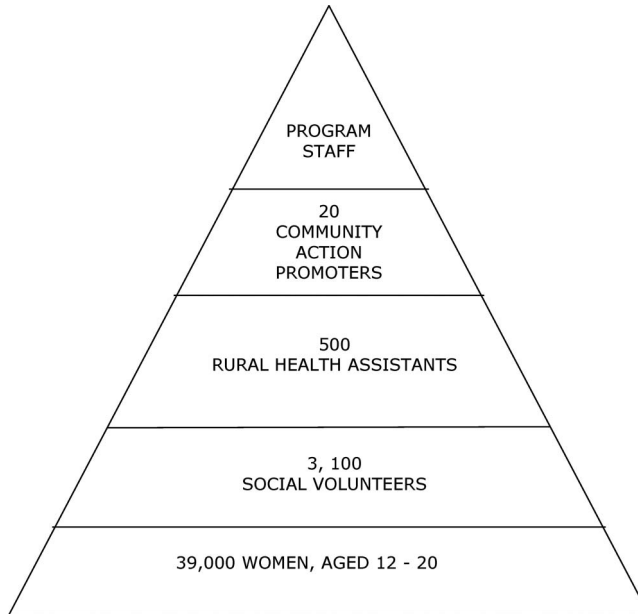


Figure 1. Training pyramid.

were enthusiastically received and seemed to work well, it was decided not to spend further effort and time on pilots with the target population, though modifications to modules were made when necessary on the basis of comments made by community action promoters during their training.

(d) Design of materials and assembly in program kits

For the preparation of materials, extensive use was made of educational and promotional material that had been developed for other IMIFAP programs, parts of which were copied with minor or major adaptations. IMSS Oportunidades made sure the contents developed by IMIFAP were in accordance with their institutional norms.

Graphic designers were employed and traveled to the Mixteca to familiarize themselves with the local environment, to identify the kinds of illustrations women liked as well as the kinds of stories that were being told. They styled materials in a way that was attractive to the target population. Apart from the layout and illustrations of the materials, a logo for the project was designed that was printed on all training materials (Figure 2). The logo was widely distributed on posters and pamphlets for advocacy in the region (see below) and also served to promote identification with the program both among the social volunteers and among the participants.

Materials for each module included:

- Handbook with theoretical background for trainers in the two highest levels of the training pyramid;
- Manuals containing group exercises;
- Didactic material for group exercises—(flash cards);
- Flip charts presenting simple messages with colored drawings



Figure 2. Logo of the “Si yo estoy bien, mi familia tambien” program.

- Videos (one for the first module; [described below under advocacy]; and one for the fourth module on prevention of cervical cancer and STIs);
- Pamphlet with summary of information handed out at the end of each unit;
- Promotional materials, including posters for display in community centers, brochures and 5,000 bags¹ with the program logo for the program materials of the social volunteers;
- Miscellaneous, e.g., measuring tapes to monitor undernourishment in women and children.

Finally, 40,000 buttons were distributed among all participants, facilitators and others associated with the program.

Accomplishments during the program development stage

Generally speaking, there were four major outcomes from this stage:

- (a) Ordering of the results from Stage I findings (needs assessment and problem definition) into program units—this ordering gave the program a sequence in which we were able to go from the most general and less personal aspects of health to the most specific and intimate ones, i.e., from health and agency to sexuality and reproductive health.
- (b) Integration of the theoretical contents, exercises and the different types of materials for each program unit—all materials were thought out in a way such that it was useful for both the trainers and their target populations. Both the trainers and the target populations benefited from the fact that knowledge and skills building were integrated in the materials and the trainings. Many of the trainers had some prior knowledge of some of the module contents and reported that the combination of exercises, theory and didactic materials was instrumental in their ability to influence beliefs and behaviors.
- (c) Adaptation of the contents, exercises and illustrations to local settings—contents and exercises were tested with the target population to assess acceptability and whether modifications were necessary.

- (d) The quality of the materials—probably the most important accomplishment was the appreciation of the trainers and the target populations concerning the high quality of the materials. They repeatedly stated that the amount of investment in the materials made them feel that they were appreciated. The program developers wanted to provide these communities with the highest possible quality of work because they thought it would be an important aspect for developing agency.

Employing designers was another important aspect of this phase. Although this was costly, the posters, leaflets and buttons with a distinct logo and motto and the illustrations used in each of the materials were of great help to promote the program and establish a sense of identification. Although there is no hard evidence to back up this rather strong opinion, it has been an important lesson. As will be argued below, the visibility of the program served to make the context more conducive to acceptance of the program, and by extension also contributed to the acceptance of the changes advocated.

Moreover, the illustrations were needed to support the written information provided to the target group since 20% of the participants had not completed primary school. In addition, we hoped that the information leaflets would be taken home and read by other (perhaps less educated) members of the household, thus further disseminating program messages.

III. Program implementation

Training

In order to ultimately administer the program to 39,000 prospective female participants, a closely supervised “cascade” system of training was followed based on the infrastructure of IMSS-Oportunidades. There were four levels in the cascade, from community action promoters to teams of volunteers who worked directly with women in their communities (Figure 1). Much effort was invested to assure that the content and the teaching philosophy were retained across levels. For each pair of program modules (see above) a group of approximately 20 community action promoters,² received a 40-h training in the course of 1 week. The training was directed at increasing knowledge, developing psychosocial skills and promoting positive attitudes towards the basic messages of the program. In addition, it attempted to develop techniques for group management and for the use of the didactic materials. This training of community action promoters was provided by IMIFAP’s program staff.

Pairs of community action promoters replicated the week-long training about 15 times, training approximately 500 rural health assistants.

The 500 rural health assistants individually replicated the 40-h workshop with approximately 3,100 social volunteer promoters in 2-h daily sessions, taking about 1 month to complete the process. The social volunteer promoters worked with the 39,000 women in groups of approximately 10–15 persons. Training of the women was given in 2-h weekly sessions. In this way, the replication of a training block of two modules took approximately 7 months to reach the target population. After the completion of a training block, the process would start again until both blocks designed for the women (i.e., the four modules) were completed. Including the training workshops for the trainers, the four modules together covered a period of 2 years.

The method chosen for program administration was highly participatory with interaction and feedback in discussion groups. This model was chosen because of the limited impact of

increased knowledge on actual behavior repertoire (Fishbein & Ajzen, 1975). Also, IMIFAP's own previous research findings and program evaluations point in this direction (IMIFAP, 2003; Pick de Weiss & Andrade Palos, 1989).

In the workshop sessions the women were expected to obtain information, learn to communicate effectively and to personally make decisions on issues that affect their lives. To the extent these goals are reached, the women should be progressively better able to be in control of their health. Throughout the program, a gender perspective was emphasized, together with the women's need for agency.

Evaluation of the program implementation stage (Process evaluation)

One crucial aspect for the effectiveness of an intervention program is the quality of delivery. The multiple levels of replication, from program staff to community action promoters, to rural health assistants, to the social volunteers who actually worked with the target population, made this program vulnerable. For this reason much attention was paid to the evaluation of the training at the various levels of the cascade (Figure 1). A questionnaire with closed items on attitudes, beliefs and specific knowledge, as well as a number of open-ended items, was administered to the community action promoters (future instructors to be) after completion of their first week-long training. Almost without exception, the answers reflected a high level of knowledge. Moreover, the responses showed positive attitudes and beliefs compatible with the program. The evaluation also served as the basis for feedback to reinforce those aspects in which trainees scored low, in this way enhancing the probability of improving their performance in the next modules. In a few instances where the performance was considered inadequate (less than 80% of the closed questions answered correctly), trainees were not selected as trainers for the next level.

With minor modifications in language, the same questionnaire was administered to the health assistants and the volunteer promoters (the next two levels in the training cascade).

All training sessions by community action promoters were supervised by the program staff for 2 full days and both their performance and that of the group were assessed. In the other levels, only a sample of trainers was supervised and evaluated (40 replications when rural health assistants were working with social volunteer promoters and 80 when these volunteer promoters were working with the women in the target population).

A notebook was given to all trainers to keep records of attendance. An analysis of a sample of 100 records showed that the average attendance in workshop sessions increased from 15.5 to 17.4 persons. We have no reports of drop-outs related to parental/spouse pressure or dislike of the program.

In general, the elaborate evaluation of the various levels of training of the program facilitators showed that the cascade method worked well and that the program was essentially administered to the target population as intended.

IV: Advocacy and dissemination

For an intervention to be successful, it has to be accepted both by the potential clients and by the wider community, including village seniors. Moreover, support has to be raised among administrative and health authorities. Advocacy is directed at policy makers in the broadest sense and has two goals. The first is to make known the plans for an intervention and to gain support for it. The second objective is to "advocate" (changes in) contextual conditions that facilitate a broader acceptance of the program and related ideas.

Dissemination is directed at the general public; it includes the wide distribution of messages through press conferences, articles in newspapers and periodicals, as well as through radio and TV programs (Venguer et al., 2002).

Advocacy and dissemination overlap in time with the project stages presented in the previous sections. However, they form a separate stream of interrelated activities and that is why they are best considered as a separate stage in project development.

Advocacy

At an early stage of the program, several visits were paid to high-ranking officials in the Oaxaca government, as well as to health officials at the district level. Officials were present at the inauguration meeting and at other promotional events. Advocacy was also directed at authorities at lower levels, including the level of individual villages. Care was taken to make such approaches before the program was started. In addition, schoolteachers who often have influence on the parents of the young women were also involved. Whenever there was a change in local authority, presentations were made to the new incumbents to explain the program.

Once implementation of the program began, advocacy with authorities became less intensive, but throughout program development and implementation, authorities were periodically informed about progress. A special aspect of advocacy concerned awareness raising and motivation of IMSS-Oportunidades staff and trainers at various levels of the cascade. Senior medical and administrative staff were also sensitized.

Dissemination

Extensive efforts were made to disseminate the program and its messages and goals among the general public. These included (a) public and media events, (b) distribution of posters and pamphlets, and (c) presentations of a video.

The program was launched at an official inauguration to which 150 dignitaries were invited, including government officials, medical directors from IMSS-Oportunidades, and municipal presidents. A press release was prepared and sent to the most important newspapers in Mexico City and Oaxaca, while TV and radio stations in Oaxaca were also notified. There was also wide coverage on local radio and TV stations.

Other events with media presence included presentation of diplomas to trainers and participants. The program staff also gave several radio and press interviews about the program and why women should attend.

Two radio stations³ broadcast messages with key elements from the program on women's agency for 9 months on an hourly basis. These were accompanied by a special jingle composed for the program. Needless to say, these messages reached a wide audience well beyond the target population.

Messages were divided in three stages: sensitization, information and invitation to action. The messages also served to inform the communities about the program and provided program participants with a sense of belonging to something important for them and their communities.

As mentioned before, during the development of the program a series of posters and pamphlets was prepared, as well as buttons with the program logo. The posters all carried the program logo (Figure 2) and a printed message containing a key idea from the program. Six thousand such posters were distributed through the IMSS-Oportunidades network. They were displayed in all participating villages in public places, such as the main plaza,

fences of markets and at schools and clinics. Additionally, murals with the logo and program messages were painted on the walls of community centers in many villages.

A video that was part of the first program module was also used for promotional purposes with the general population. It included basic health and agency contents and served to sensitize the population towards the program's goals. It was shown at public gatherings to which the whole population of a village was invited.

Evaluation of dissemination and advocacy

The two main questions to be answered are (a) whether dissemination of the program was successful, and (b) whether all important stakeholder groups were addressed. Answers to both questions have to be circumstantial, as there are no formal data and criteria against which to evaluate success. The reason for the absence of formal data is evident; an additional difficult and costly evaluation study would have been required.

Nevertheless, there are several indications that this part of the program was well accepted. The women were observed to be proud of showing their pamphlets and the posters displayed in the community. The program buttons (49,000 were distributed) given to participants who completed the first part, to trainers and to other people associated in one way or another with the effort, were widely worn and displayed as a mark of distinction.

Success in advocacy can be derived from the participation of authorities in the public events associated with the program, press, radio and TV coverage, the broadcasting of program messages for free, etc. The most pertinent point to mention is that all communities agreed to participate.

Another way to evaluate advocacy and dissemination activities is to consider obstacles interfering with successful program administration, at the level of state and regional authorities, at the community level, and at the level of individual participants. High government officials in the state of Oaxaca took a positive interest in the program. As a consequence, few obstacles were experienced.

Local authorities generally could be made to feel a sense of importance at having the opportunity to authorize the implementation of a program that, in the long term, would not only benefit the women, but would also improve the health and general well-being of families in their communities. Initial fears regarding a negative response from the men turned out to have little substance. Minor obstacles that were experienced had more to do with the lack of sufficient trainers to give the sessions to so many interested women (a problem that was solved by having rural health assistants help in administering the program after completing the training of promoters), and the occasional non-arrival of training materials in remote villages.

V: Impact evaluation

The main criterion for program success is evidence of changes in behavior repertoire in ways stimulated by the program. A large number of informal indicators were found which pointed to the success of the program. For example, a municipal administrator reported that, since the nurses involvement with the course, the local health clinic, which previously had been a mess, was the cleanest in the region. On another occasion, several local teachers spontaneously went to health promoters to tell them that girls that were in the *Si yo estoy bien, mi familia también* program were participating more in the classroom than before and more than their counterparts who were not in the program.

The most important of such indicators were numerous comments made by participants at the occasion of the spot-checks by the program staff. For example: "While in the workshop, my husband came to say that I had to leave because the kids were hungry, I told him that he should go and prepare food for them. Usually he hits me, ever since he helps with house chores and has not hit me"; "the program should continue so more women can understand that we also have rights, not only obligations"; "I really liked being treated nicely. It helped me understand that I can more often get treated well"; "I was ashamed and was afraid to talk in school, now after the course I learned that there is no reason to be ashamed [and] not to be scared to participate in the classroom".

For more formal outcome assessment, questionnaire and observation studies were conducted at baseline, after the completion of the four modules (which completed the entire program for women—Post-1), and 18 months thereafter (Post-2).

Ideally, it would have been desirable to randomly assign communities to either treatment or control conditions. Unfortunately, for political reasons that were beyond our control, a decision was made to conduct the program (i.e., to intervene) in all communities in Huajuapán de León, and in some communities in Tlaxiaco. This decision was made by IMSS-Oportunidades, who were concerned that the program be implemented in those areas in which they felt it was most needed. Unfortunately, political decisions such as this, which all too frequently occur in intervention research, make it much more difficult to conduct rigorous outcome evaluations.

Since the assignment to condition was not random, it was necessary to determine whether there were any important differences between participants in the treatment and control communities. The baseline survey, described earlier, was used to test for differences. Perhaps not surprising, given the decision to conduct the intervention in the areas where IMSS-Oportunidades felt it was most necessary, there were a number of important differences between the two conditions at baseline. For example, there were significant differences in both age and education with women in the intervention communities being younger (17.9 vs. 18.5, $p < .05$) and less well educated (e.g., 19% vs. 36% who had completed secondary school, $p < .01$) than those in the control communities. Perhaps more important, while most people in the treatment condition were Mestizo, those in the control condition were almost equally Mestizo and indigenous. In addition, those in the treatment condition were less likely to have easy access to medical services (40% vs. 50%, $p < .05$).

Given these differences, it is also not surprising to also find important differences in beliefs, knowledge and behavior. For example, compared with women in the control condition, women in the treatment condition were significantly less likely to have told their children about how babies were born (59% vs. 76%, $p < .01$), were less knowledgeable about cervical cancer and the Pap test (58% vs. 70%, $p < .02$), and were less likely to believe that "During pregnancy and after child birth women should eat more for their health" (16% vs. 24%, $p < .04$).

The follow-up instrument was very similar to the baseline questionnaire, but some questions were deleted due to the realization that they made little sense, or because the pattern of responses indicated a ceiling effect and/or social desirability. For example, asking the women if they had heard of different kinds of contraceptives, resulted in a ceiling effect that suggested a social desirability response. Thus, in the follow-up, these questions were dropped and the women were instead asked to describe how the different contraceptives were used.

In this paper, we present only a summary of the outcome evaluation results. The complete set of findings will be presented in Venguer, Pick, and Leenen (in press). In addition, a detailed description of the analytic evaluation strategy (as it was used to evaluate the impact

of the *Si yo estoy bien, mi familia también* program in rural Guatemala) can be found in Leenen, Venguer, Vera, Givaudan, Pick, and Poortinga (under review).

As a first step, we tried to reduce the large number of belief, knowledge and behavior items on the questionnaire into a smaller set of factors. Factor analyses indicated that many of the items were rather independent (intercorrelations in general being close to zero). Therefore, the dependent variables in the subsequent analyses include 13 scales and 22 single items.

These 35 measures served as the dependent variables in a multivariate analysis of variance (MANOVA)⁴ that was performed to test the hypothesis of a general overall effect of the program. The units of analysis in this MANOVA were the communities; therefore, we first calculated the means within each community at the three time periods (Pre, Post-1, and Post-2) on all dependent variables. For all three rounds of data collection, women included in the control condition came from 32 villages ($n = 178, 221$ and 264 respectively). For the experimental condition the number of villages/women was $n = 112/375, 97/600$ and $107/549$.

Communities were chosen as the unit of analysis rather than the individual women because women-within-communities are considerably more homogeneous than women between communities and ignoring these within-community dependencies may render incorrect results (Goldstein, 1995).

The independent variables in the analysis were Treatment (a binary variable indicating whether or not the program was implemented in the community) and Time (a variable with three levels [baseline, Post-1 and Post-2] indicating when the interview took place) and the Treatment \times Time interaction. As Table I shows, there is a significant Treatment \times Time interaction ($F_{70/478} = 2.53, p < .001$, which indicates that treatment and control groups change differently over time).

In order to better understand the significant overall result found in the MANOVA, separate multilevel analyses were done for each dependent variable. In contrast to the MANOVA, both partnership status (woman has a partner/does not have a partner) and type of community (mostly indigenous/mostly Mestizo) enter in the model. As such, these analyses take into account the within-community dependence among the women. Parameters are further included that model (a) the general effect of time between Pre- and Post-1 and between Post-1 and Post-2 and (b) differential effects of time between the experimental and control groups. At the same time, parameters are added that control for age, education level, and the presence of a medical unit in the community and the difference between the two regions (Tlaxiaco-Huajuapán de León). Two model variants were considered, depending on whether the dependent variable is a scale value (or a continuous variable) or a single item (or an ordinal or binary variable). In the former case, the standard multilevel model is used, which can be seen as a generalization of the standard regression model; in the latter case, a generalized multilevel model related to logistic regression is used (Bryk & Raudenbush, 1992; Goldstein, 1995). Table II shows, for a selection of dependent variables (at least one for each module in the program), the results for the parameters associated with Time 1, Time 2, Time 1 \times Treatment, and Time 2 \times Treatment.

Table I. Multivariate analysis of variance on the 13 scales and 22 single items as a function of Treatment, Time, and Treatment \times Time.

	Wilks Lambda	F-value	Numerator DF	Denominator DF	p-value
Treatment	.6049	4.46	35	239	< .0001
Time	.1256	12.44	70	478	< .0001
Treatment \times Time	.5326	2.53	70	478	< .0001

Table II. Effects of Time 1, Time 2, Time 1 × Treatment, and Time 2 × Treatment on a selection of dependent variables in a multilevel model.

Dependent variable	$B_{\text{Time 1}}$	$B_{\text{Time 2}}$	$B_{\text{Time 1} \times \text{Treatment}}$	$B_{\text{Time 2} \times \text{Treatment}}$
Defend one's opinions	-.085	-.163	.037	.467*
Eat vegetables/oil seeds	.124	.175*	.240*	.126
Use of contraception	-.004	.025	-.035	.085*
Use of rubbish bin in the house	.055	-.025	.463*	-.046
Knowledge on prevention on STI	.528*	-.293	.129	.699*
Did pap smear test	-.246	.419*	.234	.511*

* $p < .05$.

In Table II, it can be seen that there are some significant changes over time in both treatment and control groups. For example, eating vegetables and oil seeds, knowledge of STI prevention and having a pap smear increased in both groups. Such changes most likely reflect tendencies for change in the population. Consistent with expectations however, there were also significant interactions indicating that the treatment group had a larger increase in the dependent variables than did the control group.⁵ For example, compared with the control group, the treatment group showed larger increases in eating nuts and vegetable seed as well as in using a rubbish bin between the Pre-test and Post-1 and larger increases in knowledge about STI prevention and use of contraceptives between Post-1 and Post-2.

In summary, several findings indicate that the program was successful. Both qualitative findings, many of which refer to observations, and the results of the quantitative study, including self-reports and observations showed relevant changes in behavior in the expected direction.

Discussion and conclusions

The objective of this article has been to present an account of the *Si yo estoy bien, mi familia también* program development and implementation process, and the evaluation procedures carried out at each stage. The gist of the evidence clearly indicates that the intervention was successful in reaching the large majority of the target women. We ascribe this, to a large extent, to the interactive mode of presentation, the close supervision of the cascade training and the elaborate advocacy and dissemination activities.

Drop-out rates were low. An important factor is that participants recognized the program as relevant. This was achieved through extensive exploratory research on the needs of women in the context of poverty and gender inequality in which they live. Clients and their representatives identified with and had a sense of ownership of the program. It is inherent in interventions that experts play a role in program development and administration, but a broad inventory can help direct such expertise to take local beliefs, skills and customs as a starting point and match these to observed needs.

One feature of the program we want to note explicitly is that its administration was in the hands of local women. They directed the local workshops, coming at the end of a multi staged training strategy. As indicated before, it seems to us that this strategy with closely supervised cascades worked well. Obviously, such an approach requires extensive organization and supervision, but it increases program efficiency in a major way.

We believe that there are at least two conditions necessary for the realization of broad changes in individual behavior through health education and development programs. The first condition is that the intervention is extensive and takes place over a prolonged period so

that it can have an impact on a notable part of the total behavior repertoire. The most obvious analogy is that it takes about 8 years of formal schooling, to make children literate. The second condition, to facilitate maintenance of changes that have been initiated, is that the social environment should be supportive, or at least not pose impediments to newly acquired behavior patterns. The first condition was reasonably met in this program; it extended over a large number of sessions and a 3-year period. The second condition has been satisfied in so far as the program and its messages were widely accepted in the communities, making it less likely that doing or saying something compatible with the program would meet with social disapproval or derision. An additional third condition is to have interesting durable materials that facilitate scaling up and sustainability of the replication of the program long after the original facilitators have gone. And last but not least that the programs be needs based.

The impact of the program on knowledge, beliefs and attitudes was also reflected in numerous comments by participants and observations of which we have given examples in this article. More formal evidence was derived from the outcome evaluation stage.

But perhaps the best example of program success is the fact that it is being expanded and adapted to other populations. We believe that the results that showed changes at both qualitative and quantitative levels, the degree of acceptance of the program at different organizational levels, the interest in the materials, and the participatory methodology were key factors influencing IMSS-Oportunidades to adopt the program in other regions of Mexico. As part of scaling up the program, IMIFAP has designed an integral community development and evaluation strategy which adds the *Si yo estoy bien, mi familia también* program to previously designed programs which have a similar life skills base. For example, we have added a male component and a school based life skills intervention based on the widely used *Yo quiero, yo puedo* ("I want, I love, I can") program (Pick & Givaudan, 1997) and have made adaptations to the original program including a change in name to *Yo quiero, yo puedo . . . cuidar mi salud y ejercer mis derechos* (I want to, I can . . . care for my health and exercise my rights). In addition, a micro-enterprise training program (IMIFAP, 2003) and a loan provision component are being implemented under the auspices of the United Nations Foundation aiming to reach 160,000 people in the Mexican state of Hidalgo and over 60,000 in Chiapas. Finally, the program is currently being transferred to women in other societies, namely in three Central American countries where close to 4,000 replicators have been trained with very few adaptations through funding from the World Bank.

In summary, the formal and informal findings reported here suggest that the *Si yo estoy bien, mi familia también* program is an efficient tool to address health and social well-being of rural Mexican women that can be applied on a large scale. What we have tried to show in this article is that the development of such successful programs is dependent on many factors, from understanding the eco-cultural and social-cultural environments in which a population of interest lives, to developing and implementing programs that can reach, and be acceptable to, a large segment of that population. We have also tried to point out the importance of advocacy and dissemination if one is to have a successful program. While we recognize that our description of a single program is, in many ways, more of a case study than a research study, we hope that the general principles we have tried to illustrate will help others to develop successful community-level needs-based interventions.

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Notes

1. The bags showed the campaign's logo on one side and the logos of the financial sponsors, IMSS-Oportunidades and IMIFAP on the other side.
2. Community action promoters are IMSS-Oportunidades's employees in charge of health education and health prevention programs in several communities at a time. Rural health assistants receive from IMSS-Oportunidades a symbolic payment to act as health providers in communities where there are no doctors. Social volunteer promoters are voluntary individuals from rural communities who educate the population in health issues.
3. One of these stations was Radio INI (the official radio station of the National Indigenous Institute that reaches the whole state of Oaxaca), the other was a commercial station. The broadcasts were in the following languages: Mixteco alto, Mixteco bajo, Triqui alto, Triqui bajo and Spanish.
4. Instead of a MANOVA on the community means, one could analyze the current data set making use of multivariate multilevel models, which from a theoretical point of view definitely would be a superior analysis. However, given that this type of model has been developed only recently (and software was not generally available) and given the large number of missing values in the dependent variables, we resorted to the less sophisticated MANOVA.
5. The effect of time between Pre- and Post-1 was modeled through a binary variable Time 1 that assumes a value of 0 at baseline and a value of 1 for all Post-1 and Post-2 applications. Similarly, the effect of time between Post-1 and Post-2 was modeled through a binary variable Time 2 that assumes a value of 1 for all Post-2 applications. Differential effects of time in the experimental group were modeled through the interactions Time 1 \times Treatment and Time 2 \times Treatment, with Treatment being identically defined as in the MANOVA.

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