

On Linkages

COMMUNITY-BASED PARTICIPATORY RESEARCH AND THE ESCUELA DE SALUD PÚBLICA IN MEXICO

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For a number of decades, some community studies and interventions have been designed according to parameters, criteria, and perspectives, without taking into consideration the population.¹ Recent studies in communities in the United States, Canada, and Australia have shown the great value of participatory research, where the researchers, community authorities, and population are equally involved, thus improving public health research and community interventions.²⁻⁵ These programs, which include community training, are of significant importance for students wishing to learn more about a range of environmental, social, and economic factors that affect health in all societies.^{6,7}

Medical schools worldwide are including programs whereby students conduct practical work outside the classroom and teaching hospitals (e.g., rural placement programs in Tasmania and the West Virginia Rural Health Education Partnerships). Community medical education offers students the opportunity to learn about the needs of people in communities, which contributes to the students' education^{8,9} and helps train doctors who will work in these communities in the future.^{6,10-12}

Close collaboration among the research team, the population, and the decision makers who are responsible for setting public health policies, sustaining future public health, and promoting health is indispensable in community-based research.¹³⁻¹⁵ Community-based participatory research (CBPR) represents a focal point for research and evaluation that is receiving attention

in the public health field. CBPR reinforces many of the basic tenets of public health as a science dedicated to the improvement of health and to the well-being of communities and individuals. Diverse institutions including The Committee on Educating Public Health Professionals for the 21st Century, the University of British Columbia, and the Canadian Institutes of Health Research have indicated CBPR as a focal point for community development.^{16,17}

This article describes the impact of three community-based training courses that form part of the curriculum of the master's in public health (MPH) program at the Escuela de Salud Pública de México (School of Public Health of Mexico), which is part of the Instituto Nacional de Salud Pública (National Institute of Public Health) in Morelos, Mexico.

COURSE DESCRIPTION

In the MPH program at the Instituto Nacional de Salud Pública, there are three courses relating to community learning: Learning Based on the Community I, II, and III. These courses focus on the theory and methodology of community diagnosis and the evaluation of population health needs and community interventions to solve health-disease problems, manage health diagnoses, and design and evaluate community interventions. These three courses are imparted in succession and during different terms.

The first course focuses on community health, how to establish adequate communication with the population, and the methodological theory for community diagnosis. The second course teaches methods for prioritizing health problems. The third course analyzes the design and evaluation of community interventions, with the objective that the students design programs that attempt to provide solutions to the problems emerging from the health diagnosis.

Public health practice occurs within a sociocultural context and involves all the complexities that affect populations. These experiences, therefore, give future public health professionals an opportunity to link theory with practice, strengthen their perspectives, promote discussion, and hone decision-making skills.

Articles for *From the Schools of Public Health* highlight practice- and academic-based activities at the schools. To submit an article, faculty should send a short abstract (50–100 words) via e-mail to Allison Foster, ASPH Deputy Executive Director, at afoster@asph.org.

The students participate in multidisciplinary teams with other students and professors from the school. The Mexican municipality of Yautepec, Morelos, was selected in conformity with the inter-institutional agreements that the Instituto Nacional de Salud Pública has with the Health Service of Morelos. The decision to work in the community of La Nopalera, which is situated within the municipality of Yautepec, was made jointly by the team of students, their professors, and the sanitation and municipal authorities. This locale was selected because it is extremely marginalized, has no infrastructure for health services, lacks public services, and has limited geographical access.

The team established links with civil and community organizations in La Nopalera with the aim of promoting the community's active participation in community diagnosis and evaluation of health needs. The team visited once or twice a week during the 15-month study period to conduct community diagnosis and community interventions. During this time, they became involved in the daily lives of the population, which allowed authorities and community organizations to get to know each other and develop trust in the team members.

The team collected, analyzed, and synthesized the sociodemographic and health-disease characteristics of the population. Then they prepared and presented the results of the community diagnosis within the community as well as to civil authorities and the municipal health service. Following community diagnosis and based on the health needs assessment, the students and their professors designed programs and community interventions, which were analyzed and discussed with authorities and community organizations to provide relevant solutions.

COMMUNITY DESCRIPTION

La Nopalera, located in the central-southern part of the state of Morelos, is a rural community with 600 inhabitants, comprising a youthful population with high fertility levels. Seventy percent of families are of low socioeconomic status. The principal occupation is agriculture, which is conducted on a seasonal basis. Temporary land use is the name given to areas that are irrigated with rainfall. If rain is insufficient, the harvest is lost. Only 5.6% of the population has access to social security, and the mean annual expenditure on health per family is \$722.50.¹⁸

This community is considered to be very marginalized because it has no running water, health service, or garbage collection, and road surfaces and drainage

are inadequate. La Nopalera also produces pork, which causes environmental contamination.¹⁹

METHODS

The students formulated a research project to plan activities for community diagnosis,²⁰ which was conducted focusing on CBPR. The research project was presented to civil and health authorities of the municipality. The community of La Nopalera was chosen with the intention of teaching the students how to make a community diagnosis with the population's active participation.

The team of students, under the supervision of their professors, initiated contact with the various community organizations within La Nopalera: *ejido* owners (*ejidos* are agricultural production cooperatives in which members equally own machinery, tools, and farmlands for growing and harvesting goods for either personal consumption or profit), women's health service groups, religious groups, schoolteachers, students at primary and secondary levels, and mothers and fathers of families. For each of these groups, a session was held using a pamphlet designed by the students to explain what a community diagnosis consists of and the importance of population participation. Subsequently, social cartography exercises were undertaken in which the various groups were required to identify the risks and strengths of the community on a map that the students had drawn.²¹ The students also conducted a census ($n=170$ households) permitting personal encounters with each of the families, with the aim of inviting them to a meeting where they could participate in identifying the community's problems and needs. Activities for children, teenagers, and adults were planned for these meetings.

Community problems were prioritized with the participation of the population using the modified Hanlon method. The modified Hanlon method consists of convening the entire population along with civil authorities to participate in a community meeting to identify problems affecting the community.²² Twelve mixed groups of men and women were formed, consisting of 10 participants in each group. A total of three meetings took place: the first meeting identified the community's needs and problems, the second prioritized the needs and problems, and the third analyzed the link between the prioritized problems and social factors.

At the first meeting, the groups identified 29 problems. At the second meeting, these problems were analyzed, with community members giving their points of view in terms of the four components of the

Hanlon method: magnitude, severity, effectiveness, and feasibility.²² At the third meeting, with community participation, problems that could be approached as community interventions were selected.

Members of the population indicated two problems that could be resolved through collective action: (1) garbage and environmental contamination and (2) lack of opportunities for young people to either further their education or find jobs. The creation of community youth groups would help combat the observed increase in alcohol consumption and other addictions by providing activities for this population subgroup.

The results of the community diagnosis of priority problems were presented to the entire population, as well as to civil and sanitary authorities. The team of students and professors responsible for designing strategies to combat these problems included several proposals for community intervention, a concept that was also explained to the population. As a result, both the local people and the authorities approved implementation of the proposed community intervention projects. Community interventions were directed toward projects with young people, waste management, environmental contamination, and families' health expenses. The students worked with young people (mean age = 16 years) of both genders to promote personal resilience and impart sexual education.

One of the interventions focused specifically on garbage disposal, with the student team proposing the separation of organic waste to convert into compost and the creation of a collection center where inorganic waste could be deposited. To establish the collection center, a community committee was formed in which men and women were trained in environmental themes and concerning the separation of waste. The local committee and the young people, with assessment from students and professors, have taken responsibility for a variety of activities, including collecting funds for the construction of the collection center and participating in legal activities together with local, municipal, and state authorities to find a physical space and financial resources to support the project.

A further intervention focused on pork farming, specifically the biological control of flies, to diminish environmental contamination.

RESULTS

Almost 40% of the population participated in the various activities for the community diagnosis and continued to participate in an active way in the interventions. Meeting attendance was recorded so that the

percentage of the population that participated could be determined. The community interventions were structured with an integral vision, meaning that the implemented solutions combated a variety of health problems and involved participation from a range of population subgroups.

The garbage disposal problem was confronted with the aim of training a number of groups to be responsible for separating waste products. Adults, teenagers, and children were all equally involved in this activity. The population took the first steps toward constructing a storage center, which would be used to store and commercialize waste products, as well as organizing procedures for composting organic waste. Teenagers, with support from adults and teachers, will be responsible for managing the collection center.

The students and professors gave direction for a community garbage disposal project to a group of adults aged 30–45 years. The group sent a proposal to the Ministry of the Environment and Natural Resources requesting financial support for building the collection center and separating waste in the community. This group is also implementing processes to improve pig farming in the community.

To reinforce activities involving children and teenagers, a group of women from the church, with the help of students and teachers from the Escuela de Salud Pública de México, requested funding from the National Council for Culture and Arts to support music classes for children and teenagers from the area. Musical instruments have now been acquired and two teachers come every week to give music lessons.

A study of expenses for preventive health, the local health center, and hospital care was also conducted together with the families in La Nopalera. This report was presented to sanitary authorities to consider when planning the region's health services (Figure).

DISCUSSION

Practical experience within the community permitted students to use the theory disseminated in the courses of the MPH program to tackle real-world challenges and expand their experience. The students evaluated the course, the community practice, and the teamwork. Comments included:

Learning was very effective. Now it's very clear to me that community work should always involve the participation of the population, as this motivates the implementation of diverse activities, initiates a debate, creates critical consciousness, and above all is constructive. Working in a team with my colleagues was a very positive experience.

Figure. Outcomes of a health diagnosis and community intervention in La Nopalera, Morelos, Mexico: 2007–2008

Aspect	Outcomes following community diagnosis and community interventions
Population and environment	<ul style="list-style-type: none"> (a) Population made aware of need for garbage separation (b) 30% of families separate their garbage (c) Community group trained in separation of garbage and management of inorganic garbage collection center (d) Community group formed to manage garbage and take care of environment (e) Community group formed to interact with civil authorities to find solution to garbage problem (f) Schoolteachers participate in project for garbage separation (g) Assessment of waste from pig farming and viable proposals for their management and adequate disposal (h) 69% reduction in adult flies related to pig farming
Group of adult women	<ul style="list-style-type: none"> (a) Formation of women's group to manage resources for activities involving children and young people (b) Women presented project to obtain resources from the National Council for Culture and Arts to buy musical instruments (c) Women's group formed to manage resources for music group comprising children and young people
Group of children and young people	<ul style="list-style-type: none"> (a) Young people trained in reproductive health with a gender perspective (b) Secondary school students trained in garbage management and about flies acting as vectors, consequently contaminating food and causing health problems (c) Children and young people made aware of need to separate garbage (d) Children and young people attend music classes and have formed a band
Information on health and population services	<ul style="list-style-type: none"> (a) Information for the population concerning health expenses (e.g., preventive care and medicine for families in the locality) (b) Information for the population concerning emergency expenses

Source: Arenas-Monreal L, Cortez-Lugo M, Parada-Toro I, Cervin-García E, Pacheco Magaña LE, Espinoza-Cardenas F, et al. Community diagnosis and community interventions. Mexico. 2008–2010.

Community practice broadened my horizons. A person is part of a community, of a culture with a customary way of living, and here a number of social determinants take effect, which need to be analyzed and modified if there is to be any real improvement in health.

The students indicated that within public health, a link between theory and practice is essential and that this course reinforced this premise:

It is essential that community work for a health worker in the public health service should not just consist [of] learning theory, but that community practice should be obligatory. This involves contact with the population and the realization that lack of employment, education, opportunities, poor housing conditions, an unhealthy environment, inequality, and social injustice are aspects influencing health and that public health is not only related to the health sector.

Through these courses of community practice, the students acquired an ethical obligation to work for the population, and as health workers, they understood the need to reduce inequality, which afflicts the population. With this experience, it also becomes evident that public health is not solely the responsibility of the health sector, and that in working with the population, it is

necessary to have an integral focus to diminish inequalities because health is related to social justice.²³

It is currently necessary for the professors from the Escuela de Salud Pública de México to continue to provide guidance to the various local groups to manage the resources obtained for the community (e.g., resources needed to support the music group), as well as to advise on how to manage the various federal and municipal institutions to solve the problems revealed in the community diagnosis. It is also imperative that the civil authorities in the community and the municipality be committed to the projects that the population has initiated and provide support to ensure that these initiatives continue.

CONCLUSIONS

The curriculae of the MPH program at the Escuela de Salud Pública de México includes a link among students, teachers, the community, and authorities contributing to a greater understanding of the factors determining health and the socioeconomic, cultural, and political context in which the population lives. The bonds among the students, community, and authorities

represent the key to improving the relevance, sustainability, and effectiveness of community programs in public health.²⁴

In this project, closeness to the community, through a focus on CBPR, was of paramount importance, as the population participated in identifying their own problems and finding solutions. Moreover, this outreach has helped in such a way that the community interventions initiated by the team of students have been assumed by the diverse population groups, to some extent improving the health and living conditions of the population.

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