HEART HEALTH PROMOTION: A COMMUNITY DEVELOPMENT EXPERIMENT IN A RURAL AREA OF QUEBEC, CANADA

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SUMMARY
As part of the Quebec Heart Health Demonstration Project, a heart health promotion and prevention program, this experiment is being performed in a rural area of the province of Quebec (Canada). This program, promoted by the Public Health Department and supported by local community service centers, is taking place in ten municipalities of the Rivière-du-Loup area. Our main intentions are to first establish, and then maintain, a community-based promotion-prevention heart health program over the 5-year period of the experiment. Objectives concerning community development, intervention targets, and behavior changes are reported, along with the description of the program and some early community development results.

Key words: community development; heart health; health promotion

INTRODUCTION
In the province of Quebec, 40% of deaths and 20% of potential years of life lost are attributable to cardiovascular diseases. They constitute the greatest cause of hospitalization and they are the second ranking cause of long-term incapacity (Ministère de la Santé et des Services Sociaux du Québec, 1992). Related risk factors such as smoking, hypertension and hypercholesterolemia are well known and abundantly documented (White et al., 1986). Physical inactivity is also now recognized as a major risk factor for cardiovascular disease (Owen, 1996). On the rural territory where the project in question is taking place, 71% of adults show at least one of those four risk factors (Gilbert, 1992).

There is an increasing interest in different community-based health promotion approaches to prevent diseases and to develop healthy lifestyles. It is recognized that behaviors are learned from the social and environmental contexts where they remain deeply embedded. Accordingly, behavioral modifications could be considered to occur and be sustained in the aforementioned contextual settings; hence, community-based health promotion approaches triggering behavioral modifications and their sustainment appear logical.

There are five prominent community-based heart health promotion studies: the North Karelia Project, the Stanford Three-City Project, the Stanford Five-City Project, the Minnesota Heart Health Project, and the Pawtucket Heart Health Program (Shea and Basch, 1990a,b). The more recent projects (Minnesota and Pawtucket) reported smaller changes than the older ones (North Karelia, Stanford Three- and Five-City):
a variation probably due to the secular trend towards healthier lifestyles arising throughout North America over the last 20 years (Luepker et al., 1994; Carleton et al., 1995). Some authors suggest that average population risk factor levels among community samples are less stable from year to year than it was first imagined, and therefore they are not the sensitive indicators of comparative intervention effects that we first anticipated (Blackburn, 1992). Nevertheless, community programs in health promotion, particularly in heart health promotion, are still largely recommended (Shea and Basch, 1990a,b; Blackburn, 1992; Schwartz et al., 1993).

The Unite de Sante Publique (USP) of Riviere-du-Loup and the five ‘Centres Locaux de Services Communautaires’ (CLSCs) prioritized cardiovascular diseases in their interventions in 1988 and from that time, have worked cooperatively in order to improve the predicament. The USP is a public health department at the regional level, while CLSCs are local health and social services organizations (which are independent of the USP). Initial efforts were modest, but they became more and more consistent over time. There was no systematic gathering of community perceptions, but community organizers in each CLSC area knew, by contacts they made with key informants, that there were people interested in heart health promotion. By 1991, a community development program in heart health promotion was operational in three municipalities of the area; meanwhile, the program was recognized as the rural part of the Quebec Heart Health Demonstration Project. The latter is composed of different settings distributed tripartitely: an urban site, a semi-urban site, and a rural site. The overall project is linked to the greater Canadian Heart Health Initiative.

METHODS

Theoretical model and conceptual framework
The program is based on a health ecological comprehension model of behavior modification, including a network of reciprocal influences between individuals and their environment (McLeRoy, 1988). The decision to modify behavior is influenced by individual factors as well as by factors linked to family, friends, colleagues, social organizations, and public policies. These factors have reciprocal influences over one another: individuals influence family, friends, colleagues, social organization, and public policy. This model is closely akin to the Canadian Health Plan ‘Health for All’ which recommends three intervention targets: personal initiatives, support groups, and a healthy environment (Sante et Bien-Etre Canada, 1986).

The adopted approach lies between community development and social planning: it aims at empowering the community and the decision-making process belongs to the communities regarding specific objectives and activities. However, we expressly impose the heart health promotion concern. Specifically, a pure community development approach would assume that the communities had chosen heart health promotion among other possible concerns, which is not the case. On the other hand, a pure social planning approach would presume that promoters decide of all the program’s elements, while communities realize the activities, which is not the case either (Bracht and Tsouros, 1990; Brown, 1991). Although our approach shares elements of the two strategies, we think it is more closely related to community development than to social planning, because volunteers from the community are not solely executants but are, in the first place, decision-makers. Inside the heart health concern promoters don’t intervene in the choices of community.

The promoters are research and programming professionals from the USP working at a regional level, and CLSC professionals (community organizers, medical doctors and nurses) working at a local level. Regional level workers coordinate the whole program and offer support to local professionals regarding planning and teaching. They also assume program evaluation. Local promoters, for their part, support the communities in the elaboration and implementation of heart health promotion and prevention interventions. Taken as a whole, both promoter types mobilize community involvement, provide information and educational expertise, and support the heart health committees in their functioning, planning and realization of activities. They also assume program assessment and feedback to the communities (shown on the periphery of Figure 1).

The conceptual framework shows five different phases making up the community development process (illustrated in the inside frame of Figure 1). This conceptual model is inspired by the Michigan State University model (Medard, 1969), which can appear old-fashioned but
easily allows us to follow community development phases. Some other models get on to community development phases by way of program development steps (Steckler et al., 1993) or by focusing on actions to be carried out by the promoters and the community to achieve the community development process (US Department of Health and Human Services, 1980), or else by the promoters' objectives (Florin et al., 1993). We preferred a conceptual framework which had the benefit of identifying process development phases from the community viewpoint. The first phase of that conceptual framework begins with a convergence of some individuals' interests emerging by themselves or generated by promoters' efforts to mobilize the community. Next, as a second phase, the constitution of a lightly structured initiator group takes place. The following third phase is one of legitimization: the recognition of the group by the community leaders. By the fourth phase, an enlargement of the group must occur, as it is a necessity to recruit enough members to plan, organize and run activities. The realization of activities is located in the fifth and last phase. Criteria are defined for each phase, enabling the follow-up of each group.

Those groups composed of volunteers adopt heart health promotion as their mission. For these new groups, this mission becomes their sole function. From now on we will refer to them as 'heart health committees'. In addition, social groups carrying out different missions can occasionally include some heart health promotion interventions in their regular activities.

The three intervention targets suggested to the heart health groups, as well as to the other social groups, are: ‘individual initiatives’; ‘supportive networks’; and ‘a healthy environment’.

Heart health activities undertaken by both promoters and volunteers produce community activation and participation, as illustrated in the framework shown in Figure 1. Community activation takes shape with involvement of different formal community organizations and with inter-organizational collaboration aiming at heart health promotion (Wickizer et al., 1991). In defining the community participation concept, we adhere to the Alma-Ata definition, a ‘process by which individuals and families assume, for

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**Fig. 1:** Conceptual model.
themselves and for their community, responsibility of their health and welfare and develop capacity to contribute to their community progression’ (Milio, 1990). Community participation manifests itself through the realization of heart health promotion activities by community members, through community attendance and through ownership.

Population
The project area is located in the Bas-St-Laurent region, about 200 km from Quebec city. The population is highly homogeneous: of the same ethnicity, French speaking, and with a low rate of mobility. In 1991, the mean annual family income in the four county municipalities where the project took place was less than the mean income in the province and for two county municipalities was $10,000 less. Education level was inferior to the provincial level and the unemployment rate was higher than the provincial rate, reaching 20% in one county municipality, when the provincial rate was 16%.

Ten municipalities have been selected, two in each CLSC territory, to be exposed to the program. These exposed municipalities have been chosen by CLSC professionals on the basis of a perceived level of interest towards heart health promotion found in the population and the prevailing good collaboration level demonstrated by these communities in regards to other community programs. Outside the ten exposed municipalities, three other municipalities were already engaged in heart health programs.

The target population suggested to the communities involved was made up of people ranging from 18 to 64 years of age: for a total of 22,000 individuals in the ten exposed municipalities. (Volunteers are more often adults and the promoters felt they would intervene more easily with peers.) Subsequently, each heart health committee defined its specific target population from its own analysis of its community needs, not in a formal way but from the intuitive knowledge they had of their milieu. Some committees intervened more intensely with men in workplaces, some chose teachers or students in school settings, but most committee activities were directed towards the general adult population.

For each CLSC territory, two non-exposed municipalities (except for one territory where there is only one) have been identified in agreement with the following criteria. First, all non-exposed municipalities must be in the same region as exposed municipalities, making it easier to monitor potential heart health activities. Secondly, there must be a considerable distance between exposed and non-exposed municipalities, so as to avoid contamination. Thirdly, no heart health promotion activity ought to have been carried out in the municipality during the year prior to its selection. Finally, its size is required to be comparable to one of the exposed municipalities. Because of this last criterion, no municipality could be matched with Rivière-du-Loup, due to its size being larger than all the others; however, it was kept as an exposed municipality by virtue of the interest shown by the community.

Objectives
Beyond large heart health promotion concerns, decisions belong to each of the ten exposed communities. However, to meet grant requirements we had to deliver a complete plan with objectives and evaluation methods. We did this in a very comprehensive way, covering all major risk factors and large targets. So communities’ choices had greater chances to fall within those listed in our plan.

Three types of objectives have been defined: community development objectives; intervention targets objectives; and behavioral change objectives. These objectives should be reached within the 5 years following the project’s launch.

Community development objectives were as follows.

1. Attainment of the phase of realization of activities by ten committees with heart health promotion missions.
2. Realization of at least one activity by 20 organizations, or groups, with no specific heart health mission.
3. Partial ownership of the program by 50% of groups having realized activities.
4. Awareness of 50% of adults (18–64 years) of the existence of the heart health program, and its activities, in their own municipality.

Intervention targets objectives were as follows.

1. Concerning ‘individual initiatives’, a 10% increase in people with adequate knowledge (for each of the major modifiable risk factors), and a positive modification of their behavioral intentions.
2. For the ‘supportive networks’, the objectives...
are that 10% more people feel supported in their attempt to exercise regularly, eat less fat and stop smoking (for smokers).

(3) For the ‘healthy environment’ target, the objectives are in each municipality, that: convenience and small grocery stores offer more healthy foods (indicators are pre-defined); that restaurants offer low-fat menus; that low-fat cooking lessons are dispensed regularly in the involved municipalities; that the smoking restrictions law is observed in municipal buildings; and that indoor physical activity facilities are made more available for adults. (Since we have very cold winters, indoor facilities are an enabling factor for regular physical activity.)

Overall, regarding behavioral change objectives, we aim at a 5% increase in the number of people who:

(1) know their blood pressure;
(2) know their cholesterol level;
(3) have a behavior related to selecting a low-fat diet [to assess this behavior, we used an adaptation of a short dietary questionnaire (Ammerman et al., 1991) determining a score related to fat consumption];
(4) are physically active (20 min at least three times a week);
(5) do not smoke.

Evaluation

The heart health activities began in September 1991. A baseline measure of intermediate outcomes and precise impact indicators, regarding each intervention target and individual behaviors, was taken at the beginning of 1992. A final measure will be taken in 1997. Exposed and non-exposed municipalities will be compared. Community activation and community participation are also measured. The processed data allow us to monitor the program’s development level and consequently generate information to enable adjustment of the interventions; the data are collected annually. A specific paper detailing more precisely the evaluation methods and objectives indicators will be published separately.

DESCRIPTION OF THE INTERVENTIONS

Promoters’ interventions

The promoters’ role concerns: mobilization community involvement; information and teaching; support to the committees’ functioning and to the realization of activities; evaluation of the interventions; and feedback to the community.

In their mobilization role, the promoters contact natural leaders as well as community and social groups or organizations’ officers. These people are informed about the heart health concern and what can be done to enhance the situation. They are invited either to bring a direct contribution by becoming volunteers in eventual or existing heart health committees, or to help other people in the realization of future activities taking place in their community. Recruitment of volunteers is also made by local newspapers and electronic media, which are also continuously used for marketing the project, especially during dedicated heart health weeks and months. Heart health risk factor screening is a marketing strategy frequently used for recruiting volunteers.

Each CLSC’s team gives information to the heart health volunteers on risk factors, expected behaviors, suggested interventions, etc. Educational tools have been developed by the promoters. A special curriculum (lasting 21 h) has been developed specifically for the training of volunteers, and is provided upon request by a local college.

Some heart health committees need help to improve their functioning. The promoters try to avoid overformalizing the functioning of the committees. However, since a minimal structure is usually desirable, the way to ensure efficiency in meetings is taught if necessary.

Most of the support offered by the promoters concerns the realization of activities. Thus, providing educational material, helping to update the volunteers’ knowledge, supplying material, means of intervention and direct contributions to the realization of activities, are different promoters’ practices to support volunteers.

Community interventions

Heart health committees identify their choices among the different suggestions coming from both members and promoters. Volunteers’ choices are respected, as well as their pace.
STATE OF THE PROJECT IN 1996

Regional professionals invested the equivalent of 10 workdays a week in the program for the first 2 years. From then on, the invested time diminished to the presently maintained 5 workdays a week. All of the CLSC’s professionals have been involved on a part-time basis ever since the beginning. Their individual involvement varies from a workday a week, to 3 workdays a week. For the last year alone, the financial investment in the project was of $119 000, while staff time contributions from CLSCs and the USP was equivalent to $125 000. These costs are inclusive of all the promoters’ and volunteers’ activities but not of the various community contributions. Many institutions and bodies in each community contributed directly by giving money or indirectly by supplying materials or human resources. Included among them were: banks, schools, grocers, restaurants, city boards, local media, shopping centers and social clubs.

In September 1996, six exposed municipalities had one committee and two other exposed municipalities have three and four committees, respectively. On the whole, for the ten exposed municipalities there are 13 committees. Each of the three municipalities where the program began before 1991 also has a committee. A request for support even came from a municipality that had not been selected to be exposed to the program. It would have been rather improper to deny the help requested by this community, where a dozen volunteers were already recruited. We consider this municipality a satellite of the main project, just like the three pre-exposed municipalities. Hence, with a total of 17 committees gathering 150 volunteers and having reached the step of realization of activities, we can say that the project is well greeted by communities. We also can say that heart health activities do exist beyond those strictly realized in the project, and they can be viewed, at least partly, as diffusion or dissemination.

At the project mid-time (1993) an evaluation was conducted, measuring the empowerment level of the communities. Volunteers said that they were not at ease with developing educative and evaluation tools, but that the decisions about objectives and activities came almost entirely (93%) from them. They also took responsibility for the major part of financial matters, marketing and realization of activities.

Beside heart health committees’ activities, heart health activities realized by other community groups were inserted in our conceptual framework. Experience has demonstrated that heart health committees were often associated with other groups in the realization of activities, but none of those other groups initiated activities by themselves.

During the last year of activities, volunteers devoted 3080 h to the realization of 390 different activities, resulting in 10 500 contacts with members of the target population. They were also involved in five different processes aiming at environmental changes.

From the beginning of the project, the three intervention targets have been addressed by activities. Individual initiatives have been the most frequently targeted. We could be tempted to explain it by saying that volunteers are more skilful at realizing activities targeting ‘individual initiatives’, or that there are more tools available for the ‘individual initiatives’ target. However, it is difficult to establish a quantitative comparison between activities realized for each target. There are effectively more activities realized towards the ‘individual initiatives’ target, but those realized towards the two others (‘supportive networks’ and ‘healthy environment’) are often more time-consuming to set up and are always more long-lasting for population exposure. There may be fewer activities realized for ‘supportive networks’ and ‘environment’ targets, but chances are that they will have more durable effects.

Regarding behavioral change objectives, physical inactivity has been the most popular target, followed by fat consumption and, finally, far behind, by smoking. Heart health committees were reluctant to realize anti-smoking activities because they perceived smoking as a very sensitive subject in their small communities.

The next sections provide an overview of the major activities realized by communities in regard to each intervention target.

Individual initiatives

These activities are mainly educational and aim directly at individual behavioral modification. The following are the major activities realized by heart health committees in this category.

Organization of a special physical activity day:

- walking day;
- cycling day;
- skating day;
- intermunicipality competition day.
Diffusion of heart health promotion messages by different means:

- heart health promotion tablemats in cafeterias;
- installation of a hotline offering prerecorded messages, in the workplace;
- distribution of messages printed on candy wrappers, in the workplace;
- publication of short articles in local newspapers;
- information stands at local fairs;
- theatre plays followed by discussions with professionals;
- organization of heart health cooking lessons;
- organization of heart health community meals;
- organization of risk factor screening sessions with counseling;
- organization of hypertension clinics with counseling;
- educational supermarket tours.

Supportive networks
The following were the main activities undertaken in this category:

- organization of walking clubs;
- organization of informal discussions with people at higher risk of cardiovascular diseases;
- organization of smoking cessation group sessions;
- organization of supportive networks of physical activity.

Healthy environment
For this intervention target, the following were promoted:

- availability of heart health recipes in supermarket;
- introduction of healthy menus at restaurants;
- modification of a professional cooking school program;
- extension of smoke-free environments.

DISCUSSION

This project is different from major US trials on community cardiovascular disease prevention in relation to two major points: we perceive it to be closer to community development as, inside the heart health concern, volunteers control both the objectives and the activities; additionally, it requires a lesser financial expenditure.

We had, and still have, to deal with the boundaries surrounding volunteers’ involvement and the reluctance of professionals to ‘let go’ of some health tasks. For example, at the beginning of the project, professionals were reluctant to train volunteers to run risk-factor screening sessions. They can now appreciate the quality of the interventions realized by the volunteers. In fact, some volunteers master risk-factor knowledge to the point that they can easily lecture an audience on that concern. Yet, we must stay vigilant in order to avoid mistakes that could endanger the credibility of the project.

Even if many educational tools have been designed by professionals, some were created by volunteers themselves. This creation contributes to the empowerment of communities. We still have to learn to strike a balance of our support in the elaboration of educational tools: we do not want to put down the volunteers’ creativity, but we still have to check the quality of the scientific content of educational tools.

Once the community development strategy is adopted, we have to subscribe to the communities’ decisions concerning heart health objectives and activities. Most of the time, objectives and activities fall within the heart health prevention-promotion frame, but not always. For instance, a heart health committee has implemented a cardiac rehabilitation program with cardiac patients and their families. Part of the program implemented by this committee includes education on risk factors, and so it contributes to heart health promotion, even though its fundamental purpose is neither heart health promotion nor primary prevention. This group subsequently created a heart health promotion committee. Nevertheless, we think that we must respect community choices.

Another preoccupation we had to deal with was the evaluation design in the setting of a community development program. For grant requirements, promoters elaborated impact objectives, but the choice belonged to the community. It may seem somewhat risky to have defined objectives for either suggested intervention targets or behavior changes while it is not possible to predict community inputs within this model. Despite that, we set a range of objectives according to suggested targets for evaluation purposes, and we will take into account choices made by communities in the result analysis.
The impact of the project will not be known for 1 year. Involvement of health regional and local organizations makes sustainability and institutionalization not assured but most probable. So far, we have learned some lessons, but we will certainly learn more about implementation conditions, sustainability of activities, and impacts as we go along. Results will certainly be generalizable to rural populations living in similar socio-economic conditions.

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REFERENCES


