Why Did North Karelia—Finland Work?

Is it Transferrable?

Pekka Puska

Helsinki, Finland

ABSTRACT

Successful prevention of cardiovascular diseases in the North Karelia Project and Finland has drawn international attention, particularly as cardiovascular diseases and more generally noncommunicable diseases have become the leading cause of premature mortality in the world. The questions have often been asked about what were the main reasons for success and whether or not the experience could be transferred elsewhere. The main lesson is that the possibilities and potential of cardiovascular prevention are great. The principles of population-based prevention are universal and are expressed in the strategies of World Health Organization. But, the practical implementation of the preventive work must be tailored to local cultural, social, and administrative (political) situations. This paper discusses many elements of the work in North Karelia and Finland that were likely important for success.

The North Karelia Project was started in 1972 in response to the huge public health problem of extremely high cardiovascular mortality in Finland, and especially in Eastern Finland. The Province of North Karelia was the original target area for the prevention, as a pilot program for Finland. After the original 5-year period, the Project was continued as a national demonstration, but at the same time the experience was actively transferred to a national level through both many organized measures and unorganized diffusion of the innovations. After 25 years, the Project was formally ended, but national preventive activities continue.

The work and results of the North Karelia Project and the related national action have been summarized in a monograph in 2009 [1]. The results, the experiences, and its offspring studies have also been described in the special issue of Global Heart [2]. The results show marked positive population changes in target risk factors and related lifestyles, and associated with these, positive changes in cardiovascular rates during the original period, especially in North Karelia and later on in all of Finland. These can be explained to a great extent by the changes in the target risk factors [3,4]. From between 1969 and 1971 to 2011, the age-adjusted coronary heart disease mortality among the 35- to 64-year-old male population declined in North Karelia by 84% and in all of Finland by 82%. The early rather large gap between North Karelia and all of Finland became very small by 1995, and practically disappeared in the 2000s.

With the longstanding experiences and documented big changes in cardiovascular rates and in overall public health, the North Karelia/Finland experience has been a much cited reference in international discussions on cardiovascular disease (CVD) and noncommunicable disease (NCD) prevention and on CVD/NCD programs. In these discussions, the often asked questions have been: what were the main reasons for success, and could the experience be transferred to other countries?

Concerning the latter question, the main answer is that the Finland experience gives strong support to the general possibility and potential of CVD prevention and to the main strategies of population-based prevention. In the last few years, these strategies have been reproduced using a very similar design in numerous international and national strategy documents [5]. Especially important is the World Health Organization (WHO) Global Action Plan on Prevention and Control of Non-communicable Diseases for 2013 to 2020 [6]. Over the years, the North Karelia Project/Finland experience has contributed greatly to the work of WHO in the area.

The first question refers to the much more difficult and complicated issue: how can these principles and strategies be successfully implemented in different countries, that is, how do we overcome the implementation gap? It is quite clear that every country has to find its own way in its specific cultural, social, administrative and political situation. Direct replication of the Finnish work is not practical. However, it is certainly of interest to discuss which elements of the North Karelia Project and the work in Finland have been especially valuable. With comprehensive activities and policies over the years, it is not possible to give clear scientific answers. However, this question has been discussed in the latest summary work of the North Karelia Project, and is reflected in this paper [1].

WHY WAS NORTH KARELIA SUCCESSFUL?

Appropriate theory base

A fundamental reason for the success of the North Karelia Project was a correct and appropriate public health

The author reports no relationships that could be construed as a conflict of interest.

From the National Institute for Health and Welfare (THL), Helsinki, Finland. Correspondence: P. Puska (pekka.puska@thl.fi).

GLOBAL HEART

VOL. 11, NO. 4, 2016
ISSN 2211-8160/$36.00.
http://dx.doi.org/10.1016/j.gheart.2016.10.015

understanding of the problem. A phrase often used in the work was: "Nothing is as practical as a good theory." The theory concerns primarily finding the main causal risk factors and then targeting those that are most prevalent in the population. In the North Karelia Project, the epidemiological considerations about the risk factors and the role of life-styles led to the adoption of a community-based approach, which shifted the risk factor profile of the population and targeted the whole community with its social and physical structures. In doing this, several behavioral and social frameworks were also used [7], including steps for behavior change, communication, innovation diffusion, and community organization. After moving to the national level, these same theoretical bases of policy issues were also dominant and relevant.

Flexible intervention

While the intervention in North Karelia had a strong theoretical base and framework, the actual intervention was flexible, responding to practical situations and naturally occurring possibilities in the community. The Project worked in close collaboration with the local population, was visible, and interacted with many different organizations. The aim was not only to communicate the Project's message, but also to listen to the views and issues in the community.

Intensive intervention

The results depended not only on correct theories, but also on their practical application. It is not enough to do the "right thing," one must also "do enough of it." The dose of the intervention is also important. Over the years, the Project initiated and organized many practical activities among the population. Although the budget of the Project was never considered to be huge, it was able to mobilize many activities that did, indeed, reach many people, often in their everyday lives. During the first 5 years, some 20,000 patients with hypertension were registered in North Karelia and followed-up with treatment and counseling for risk reduction [8]. Numerous specific campaigns did reach a large number of people.

Working with the people

From the very beginning of the Project, it was felt to be important to work closely with the community and among the people. A commonly used phrase within the Project was to work with "boots deep in the mud." The ownership of the Project by the people was considered to be crucial. The original petition to reduce CVD mortality was much emphasized. The activities were presented as a response to the petition: "The Project message is the best scientific way to respond to your wish: reduction of the cardiovascular burden, but the changes can only be done by people yourselves." The role of the Project was to make such changes as easy as possible. Concerning the ownership, a common phrase used was "I am in the Project." Even the name, the North Karelia Project, indicates the ownership by the province. In the organization of the work, numerous local people were involved.

Community organization

In the early 1970s, community-based prevention was a new and innovative approach to prevent CVDs. The basic idea was, from the very beginning, to change the community; individual behaviors tend to follow the general life-style patterns of the community. In close interaction with the community, the Project took every opportunity to discuss with various organizations how they could contribute to the practical objectives of the Project. This concerned official service structures (health, social, education, and so on), nongovernmental organizations of different kinds, the private sector, local political bodies, and the media. Two principles were important in these persuasive contacts. First, much of the influence was on the basis of personal, often opportunistic, contacts and trust. Second, the aim was to find "win-win" situations, so that collaboration would benefit both the Project and the partner. Media publicity provided public pressure, recognition, or financial incentives to the partners.

Work with health services

The intervention in North Karelia was broad, and all possible areas of life were considered. At the same time, it was realized that health services must be supportive and form a backbone to the local activities. Within local health centers, public health nurses and physicians were in especially key positions. The Project established close contacts through training seminars, written materials and guidelines, monitoring, and personal contacts.

Official authority

Much of the Project work was based on voluntary collaboration, persuasion, training, communication, and so on. But, at the same time, the Project was linked with official administrative structures and health authorities. The point was that this work was not only a voluntary activity, but also an important part of daily professional work. In this way, the Project wore "2 hats": an official and unofficial one. The activities were also linked as much as possible with national official guidelines and programs, and thus took advantage of national policies and guidelines.

Limited targets—outcome orientation

A reason for success was clearly the decision about the critical and limited targets. "Less is more" is a phrase that was often used. All interventions were oriented toward the reduction of the population's levels of the target risk factors: blood cholesterol, blood pressure, and smoking. Because the population's cholesterol and blood pressure levels were understood as dependent upon certain dietary habits (high intakes of saturated fat, very little

polyunsaturated fat, little vegetables, and much salt), critical changes in diet and reduction in smoking rates were the direct targets. For blood pressure, in addition, detection, treatment, and follow-up was targeted, but the emphasis was on the overall risk reduction among these high-risk persons. These limited and practical targets were promulgated through persuasive messages involving opinion leaders, through teaching practical skills, and by facilitating such changes. Thus, changes in knowledge or attitudes were not seen a primary objective. It was assumed that such changes would be consequences of behavior changes. Also, broader aims of health and well-being existed, but the idea was that the practical health behavior changes and positive experiences would spearhead broader health aims.

Positive messages

Although the initial message of the Project was dramatic and negative—North Karelia has the highest heart disease mortality in the world—subsequent Project messages were as positive as possible. Heart disease can be prevented by practical positive action. The attention shifted from "do not smoke" to "smoke free" and to aspects of smoking cessation, clean air, and so on. For diet, the message shifted from avoiding saturated fat to enjoying heart-healthy diets, healthy foods, local (rapeseed) oil, fat free milk, local berries, and so on. Attention was paid to emotional issues of the local culture. In addition, a strategy was to use the information from the monitoring to give feedback to people about positive changes in dietary habits, risk factors, and disease rates.

Bottom-up, top-down

In health promotion, the discussion is often about whether to use a top-down or bottom-up approach. In the North Karelia Project, clearly a blended model was used. The Project started bottom-up, with the petition to "do something." But, the international and national expertise then identified the science-based objectives. Professional expertise was used to outline the theoretical frameworks, implement the many innovations (often borrowed from abroad), and to carry out the evaluation. Then again, the ownership of the local community was emphasized in phrases such as, "this is your Project" and "only you can change North Karelia." Although local people very much shared the aim of the Project, the practical messages were not tempting. Smoking was a small pleasure in the difficult life conditions; in the dairy farming area, butter and milk fat was popular and also economically important; and eating vegetables was not common or popular, especially among the hardworking men. Thus, the Project clearly had to act as a vigorous change agent.

Working with the media

Innovative work and partnership with the media were key elements in working with the population. Instead of providing health information, the dominant role was reporting to people about activities and results. The aim was to link the media messages as much as possible with the work in the field. The Project team had close personal relationships with representatives of the media. The aim was to serve media in their needs. Health and the activities of the Project were of great interest to the people; thus, the media wanted to cover the issues. The Project did not avoid confrontation or debates; those were seen as possibilities to respond to counterarguments and to get the message across.

After the original period, the Project was widely covered in the national media. Of great significance were the popular national television courses from 1978 until 1991 [9]. Other parts of Finland found the North Karelian example both interesting and encouraging. At the same time, it helped further the work in North Karelia.

FROM NORTH KARELIA TO THE NATIONAL LEVEL

North Karelia as a demonstration

The original aim of the North Karelia Project was to carry out the intervention in North Karelia for the 5-year period between 1972 and 1977 as a pilot for all of Finland. After this period, many positive changes were already observed, but obviously there was much more to be achieved. The decision was made to continue in North Karelia, but at the same time to start applying the experiences on a national level. Thus, the work in North Karelia continued as a national "demonstration." The idea was that both should benefit: North Karelia would serve the national work, and national interest would help the program continue in North Karelia. The concept to use a demonstration area to promote and stimulate national preventive work has been utilized often in both the developed and the developing countries [10,11].

National focal point

After the original Project period, when the work moved to the national level, the coordinating center of the project moved from the University of Kuopio in Eastern Finland (currently the University of Eastern Finland) to the National Public Health Institute. Because the National Public Health Institute, and later the National Institute for Health and Welfare (THL), is directly under the Ministry of Health, this gave a strong official institutional base and authoritative support for the work. Transferring the leadership to a national level has been extremely important for the sustained continuation of the program.

Monitoring and feedback

A comprehensive evaluation and monitoring system was developed for the Project at the outset. It was soon realized that the monitoring does not only serve the evaluation. Feedback of the trends and other information to the population and various stakeholders became one of the

strongest intervention modalities. "What gets measured gets talked about." Especially important were the biannual rapid heath behavior surveys and the larger risk factor surveys. With this experience, when the activity was moved to the national level, THL expanded these surveys to a national health monitoring system. Gradually, the monitoring and the survey data were increasingly also used to push for healthy national public policy decisions.

Leadership—collaboration

The North Karelia Project was clearly a major societal undertaking—first in North Karelia, and then nationally. This called for visible, strong, dedicated, persistent, and long-term leadership. It was inevitable that the Project leader and the team received a fair amount of personal publicity. It was seen that "committees do not do the real work" and that the practical focal point and leadership is vital. At the same time, it was realized that broad collaboration is vital. Good results can be achieved only if many organizations and stakeholders contribute—on the national level, this meant much intersectoral work. Thus, the principle was to combine strong leadership with broad collaboration.

Links with international and global work

CVD and other major NCD are prevalent in most parts of the world. Also, the risk factors, despite cultural differences, are surprisingly similar, and many of their determinants are global. Global influences related to marketing, economic interests, fashion, international models, and so on, are important. Thus, the possibility of major success in any country is linked to international development. The CVD epidemic has strong global roots, so the action to fight it must also be global!

From the very beginning of the North Karelia Project, and later in the national work in Finland, the activity has been linked to international efforts and very much to the work of WHO. This led to much support for the work in Finland, but also contributed to many international activities and WHO's global work. The current efforts of WHO in its Global NCD Action Plan, supported by the United Nation's political declaration and more recently the United Nation Sustainable Development Goals, are important global backgrounds. An especially pioneering global instrument is the WHO Framework Convention on Tobacco Control, a unique global instrument to fight tobacco [12].

Social change as the basic issue

The original aim of the North Karelia Project was to prevent CVDs through broad health promotion and policies on the basis of medical knowledge, and through encouraging a population change toward healthier life-styles. The big questions everywhere are: how is it possible, and what is the basic process? Because the main aim was to change the community, and later the nation, so that the desired life-styles would be easy and normal, much attention focused on how to ultimately influence decision making for policies and the private sector. In North Karelia, it was already noted that politicians wanted to associate themselves with health issues that were attractive to the population. The Project often hosted local decision makers at various occasions and gave them personal visibility. These contacts were important.

This process was even more important on a national level. The numerous changes in Finnish tobacco policy, nutrition policy, agricultural and industrial production, and marketing resulted in many prevention and health promotion messages and activities that the population—voters and consumers—embraced, leading to healthier diets and life-styles. These policy and private sector changes in turn helped further the capacity for change in the population and ensured that it was sustainable and growing. The work to influence decision makers and the private sector was not only direct, but very much through individuals, and was also augmented by planned communication.

Thus, it can be said that long-term, sustainable prevention is not only social engineering through the often complex and difficult decisions to implement evidence-based preventive interventions and policies. Such actions of course have their effect; but, ultimately, it is a question of the continuous social change process where health promotion among individuals pushes policies and the private sector, and these measures push further changes in life-styles of people and supportive environments. This cycle represents a social change process that ultimately and permanently changes life-styles, norms, environments—and public health. Such processes cannot be taken for granted, but need continuous monitoring and leadership. This kind of fundamental social change process and its drivers should be kept in mind when countries aim at substantial reduction in cardiovascular rates and ultimately at ideal cardiovascular health of their populations [6,13]. *The role of the Project was not primarily to carry out the activities, but to plan, catalyze, and evaluate the work done by different sectors of the community, and thus, continually to push forward the process of change.*

REFERENCES

1. Puska P, Vartiainen E, Laatikainen T, Jousilahti P, Paavola M. The North Karelia Project: From North Karelia to National Action. Helsinki, Finland: The National Institute for Health and Welfare (THL); 2009.
2. Puska P, Bansilal S, editors. The North Karelia Project. 2016;11(theme issue):171−266.
3. Laatikainen T, Critchley J, Vartiainen E, Salomaa V, Ketonen M, Capewell S. Explaining the decline in coronary heart disease mortality in Finland between 1982 and 1997. Am J Epidemiol 2005;162:764–73.
4. Jousilahti P, Laatikainen T, Peltonen M, et al. Primary prevention and risk factor reduction in coronary heart disease mortality among working aged men and women in Eastern Finland over 40 years: population based observational study. BMJ 2016;352:i721.
5. Puska P. Prevention strategies common to noncommunicable disease. In: World Cancer Report. Lyon, France: IARC; 2014:298–304.

6. World Health Organization. Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013—2020. Geneva: World Health Organization; 2013.
7. Puska P, Nissinen A, Tuomilehto J, et al. The community based strategy to prevent coronary heart disease: conclusions from the ten years of the North Karelia Project. Ann Rev Public Health 1985;6:147–93.
8. Nissinen A, Tuomilehto J, Puska P. Management of hypertension and changes in blood pressure level in patients included in the hypertension register of the North Karelia Project. Scand J Soc Med 1980;8: 17–23.
9. Puska P, McAlister A, Pekkola J, Koskela K. Television in health promotion: evaluation of a national programme in Finland. Int J Health Educ 1981;24(Suppl):1–14.
10. Puska P, Leparski E, Heine H, et al., editors. Comprehensive Cardiovascular Community Control Programmes in Europe. EURO Reports and Studies 106. Copenhagen: World Health Organization, Regional Office for Europe; 1988.
11. Nissinen A, Berrios X, Puska P. Community-based noncommunicable disease interventions: lessons from the developed countries to the developing ones. Bull World Health Org 2001;79:963–70.
12. World Health Organization. WHO Framework Convention on Tobacco Control. Geneva: World Health Organization; 2003.
13. Shay CM, Gooding HS, Murillo R, Foraker R. Understanding and improving cardiovascular health: an update on the American Heart Association's concept of cardiovascular health. Prog Cardiovasc Dis 2015;58:41–9.