Contribution of the North Karelia Project to International Work in CVD and NCD Prevention and Health Promotion

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ABSTRACT

During the decades after the start of the North Karelia Project in 1971, cardiovascular diseases and related noncommunicable diseases have emerged as the greatest global public health burden. The prevention and control of these diseases have thus become a major challenge and target for global public health, as emphasized by the Political Declaration of the United Nations (UN) General Assembly in 2011. The experiences and results of the North Karelia Project have accordingly received much international attention and have in many ways contributed to the international work in the area, including the strategies and programs of the World Health Organization. The experience of the Project shows the great potential of population-based prevention of cardiovascular diseases and other noncommunicable diseases and that influencing lifestyles related to heart health with comprehensive health promotion and national policies is the cost-effective and sustainable way to improve contemporary public health.

When the North Karelia Project was started in 1972, cardiovascular diseases (CVDs) and related chronic noncommunicable diseases (NCDs) had rapidly increased and become major health problems in industrialized countries. They were seen as "degenerative diseases" and consequences of aging. Because most of the world (i.e., the developing countries) had mainly other health problems, these diseases were commonly referred to as "diseases of affluence."

Because of this, there was no emphasis and marginal interest at the World Health Organization (WHO) regarding these problems, although WHO was involved with the start of the North Karelia Project by sending a few high-level experts to the planning meeting that outlined the principles of the Project (H. Blackburn, J. Morris, Z. Fejfar, and Z. Pisa). There was a particular interest at the European Regional Office of WHO, with a Finnish professor Leo Kaprio as the Regional Director.

During the 1970s, the Project became involved with and contributed to a number of WHO projects, both at the headquarters and at the European office (EURO). These included setting up in North Karelia registers for acute myocardial infarction, cerebrovascular stroke, and hypertension, in contact with the respective WHO programs [1]. The hypertension register with its follow-ups became the backbone for the community control of hypertension in the North Karelia Project in the 1970s and the 1980s [2].

The idea of the North Karelia Project, i.e., community-based prevention of CVDs, started to raise interest in many Western countries, although the concept was new and also faced criticism. For instance, the *International Journal of Epidemiology* had in 1973 an editorial "Shot-Gun Prevention?" warning of launching population-based intervention with questionable scientific evidence [3].

In a number of European countries, community-based projects were, however, started—often inspired by and usually in contact with the North Karelia Project. WHO/EURO started to coordinate this work that was called "Comprehensive Cardiovascular Community Control Programmes. This collaboration had a major meeting in Koli, North Karelia, in 1976. The experiences showing variable feasibility and some positive changes were collected and subsequently published by WHO/EURO [4].

The North Karelia Project also collaborated with 3 major respective projects in the United States, financed by the National Institutes of Health. All of these projects (Stanford, Minnesota, and Rhode Island) were started in the 1970s [5]. Much later, the North Karelia Project team summarized their experiences with community-based intervention studies in high-income countries [6].

DISEASE TRENDS AND INTEGRATED PREVENTION

In the 1980s, interest grew on the trends of CVDs in different countries and on the determinants of these trends. Thus, the focus shifted from national differences in mortality to differences in national mortality trends. With this background, the WHO started the Monitoring of Cardiovascular Diseases and Their Determinants (MONICA) project that has been one of the most extensive field research programs from the WHO [7]. Finland, represented by the North Karelia Project team at the National Public Health Institute (translated from the Finnish Kansanterveyslaitos [National Health Institute], known as

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KTL), participated with the North Karelia experience in planning and later on in the implementation. The International Data Center of the MONICA project was then set up and located at KTL in Finland. The center collected the data and guided the data collection from the project with 32 centers in Europe, the United States, and Asia.

Another major development in the 1980s was discussion within the WHO that many risk factors appeared to be linked with several major chronic NCDs. With this background, WHO headquarters launched the so-called Interhealth Programme which had demonstration projects for integrated prevention of NCDs in different countries around the world [8]. The North Karelia Project team contributed actively to the program and worked with many of the Interhealth centers over the years. An important training seminar for representatives of various Interhealth centers was organized in Polvijärvi, North Karelia, in 1986.

After this discussion, the WHO/EURO launched in the early 1980s the Countrywide Integrated Noncommunicable Disease Intervention (CINDI) program. The North Karelia Project and the KTL played a central role in formulating the CINDI principles, in its coordination, and in its many activities, including training. The Director of the North Karelia Project was the chair of the CINDI Program committee for many years. The CINDI program has recently been described from the Finnish perspective in a history book [9].

The CINDI program had concrete effects in many countries, including the Soviet Union. After the disintegration of the Soviet Union, many newly independent Eastern European countries joined CINDI, with close collaboration with Finland. Also, Latin America was influenced by this development. WHO's American Regional Office, Pan-American Health Organization, started the so called CARMEN (Conjunto de Acciomes para la Reduccion Multifactorial de las Enfermedades No transmisibles [Integrated Prevention of Noncommuniable Diseases in the Amercias]) program, based largely on the principles of CINDI, as applicable to Latin America.

In the early 2000s, when the Director of the North Karelia Project (P.P.) served at WHO headquarters as Director for NCD Prevention and Health Promotion, WHO organized 3 global NCD Forum meetings (Geneva 2001, Shanghai 2002, and Rio de Janeiro 2003) to share experiences between NCD demonstration projects and networks in different WHO regions. Nissinen et al. [10] have described their experiences with community-based NCD prevention programs in developing countries.

INCREASING POLITICAL ATTENTION ON NCDS

Towards the end of the 1990s, changes in the global public health panorama and the increasing role of CVDs and other chronic NCDs in the global burden of disease became obvious and well documented. Although many infectious diseases and other traditional health problems, such as child and maternal mortality, remained as serious problems and should continue to be vigorously addressed, NCDs had started to dominate global public health [11]. Currently some two-thirds of all deaths in the world are due to NCDs, and some 80% of these deaths occur in the low- and middle-income countries. Much of them occur among the middle-aged population, hampering social and economic development.

A first important step by the WHO was adoption the Global WHO Strategy on NCD Prevention and Control in 2000. Again the North Karelia experience and the project team were much involved, with the director of the North Karelia Project chairing the expert group that prepared the background for the strategy. The strategy acknowledged the great need for addressing NCDs, the priority for prevention, and the earlier-described principle of integrated prevention. The strategy specifically targets four NCDs: CVD, cancer, chronic obstructive pulmonary disease, and diabetes through population-based interventions on 4 behavioral risk factors: tobacco, unhealthy diet, physical inactivity, and alcohol.

Soon after the launch of the strategy, the Director of the North Karelia Project became the Director for NCD Prevention and Health Promotion at WHO Headquarters in Geneva (the position he held before returning to Finland for the position of Director General of the Finnish National Public Health Institute). This position further helped to take advantage of the North Karelia experience in the CVD and NCD prevention work in many countries and in many WHO programs.

Associated with the WHO NCD strategy, discussion governments started in Geneva negotiations that in 2003 led to adoption of the WHO Framework Convention on Tobacco Control [12]. The Framework Convention on Tobacco Control became effective in 2005, and by 2015 some 180 countries had ratified it. The convention is historical because it was the first time that international law was used to tackle a global public health problem. The participating countries agreed in 2014 that after 10 years of existence an independent international expert group should perform an assessment of the impact of the convention.

Concerning diet and physical activity, 2 other key behavioral determinants of NCDs, the WHO performed expert work and later extensive consultations that led to adoption of the WHO Global Strategy on Diet, Physical Activity, and Health, adopted by the World Health Assembly in 2004 [13].

Finland had actively contributed to the WHO work on tobacco, diet, and physical activity. The Finnish tobacco legislation has since the early North Karelia Project years developed to become one of the most comprehensive in the world, nowadays specifying "Smoke-free Finland" as the official target in the latest tobacco law amendment by the Finnish Parliament. And the North Karelia experience gave strong support to the principles of the WHO Global Strategy on Diet and Physical Activity. At the same

time, Finland has taken advantage of these developments for continuing its own work.

During the last few years, the international political attention on the NCD burden, with all its social and economic consequences, has continuously increased, culminating in a special UN Assembly on NCDs in September 2011 in New York. Based on the political declaration of this UN meeting, the WHO has continued and strengthened its work on global NCD prevention and control, with increasing attention on intersectoral collaboration for promoting favorable changes in NCD-related behavioral risk factors and lifestyles in the population [14].

COLLABORATION WITH NEIGHBORING COUNTRIES

Finland has always collaborated with other Nordic countries. This collaboration has also concerned health issues. Consequently, the North Karelia Project had many contacts with other Nordic countries, with several of their preventive CVD projects, especially in Sweden and Norway. A major long-term community-based prevention program in Northern Sweden was particularly influenced by collaboration with the North Karelia Project [15].

A major collaborative activity was started after the disintegration of the Soviet Union between the Russian Republic of Karelia and the North Karelia Project. In Russian Karelia the district of Pitkäranta was chosen as a demonstration area for the republic. The preventive work with population risk factor surveys was started there in 1992. The rich experience over 20 years of collaboration has been summarized in a general report [16].

After the re-independence of the Baltic states, collaboration started first with Estonia, when the North Karelia Project organized a large collaborative smoking cessation series, broadcast jointly by Finnish and Estonian television. Thereafter, collaboration started with Estonia, Latvia, and Lithuania to help establish in those countries a national health behavior monitoring system, similar to what was started in North Karelia during the project and later on implemented on a national level. This Finbalt Health Monitor collaboration was performed for many years and resulted in establishing important trend information in those countries during the interesting years of political transition [17]. After these good experiences, this monitoring system was later also used in the CINDI collaboration known as the "CINDI Health Monitor," as implemented, for example, in Slovenia, the Czech Republic, and Italy.

VISITORS, TRAINING, MEDIA INTEREST, AND RESEARCH COLLABORATION

In addition to the earlier-mentioned formal programs and activities, over the years there has been an extensive amount of contact with researchers, experts, administrators, and media representatives from many countries. To coordinate these visits, a formal North Karelia Visitors' program has been organized since the end of the 1970s once or twice a year, with part of the program in Helsinki and part as field visit in North Karelia.

Also, many other visitors, in addition to the participants of the formal programs, have made visits and become acquainted with the North Karelia Project in Helsinki and/or in North Karelia. It has been estimated that over the years altogether there has been some 2,000 visitors from approximately 100 countries. The visitors have been from political realms, groups of parliamentarians, health ministry representatives, and health ministers.

With CVD being the number 1 killer and with the documented achievements in North Karelia, international media interest has been extensive. Over the years, more than 30 international television companies (including, e.g., BBC, CNN, ABC, NBC, and Al Jazeera) have featured the North Karelian experience.

The project has also hosted over the years numerous international meetings and workshops, often those of the WHO, and contributed to big international conferences in Helsinki (World Conference on Health Education 1992, European Conference on Tobacco or Health 1995, World Conference on Tobacco or Health 2003, and the WHO Health Promotion Conference 2013). The project representatives have also been active in many international professional organizations, such as the World Heart Federation where Pekka Puska served as President from 2009 to 2010.

The material and data collected for the monitoring and evaluation of the project and its many subcomponents have also been a rich source and basis for many international research collaborations, resulting in hundreds of scientific articles and off-spring studies, some of them also covered in this issue.

SUMMARY

Finland was historically the country in which, after World War II, an extremely high burden of CVDs developed; therefore, it was also early forced to do something about it. With applying emerging international research on possibilities for prevention (the Seven Countries Study, the Framingham Study, etc.) and much determined Finnish work, good results have been achieved and documented.

With this background it is understandable that other countries facing similar problems have been interested in the North Karelia Project and the Finnish experience. Over the years the North Karelia Project has gained much from international collaboration and, especially during the early years, from the support of the WHO. Thus, the North Karelia Project has been only happy to share its experiences and to contribute in many ways to the international work in the area—with the message that prevention of CVDs and related NCDs in the population is possible and pays off!

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