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