REVIEW gREVIEW

## **Tobacco Control**

## From North Karelia to the National Level

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#### **ABSTRACT**

After World War II, smoking among men was very common in Finland, and especially in North Karelia, contributing to the high rates of cardiovascular diseases and cancer. Thus, the North Karelia Project, from its very start in 1972, took reduction in smoking as one of its main targets. After 1977, the project actively contributed to national tobacco control work, including comprehensive legislation and many other activities. Smoking in North Karelia declined initially much more than in the rest of Finland, but thereafter there has been a steady national decline, resulting in a prevalence of daily smoking among adults of approximately 15% and contributing to the big reduction in the rates of heart disease and tobacco-related cancers, especially among men.

The life expectancy of Finns had clearly risen after World War II, but in the late 1950s, the pace of progress began to wane, especially among men. The slowdown was caused by exceptionally high mortality from coronary heart disease in Finnish men, which was among the greatest in Western Europe [1,2], as well as by the high mortality from lung cancer. A key reason for this was very high prevalence of daily smoking among Finnish men, which has been estimated as having been >70% in the late 1940s. Mortality rates from coronary heart disease remained high up to the 1970s [1].

Regionally, the highest prevalence in smoking among men was found in North Karelia (>50%) in the beginning of the 1970s, when the petition for action was written and when the North Karelia Project was subsequently started. It was clear that reducing smoking in men needed to be one of the most important targets of the project to reduce high mortality rates, particularly among the male population. Women in Finland smoked relatively little, and in North Karelia somewhat less than women in Finland on average.

# REDUCING SMOKING IN NORTH KARELIA AND NATIONALLY

In the original North Karelia Project plan, intervention activities to reduce the risk factor levels were described in several categories: 1) general public information; 2) organization of services; 3) personnel training programs; 4) environmental changes; and 5) monitoring systems. The "anti-smoking programme" was initially one of the main subprograms of the project. In the project's continuation phase there were 3 specific target programs: anti-smoking, cholesterol lowering nutrition, and blood pressure lowering.

Much affected by the initiation of the North Karelia Project and its early activities combined with a progressive health policy climate, preparations for tobacco control legislation were started in the first half of 1970s. Finland became one of the world's pioneer countries in tobacco control in 1976, when the nationwide Tobacco Act was passed in the Parliament. The Act came into force in 1977, and the associated total ban on tobacco advertising a year later. The leaders of the North Karelia Project worked actively for the tobacco control legislation.

Along with the ban on advertising, the Tobacco Act of 1976 stipulated that a mandatory warning on the health hazards of smoking be printed on cigarette packs and tobacco products. The law also set maximum limits for harmful substances and restrictions on smoking in schools and public places. In addition, the sale of tobacco products to persons under the age of 16 years was prohibited. It was prescribed that 0.5% of the revenue from the excise duty on tobacco be used for work to reduce smoking.

During the original project period, there was much dissemination of information on the strong role of smoking in the high burden of heart disease in North Karelia. This took place in many types of articles in the press, health education leaflets and posters, mass meetings, and through health services and schools. Initial work also tried to counteract advertising and to promote smoke-free areas. Signs and stickers—"We do not smoke here - we are in the North Karelia Project"—became popular. The project also distributed many "no smoking" signs.

After a few years, the project started to pay attention to the problems of those who had decided to quit smoking. With some international influence, the project developed its smoking cessation model and helped set up many smoking cessation groups in local communities, usually led by the local public health nurse. Following the development in Sweden, the project started to test the at-that-time novel concept of nicotine replacement. The results of the double-blind trial on the effects of nicotine chewing gum in smoking cessation carried out in North Karelia were

The authors report no relationships that could be construed as a conflict of interest.

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GLOBAL HEART
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VOL. 11, NO. 2, 2016
ISSN 2211-8160/\$36.00.
http://dx.doi.org/10.1016/
i.gheart.2016.04.012

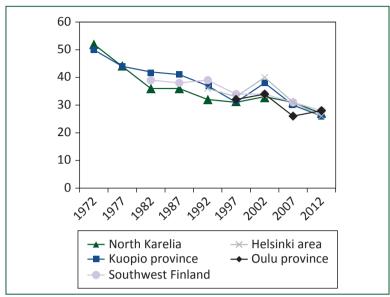


FIGURE 1. Development of male smoking in North Karelia and some other Finnish provinces, 1972 to 2012.

published internationally as the first of its kind [3]. The results of the study were used in the formal process to license the commercial use of the product.

After the original project period (1972 to 1977), the project started to contribute actively to smoking reduction at the national level. A very visible and long-term national action was the series of televised smoking cessation programs of the North Karelia Project that were carried out in 1978, 1979, 1986, and 1989. These were funded by the Finnish Broadcasting Company (YLE) and broadcast on national TV. National Quit and Win contests were linked with the programs of 1986 and 1989 [4]. The 1986 competition attracted >16,000 smokers, of whom about 20% reported having remained nonsmokers at least for 6 months. In 1989, a competition on smoking cessation was held between Finland and Estonia. Even if the percentage of contestants who quit smoking remains low, the competition has a good cost-benefit ratio because of the high number of participants.

Toward the end of the 1970s, more attention was also paid to smoking prevention among youth. The North Karelia youth project aimed at the prevention of cardiovascular risk factors among adolescents aged 13 to 15 years. The youth project included school-based smoking prevention programs with different approaches including, for instance, social influence, life skills training, and competition-based approaches [5].

The Smokefree Class Competition concept was developed further, and similar competitions have been organized nationally since 1989. In addition to national funding, the school programs have also received European Union support. The purpose of the competitions has been to delay the start of smoking and to prevent students who

have already experimented with smoking from becoming habitual smokers. The age group has been 11- to 14-year-olds. The research results on the permanent effect of the school programs on preventing smoking among young people have varied, but the majority of studies seem to indicate that the programs have a positive impact. It was emphasized that school programs should always be combined with other smoking reduction measures [6].

The trends in the prevalence of smoking have been assessed by surveys of representative population samples of the working-age population, initially in 1972 in North Karelia and the matched reference area, and since then every 5 years. Since 1992, the FINRISK surveys have included 5 areas in Finland. These surveys have always used the standardized FINRISK criteria that give a higher prevalence than the simple question on current daily smoking. Since 1978, simple national population postal surveys among adults ("AVTK"—Monitoring of Adults' Health Behavior) have been carried out annually. These surveys have also monitored smoking trends and used the criteria of current daily smoking [7,8].

#### **CHANGES IN SMOKING RATES**

The proportion of current smokers was 51% among men in the baseline survey of the North Karelia Project in the spring of 1972. The prevalence declined until 1980. Since that period, the recorded smoking prevalence varied between 35% and 40%. In the mid-1990s, male smoking among the age group 25 to 59 years was 30% in North Karelia and the corresponding proportion in the national sample for men was 34%. Since then, the prevalence in the FINRISK surveys has reduced to approximately 25% (Fig. 1).

In North Karelian women, smoking prevalence was 12% in the 1970s. During 1980 to 1987, the female prevalence was <16% but increased to 19% at the end of 1980s. In the mid-1990s, the proportion of current female smokers was 22%. In the early 2000s, the prevalence among women in North Karelia was 18% and 22% nationally. Female smoking was at a lower level in North Karelia than it was in Finland as a whole during the entire follow-up period. Since the year 2000, smoking has further decreased in North Karelia and nationally both in men and women.

The main feature of the decline in smoking in North Karelia in the 1970s was the growing proportion of exsmokers. In the 1980s, the proportion of exsmokers remained relatively constant, even seeing a slight decline, while the percentage of never smokers increased. A cohort effect was also found: fewer young men started smoking in the 1960s and 1970s than in the previous decades. Birth cohort analyses from a large population survey data showed that the onset of smoking increased in the birth cohorts born from 1916 to the 1950s [9]. The increase stopped in the later cohorts who were of smoking initiation age at the time when the first Tobacco Act was enacted and thereafter.

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