tory and clinical findings to the patient care setting. To prevent the further spread of AIDS in the developing and developed world is clearly an extremely important priority and its accomplishment will be to the benefit of all.

Beyond these immediate and urgent public health issues with which the WHO is concerned, other functions, activities, and objectives of the WHO merit the attention, and where possible the active involvement, of U.S. public health officials and the medical community. The WHO is engaged in research, in training, in information dissemination, in health planning, and in a wide range of other activities. WHO activities are clearly articulated in a wide range of WHO publications that can be easily obtained. (See Editor's Note.) U.S. public health officials and practitioners can, of course, seek professional positions with the WHO, or, at the invitation of WHO, serve as WHO advisors and consultants, an experience that many of their colleagues have found highly rewarding.

World health is a laudable goal. WHO's campaigns for the prevention, treatment, and eradication of diseases can benefit all mankind as exemplified by the successful eradication of smallpox from the globe nearly 200 years after the successful demonstration of a vaccine by Sir William Jenner.

It is not mere rhetoric to say that the WHO deserves the understanding and support of the U.S. public health and medical communities. In fact, the WHO is, and will continue to be, an important source of information and insight that can be of significant value to the health of the people of the United States.

Editor's Note—World Health Organization publications can be obtained in the United States from WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210. WHO publications are also available from the United Nations Bookshop, New York, NY 10017.

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A Television Format for National Health Promotion: Finland's "Keys to Health"

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The Keys to Health projects discussed in this paper were enhanced by the valuable guidance of Dr. N. Maccoby of Stanford University and the longstanding commitment of associates with Finland's TV 2, especially producers H. Palander and M. Karjalainen.

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Synopsis

A series of televised risk reduction and health promotion programs have been broadcast in Finland since 1978. The five series of programs were the product of a cooperative effort by Finland's television channel 2 and the North Karelia Project. The series has featured a group of volunteers who are at high risk of diseases because of their unhealthful habits and two health educators who counsel the studio group and the viewers to make changes in health behaviors.

The "Keys to Health 84-85" was the fifth of the series and consisted of 15 parts, 35 minutes viewing time each. Results of the evaluation surveys, which are presented briefly, indicate that viewing rates were high. Of the countrywide

sample, 27 percent of men and 35 percent of women reported that they had viewed at least three parts of the series.

Reported changes in behaviors were substantial among the viewers who had seen several parts of the series and were meaningful, overall, for the entire population. Of the countrywide sample, 7.1 percent of smoking viewers reported an attempt to stop smoking—this number was 3.6 percent of all smokers. The percentages of weight loss among viewers and the total population sample were 3.9 for men and 2.1 for women. The reported reductions in fat consumption were 27.2 percent for men and 15.0 percent for women. The reported effects in the demonstration area of North Karelia were even higher, mainly because of higher viewing rates.

SINCE 1978 FINLAND'S television channel 2 (TV 2) and the North Karelia Project, which is based at the National Public Health Institute of Finland, have cooperated in developing a format for a nationwide health promotion program for television. Beginning with the 1978 "Keys to Health" program on smoking cessation, the format has been tested in a series of broadcasts. A number of publications have described the methods and outcomes of this ongoing work (*1–6*). In this report we give a brief description of the methods used in conducting and the experiences resulting from the "Keys to Health 84–85" broadcasts, the fifth series.

The TV program's format is based on the concept of social modeling as a key process in stimulating changes in health behavior among the population (*7*). Smoking cessation, reduced consumption of fat and salt, increased consumption of vegetables, and increased physical activity are considered important goals for promoting public health in Finland. A great proportion of the population is aware of the benefits of these behaviors and is motivated to try making changes in health habits. The goals also have been the main target of the North Karelia Project. For television, the concept of modeling is employed to help the public learn how the changes can be made and to encourage social support for those changes.

The Series and the North Karelia Project

The North Karelia Project is a key national demonstration project for the community-based prevention of cardiovascular and other major chronic diseases and the promotion of health, in general. It was started in 1972 to fight the extremely high rates of cardiovascular diseases in Finland. The project involves a well-conceived and carefully evaluated intervention program in the County of North Karelia (in eastern Finland) with applications nationally of the experiences that result from the project (*8*).

The project's activities in North Karelia have included the distribution of health education materials, messages in newspapers and noncommercial media, work in primary health care, involvement of various community organizations, and modifications to the environment—for example, promotion of smokefree areas and low fat foods. A quasi-experimental study design using a matched reference area, repeated surveys of large samples of the population at 5-year intervals, and disease registers forms the basis of the evaluation. The 10-year results of this North Karelia Project have been published (*9,10*). They demonstrate the success in North Karelia of this comprehensive program in reducing risk factor and disease rates in the target community. The experiences gained during the first 5-year period have been used in several TV programs to influence, nationally, the reduction of risk factors and promotion of good health practices. At the same time, intensified field activities have been carried out in North Karelia to take advantage of the national programs for the special intervention in that county. These activities have involved health workers, supermarkets, local mass media, and specially trained lay leaders of the project.

All of the five main series have used the same format. The studio group comprises 6–10 "ordinary" persons who attempt to modify their health-related habits by following instructions from two project experts (photograph). These four series were shown before the 1984–85 presentation:

- 1978: "Stop Smoking" (original showing), 7 parts, 45 minutes each (*1*).
- 1979: "Stop Smoking" (repeat showing plus the 1-year followup of the original 28 series), 8 parts, 45 minutes each (*1*).

• 1980: "Keys to Health 80," 10 parts, 30 minutes each (*2*).
• 1982: "Keys to Health 82," 15 parts, 35 minutes each (*6*).

The studio groups are persons from different socioeconomic levels who have some unhealthful lifestyles, and they volunteer to serve as models in their attempts to change health behaviors. Members of a group usually are smokers and often have diets high in fats. Some members are overweight and have elevated serum cholesterol and blood pressure levels. In the program, the models attempt to reduce their risk factors; they share their experiences in a series of programs televised at 1- or 2-week intervals.

The sessions are filmed in the TV studio and broadcast later with minimal editing so that a sense of naturalness is communicated to the viewers. During the sessions the models receive advice from two project experts about gradually changing their health habits. The broadcasts also include illustrations of how the models deal with the many practical problems that confront anyone attempting to make such changes. During the broadcasts health educators appeal directly to viewers, urging them to imitate the models in specific ways. The problems that the studio groups face and the coping strategies they develop are presented to help viewers make changes personally.

To increase the impact of the program in North Karelia, a special activity to stimulate social reinforcement has been organized as a major component of intervention. This activity is carried out in the overall context of the North Karelia Project, which was started in 1972. Therefore, many of the project's activities were well established before the start of the TV programs.

In North Karelia, the community work associated with the TV programs includes various forms of community organization involving formal and informal decisionmakers, public health service providers, and voluntary organizations. It includes the provision of health education materials to people and training for physicians, public health nurses, and other health care workers. It also includes recruitment and training of "opinion leaders" and other persons strategic to encouraging viewing of the television programs and to providing social reinforcement for imitating the models (*12*). (Workers were asked to name a fellow worker to assist with the project. The persons named most frequently were invited by the project teams to participate as opinion leaders.)

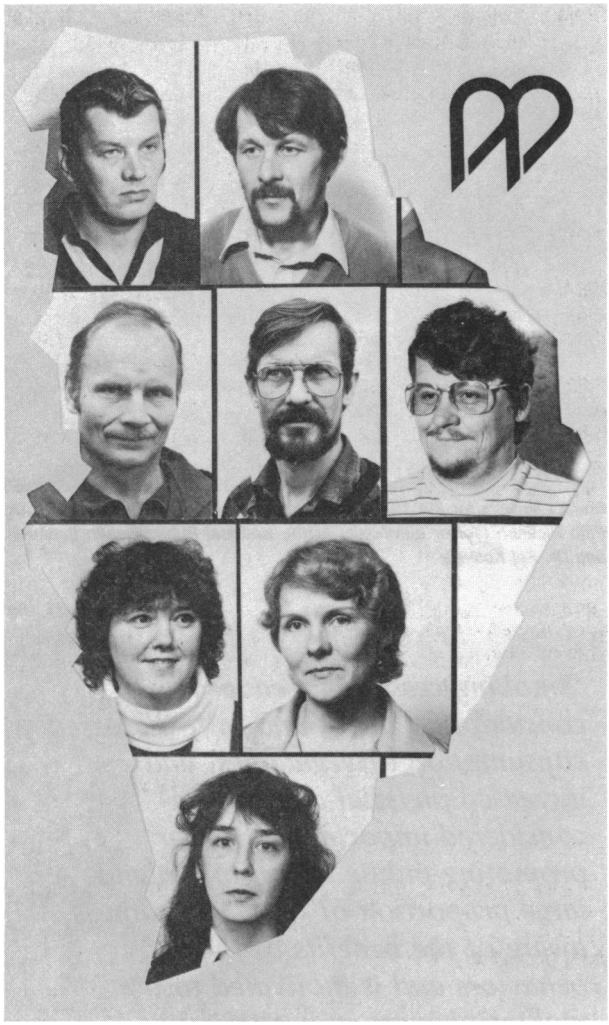
Project experts for the 1984–85 series. From left: Dr. Pekka Puska, Dr. Pirjo Pietinen (senior nutritionist at the National Public Health Institute), and Dr. Kaj Koskela

'Smoking cessation, reduced consumption of fat and salt, increased consumption of vegetables, and increased physical activity are considered important goals for promoting public health in Finland. A large proportion of the population is aware of the benefits of these behaviors and is motivated to try making changes in health habits.'

TV 2 is one of the two public TV channels in Finland. For most of the population, these are the only channels they see, although cable TV—with several other channels—is rapidly increasing in many cities and towns. At its own expense, TV 2 has produced the health promotion series as regular program productions. The program's contents have been designed by project experts. The broadcasts have been aired at various times of the evening—at periods between 6:30 and 10:20 pm.

"Keys to Health 84–85"

The 1984–85 "Keys to Health" series featured a group of eight middle-aged, North Karelia residents with different backgrounds. They all were smokers, averaging 20 cigarettes per day. Most of them had elevated serum cholesterol levels and



Studio group, 1984–85 series. From left, top row: Pekka Paakkunainen, metal worker; Pentti Kosonen, forestry school teacher. Next row: Jaakko Pakarinen, meat cutter; Valto Rantanen, sawmill worker; Mauri Härkänen, railway locomotive driver. Next row: Liisa Väisänen, textile factory worker; Irma Penttinen, assembly worker in paper factory. Bottom row: Maire Turunen, textile factory worker. (Map of North Karelia is the background)

were physically inactive. Several had elevated blood pressure and were overweight. They were recruited from eight different communities in North Karelia and were among the parents of children in eight special study schools of the North Karelia Youth Project. Further, they were selected for the project because they were employed at medium-sized worksites, that is, sites having more than 25 workers but fewer than 150 (photograph).

The program series that was aired November 1984 to April 1985 included 15 broadcasts of 35 minutes. The first eight parts in the fall of 1984 took place at weekly intervals. Thereafter (in the spring of 1985), the program concentrated on maintaining the changed behaviors, and the sessions were broadcast at 2-week intervals.

The program featured the processes of change that persons experienced in the context of family life and emphasized the important roles family members played in supporting the changes. Those aspects were featured in short films about spouses and children—their involvement at home and in a special health program at schools was shown. The broadcasts also featured social reinforcement and environmental changes at workplaces. These broadcasts were organized to support smoking cessation, dietary changes, increased physical activity, and improved stress-coping. Opinion leaders among workmates were recruited to assist in the activities. They delivered health education materials and promoted health-related discussions and activities at worksites.

Throughout Finland a broad promotional campaign was conducted on television and in newspapers to encourage viewing. Workbooks were distributed at health centers and drug stores following the program. The workbook contained instructions for viewers and forms that were similar to those used by the studio group for recording personal behavior changes. Worksheets that were similar to the forms were published in magazines that are circulated nationally.

In North Karelia the network of approximately 500 trained opinion leaders was involved in distributing workbooks. In that county the workbooks also were distributed at supermarkets, schools, and worksites as part of a broad but intensive effort to mobilize support for viewing the program and for making personal changes. At the eight schools with a student whose parent was participating in the studio group, the students were asked to encourage their parents to view the program and make changes in health behaviors.

Over the course of the 15 broadcasts all 8 models stopped smoking. Substantial dietary changes took place, and the mean serum cholesterol of the 8 models was decreased by 7 percent. Their physical capacity index increased 13 percent. With reduced salt and fat intake, increased physical activity, and the use of stress management techniques, the television models also experienced an 8 percent reduction in systolic blood pressure. The reduction in a sum risk score for cardiovascular diseases (that is, the summed scores for the risk factors smoking, serum cholesterol level, and blood pressure) was 67 percent.

These changes were fairly well maintained at the 1-year followup, which also was broadcast. At the followup, six of the eight models still were not smoking and the mean decrease from the initial

level of serum cholesterol was 9 percent; for systolic blood pressure, it was 6 percent. The overall reduction in the cardiovascular risk score was 52 percent at 1-year followup. The studio groups of the previous series experienced similar changes during the program.

Program Evaluation

The effects of the program on the entire population of Finland and of North Karelia were estimated with the use of a mail survey at the end of the program. A countrywide, random sample of the population ages 15–64 years and an additional sample from North Karelia County were surveyed. The questionnaire included precoded questions; those concerning the TV program were only part of the survey. The main purpose of the survey was to assess health behaviors and health-related practices among the Finnish population. Similar surveys have been carried out annually since 1978. The national sample for spring 1985 included 4,997 persons; 3,418 responded (68 percent). Of the sample of 1,222 persons in North Karelia, 862 responded (71 percent).

In the survey, persons were asked whether they had viewed the program, the context of that viewing, their use of the workbook and followup tables, and the changes they had made because of the program. In a previous study of this type concerning "Keys to Health 82," the validity of such self-reports was assessed in a subsample and found to be satisfactory (*5*). The survey results thus enable estimation of the self-reported, short-term (approximately 5 months) effects of the program and a comparison of effects in North Karelia with those in the whole country.

Results

Table 1 presents the viewing rates for the 1984–85 series, compared with those of the two previous "Keys to Health" series. In North Karelia, the viewing rates were higher than in the rest of Finland, and they had increased from the earlier broadcasts. These data show that interest in the series had been sustained and that the emphasis on North Karelia had resulted in proportionally more viewers there.

A large proportion viewed the program with their families—a greater percentage doing so in North Karelia. Few persons reported that they had followed the program in a group other than the family. A small proportion of the population

Table 1. Viewing rates of the 1980, 1982, and 1984–85 "Keys to Health" television programs in Finland (percentages)

Period series was shown and sex of viewer	North Karelia sample		Countrywide sample	
	Viewed at least 1 session	Viewed 3 or more 1 sessions	Viewed at least 1 session	Viewed 3 or more sessions
Men				
1980	49.7	13.5	34.8	8.6
1982	...	...	26.6	9.5
1984–85	68.7	49.1	49.0	27.2
Women				
1980	57.5	20.0	43.3	11.7
1982	...	...	36.2	15.4
1984–85	73.2	54.7	54.6	34.6

NOTE: The 1980 series had 10 parts; the 1982 and 1984–85 series had 15 parts. No survey was conducted after the 1982 series in North Karelia comparable to those done among viewers in the countrywide sample.

Table 2. Proportion of viewers who watched at least 1 part of the 1984–85 "Keys to Health" television program in Finland with the family or other group and who used the printed guidebook followup table (percentages)

Condition	Viewers in North Karelia (N = 612)	Viewers countrywide (N = 1,775)	P value[1]
Watched program with family	73.5	69.5	<.001
Watched program with other group	4.4	3.3	NS
Used printed guide	8.0	4.6	<.01

[1] Chi-square test.
NOTE: NS = not significant.

followed the series with a printed guide; the percentage doing so, again, was greater in North Karelia (table 2).

Rates of self-reported behavior change with the 1984–85 series are presented in table 3, both as a proportion of viewers (viewed at least one part of the 1984–85 series) and as a proportion of the total sample (to indicate the impact). Higher rates of reported behavior change were generally observed in North Karelia because of higher viewing rates. There was little difference in rates of behavior change between viewers in North Karelia and the whole of Finland. A substantial proportion of respondents reported making some changes in their diet, that is, reducing fat, salt, and sugar consumption and increasing vegetable consumption. Many also reported increasing their physical activity.

A relatively small proportion reported reducing their weight by 2 kg or more. However, consider-

Table 3. Behavior changes reported among viewers and total samples as the result of the 1984–85 "Keys to Health" television series in Finland (percentages)

Behavior changes	Viewers in North Karelia[1] (N = 612)	Viewers countrywide[1] (N = 1,775)	P value[2]	Total sample in North Karelia (N = 862)	Total sample countrywide (N = 3,418)	P value[2]
Reduced fat consumption	28.1	27.2	NS	20.6	15.0	<.001
Reduced salt consumption	12.7	17.4	<.05	9.7	9.5	NS
Reduced sugar consumption	20.3	20.3	NS	14.8	11.2	<.005
Increased vegetable consumption	26.5	25.2	NS	19.4	13.6	<.001
Increased physical activity	24.0	19.9	<.05	18.0	11.1	<.001
Lost weight in excess of 2 kg	4.6	3.9	NS	3.7	2.1	<.01
Tried to stop smoking (persons who were smokers at beginning of series)	5.6	7.1	NS	3.8	3.6	NS

[1] Viewed at least 1 part of series.
[2] Chi-square test.

NOTE: NS = not significant.

Table 4. Behavior changes reported among viewers of 5 or more broadcasts of the 1984–85 "Keys to Health" television series in Finland compared with those among all viewers (percentages)

Behavior changes	North Karelia sample: Viewed 5 or more parts (N = 236)	North Karelia sample: Viewed at least 1 part (N = 612)	P value[1]	Countrywide sample: Viewed 5 or more parts (N = 457)	Countrywide sample: Viewed at least 1 part (N = 1,775)	P value[1]
Reduced fat consumption	41.5	28.1	<.001	42.5	27.2	<.001
Increased vegetable consumption	38.1	26.5	<.001	34.1	25.2	<.001
Lost weight in excess of 2 kilograms	6.8	4.6	NS	8.5	3.9	<.001
Tried to stop smoking (persons who were smokers at beginning of series)	15.4	5.6	<.01	20.0	7.1	<.001

[1] Chi-square test.

NOTE: NS = not significant.

'The more programs people reported watching, the more likely they were to make changes in their health habits. In the entire country and in North Karelia, the reported effects were remarkable among persons who viewed five or more broadcasts.'

ing that the findings represent about two-thirds of the entire population surveyed, the absolute effect represents about 60,000 persons nationwide and about 4,000 persons in North Karelia. Also, although the proportion reporting an attempt to stop smoking was relatively small, the absolute effects are considerable because approximately 30,000 persons nationwide and more than 1,000 in North Karelia were estimated to have attempted to stop smoking. At the time of the survey (3- to 5-month followup), 65 percent had resumed smoking. Considering some expected failures, we approximate the permanent success rate to be 20–25 percent of that reported previously.

The more programs people reported watching, the more likely they were to make changes in their health habits. In the entire country and in North Karelia, the reported effects were remarkable among persons who viewed five or more broadcasts (table 4). In this mass communication program, the results among the audiences compare favorably with results that are typical of much more intensive programs of direct, interpersonal communications and health education.

Conclusion

This report is only a brief overview of the methods and results of the TV health promotion activity in Finland (see references *1–6* for a more detailed description and assessment of the earlier results). The viewing rates show continued interest

in these program series among the population—a conclusion that is corroborated by viewing surveys.

Evaluating this kind of national program is complicated. The results presented refer to changes in health behavior that are reported to have occurred as the result of viewing the program. The evaluation cannot detect possible other effects and long-term effects in national health promotion, for example, general support to other health education activities or contributions to later behavior changes among viewers. It cannot differentiate the impact of the program's format from that of special features of the Finnish population: it is largely homogeneous racially and culturally, has a longstanding tradition of taking public action, places relatively good trust in medical experts, and acts on the recommendations of national health authorities. The comparison between North Karelia and all of Finland gives an idea of the possible contribution of intensified community support. It is obvious that the Finnish population is interested in health-related issues and that TV has a prominent media role, but such conditions are not different from those in other countries.

Based on the reported findings, which are supported by earlier experiences, we conclude that a television format has been developed that is capable of attracting a large audience and facilitating significant changes in personal health habits. Furthermore, we conclude from the increased viewing and success rates that this format is appropriate for continued use nationally. Finally, from the greater effects on the population we observed in North Karelia compared with the rest of Finland, we conclude that the impact of such a broadcast series can be enhanced through active community organization and mobilization for social support to increase audience involvement and actual behavior change.

The direct and indirect impact of these TV program series since 1978 have most certainly contributed to the favorable changes in health-related lifestyles in Finland. The benefits have been observed in several surveys; the changed health behaviors have been associated with a marked decline in coronary mortality rates in Finland, especially in North Karelia (*10*). Of course, experiences and results with similar TV program formats in other countries are needed. Such activities are underway. An example is the A Su Salud Project at the University of Texas (see Editor's note), which is associated with a community-based health promotion project in southern Texas. It is necessary to find out the extent to which the results are caused by cultural factors in Finland and to what extent they can be accomplished elsewhere.

Editor's Note—Readers interested in securing information concerning the A Su Salud Project may write to Alfred McAlister, PhD, Center for Health Promotion Research and Development, University of Texas Health Science Center at Houston, Box 20186, Houston, TX 77225.

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