Promoting smoking cessation in Russian Karelia: a 1-year community-based program with quasi-experimental evaluation

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SUMMARY

Cigarette smoking is a major contributor to the East–West health gap in Europe, a situation which is particularly evident in comparisons of mortality and health behavior in Finnish and Russian Karelia. With technical assistance from the North Karelia Project in Finland, a Quit and Win smoking cessation contest was organized in the district of Pitkäranta in Russian Karelia. Local health care workers organized media publicity and community support, including news about competition winners and participants, and distribution of leaflets featuring stories about how local people were able to stop smoking during the Quit and Win contests. The Pitkäranta campaign was evaluated in a quasi-experimental study in which panels of 176 and 202 smokers, identified in a random population sample survey at the outset, were followed for 1 year in Pitkäranta and a comparable neighboring district. Cessation rates were estimated to be 7–26% in Pitkäranta and 1–2% in the comparison area, a statistically significant indication of experimental effects. These findings demonstrate that community campaigns can effectively reduce smoking in the present difficult conditions in Russia.

Key words: community smoking cessation; Russia

INTRODUCTION

High levels of smoking in Eastern Europe are an important contributor to the well-documented East–West health gap in Europe (Laaksonen et al., 1999). This gap is particularly acute in the Karelia region on the Russian–Finnish border. In Finnish Karelia, widespread improvement in health habits has led to large reductions in cardiovascular disease and cancer mortality (Vartiainen et al., 1994), while the death rate from these causes has increased in the Republic of Karelia in Russia (Laaksonen et al., 1999). Mortality rates in Russian Karelia are presently more than twice as high as those in the neighboring provinces in Finland (Puska et al., 1993). The high level of chronic disease mortality in Russian Karelia is at least partly attributed to very high smoking levels among men. Previous studies have found that approximately half of the men in Russian Karelia were daily smokers, twice the proportion found among men in Finland (Puska et al., 1993). Peto and Lopez (Peto et al., 1994) estimate that 42% of all deaths among Russian men aged 35–69 are due to smoking.

Because smoking reduction is a high priority for public health in Russia, the North Karelia Project in Finland organized technical assistance in the Russian Republic of Karelia to test the feasibility and effectiveness of smoking reduction
methods that have proven to be useful in Finnish Karelia. These methods consist of highly publicized smoking cessation competitions (‘Quit and Win’) combined with communication campaigns featuring stories about local role models who quit smoking. To provide interpersonal support for cessation, community networks, including laypeople and health care workers, distribute leaflets and promote imitation of the role models. Demonstrations of how these communication campaigns can reduce population smoking levels have been reported from over two decades of successful disease prevention in the North Karelia Project in Finland, where the proportion of men who smoke has decreased by more than half in the past 20 years (Puska et al., 1996; Vartiainen et al., 1998).

To determine whether this approach could be feasible and effective in Russian communities, the methods developed in Finland were adapted for use in a 1-year pilot program to promote smoking cessation in the district of Pitkäranta in the Republic of Karelia in Russia. Pitkäranta is a district with a population of ~28,000 that is located on the eastern shore of Lake Ladoga ~100 km from the Finnish border. It was selected for study because of its proximity to the Finnish North Karelia Project offices. Previous studies in Pitkäranta have found daily smoking rates of more than 50% among men and ~10% among women, while corresponding rates are ~25–20% among men and women in North Karelia, Finland (Puska et al., 1993). Mortality rates among men are also very high in this area, exceeding 1600 per 100,000 inhabitants during recent years (Laaksonen et al., 1999). Economic conditions are difficult. Many families lack food and other basic resources, and the health care system is not adequately funded. While Finnish and other international agencies provide various forms of assistance (e.g. with food and clothing), deteriorating economic infrastructures (e.g. reduced factory output) make continuing poverty an inevitable prospect in the near future (Laaksonen et al., 1999).

Local activities in Pitkäranta were carried out by staff of the Pitkäranta Central Hospital. Training and technical assistance were provided by staff from the North Karelia Project and the National Public Health Institute of Finland, and by international consultants with experience in communication and community organization for promoting smoking cessation in diverse populations. The work included a smoking cessation campaign with an independently conducted baseline survey and 1-year follow-up of a panel of smokers from Pitkäranta and the neighboring district. The experiment described here was part of a larger project supported by the European Union in which health conditions and risk factors were studied, and various efforts were organized to improve nutrition and other health behaviors.

METHODS

Subjects and experimental design

A random population sample of 1629 persons aged 25–64 years was surveyed at the outset (April 1996) in Pitkäranta and in the adjacent district of Suojärvi, using a standardized questionnaire and instructions from the Finnish Study team. The two districts were very similar with respect to demography and economic conditions. The survey was performed as part of a large international study of adult populations in different countries in Eastern and Western Europe (Laaksonen et al., 1999). There were 730 survey participants in Pitkäranta and 899 in Suojärvi. Among 317 men who were interviewed in Pitkäranta, 150 (47%) reported daily smoking (one or more cigarettes per day on average) in the initial survey. The rate was 55% among the 275 men surveyed in the neighboring district. Among the 624 women surveyed in Suojärvi and 413 women in the Pitkäranta survey, the rates of daily smoking were 8.3% and 6.3%, respectively.

To compare cessation rates in the two districts, the daily smokers were resurveyed 1 year later with standard questions about their current tobacco use. This enabled the cessation campaign in Pitkäranta to be evaluated in a quasi-experimental panel study similar to those reported by Meyer et al. (Meyer et al., 1980) and McAlister et al. (McAlister et al., 1992), with the campaign hypothesized to produce cessation rates in Pitkäranta that are higher than the rates which are observed in the comparison district. The panels of daily smokers consisted of 176 persons in Pitkäranta and 202 in the neighboring area. Follow-up surveys were conducted with 102 and 89 of the daily smokers in Pitkäranta and the neighboring district, respectively. The higher follow-up rate in Pitkäranta probably reflects the more intense activity and interest in smoking issues among health workers in that area.
Smoking cessation campaign

‘Quit and Win’ (Puska et al., 1996) is an established method for promoting community-level smoking cessation in whole populations by inviting smokers to participate in a contest requiring 1 month of confirmed abstinence from tobacco. In May 1996 an international Quit and Win smoking cessation contest was carried out in Pitkäranta. In addition to the Russian and international prize ($10 000), there were several local prizes donated from Finland. The entry form was published in the local newspaper and distributed through health care centers, schools and informal social networks. One hundred and five smokers participated. A continuous Quit and Win contest was conducted from September 1996 to March 1997. During that period smokers could register for the competition whenever they wanted. Participants who had abstained from smoking for at least 4 weeks were eligible for prizes. A drawing was held once a month and possible winners were tested by a carbon monoxide meter. A separate contest was arranged for individuals identified as ‘support persons’ (mostly spouses and friends) by smokers making quit attempts in the contest. The monthly prize for ex-smokers and their supporters was a 3-day holiday in North Karelia. There were 68 participants in the monthly competitions.

Behavioral journalism with role model stories (McAlister et al., 1992) was used in the campaign, with the first stories featuring persons who had stopped smoking earlier that year. The role model stories were presented in articles in the local newspaper and in three leaflets which also announced the Quit and Win competitions. The stories featured all stages of behavior change and important change processes, e.g. decisional balancing, social support, counter-conditioning and stimulus control (Prochaska and DiClemente, 1983). To achieve the widest possible community participation, three different leaflets were delivered through health care workers, in schools and kindergartens, at work-sites and through informal social networks. Persons distributing the leaflets were trained to refer to the successful experiences of the role models in the leaflets and to provide brief social reinforcement for persons stating intentions to quit smoking in the contest. A total of 600 leaflets were distributed.

Because of the presently difficult economic situation in Russia, there were many practical obstacles that needed to be overcome during the implementation of this project. Transportation and communication were often very difficult, due to road conditions and lack of electronic technology. Health workers in Russia did not receive reliable salaries and they lacked basic resources for public communication. Initially, the Pitkäranta Central Hospital had no formal staff assignments for community education and no program to reduce smoking. Because of high levels of economic distress, many community leaders and ordinary people were not interested in organized efforts to discourage smoking. This made it difficult and time consuming to recruit individuals to quit smoking or to join in organized support for smoking cessation. Additional problems were caused by growing insecurity and safety threats in the community.

RESULTS AND DISCUSSION

Cessation rates during the 1-year campaign were significantly higher in Pitkäranta than in the neighboring district, supporting the hypothesis that the campaign influenced smokers to quit. Among persons who participated in the 1-year follow-up survey, 14 reported that they had not smoked for at least the past month. Thirteen of these individuals were from Pitkäranta and one was from the comparison community. If non-participants are assumed to have continued smoking, the cessation rates were 7% (13/176) in Pitkäranta and 0.5% (1/202) in the comparison community (Fisher exact test for comparison of proportions, $p < 0.05$). Another 14 smokers reported that they stopped during the past month, again with 13 in Pitkäranta and one in the neighboring area. Combining both groups of quitters, the cessation rate was 14% (26/176) in Pitkäranta and 1% (2/202) in the neighboring area (Fisher exact test, $p < 0.01$), again assuming that non-respondents did not stop smoking. If cessation rates are calculated less cautiously as the proportion of the follow-up respondents who cease smoking (i.e. ignoring non-respondents), the rates were 26% (26/102) in Pitkäranta and 2% (2/85) in the neighboring area (Fisher exact test, $p < 0.01$). There were no significant gender differences in smoking cessation rates.

These findings are consistent with the expected effects of the smoking reduction activities in Pitkäranta. A total of 173 smokers participated in the Quit and Win competitions, ~3% of the whole population of smokers in the district. This
rate was similar to the annual level of participation found in Finnish North Karelia and other areas where intensive Quit and Win campaigns have been organized (Puska et al., 1996). This demonstrates that the method is feasible and that even small prizes can attract participation in an economically disadvantaged population. The difference in sustained cessation rates in the experimental and comparison districts ranges from 6 to 12%, depending upon how it is estimated. The effect size is similar to those observed in other quasi-experimental panel studies in California and Texas (Meyer et al., 1980; McAlister et al., 1992). If one in four of those who report cessation are able to maintain abstinence, as found in previous studies (Puska et al., 1996), the long-term net effect of this 1-year campaign may be estimated in the range of 2–3%. While the effect of a 1-year campaign is small, long-term studies in Finland have shown how small annual changes accumulate to produce significant long-term improvements in population health. Annual smoking reductions similar to those observed in this study, sustained over more than 20 years, have led to large reductions in tobacco-related deaths in North Karelia, Finland (Puska et al., 1995). If programs like this can be implemented and sustained in Russia, they may achieve similar results there. Unfortunately, domestic financial constraints presently limit that possibility.

Accomplishments in this work were obtained through close co-operation between Finnish and Russian colleagues determined to demonstrate model activities in a very difficult social situation. The results that were obtained show that a smoking cessation campaign can be both feasible and effective in a Russian community. Despite the great differences between conditions in Finnish North Karelia and Russian Karelia, the health promotion methods developed in Finland can be successfully adapted for application in Russia. With appropriate technical assistance in the use of community-based methods, a local health center in Russia can effectively promote smoking cessation. If financial support can be obtained for sustained activity, smoking cessation campaigns can help reduce the East–West health gap in Europe. Because tobacco use is a major contributor to the high rates of mortality in Russia and other Eastern European countries, support for smoking control should be included in programs of international assistance.

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REFERENCES


