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Original Research

Changes in the prevalence of cigarette smoking and quitting smoking determinants in adult inhabitants of rural areas in Poland between 2003 and 2012

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ABSTRACT

Objectives: We investigate trends in the prevalence of cigarette smoking among adults at all ages in two time points 9 years apart in two neighbouring rural populations and examine social and respiratory health determinants of quitting smoking.
Study design: Repeated cross-sectional study.
Methods: Two cross-sectional surveys were conducted in the same rural area of lower Silesia in Poland in 2003 and 2012. A total of 1328 (91% of adult eligible individuals) in 2003 and 1449 (92% of eligible) in 2012 adult inhabitants were surveyed, 908 people (560 villagers and 348 town inhabitants) participated in both surveys. Participants completed a questionnaire on smoking behaviour, education level and respiratory diseases.
Results: Current smoking was higher in the villages than the town, among men than women and those with a middle level of education. The prevalence of current smokers decreased over time, although this decline was much more pronounced in the town than in the villages (30.2% vs 23% and 35.5% vs 33.7%, respectively). Men were more likely to stop smoking than women both in villages and in town. The prevalence of current smokers among village women even increased between the two surveys from 27.6% to 29.3%. Respiratory diseases did not influence quitting smoking.
Conclusions: The degree of decreasing trend in smoking prevalence varied considerably within neighbouring populations. It was mainly seen in the town and among younger people. Men and those better educated were more willing to quit smoking. The discrepancies between two close rural populations indicates the need for an individual approach when designing programs of tobacco control.

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Introduction

Almost 700,000 deaths among European citizens per year are the consequence of cigarette smoking.[1] According to the European Commission, smoking costs the EU countries at least €100 billion per year and causes more health problems than alcohol, drugs, high blood pressure, excess weight or high cholesterol combined.[1] Despite the considerable successes in reducing tobacco exposure in recent years, the number of smokers in the EU is still relatively high, comprising 28% of the population.[1] Poland is one of the countries with the highest death rates due to cigarette smoking, with approximately 69,000 deaths per year, of which approximately 43,000 are premature deaths in people aged 35–69 years.[2] It is estimated that there are nine million tobacco smokers in Poland, representing 30.3% of the country's adult population.[2] These numbers were even higher in the past.[3]

Together with political, economical and sociological changes initiated in Poland in the early 1990s, social acceptance of smoking noticeably decreased. This change in attitude towards smoking was possible due to greater public awareness of health risks, numerous public campaigns against smoking and economic decisions including raising taxes on cigarettes which made them less accessible financially. All these factors have contributed to the fact that, from the 1990s, the number of smokers in Poland has markedly decreased.[2] However, in recent years there has been a slowdown in the declining trend, and in some populations the number of smokers has even increased. In the Global Adult Tobacco Survey (GATS) conducted in 2009–2010 in 16 countries, current smoking prevalence among women was the highest in Poland (24.4%)[4]. Distinct differences between Polish big cities and village inhabitants' smoking habits were also reported recently.[5]

In this article, we investigate trends in the prevalence of cigarette smoking among adults at all ages in two time points 9 years apart in two neighbouring places of residence in a rural area of south-west Poland. In addition, we examine social and respiratory health determinants of quitting smoking among individuals living in these two locations between 2003 and 2012.

Methods

Two cross-sectional surveys were conducted in the same rural area of lower Silesia in Poland in 2003 and 2012. All inhabitants aged 5 years or more were eligible. For the purpose of this article, we restricted the analyses to adults aged 18 years or more. They were inhabitants of seven small villages and two randomly selected areas of a nearby small, market town of about 4000 people.

We used exactly the same instruments in both surveys. All family members completed, with the aid of a nurse interviewer, a questionnaire on respiratory and allergic symptoms and smoking behaviour currently and in the past. We also gathered information on potential confounders or effect modifiers including sex, place of living, parental and maternal smoking and education (categorized according to the Polish three-level school system).

Participants were considered ever smokers if they reported smoking at least one cigarette per day for at least one year. Ever smokers were divided into current smokers (do you currently smoke cigarettes?) and ex-smokers (if they had stopped smoking before the survey). We also recorded the duration of smoking in years and age of smoking initiation.

Asthma and hay fever were defined as a positive answer to the question about the doctor's diagnosis of these conditions. Atopy was defined as a positive result (wheal of mean diameter 3 mm or more than the response to saline) of skin prick tests (house dust mite, cat fur, mixed grass and tree pollens, ALK-Abello, Hungerford, Berkshire, UK). We asked about chronic cough (do you usually cough during the day—or at night—in the winter?), exercise-induced symptoms (does exercise give you wheezing or whistling in the chest?), inhaler use (in the past 12 months, have you taken inhalers for breathing or for respiratory problems prescribed by doctor?) and bronchitis diagnosis ever (has a doctor ever told you that you have bronchitis?).

Ethical approval was obtained from the Ethics Committee at the Wroclaw Medical University; each participant provided signed consent.

Statistical methods

We estimated crude and adjusted prevalence odds ratios for being ever or ex-smoker using logistic regression, adjusting for age, sex, location and school education years (identified *a priori* as potential confounders). All analyses were performed with IBM SPSS Statistics 20 package.

Results

A total of 1328 (91% of adult eligible individuals) in 2003 and 1449 (92% of eligible) in 2012 adult inhabitants completed a questionnaire. The response rate was similar in villages and town (in 2003 89% in villages vs 93% in town and in 2012 89.6% vs 94.9% respectively); 908 people (560 villagers and 348 town inhabitants) participated in both surveys.

The characteristics of the village and town participants are shown in Table 1. Townspeople were slightly older than those from the villages, and older in 2012 than in 2003. Participants were more often female in both locations and in both surveys. The proportion of higher educated inhabitants was greater in the town than in the villages both in 2003 and 2012. In 2003, the prevalence of ever smokers was similar in town (53.9%) and villages (53.7%). Nine years later it slightly dropped in town to 48.4% and remained stable in villages (53.9%).

Current smoking was higher in the villages than the town (in 2003 35.8% vs 30.2% and in 2012 33.7% vs 23.0%, respectively), higher among men than women in both locations and in both years; it was also higher among those with a middle level of education than those with basic level and academic degree (Table 2). The differences between the villages and town communities with respect to current smoking were evident at all ages, and in both surveys, but particularly in