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Ready for a goodbye to tobacco? — Assessment of support for endgame strategies on smoking among adults in a Danish regional health survey

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ABSTRACT

Objectives. To assess support for a future ban on smoking and for increasing tobacco taxes in Denmark, and to explore if support differed across sex, age, educational attainment, smoking status and intention to quit.

Methods. Data from a 2013 health survey representative of the population aged ≥16 years in the Capital Region of Denmark (N = 41,356, response rate = 43.5) was linked with data on sex, age and education from central registers. Participants were asked if they supported: 1) a future ban on smoking in Denmark, and 2) increased taxes on tobacco products. Subgroup differences were explored using logistic regression.

Results. 30.6% supported a future ban on smoking, while 59.0% supported increased taxes. Women were less supportive of a future ban (OR = 0.83 (0.78–0.88)) and more supportive of increasing taxes (OR = 1.11 (1.06–1.18)) than men. Support for both measures was higher among the youngest. Only small differences were found in ban support across educational attainment, while support for taxes increased with increasing education. Support for both measures were greatest among never smokers (OR = 2.66 (2.40–2.93) and OR = 9.69 (8.83–10.63)) compared to daily smokers. Smokers intending to quit were two to three times as likely to support a future ban or increased taxes compared to smokers with no quit intensions.

Conclusion. One third supported a future ban on smoking, while six out of ten supported increasing taxes. This first Danish study of support for more radical tobacco control adds to the growing literature on tobacco endgame and sets a baseline for future assessments of public support.

Introduction

Many developed countries have achieved major declines in smoking prevalence in the last decades using a variety of tobacco control measures such as comprehensive smoking bans (Warner, 2013; Hyland et al., 2012). Smoking bans that seemed impossible and were thought unacceptable only few years ago are now widely and increasingly supported by the public — even among smokers (Daynard, 2009a; Gallus et al., 2014; Lykke et al., 2014). However, the decline in smoking rates in many countries has slowed to a trickle leading to a growing focus on more radical approaches to tobacco control, the so called endgame strategies (Warner, 2013).

Endgame strategies generally consist of government strategies with three overall aims; reducing tobacco use to a minimum (close to zero percent), end commercial sale of tobacco, and denormalize smoking in society, so that no children are exposed to tobacco use (Thomson et al., 2012; Malone, 2013). Different endgame strategies have been proposed such as; increasing tobacco taxes (Laugesen et al., 2010), reducing tobacco outlets (Cohen and Anglin, 2009; Chapman and Freeman, 2009), quotas on tobacco sales and the so called "sinking lid" approach in which the amount of tobacco released to customers is gradually reduced until it is near zero (Laugesen et al., 2010; Thomson et al., 2010a). Further suggestions include transforming the tobacco industry to a government agency or a non-profit organization with obligations to reduce harm (Callard and Collishaw, 2013; Borland, 2003), a license for smokers (Chapman and Freeman, 2009; Chapman, 2012), reducing nicotine in cigarettes to non-addictive levels (Laugesen et al., 2010; Benowitz and Henningfield, 2013) or even banning the sale of tobacco all together (Proctor, 2013; Daynard, 2009b). Banning cigarette sales to those born after a particular year, often the year 2000, is currently being seriously discussed in Singapore, Finland and the Australian state of Tasmania (Malone, 2013; Berrick, 2013; Khoo et al., 2010). In Canada the tax on tobacco has recently been increased substantially (Canadian Cancer Society). Countries like Finland and New Zealand have implemented policies that sets an end date on tobacco use — a date for when tobacco consumption should be close to zero (Edwards et al., 2012; Tobacco Act and No. 693/1976, 2010). End dates have also been set in Hong Kong, Ireland and Scotland.

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Thomson et al. (2012) suggest that an effective government endgame strategy should include: "Having an explicit government intention and plan to achieve close to zero prevalence of tobacco use" and "A clearly stated government "end" target date within a maximum of two decades". It is believed that endgame strategies could be successfully implemented if smoking prevalence is low (less than 15%) and there is wide public support across social, ethnic and other groups of the need for an end to smoking (Thomson et al., 2012).

Increasing tobacco taxes is one of the most effective existing tobacco control methods and the WHO "Framework Convention on Tobacco Control" calls for governments to use tobacco taxes as a mean to reduce tobacco use (WHO, 2003). The price of a standard pack of cigarettes (20 pcs.) in Denmark is around 5 Euros depending on brand. The tax constitutes 0.16 Euro per cigarette + 1% of retail price. A growing number of studies have documented that tobacco consumption decreases when the price of tobacco increases — especially among young people and those with low socioeconomic status (International Agency for Research on Cancer, 2011; Chaloupka et al., 2012). Higher prices decreases youth smoking initiation, reduces the duration of smoking, raises interest in quitting, boost quit attempts, and increases the number of smokers who successfully quit smoking (International Agency for Research on Cancer, 2011). Increasing taxes is therefore often included as one of the important strategies to achieve the tobacco endgame (Laugesen et al., 2010).

Knowledge of public support is an important factor in leading politicians to action (Thomson et al., 2010a; Wilson et al., 2013) and survey data is needed to assess the population's support for the different endgame strategies (Thomson et al., 2012). In 2013 the smoking prevalence in the Capital Region of Denmark was 15%. To our knowledge there has never been an assessment of the support for endgame strategies in a Danish population. Studies in other countries have found public support for a total ban on smoking to be 35–65% (Gallus et al., 2014; Connolly et al., 2012; Hayes et al., 2014; Shahab and West, 2010; Thomson et al., 2010b; Wang et al., 2015) but these studies were carried out in small population samples and only two where in an European context (Gallus et al., 2014; Shahab and West, 2010). Studies on support of increasing taxes on tobacco include the study by Filippidis et al. from 2014, who found an average support rate for increasing tobacco taxes of a little more than 50% in the 27 EU countries, but did not investigate subgroup differences (Filippidis et al., 2014). In Germany 39% supported tax increases on tobacco in 2008 (Hanewinkel and Isensee, 2008).

The aim of this study was to assess support for a future ban on smoking and for increasing tobacco taxes in the Capital Region of Denmark. Furthermore we wanted to explore if support differed across sex, age, educational attainment, smoking status and intention to quit smoking.

Methods

The "How are you?" survey

This study is based on data from a cross-sectional health survey ("How are you? 2013") conducted in all 29 municipalities of the Capital Region of Denmark. The survey (the third in the region), was conducted from February to April 2013. The survey used a random sampling design stratified by municipalities and a random sample of all citizens of the region was drawn from the Civil Registration System (CRS) (Christensen et al., 2012), where all Danes are given a personal and permanent 10 digit identification number at birth or on immigration. This number is used to register all information on disease, mortality, education and socioeconomic status, address, etc. in a central register. The CRS was further used to link the questionnaire data with information from other national registers.

The total sample included 95,150 individuals from the 29 municipalities in the region. Per municipality 2450 persons aged 16 years or older were sampled. Due to differences in population size between municipalities sample size in one municipality (Frederiksberg) was increased to 4500 persons, and Copenhagen Municipality was divided into ten areas treated as individual municipalities in the sampling process.

Each individual received a mailed invitation and a paper questionnaire (a web-based version was also available). The questionnaire contained questions among others on health-related behavior, general health, well-being, and chronic diseases as well as attitude towards structural interventions such as bans on smoking and alcohol sale, support for increasing taxes and a future ban on smoking. The response rate was 43.5% (n = 41,356) (Robinson et al., 2014). All survey participants were included in this study.

Support for a future ban on smoking and increasing taxes

Support for a future ban on smoking was measured using the following question: "Do you think it's a good idea to set a date for when smoking in Denmark should be banned (with the possibility of tobacco on prescription for already addicted smokers? No/Yes within 10 years/Yes within 20 years/Yes within 30 years or more)". The variable was dichotomised into two categories: "supportive attitude" and "non-supportive attitude" in the regression analyses. Support for increasing taxes was measured using the question; "Should taxes on tobacco products be increased? (yes/no)".

Covariates

The covariates included sex, age, educational attainment, smoking status and intention to quit smoking among smokers. Information on age and sex was obtained from the CRS, while data on educational attainment was drawn from the Danish Population's Education Register (PER) and linked with questionnaire data using the CRS. Educational attainment refers to highest completed education and was used as an indicator for socioeconomic position. The variable was categorized into five groups: "Under education", "No vocational education" (elementary, lower and upper secondary school), "Vocational education", "Professional/academy programs" and "University degree". Smoking-related variables from the questionnaire included self-reported smoking status (daily, occasional, former, and never smoker) and intention to quit smoking among daily and occasional smokers. Smoking status was used as a four category variable. Intention to quit smoking was dichotomised into: "Yes" (intention to quit with no set date/within six months/within one month) and "No".

Statistics

Descriptive statistics were carried out to characterize the sample and provide prevalence data on supportive attitudes towards a future ban on smoking and increased taxes. The associations between sex, age, educational attainment, smoking status and intention to quit respectively and support for the two strategies were tested using raw logistic regression models. Models were then adjusted for age, sex, educational attainment and smoking status. Since very few participants did not answer the questions about a future ban and increasing taxes, all models were based on complete cases, and no attempt was made to impute missing data. The level of significance was 0.05 in all analyses.

To make the results representative for the entire population in the region, all analyses were weighted to account for the stratified sampling design and non-response. In the sampling design of the survey, the same number of participants was sampled in each municipality. Residents in larger municipalities were therefore less likely to be sampled compared to those in smaller municipalities. The weights were computed by Statistics Denmark and were based on the results from the two previous "How are you?" surveys. The following variables were among others believed to influence response; sex, age, municipality, educational attainment, income, civil status and hospitalization (Christensen et al., 2012; Robinson et al., 2014). These weights are consistently used in the analyses of data from the "How are you?" surveys (Christensen et al., 2012; Robinson et al., 2014). All analyses were performed using survey procedures in SAS statistical software (version 9.3, SAS Institute Inc., USA).

Results

Table 1 shows the characteristics of the study population. A total of 30.6% supported a future ban on smoking with the majority supporting a ban within 10 years. Overall 59.0% supported increasing taxes on tobacco products. Further 41.8% of those supporting increasing taxes also supported a future ban, while 85.5% of those not supporting increasing taxes don't support a future ban (results not shown).