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Research report

Exploring smokers' opposition to proposed tobacco control strategies

MARIANNE LUND

ABSTRACT

BACKGROUND – Tobacco control (TC) advocates are searching for new TC strategies to decrease smoking rates further. AIMS – The aim of this study is to explore smokers' opposition to 16 TC strategies, including the attitudes in the sample as a whole. The results are discussed in relation to the importance of public versus smoker support, and the need for legitimate TC strategies. METHODS – An Internet panel with 35,000 registered users was accessed to invite participants to join a survey on attitudes towards TC strategies. In addition, 1253 participants were recruited directly from mobile phone lists. Of the 5543 participants recruited, 5250 adults aged 20 years or older were eligible for analysis. Respondents' attitudes were measured on a five-point Likert scale, and mean values, standard deviations and percentages of those who opposed TC regulations were reported. RESULTS – In the total sample, there was some support for regulating smoking in specific outdoors areas. Smokers opposed all of the proposed strategies except banning smoking in cars carrying children, increasing the age limit for purchasing cigarettes and banning smoking at transportation stops. Smokers seemed to accept regulations that protected others from the health risks of smoking, but defended their right to smoke in some specific outdoor areas. CONCLUSIONS – Smokers opposed most of the proposed TC strategies. Smokers' support may be more important in TC areas that aim to denormalise smoking and where enforcement is more complex.

KEYWORDS – Tobacco control, opinions, opposition, smokers

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Introduction

Tobacco control (TC) strategies are important for reducing smoking prevalence. Different TC measures used in combination are claimed as the most effective (Levy, Chaloupka, & Gitchell, 2004; Zhang, Cowling, & Tang, 2010). Tax increases, smoke-free air laws, advertising restrictions and cessation treatment programmes are effective strategies for lowering smoking rates (Nagelhout et al., 2012).

Norway implemented an advertising ban on tobacco products in 1975, introduced a smoke-free air law in public indoor areas and on public transportation in 1988, and a total ban on indoor smoking in bars and restaurants in 2004. In 2010, a display ban on tobacco products was implemented. In partnership with the World Health Organization Framework Convention on Tobacco Control (FCTC), a number of TC initiatives have been undertaken. Although Norway has implemented most of the strategies recommended by the FCTC, some methods have still not been applied or are underused. In the last two years, the daily smoking prevalence has been stable at 13%, and occasional smoking has remained at 9–10% for decades

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(Norwegian Institute for Alcohol and Drug Research, 2015).

Norway has a statutory goal of being a tobacco-free society and aims to reach a daily smoking prevalence of 10% by the end of 2016 (Ministry of Health and Care Services, 2014). To achieve the goal of a tobacco-free society, novel and radical TC strategies have been proposed. The so-called endgame strategies may be grouped into three overall aims: to reduce tobacco to a minimum; to end commercial sale of tobacco; and to denormalise smoking in society (Lykke, Pisinger, & Glümer, 2016). The concept of smoking denormalisation has become a central part of TC instruments, referring to strategies that aim to make cigarettes less desirable and less accessible, and the act of smoking less acceptable (Zhang et al., 2010).

This paper presents several proposals for regulating smoking behaviour, suggested by the government and non-government organisations and inspired by international endgame discussions (Warner, 2013). The proposed TC strategies presented in this study include reducing the accessibility of cigarettes by sales restrictions, a radical proposal to ban the sale of cigarettes in 10 years and strategies that aim to denormalise smoking by introducing outdoor smoking bans in specific areas. The Norwegian Medical Association, the Norwegian Cancer Society, "Tobacco Free" ("Tobakksfritt") and the Norwegian Directorate of Health have proposed that tobacco sales should be covered by the same regulation as the sale of beer, that is, only allowed in grocery stores licensed for such sale (Nesje, 2000; Ministry of Health and Care Services, 2012). A regulation of tobacco similar to alcohol sale would ban petrol stations and kiosks from selling tobacco and would thereby lower the number of tobacco outlets.

The proposal of changes in duty-free shopping of cigarettes have mainly originated from a debate on alcohol consumption, due to an increase in the sale of alcohol outside the state monopoly (Bergsvik, 2015). Several NGOs, such as the Norwegian Medical Association and the Norwegian Cancer Society suggest that tax-free sales of cigarettes be discontinued (Ministry of Health and Care Services, 2012).

Australia is currently the only country to have implemented plain packaging on tobacco products (Francis, 2012). In Europe, countries such as Ireland, the United Kingdom and France have adopted the regulation, and the Norwegian government is currently working on a proposition bill presented for parliament during autumn 2016.

Several states in the United States have expanded the smoking ban to outdoors settings, such as parks and beaches, of which New York City is an example (Johns, Coady, Chan, Farley, & Kansagra, 2013). In Europe, regulation of smoking in outdoor settings is limited (Martinez, Guydish, Robinson, Martínez-Sánchez, & Fernández, 2014). Regulating smoking in cars where children are present is implemented in several states in the US, Canadian provinces and Australian states, and in the United Kingdom and Ireland (Canadian Cancer Society, 2014; Action on Smoking and Health, 2016).

Public health interventions that seek to combat health burdens in society need to consider the importance of the problem, the effectiveness and cost-effectiveness of the policy, and the likelihood that the policy will meet public acceptance (Morain & Mello, 2013). Cigarette smoking is the

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leading preventable cause of premature death, explaining 13% of all mortality in 2009 in Norway (Vollset, Selmer, & Magnus, 2011). Knowledge of public support for TC strategies is considered an important factor for two reasons: support may lead politicians to take action and it is important for the successful implementation of TC (Wong, Pawson & Owen, 2011; Rabe, 2013). Differences in attitudes between smokers and non-smokers have been reported by others and are mainly described in terms of smokers' self-interests (Ashley et al., 2000; Dixon, Lowery, Levy, & Ferraro, 1991; Hersch, 2005; Lazuras et al., 2009; Green & Gerken, 1989). However, there are nuances in smokers' opposition to tobacco regulations (Poland, 2000).

The aims of this study were, first, to explore attitudes to 16 proposed TC strategies, and second, to explore the degree of smokers' opposition to these strategies. Smokers will need to adjust their behaviour if these strategies are implemented, and successful implementation may depend on their support. The findings are discussed in relation to the importance of public versus smoker support and the need for legitimate TC strategies, especially those aimed at denormalising smoking behaviour.

Methods

Data and sampling procedure

A market research firm (Ipsos MMI) used its pool of 35,000 registered Internet panellists in Norway to invite participation in an Internet-based survey on public opinion towards TC strategies. A double opt-in procedure was used, whereby panellists gave background information when signing in, in addition to confirming their attendance by email. The participants for the study were randomly selected within quotas set by gender, age and geography. A total of 4291 panellists were recruited. A further 1252 participants aged under 29 years were recruited directly from mobile phone lists. A mixed-mode survey using Internet and telephone (SMS) makes it possible to reach a higher number of respondents (Dillman et al., 2009). Panel members over the age of 64 years were interviewed by computer-assisted telephone interviewing (CATI), those in the 25–64-year age group answered via the Internet, and the youngest used their mobile phones. This approach has shown to give higher response rates: the youngest age group prefers to use their mobile phones in responding to surveys, while older age groups prefer CATI (Ipsos, personal communication, 2016). The survey ran in December 2014, recruiting 5543 respondents in total. Only respondents aged 20 years or older were included in the analysis (N = 5250).

Variables

Respondents' opinions towards proposed TC strategies were measured on a five-point Likert scale (1 = no support, 5 = full support). The introduction to the questions was as follows: "Several new tobacco control strategies may be implemented to reduce the health risk from tobacco smoking in society. What is your opinion if the government were to implement these regulations on smoking behaviour?" Smoking status was measured by asking "What are your current smoking habits?", with answering options "smokes daily", "smokes occasionally" or "never smokes". Those who said they smoked occasionally or never were asked if they had ever smoked daily. Former occasional smokers were not

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possible to identify in the data set, and are included in the non-smoker group.

Statistical analysis

Mean values (M) with standard deviations (SD) for each TC measure are reported, together with mean differences between daily smokers and non-smokers with independent sample *t* tests (Table 1). Analysis of covariance, with gender, age and education added as covariates, did not change the results in table 1 (Supplementary Table 1, available online). In this study, no support (value 1) was defined as having strong opposition to the TC proposal. The percentages of those who strongly opposed TC regulation are presented in Table 2, with a test for statistical differences between daily and occasional smokers.

Results

In the total sample, the highest support was observed for banning smoking in cars carrying children (M = 4.47), followed by support for outdoor smoke-free air laws at transportation areas (M = 3.97) and at workplace entrances (M = 3.79). There was also some support for banning smoking in outdoor seating areas at restaurants and bars, although less than given to banning smoking at transportation stops and outside workplaces. In the total sample, there was also some support for increased taxation and age limits for purchasing cigarettes. Overall, a total ban on selling cigarettes in the next 10 years was met with more opposition than support (M = 2.87), but 19% had a neutral opinion in this matter (results not shown). In the total sample, there was more support for regulating smoking in outdoor settings than for regulation by sales restrictions.

As expected, there were significant differences in opinion by smoking status. The differences in mean scores between daily smokers and non-smokers were largest for the proposals of extending the smoking ban to outdoor seating areas in bars and restaurants, increasing taxes on cigarettes and prohibiting smoking in public parks. The TC strategies with the least disagreement between daily smokers and non-smokers were banning smoking in cars carrying children and increasing the age for purchasing cigarettes from 18 to 20 years (Table 1).

Table 2 presents the percentage of those opposed to the regulations (those who scored 1 = "no support" on the five-point Likert scale). In the total sample, opposition was reported for regulation of the sales of tax-free cigarettes, prohibition of sales from kiosks and petrol stations, restricting cigarette sales to pharmacies only, introduction of plain packaging and a total sales ban.

Daily smokers opposed 13 of the 16 TC proposals, which meant that 50% or more reported no support for these items (Table 2). Of the daily smokers, 73.2% opposed the most radical proposition of banning smoking in 10 years. The corresponding number among occasional smokers was 50.8%. Significant differences in reporting strong opposition to tobacco control were found between daily and occasional smokers on all items except for increasing the age limit for purchasing cigarettes and banning smoking in cars (Table 2).

Discussion

The main findings from this study were observed as support for banning smoking in specific outdoor settings, for an age limit increase for purchasing cigarettes

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Table 1. Attitudes towards proposed tobacco control strategies. Mean (SD). Five-point Likert scale (1 = no support, 5 = full support). Differences between daily smokers and non-smokers. Respondents were aged 20 years or older.

	Daily smokers N = 541	Occasional smokers N = 532	Former daily smokers N = 1700	Non-smokers N = 2477	Total N = 5250	Difference: daily smokers vs. non-smokers
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Remove duty-free quota on cigarettes completely when entering Norway	1.34 (0.93)	2.01 (1.42)	2.81 (1.70)	3.42 (1.60)	2.86 (1.70)	2.08*
Increase cigarette taxes	1.45 (1.01)	2.34 (1.52)	3.29 (1.61)	3.83 (1.40)	3.26 (1.64)	2.38*
Reduce the number of cigarette outlets	1.47 (0.97)	2.18 (1.43)	2.89 (1.61)	3.39 (1.53)	2.90 (1.62)	1.93*
Prohibit cigarette sales at petrol stations and kiosks	1.36 (0.89)	1.94 (1.30)	2.72 (1.62)	3.21 (1.56)	2.73 (1.62)	1.85*
Prohibit cigarette sales at festivals, concerts and other cultural events	1.67 (1.15)	2.17 (1.43)	3.06 (1.66)	3.55 (1.53)	3.06 (1.65)	1.88*
Allow cigarette sales only at grocery stores, similar to the regulation for the sale of beer	1.71 (1.19)	2.19 (1.41)	2.92 (1.60)	3.36 (1.51)	2.93 (1.60)	1.65*
Give exclusive rights to pharmacies to sell cigarettes	1.23 (0.71)	1.63 (1.17)	2.04 (1.46)	2.49 (1.57)	2.13 (1.49)	1.26*
Increase age for purchasing cigarettes from 18 to 20 years	2.49 (1.58)	2.75 (1.63)	3.14 (1.66)	3.51 (1.59)	3.21 (1.65)	1.03*
Introduce plain packaging regulation	1.49 (1.01)	2.13 (1.42)	2.61 (1.60)	3.10 (1.56)	2.68 (1.59)	1.62*
Prohibit all cigarette sales within 10 years	1.56 (1.08)	2.15 (1.42)	2.92 (1.61)	3.27 (1.55)	2.87 (1.62)	1.71*
Prohibit smoking at (outside) roofed stands for buses, trains, boats, trams and taxis	2.50 (1.50)	3.31 (1.60)	4.03 (1.39)	4.38 1.14)	3.97 (1.44)	1.88*
Prohibit smoking in public parks/gardens	1.47 (0.97)	2.10 (1.38)	3.08 (1.64)	3.66 (1.47)	3.09 (1.64)	2.19*
Prohibit smoking at entrances to all workplaces	2.17 (1.41)	3.01 (1.57)	3.85 (1.49)	4.28 (1.21)	3.79 (1.52)	2.11*
Extend smoking ban to outdoor seating areas in restaurants	1.37 (0.87)	2.09 (1.40)	3.20 (1.63)	3.89 (1.40)	3.23 (1.66)	2.52*
Extend smoking ban to outdoor seating areas in bars	1.34 (0.84)	1.97 (1.35)	3.15 (1.64)	3.80 (1.43)	3.15 (1.67)	2.46*
Prohibit smoking in cars when children are present	4.05 (1.43)	4.25 (1.30)	4.51 (1.12)	4.59 (1.00)	4.47 (1.14)	0.55*

*p-value (2-tailed) < .001

and tax increases on cigarettes in the total sample. Smokers only supported banning smoking in cars carrying children. Smokers showed a strong degree of opposition towards most of the proposed TC instruments. Except for the proposal of increas-

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Table 2. Attitudes towards proposed tobacco control strategies. Percentage opposing (1 = no support) tobacco control strategies. Respondents were aged 20 years or older.

	Daily smokers N = 541	Occasional smokers N = 532	Former daily smokers N = 1700	Non-smokers N = 2477	Total N = 5250	Significant difference: daily vs. occasional
	%	%	%	%	%	p -value
Remove duty-free quota on cigarettes completely when entering Norway	82.1	56.2	36.9	21.6	36.6	.000
Increase cigarette taxes	79.1	46.6	24.4	11.8	26.4	.000
Reduce the number of cigarette outlets	76.0	50.0	32.7	18.8	32.3	.000
Prohibit cigarette sales at petrol stations and kiosks	81.1	58.1	36.9	22.9	37.0	.000
Prohibit cigarette sales at festivals, concerts and other cultural events	68.4	49.8	29.5	17.0	29.7	.000
Allow cigarette sales only at grocery stores, similar to the regulation for the sale of beer	67.7	49.8	31.0	19.0	31.0	.000
Give exclusive rights to pharmacies to sell cigarettes	87.4	71.4	58.9	43.0	55.6	.000
Increase age for purchasing cigarettes from 18 to 20 years	44.4	36.7	28.5	20.2	27.0	.042
Introduce plain packaging regulation	76.5	51.3	40.4	24.1	37.6	.000
Prohibit all cigarette sales within 10 years	73.2	50.8	31.4	21.1	32.8	.000
Prohibit smoking at (outside) roofed stands for buses, trains, boats, trams and taxis	39.9	22.0	10.8	5.0	12.2	.000
Prohibit smoking in public parks/gardens	76.0	50.4	28.6	13.8	28.7	.000
Prohibit smoking at entrances to all workplaces	49.5	26.9	14.1	6.5	15.4	.000
Extend smoking ban to outdoor seating areas in restaurants	79.7	52.4	25.2	11.1	26.9	.000
Extend smoking ban to outdoor seating areas in bars	81.3	56.8	26.5	12.4	28.6	.000
Prohibit smoking in cars when children are present	12.4	8.6	6.2	4.3	6.2	.135

ing the age limit for purchasing cigarettes and banning smoking in cars carrying children, daily smokers were more in opposition to the TC strategies compared to occasional smokers.

Daily smokers were opposed to the proposal of a total sales ban on cigarettes in 10 years (73.2%), while the corresponding opposition in the total sample was 32.8%. Half of the occasional smokers opposed

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ing the age limit for purchasing cigarettes and banning smoking in cars carrying children, daily smokers were more in opposition to the TC strategies compared to occasional smokers.

Daily smokers were opposed to the proposal of a total sales ban on cigarettes in 10 years (73.2%), while the corresponding opposition in the total sample was 32.8%. Half of the occasional smokers opposed this ban. Two studies on public opinions towards a total sales ban in other European countries report support rates between 35% and 45% (Gallus et al., 2014; Shabab & West 2010). However, the wording of the questions and the answering option in the present Norwegian study are not comparable to these two studies.

A central question is whether support from the public is considered to be sufficient or whether support from smokers, the group that society demands to change, is more important. As the prevalence of smoking declines, smokers become a minority group; therefore, their public "voice" is diminishing. Thus, public support becomes almost equivalent to non-smokers' opinions, and this group may easily support restrictions towards a behaviour they do not engage in themselves. In addition, daily smoking has become more and more associated with low social status. There are indications of social marginalisation and a stronger association between smoking and mental health problems (Lund, 2015; Lund, Lund, & Halkjelsvik, 2014; Talati, Keyes, & Hasin, 2016). This situation has activated an ethical debate in tobacco control, where social inequality in smoking behaviour becomes both an argument for and against strong TC strategies (Bayer, 2008; Burris, 2008).

The proposals of regulating smoking at outdoor seating in restaurants and pubs came up as a response to the findings by the Norwegian Labour Inspection Authority, which reported that one in three bars/restaurants were violating the Tobacco Act by building in their outdoor seating areas (Ministry of Health and Care Services, 2012). NGOs representing different patient groups suggest a total smoking ban at outdoors seating at bars and restaurants. High discrepancies between smokers and non-smokers were found on the proposal to ban smoking at outdoor seating in bars and restaurants. In this area, smokers and non-smokers have a clear conflict of interest: smokers may feel they have already gone to great lengths to accommodate the indoor smoking ban required by the public, while non-smokers may feel excluded from outdoor seating at some restaurants and bars. The outdoor seating areas are often enclosed and built-in to protect customers against rain, wind and cold, leading to a high density of environmental tobacco smoke. Non-smokers may feel discomfort, and outdoor seating at some restaurants may become an inappropriate place for families.

When smoking indoors was banned, there was support from the public, but not from smokers. Still, the high level of compliance after implementation of the law showed that smokers were able to adapt (Lund, 2006). In this case, the justification for an indoor smoking ban was strong because of the risk of environmental smoke and the need to protect employees in the hospitality industry. In addition, there was support from the labour unions, and media campaigns were used to inform the public about the justification of the law before it

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was implemented. The strong justification of this ban was accepted by the smokers, and it is also probable that smokers did not experience this ban as a top-down approach, but rather as an important step in reducing health inequality by protecting employees in the hospitality industry.

It is unclear whether this successful implementation can be applied to banning smoking in specific outdoor settings. There is some evidence that high smoker density in enclosed outdoor areas generates high levels of environmental smoke, measured as particulate matter (Sureda, Fernández Muñoz, López, & Nebot, 2013). Banning smoking at outdoor seating in bars and restaurant may therefore have some justification in relation to the health risk of passive smoking in some cases. Beyond these conditions, the evidence of harm from cigarette smoking in outdoor settings is weak (Bayer & Bachynski, 2013). Some argue that banning outdoor smoking is a major intervention in the autonomy of the smoker, that such interventions need to be supported by scientific argument of health risk to others and that the argument that smoking is an unwanted behaviour annoying non-smokers is not enough to build policy upon (Chapman, 2000). Another problem with the outdoor smoking ban is the absence of enforcement measures, as the policing of the outdoor smoking ban would be left to the lay public (Poland, 2000).

Evidence is strong for a high concentration of environmental tobacco smoke in cars, with subsequent health risks, especially for children (Evans & Chen, 2009; Rees & Connolly, 2006). The banning of smoking in cars carrying children was met by support from both non-smokers and smokers. Support among smokers for banning smoking in cars carrying children has been reported by others (Hitchman, Fong, Zanna, Hyland, & Bansal-Travers, 2011; Wong et al., 2011). Tobacco control interventions that include children in the context of passive smoking activate protective attitudes in smokers. Smokers regret starting to smoke and do not want their children to take up smoking, and are therefore supportive of interventions targeting children (Diepeveen, Ling, Suhrcke, Roland, & Marteau, 2013; Fong et al., 2004). In this aspect of TC, everyone seems to agree that the practice of smoking while driving and exposing children to the environmental smoke is unacceptable. Therefore, a high degree of compliance with such a ban is likely.

For some types of outdoor regulations, smokers' opposition is less marked. A minority of daily smokers opposed regulation at transportation stops, and only two out of ten occasional smokers opposed this regulation. The concept of the "considerate smoker" illustrates the notion that smokers wish to retain public acceptance of their smoking. They are therefore willing to comply with the unwritten social norms and expectations relating to outdoor public spaces by moving away from non-smokers to light a cigarette (Poland, 2000). Smokers are aware that their smoking may bother non-smokers, reporting that they feel more comfortable smoking where non-smokers are absent (Kaufman et al., 2010). It is also possible that this type of regulation is not considered a major intervention into the freedom of smokers.

In contrast, smokers opposed the banning of smoking in public parks and gardens in addition to outdoor seating in bars

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and restaurants. Such a proposal probably activates fear among smokers that "every space is claimed" by non-smoking norms (Bell, McCullough, Salmon, & Bell, 2010). The arguments for banning smoking in outdoor settings are found mainly in the social denormalisation approach, where reduced visibility of smoking is believed to make smoking less acceptable (Collins & Procter, 2011). The "out of sight, out of mind" strategy represents a shift in social norms, believed to be important for the prevention of smoking uptake among youth and supportive for smokers who are trying to quit (Bloch & Shopland, 2000).

For governments, endgame strategies aimed to socially denormalise smoking behaviour face challenges related to increased stigmatisation and potential isolation of smokers (Thomas & Gostin, 2013). TC strategies where denormalisation is the main aim and, to a lesser degree, the protection of non-smokers need ethical evaluation through the lens of health justice (Thomas & Gostin, 2013). To persuade smokers to regulate their behaviour based on the theory and documentation that underlie tobacco denormalisation approaches seems to be much harder than to persuade smokers based on evidence-based research on the health consequences of smoking, including passive smoking. The question is whether smokers (or non-smokers) see social denormalisation strategies as a legitimate strategy in TC. When people view a policy as legitimate, they may be more likely to comply. Otherwise, the intervention may backfire (Morain 2013).

However, there are TC strategies that could be successfully implemented without support from smokers, such as reducing accessibility to cigarettes, because they encompass the possibility of permanent structural changes and law enforcement, and may be seen as less stigmatising. Legislation has been an important part of TC in the last decades, and its imperative in endgame strategies has been strengthened (Thomas & Gostin, 2013). The biggest threat to reduced accessibility to cigarettes may not be a lack of support in the public, but powerful actors with economic interests. Examples here are duty-free sales, advocated as essential for the profitable operation of Norwegian airports, and lawsuits from the tobacco industry (TI) to the introduction of the display ban in Norway, and plain packaging in Australia (Mikalsen, 2015; News.com.au, 2012).

The cigarette pack is considered an important part of the TI's marketing strategy, so removing cigarette brand images by introducing plain packaging is believed to have an effect on the appeal of the product. It is also believed that plain packaging will make the health warnings more prominent and avoid misleading the public by creating false perceptions with colours and fashionable designs (McCool, Webb, Cameron, & Hoek, 2012; Moodie, Angusa, Stead, & Bauld, 2012). In the present sample, there was little support for introducing plain packaging in the total sample. The reason for this is not clear, but one possible explanation is lack of information to the public about its TC potential. The justification of plain packaging may be more complex to communicate to the public because it is based on findings from complex study designs (observational, experiments and population-based studies), supported by the theory of consumer perception and brand identity (Smith, Kraemer, Johnson, & Mays, 2015).

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Debates about public health intervention are related to the classic conflict between individual autonomy and freedom, and the desire to promote health and protect third parties from health risks. The strong negative health impact, along with the economic and social costs, has been used to justify reduced availability of cigarettes, product regulation and laws to reduce the harm caused by passive smoking. The justification to continue along this path still exists, but ethical questions have been raised in relation to the use of social denormalisation strategies and in consideration of the characteristics of the remaining population of daily smokers.

If the decline in smoking rates continues, the goal of reaching a 10% daily smoking rate will be achieved in few years. The statutory goal of a tobacco-free society presupposes the implementation of a wide range of endgame strategies to drive the smoking rates towards near-zero levels. Among the proposed strategies presented in this study, a proposition to the Norwegian parliament Stortinget (bill) is being drafted regarding plain packaging legislation, and the Norwegian government intends to implement a register database for tobacco outlets (Ministry of Health and Care Services, 2016).

Based on the present results where smokers report strong opposition to the proposed TC strategies, this may indicate that implementation of a wide range of endgame strategies does not seem to have reached a legitimate status among smokers. The ideas behind the endgame strategies and the goal of a tobacco-free society need be anchored also among smokers to increase compliance. This is particularly important for strategies aiming at regulating the behaviour itself. The dilemma for a TC policy highlighting a denormalisation approach with its primary goal of creating a social milieu in which smoking becomes less desirable and less socially acceptable is to convince the smokers that this approach is possible without stigmatising smokers (Bayer & Bachynski, 2013). Support from smokers may be more important for successful implementation in areas of TC that rely on social denormalisation, where enforcement is low and where successful implementation is left to the lay public and compliance by smokers. Tobacco control at a structural level, reducing the accessibility to cigarettes, is possibly less stigmatising and may not depend on support from smokers to be effective.

Strengths and limitations

The use of Internet-based data provided the opportunity to accumulate a large volume of responses in a short time, including a large enough group of smokers. It is also likely that Internet-based data are more suitable for measuring behaviours with a negative social perception, such as smoking status, to avoid social desirability bias.

Shortcomings in the data are mainly related to uncertainty regarding representativeness. The main question is whether we have a representative sample of smokers in the data set. There are two elements of self-selection regarding the web-panel data which is troublesome. First, the willingness to join the panel in the first place, and second, the willingness to participate in the actual survey on TC attitudes. For example, the theme of the survey may have motivated those who strongly oppose TC regulation. If the preferences of non-respondents systematically differ from those

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who participate, the results would be biased.

The participants who were recruited from the panel were compared to the official Tobacco Survey data, which is representative data using register databases for information about the educational level. The results showed an overrepresentation of individuals with high educational level in the study sample, a bias that is often reported in web-based data (Bosnjak, et al., 2013). An overrepresentation of highly educated individuals was also found in the panel which the data were recruited from. It is, however, unclear how this bias may have interfered with the results on attitudes. A comparison of the attitudes scores between the panel respondents and those recruited directly from mobile phone lists (in the same age group, 20–29-year-olds) showed no statistical differences except in the item of banning smoking outside workplaces. In the future, the quota method of surveys on smoking behaviour and tobacco control attitudes which use data gathered from web panels should include education/income in addition to gender, age and region to reduce potential bias.

Declaration of Interest None.

Marianne Lund, PhD student
Department of Substance Use
Norwegian Institute of Public Health
E-mail: marianne.lund@fhi.no

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