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# To what extent and why adolescents do or do not support future tobacco control measures: a multimethod study in the Netherlands

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## ABSTRACT

**Background** In the Netherlands, the adoption of new tobacco control measures is needed to further reduce rates of adolescent smoking. Adolescents' support for future measures could increase the likelihood of adoption as this provides political leverage for tobacco control advocates. There is, however, scant evidence about to what extent and why adolescents support future measures. We therefore assessed adolescents' support for a range of future measures and explored the criteria that adolescents use to underpin their support.

**Methods** A mixed-method design involved surveys and group interviews with fourth-year students (predominantly 15–16 years). The survey, completed by 345 adolescents, included statements about future tobacco control measures and a smoke-free future where nobody starts or continues smoking. Thereafter, 15 adolescents participated in five group interviews to discuss their support for future measures.

**Results** The survey showed that adolescents generally support a smoke-free future. They expressed most support for product measures, mixed support for smoke-free areas, ambivalent support for price increases and least support for sales restrictions. The group interviews revealed that differences in support were explained by adolescents' criteria that future measures should: have the potential to be effective, not violate individuals' right to smoke, protect children from pro-smoking social influences and protect non-smokers from secondhand smoke.

**Conclusion** Adolescents' high support for a smoke-free future does not lead to categorical support for any measure. Addressing the underlying criteria may increase adolescents' support and therewith provide political leverage for the adoption of future measures.

## INTRODUCTION

Adolescent smoking in the Netherlands is still a problem. A national survey on 16-year-old adolescents showed that 40% ever smoked, 21% smoked in the prior month and 6% smokes on a daily basis.<sup>1</sup> Therefore, policy makers recently adopted legislation to prohibit smoking at schools and decrease the attractiveness of tobacco packages for youth (see online supplementary file 1 for details).

To move towards the elimination of adolescent smoking behaviour, policy makers should implement a more comprehensive set of strict tobacco control measures.<sup>2</sup> This includes the implementation of tobacco endgame measures.<sup>3</sup> The adoption of such measures will be more likely if they are supported by the adolescents themselves as

this provides political leverage for tobacco control advocates.

There is, however, scant evidence about to what extent and why adolescents support the implementation of different kinds of future measures. We found only two studies among adolescents aged 14–15 years from New Zealand; both showed high levels of support with minimal differences in the levels of support between the measures.<sup>4 5</sup> Scientific studies explaining why adolescents do or do not support different tobacco control measures are even scarcer. The only study we found showed that measures that are perceived to threaten individuals' freedom receive relatively less support.<sup>6</sup>

We employed a mixed-method design to address the following objectives. First, in a survey, we assessed adolescents' support for a smoke-free future (ie, where nobody starts or continues smoking) and their support for a range of measures that were not yet implemented in the Netherlands in 2016. Second, group interviews explored what underlying criteria (ie, themes of reasoning recurring over individuals) adolescents use to underpin their support for future measures.

## METHOD

### Survey

Fourth-year students (predominantly 15–16 years) self-completed, in the presence of a teacher, a paper-based survey during regular school hours in April 2016. Students (n=345) were from 15 classes divided over three schools that were conveniently selected from our personal network of schools in the Amsterdam region. These schools were asked to select one or two classes per educational track to represent three different educational levels of the tiered Dutch system: 'low' (preparation for vocational schools), 'middle' (preparation for higher vocational schools) and 'high' (preparation for college and university) tracks. None of the students in these classes used their right to refrain from participation.

The survey included 19 items: 7 about demographics and smoking status, 10 statements about support for future measures and 2 statements about support for a smoke-free future. Online supplementary file 1 presents the statements.

Gender and country of birth were determined by straightforward survey questions. Educational level was determined by class. Participants were defined as 'current smokers' if they had smoked in the last 30 days. 'Ever smokers' had smoked, but not in last 30 days. Never-smokers had not smoked a single



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puff and were either 'non-susceptible' or 'susceptible'. The measurement of susceptibility was based on Pierce *et al.*<sup>7</sup>

Support for each statement was measured with a five-point Likert scale (*completely disagree* to *completely agree*). Adolescents were considered supportive if they answered *completely agree* or *agree*. Analysis focused on assessing percentages of support for specific statements and overall support for future measures and a smoke-free future. The percentage of missing values per statement ranged between 0.3% and 2.6% and were excluded from the analysis.

### Group interviews

Students were personally approached for participation in one of five group interviews, each with three students, in May and June 2016. Small groups were preferred to allow for more in-depth probing, such as when discrepancies in reasoning occurred. Different groups were established for the low and high educational levels. Within each level, we conveniently selected men, women, and also (ex-)smokers, experimenters and never-smokers. Most participants did not answer the survey, but were made aware of the content of the survey. Online supplementary file 2 presents the group compositions.

The interviews were semistructured, took place in quiet locations in or near schools and lasted 30 to 45 min. The interviewer first explained the research, participants' rights and asked for written consent. She started the interview by asking adolescents to share their experiences with and opinions about smoking. Then, adolescents elaborated on how they want smoking and tobacco control to be in the future. The interviewer thereafter mentioned that she wanted to know more about what they think of future measures. To stimulate this discussion, a ranking exercise was introduced that distinguished between smoke-free, price, product and sales measures. Adolescents placed two post-its: one at the measure they supported the most and the least, including a reason.

A thematic analysis identified what criteria adolescents used to underpin their support. Thereafter, the transcripts were reread to explore how adolescents used said criteria to underpin their

support for the surveyed measures. Transcripts were analysed and discussed by the first and second authors.

### Ethics

The issue of ethics was discussed with schools, and together, we agreed on a protocol, including the informing of parents. The protocol was sent to the Amsterdam Medical Centre Medical Ethics Review Committee, which concluded that the Medical Research Involving Human Subject act does not apply to this study and that approval by this committee was not required (letter W16\_068).

### RESULTS

Online supplementary file 3 presents the linear regression analysis. Support for a smoke-free future ( $M=3.86$ ) was higher than support for future measures ( $M=3.32$ ). Adolescents in the high educational track ( $M=4.10$ ) showed significantly more support for a smoke-free future than adolescents in the middle ( $M=3.71$ ) and low ( $M=3.83$ ) tracks. This association with educational level occurred only with the statement 'I want no one to smoke in the Netherlands in 10 years', not with 'I want my own future children to have no chance to start smoking' (table 1). Non-susceptible never-smokers showed significantly more support for both future measures ( $M=3.76$ ) and for a smoke-free future ( $M=4.32$ ) compared with those with other smoking statuses (eg, current smokers:  $M=2.59$  and  $M=3.22$ , respectively).

Table 1 presents the levels of support for different future measures. Comparisons between educational levels found a significant difference only for increasing costs. Large but non-significant differences existed in support for smoke-free school yards and the removal of addictive ingredients. Comparisons between smoking statuses showed significant differences for all measures, except for smoke-free cars with children. The most notable differences were that relative to non-susceptible never-smokers, current smokers hardly supported removing designated smoking areas in bars and restaurants, increasing costs and implementing complete or generation sales bans.

**Table 1** Proportion of adolescents who support a smoke-free future and smoke-free measures

	Overall	Educational level			p Value	Smoking status				p Value
		Low	Middle	High		Non-susceptible	Susceptible	Ever smokers	Current smokers	
Support for smoke-free future										
No chance for children	78.6	77.2	78.6	79.6	0.92	88.6	74.4	72.4	69.8	<0.05
No smoking in 10 years	63.8	56.3	56.9	78.1	<0.05	84.8	62.3	45.7	40.0	<0.05
Support for smoke-free measures										
Cars with children	89.8	84.8	89.4	93.8	0.26	92.3	87.8	93.1	84.4	0.16
School yards	64.7	58.0	62.9	72.1	0.55	84.0	61.8	49.1	43.8	<0.05
Sport fields	55.4	58.0	53.7	55.7	0.53	66.7	55.6	50.8	36.9	<0.05
Bars and restaurants	32.7	35.0	31.8	32.5	0.53	42.7	32.2	27.1	18.5	<0.05
Support for price measures										
Increase costs	46.9	55.5	37.1	54.0	<0.05	65.6	46.7	43.1	12.5	<0.05
Support for product measures										
Plain packaging	68.0	65.0	66.7	72.0	0.92	79.4	68.5	61.0	50.8	<0.05
Remove addictive ingredients	66.7	52.5	68.9	73.7	0.06	76.1	69.7	70.7	40.0	<0.05
Support for sales measures										
Retail display bans	64.8	59.3	66.7	66.4	0.93	77.9	65.5	62.7	39.1	<0.05
Complete sales ban	34.1	38.3	31.4	34.9	0.44	47.7	32.6	30.5	12.3	<0.05
Generation sales ban	30.3	34.2	28.9	29.4	0.55	42.2	25.6	24.1	18.5	<0.05

Support is calculated by the proportion of adolescents answering completely agree or agree, divided by the total number of adolescents who answered the statement.  $\chi^2$  tests determined statistical significance at the 0.05 alpha level.

### Different levels of support for future measures

Adolescents generally approved implementing future measures to decrease smoking because 'less people will smoke and get diseases'. They explained differences in support for specific measures with four criteria. Future measures should: have the potential to be effective, not violate individuals' right to smoke, protect children from pro-smoking social influences and protect non-smokers from secondhand smoke. Online supplementary file 4 presents the citations that illustrate adolescents' support.

Product measures received high support as these were considered not to violate individual's right to smoke and perceived to be effective in decreasing the harmfulness and addictiveness of cigarettes. Arguments against product measures primarily related to its ineffectiveness. Adolescents reasoned that the removal of nicotine will make people find alternative ways to get nicotine. Another argument was that the replacement of ingredients may cause people to start smoking because it is less unhealthy.

Smoke-free measures received mixed support. Banning smoking in cars with children and smoke-free school yards received high support as adolescents reasoned that these protect children from social influences and non-smokers from secondhand smoke. However, support for smoke-free measures was low if these were reasoned to unnecessarily violate individuals' right to smoke. This became evident in adolescents' discussions about banning designated smoker's areas inside bars and restaurants as current measures were considered sufficient to protect non-smokers from secondhand smoke.

Price measures received ambivalent support. This related primarily to uncertainty regarding its expected effectiveness. Adolescents reasoned that price increases could work if cigarettes become sufficiently expensive and/or if alternatives become financially attractive. They also reasoned that price increases will only withhold those from smoking who cannot afford the new price. Lastly, they anticipated many adverse impacts, such as poverty and illegal trade.

There was little support for generation or complete sales bans. This non-support related to adolescents' view that such sales restrictions severely violate individuals' right to smoke. Adolescents showed more support for the less restrictive retail display bans because such measures do not violate individuals' right and effectively help individuals to refrain from buying tobacco.

### DISCUSSION

Adolescents in the Netherlands show highest support for product measures, mixed support for smoke-free measures, ambivalent support for price measures and little support for restrictive sales measures. Differences in support can be explained by adolescents' perceptions of whether measures have the potential to be effective, do not violate individuals' right to smoke, protect children from pro-smoking social influences and protect non-smokers from secondhand smoke.

### Limitations

Some limitations should be mentioned. First, the results do not necessarily represent adolescents' support in the Netherlands as all schools and classes were conveniently selected, the number of survey participants was small, participant characteristics do not match national statistics and women were over-represented in the group interviews, whereas most (ex-)smokers were men. Second, the use of criteria should not be generalised to other countries as adolescents in other cultures might attach different weights to the four criteria. Lastly, smokers were defined as those who smoked in the last 30 days. A more strict demarcation of

smokers could lead to larger differences between 'smokers' and 'ever smokers', but we, nonetheless, found a clear trend from non-susceptible never-smokers to smokers.

### Brief reflection

Literature indicates that smoking status strongly influences adolescents' support for future measures.<sup>8,9</sup> Similarly, our results showed a clear gradient of declining support from non-susceptible never-smokers to current smokers. We suggest that this trend is likely caused by adolescents' different weighing of the criteria to underpin their support. For instance, smokers recurrently mentioned personal experiences to underscore the effectiveness of price increases (ie, financial struggles), yet they showed the least support because of its impact on individual's rights to smoke.

### Implication

Addressing the criteria that adolescents use to underpin their support may increase adolescents' levels of support for future antismoking measures. We therefore suggest one possible strategy that should be further studied. This strategy is to make adolescents aware about the existing discrepancy between the smoke-free future they support (ie, no chance for children to start smoking) and the criterion that future measures should not violate individual's right to smoke. Creating awareness about this discrepancy, for example by dissonance-based interventions,<sup>10</sup> likely elicits reflection on the weights attached to criteria. A potential risk of this strategy is that this reflection may decrease their support for measures, yet an increase may be more likely given the great importance that many individuals attach to the protection of children.<sup>11-13</sup>

### What this paper adds

- ▶ This is one of the first papers to assess to what extent and why adolescents do or do not support a range of future tobacco measures.
- ▶ Dutch adolescents' wish for a smoke-free future does not translate into categorical support for restrictive tobacco control measures.
- ▶ Adolescents in the Netherlands show most support for product measures, mixed support for smoke-free areas, ambivalent support for price increases and least support for sales restrictions.
- ▶ Adolescents' support depends on whether they think that measures: have the potential to be effective, do not violate individuals' right to smoke, protect children from pro-smoking social influences and protect non-smokers from secondhand smoke.
- ▶ Addressing these criteria may increase adolescents' support for future tobacco measures.

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