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Not forgetting the benefits to youth and non-smokers – an example from increases in tobacco taxes

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Nick Wilson, Richard Edwards, Janet Hoek

Tobacco control's focus on supporting smokers to quit, thus reducing the harm they face (eg, via appropriately regulated access to e-cigarettes) remains important. However, we need to do more to protect youth and non-smokers from the burden of tobacco. In this blog we use the issue of tobacco tax increases to show the potentially large benefits to youth and non-smokers – as well as to smokers who quit. Policy-makers need to take a broad view of how tobacco control policies impact on society so that progress to the country's Smokefree 2025 goal is accelerated.

Introduction

Debates about which interventions and policies to implement to reduce smoking prevalence often focus on the potential impacts (positive or negative) on smokers. This is understandable as it is smokers who suffer most immediately from the deadly health impacts of the tobacco industry's products, and who will most obviously benefit from successful interventions and policies which promote and support quitting. For example, much of the current discourse in the debate about e-cigarettes and smokefree strategies in NZ focuses on helping smokers to quit or exploring how they might be supported to switch to e-cigarettes (to assist quitting or to reduce harm while still being dependent on nicotine); with proponents arguing forcibly that maximising availability and appeal of e-cigarettes and other vaping products should be a priority.

However, while a strong focus on helping smokers is wholly appropriate – there is also a need to consider benefits and harms of proposed interventions to other sectors of society, particularly youth and adult non-smokers. Due to the addictive nature of tobacco and vaping products, and minimal uptake of smoking among mature (>25 years) adults [1], policies which increase or decrease use of these products among this age-group can have profound implications for future health. Reducing uptake of smoking among young people is also a key component of reducing prevalence and sustaining minimal prevalence – albeit changes to uptake have a much longer-term impact on prevalence than do changes in quit rates among current smokers [2].

As an example of the importance of taking a broad approach to assessing the impacts of tobacco control interventions, in this blog we explore which other groups might benefit from a key tobacco control intervention: raising tobacco taxes.

The case of tobacco tax increases – who benefits, who might not

There is no doubt that tobacco tax increases are effective in reducing tobacco consumption and prevalence through preventing youth uptake of smoking and promoting quitting [3]. They are likely to have contributed to NZ's major declines in youth smoking and on-going declines in per capita consumption (see this blog and another one on the 2018 EY Report on tobacco tax in NZ). NZ modelling work also suggests tobacco tax increases will have beneficial future impacts on: reduced smoking prevalence [4], and will bring large health gains and cost-savings to the NZ health sector [5] [6] [7]. Māori are also likely to have much higher per capita health gains from tobacco tax increases [6], which is consistent with international work indicating the overall pro-equity benefits of tobacco tax increases (see a review in the Supplementary Information file associated with this work some of us did [5]).

Some estimates of the sizes of groups benefiting and being harmed by tobacco tax increases

Unfortunately the NZ Government has not commissioned the necessary research to determine the degree to which different population groups might benefit and which might be harmed from increases in tobacco taxes. We therefore undertook a preliminary analysis using available data – albeit with a number of assumptions. The methods and results are shown in the Table in the Appendix. In summary, those smokers who quit or cut down as a result of tobacco tax increases will benefit in health terms and often also in financial terms (Groups A, B, and C in the Appendicised Table). However, lower income groups of smokers who do not quit or cut down in response to tobacco tax increases – potentially around 145,000 adult smokers (Group E, if we are considering the poorest quintile of smokers) will potentially suffer some increased financial hardship (potentially along with other members of their household). Even so, previous NZ work has estimated that the harm to health from increased financial hardship from tobacco tax increases is likely to be relatively small compared to the health harms from smoking and also of deprivation [8]. Also of note is that while some continuing smokers may experience increased financial hardship – in the long-term they may still experience health benefits if the high tobacco prices help them along the quitting pathway or to switch to lower-cost e-cigarettes at some point in the future.

But the largest group benefiting from tobacco tax increases is the 88% of New Zealanders (4.3 million people) who currently are non-smokers (children and adults: Group F). They benefit from: (i) a lower risk of smoking uptake (almost entirely a benefit to youth); (ii) a lower risk of exposure to second-hand smoke; and (iii) access to a less resource-constrained health system if fewer funds are needed to treat expensive tobacco-related diseases such as lung cancer. Also due to the age-structure of Māori and Pacific populations – the benefit of reduced smoking uptake will typically be pro-equity.

Our comparison of these different groups in the Appendicised Table doesn't fully address the large asymmetries in the size of the benefits by different group. For example, some youth who do not take up smoking because of high prices could have decades of life saved (eg, if preventing a fatal heart attack in their 50s). But non-smokers who currently have relatively low exposure to second-hand smoke will gain much smaller benefits (eg, their tax dollars will go further in providing other health services). Smokers who quit while young may gain decades of extra life, while older smokers may only gain relatively little, perhaps on average only a few extra months of life).

Nevertheless, the findings in the table suggest that the overall impact will be predominantly extremely positive in health and financial terms, other than for disadvantaged smokers who continue to smoke. Yet policy implementation could occur so as to minimise even these adverse impacts if the NZ Government introduced measures to help low-income smokers to quit and to stay quit and mitigate financial impacts. Such possible actions include:

1. **Piloting subsidised e-cigarette interventions for low-income smokers.** For example, smokers with Community Services Cards could get subsidised e-cigarettes from pharmacies or licensed specialist vape shops (with required provision of advice for quitting smoking). If such interventions worked well in pilot programmes – they could be rolled out to the rest of NZ and eligibility could be widened to larger groups of low-income smokers.
2. Improving funding **for mass media campaigns and smoking cessation support** around the time of the annual tax increase to maximise successful quitting (and shifting the time of the increase to World Smokefree Day). Campaigns especially designed to reach and support Māori and Pasifika smokers with quitting are needed (eg, building on the successful "It's About Whanau" campaign [9] [10]). Some of us have argued for increased smoking cessation support to accompany tobacco increases since 2005 [11], and the recent "Achieving Smokefree Aotearoa by 2025" Report also argues that tobacco tax increases should be implemented with concurrent increased and targeted cessation support and messaging [12].
3. Creating **more supportive environments** by maximising smokefree outdoor areas – especially in low-income communities (eg, children's playgrounds, parks, and sports fields, outdoor areas at restaurants and pubs etc). Advancing **alcohol control** in NZ would also help, given that alcohol use is related to both the increased risk of smoking uptake, but also increased risk of relapse after quitting.
4. Implementing concurrent increases in **minimum wage and welfare benefits** so that disadvantaged continuing smokers do not suffer net financial disadvantage following tobacco tax increases.

In summary, in this blog we use the issue of tobacco tax increases to show the potentially large benefits to youth and non-smokers, as well as to smokers who quit. We then contrast these benefits with the smaller numbers of low-income smokers who might experience increased financial harm from tax increases if they do not quit, cut-down or switch to a reduced-harm alternative. Fortunately policy-makers have options to reduce such risks; they should therefore be exploring strategies that complement tobacco tax increases with programmes targeting support to low-income smokers. It is important that the impacts of tobacco control policies are considered across the whole of the population, and that positive impacts on young people and non-smokers are taken into account in assessments of the pros and cons of different policy options and interventions.

Appendix: Estimates of how the health and financial impacts of tobacco taxation increases are distributed across NZ society (with further research being required to improve many of these estimates)*

Population group	Estimated % of NZ population (number)	Likely health impacts	Likely financial impacts
Smokers who quit as a result of a tax increase **[Group A]**	0.2% (12,000)	(i) Benefits for those who quit (potentially many extra quality-adjusted life-years per smoker quitting, albeit less in older smokers).	Large financial savings for these ex-smokers (direct expenditure costs, enhanced earning due to reduced health impacts) and some out-of-pocket health costs. Eg, typically around 1.0 productivity-adjusted life year is lost by an individual smoker [13].
Smokers who cut down proportionately as a result of a tax increase (spend the same on tobacco) **[Group B]**	1.2% (58,000) [crude estimate]	(i) A modest reduction in some disease risks (eg, cancer risk, chronic lung disease) but probably fairly minor for other major risks (eg, cardiovascular disease).	(i) Small benefit from potentially lower out-of-pocket health costs. (ii) Some potential financial benefit if they are more likely to quit in the long term.
Smokers who adopt or increase their use of e-cigarettes as a result of a tax increase **[Group C]**	1.2% (58,000) [crude estimate]	(i) Much less health harm for those who switch from smoking to e-cigarettes and then quit e-cigarettes. (ii) Less health harm (degree uncertain but likely substantial) if people switch entirely to e-cigarettes (harm-reduction benefits) and continue to use long term [14].	Large financial savings if become smokefree and vapefree. For those who become smokefree but stay vaping they will still have financial savings since the costs of vaping are (on average) 8 to 12 times less than smoking (based on this NZ cost calculator).
Smokers who do not quit or cut down – but who still have enough income to address their basic needs **[Group D]**	6.3% (308,000) [crude estimate]	No substantial health impacts. Potentially the higher prices might increase the chance of quitting, cutting down tobacco consumption, or switching to e-cigarettes in the long-term.	Some reduced spending power – but assumed to not be at a level that significantly harms well-being.

Population group	Estimated % of NZ population (number)	Likely health impacts	Likely financial impacts
Smokers who do not quit or cut down sufficiently and spend more on tobacco as a result (poorest quintile of smokers) **[Group E]**	3.0% (145,000) [crude estimate] (these are 32% of smokers in Groups D+E)	Potentially increased harm to physical and mental health from increased financial hardship (less spending on food and housing etc, and more psychological stress). But as per Group D – potentially an increased chance of long-term benefits (quitting, cutting down tobacco consumption, or switching to e-cigarettes).	Potentially increased financial hardship (unless they are prompted to quit or switch to e-cigarettes in the long-term).
Non-smoking New Zealanders – both children and adults **[Group F]**	88.1% (4,319,000)	(i) Benefits to youth from lower risk of uptake of smoking due to higher prices. (ii) Benefits from reduced exposure to second-hand smoke in indoor and outdoor settings. (iii) Reduced risks for new-borns and infants (eg, prematurity, SIDS deaths) if fewer of their parents smoke.	Widespread benefits eg, as reduced tax-payer funding needed for tobacco-related diseases; and productivity gains from a healthier workforce benefit the whole economy. Also substantial lifelong financial benefits for young people who do not start smoking as a result of tobacco tax increases.

*** Data and assumptions:**

Group A: Using a price elasticity of -0.2% for a prevalence elasticity (this is the mid-range value of the age-specific values we have used in NZ modelling work [5]).

Group B: Assumed to be five times the size of Group A, a very rough estimate which could be refined with further research.

Group C: Assumed to be the same size as Group B (again research is needed to get more accurate estimates on this).

Group D and E: Distributed as per NZHS data on smoker deprivation levels (using NZDep – a small area measure of deprivation). These groups are priority ones for obtaining better data and for research around interventions eg, provision of subsidised e-cigarettes on prescription.

Group F: Estimated from NZ Health Survey (NZHS) data by subtracting “current smokers”; using a total NZ population of 4.9 million.

An Excel spreadsheet with all the precise workings is available on request.

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