Author's response to reviews

Title: What price quitting? The price of cigarettes at which smokers say they would seriously consider trying to quit

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Author's response to reviews: see over
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BMC Public Health
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236 Gray’s Inn Road
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Dear Editor,

Re: (MS: 5581928007749192)
What price quitting? The price of cigarettes at which smokers say they would seriously consider trying to quit

Word Count: 5,243 words

Authors: M Scollo, Linda Hayes, M Wakefield

Thank you for the opportunity to re-submit the above paper to be re-considered for publication in your journal. The data are original and have not been published elsewhere.

Along with this cover letter we are providing:

- the revised manuscript
- a detailed response to reviewers (provided below)
- a revised copy of Figure 2.

All authors have agreed to submit the paper as it now stands to your journal.

Yours sincerely,

Professor Melanie Wakefield
Director
Response to reviewers

“What price quitting: The price of cigarettes at which smokers say they would seriously consider trying to quit” By Scoll o, Hayes, and Wakefield

Response to comments by Reviewer 1, Hana Ross

We are grateful to Hana Ross for her close reading of the paper and suggestions.

Major Essential Revisions:

1. The text often refers to a pack without specifying the pack’s size. This is problematic given the different prices and the different price sensitivity of those who buy different pack sizes. Therefore, I suggest that the analysis focus only on the price per stick while separately studying the price points for those who buy different pack sizes. There are some interesting observations in the section that focuses on packs, but these can be moved into the discussion section.

Author: We have added reference to pack size in a number of places. Smokers participating in the survey were asked about prices per pack, not prices per stick. In the revised draft we’ve made it clearer that the upfront price of their pack is in fact what seems to be crucial to smokers’ price points... the rounding ‘rule’ is being applied by smokers to the upfront purchase price of the pack ($20, $25) rather than to the price per stick (80 cents, $1 etc). For this reason it is crucial that the analysis by pack remains in the paper.

2. The classification of smokers into the 3 categories based on their smoking intensity is problematic. Is a smoker consuming 14 cigs per day a light smoker? As a result of this classification, the distribution is heavily skewed toward light smokers. How many non-daily smokers are in your sample? It would be important to study the cessation price point for this group separately from daily smokers.

Author: Fourteen or fewer cigarettes per day has been used to describe ‘light’ smokers in the extensive literature on the effects of NRT – see Cochrane review at http://www.thecochranelibrary.com/userfiles/ccoch/file/World%20No%20Tobacco%20Day/CD000146.pdf We have used the same definition every year in our annual population surveys (in place in Victoria since 1983) in order to maintain the historical series. We take the point, though, that this classification is out-of-step with contemporary consumption patterns: 14 cigarettes per day is much closer to the mean in 2011 than it would have been in previous decades. However, unfortunately there is currently no agreed definition of ‘light’ vs ‘heavy’ smoking – refer Schane et al 2010 http://circ.ahajournals.org/content/121/13/1518.full
We have re-done the analysis using a 0–>10, 10 to <20 and 20+ classification. Results presented in Tables 1, 2, 3 and 4 reflect this new consumption variable. We have also added results from an analysis of daily smokers compared to those smokers who smoke at least weekly but less than daily. Predictably, those who smoke less than daily required a significantly higher increase in prices before they would seriously consider quitting.

3. The classification of smokers into the SES groups is also problematic given that it is based on their residence rather than on the individual situation of each smoker. This variable suffers from measurement error resulting in the significance of the coefficient being biased downwards. If the individual socioeconomic status of each smoker is unknown, then the weakness of this variable needs to be stated.

Author: Unlike in the US, where every major survey reports results for White, Black and Hispanic Americans, in Australia ‘race’ is not a feasible system for assessing relative disadvantage. Indigenous people make up fewer than 3% of the total population and immigrant groups come from a very wide variety of countries and backgrounds with a wide range of cultural attitudes to smoking. Those who are unemployed or who head single-parent families are quite clearly disadvantaged, but once again these represent a small percentage of the total population. Survey respondents often refuse to answer the question relating to ‘income’, and in any case this measure overestimates disadvantage among people whose income is only temporarily low, such as students, the elderly and parents of young children where one or both parents may not be working or be working reduced hours. Educational attainment is a better measure of relative advantage/disadvantage, although it does over-state disadvantage among older people, particularly older women who grew up at a time when the leaving age was typically much lower.

Every different system for classifying individuals by level of disadvantage has strengths and weaknesses, but we would argue that an area-based measure is the least problematic in the Australian context.


Area-level classifications of disadvantage in Australia indicate stark disparities in smoking rates, with rates roughly twice as high in the most disadvantaged compared to the least disadvantaged groups.


We have added a short statement providing justification for use of the SES measure to the Methods section, in the ‘Statistical analysis’ sub-section.

4. I disagree with the statement that “little additional benefit is provided by prices greater than 80 cents until the AUD$1 threshold is reached”. It seems that 95 cents is another significant threshold. In addition, this statement is based only on the expected reaction of current smokers. We do not know how smokers would actually respond if the price were to increase to this level. There is also the question of how “the benefits” are defined – do they include additional tax collection or only behavioral change?

Author: The simplified version of the graph we previously provided has given the reviewer an incorrect impression —our apologies for this.

It is definitely $1, not 95 cents, where the jump occurs. A pack of 25s is unattractive to a substantial number of smokers at $20 (80 cents per stick). It needs to reach $25 ($1) before there is a substantial jump in the % of smokers of packs of 25s who say they would quit. Very few additional smokers say that they would quit at prices between $21 and $24 for a pack of 25s. We have provided the revised graph (above) with the revised version of the paper.
We have also made it clear in the revised draft that we are discussing benefits in terms of behavioural change rather than revenue.

5. The discussion should mention possible ways for smokers to escape higher taxes/prices such as a change of pack size and brand (or product) substitution.

Author: We have drafted a couple of sentences to this effect.

**Minor Essential Revisions:**

1. The last sentence in the abstract is redundant.

Author: The final sentence highlights the importance of the price per pack (as for point 1 above). It encapsulates the real world policy recommendation and its likely effect: we’d therefore be loathe to remove it.

2. “….so that the continuing costs of smoking are greater and the benefits of quitting more immediate.” I suggest changing this to “….so that the continuing costs of smoking are greater than the costs of quitting as measured by the immediate level of discomfort.”

Author: Have reworded as suggested.

3. The sentence “Analyses of co-variance (ANCOVA) were undertaken to examine the adjusted effect of pack size and SES on the price point individual sticks were calculated to have to reach before smokers would seriously consider quitting.” is cumbersome. Also, it would be good to describe here what you mean by the adjusted effect, namely what is it adjusted for.

Author: Have reworded as follows: “Analyses of co-variance (ANCOVA) were undertaken to examine the effects of pack size and SES on the price individual sticks would have to reach before smokers would seriously consider quitting, taking into account sex, age, consumption levels and frequency of consumption.”

4. The last sentence of the 1st full para on p. 9 compares the current median with the future mean. This also occurs in the 3rd full para on the same page.

Author: The word ‘average’ was being used undesirably loosely in the lay sense of ‘typical’ They are both, in fact, the medians and this has now been corrected.

5. “Unsurprisingly, users of large packs tended to cluster at higher price points than users of smaller packs.” What is important is the percentage increase by pack size, not the absolute increase.

Author: We have added a sentence noting the percentage increase. We think that both the percentage increase and the absolute increase are important in smokers’ minds. But even more important is the heuristic of whether or not the price is passing another round number $20, $25, $30.
6. The sentence “It also suggests a strategy for optimising quitting among low-SES groups for the least possible cost of purchasing cigarettes for continuing smokers.” is cumbersome.

Author: Have reworded as follows: “It also suggests a strategy for optimising quitting among low-SES groups while at the same time minimising the additional financial outlay required by continuing smokers.”

7. This sentence is difficult to comprehend: “… almost nine out of ten of the 74% of smokers indicating a price point would seriously think about quitting.” Please reword.

Author: Have reworded as follows: “Almost nine out of ten of the 74% of smokers who were able to indicate a price point would seriously think about quitting if cigarettes cost at least $1 per stick.”

**Point-by-point rebuttal of review by Reviewer 2, Matthew Rousu**

Reviewer 2 notes that willingness-to-pay surveys have been plagued by what is known as “hypothetical bias” which reduces the reliability of estimates.

Author: As stated in the first sentence of the Discussion, it is acknowledged that action may fall well short of intention in the event of a real increase, and that the majority of people who attempt to quit will fail. Predicted price points are just one piece of information that might be used to help policy makers. Historical data on actual quit rates following price increases would be another.

This survey asked smokers what cigarettes would need to cost before they would seriously consider quitting. We would argue that the validity of estimates generated is enhanced by the following:

- All respondents were able to accurately report the price they had paid for their last pack of cigarettes, so they were starting from a solid baseline.
- Respondents were asked the question about their own brand/pack size purchasable (implicitly) from the same range of retail outlets to which they currently have access, not some hypothetical brand.
- Respondents had experienced a 20% increase in prices in the previous year, as well as regular increases each February and August, so that they had recent experience of both large and small pack sizes on which to base their judgement.

Reviewer 2 also talks about the likelihood of use of contraband products becoming more prominent in the event of a price increase.

Author: We would dispute the accuracy of reviewer 2’s (unreferenced) statement that up to a third of products in US states may be contraband. That aside, tobacco control experts in Australia believe that the illicit tobacco market is extremely small. Unlike the US, tax
rates do not differ between states so cross-border shopping and 'butt-legging' is not a problem. Australia does not have any parallel to the US Indian reserves from which tobacco products are sold tax-free. While increases in taxes and prices of cigarettes theoretically increases the risk of a growth in illicit trade, Australia’s island geography and remote location in relation to Asia, Europe and elsewhere make importation of illicit products much more difficult than in almost every other country in the world. Penalties for importing illicit tobacco products have recently been strengthened and the Government is devoting significant resources to implementation of its plain packaging legislation which is likely to result in an increase in detection of any non-compliant packs.

We would be happy to include a paragraph discussing the relationship between illicit trade and price increases if the editor requires, however this is peripheral to the paper’s findings—price points would apply whether cigarettes are licit or illicit—and explaining the relevance would add considerably to the length.

Reviewer 2 agrees with our conclusion that other methods to decrease cigarette use, including restrictions on branding and educational campaigns, should be considered.

Author: Yes, we will retain this conclusion.