Reviewer's report

Title: Short-term effects of plain cigarette packaging on smoking behaviour and attitudes: A randomised controlled study

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Reviewer: Marc C. Willemsen

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This study uses RCT methodology to examine the effect of a first confrontation to plain cigarette packaging on smoking. The paper is very well written, research questions are properly introduced and described. Strengths of the study include the very low attrition rate and the measurement of precise behavioural effects through a smoking topography monitor.

Minor Essential Revisions:

1. Abstract, line 19: “increase the impact of the health warnings”. Suggestion to change this into “increase the self-perceived impact of the health warnings” (or similar wordings), as this is what was measured.

2. P3., line 40. Strictly speaking, thinking about quitting and forgoing cigarettes are not a cessation behaviours, although they are associated with it. So, please rephrase.

3. P3., line 42. “negative effects”?? I found the choice of the term ‘negative’ unexpected. Avoidant behaviours and reduced consumption are positive effects (from a public health perspective).

4. P4., line 60. The study period is 24 hours. This only allows for an assessment of the very first exposure to plain packaging in smokers. I would not call this ‘short-term’ effects (as indicated in the title), but rather something like ‘first confrontation with’. Short-term is misleading, since this term is also used in smoking cessation trials where everything shorter than 12 months is called short term, in contrast to long-term, which could be up to two years. I would strongly advice to change this throughout the manuscript.

5. P4, line 66. Reference is made to a ‘published protocol’ for more details on the procedures. This is a reference to a study (ref. 1), which does not look the same as the current study. Is this the correct reference?

6. P4. Line 70. Why exclude smokers who want to quit smoking? And why exclude smokers older than 40? Older smokers who are interested in quitting are an important target group for health warnings on cigarette packs. The warnings might act as a que to make a quit attempt. By excluding these groups, the study results are less generalizable to the overall population and this should be mentioned in the discussion.

7. This brings me to a general comment that it is not yet sufficiently unclear what the public health relevance of the study is. Plain packs is a population measure.
Surely, governments who implement this measure, expect that it will deter young people from starting to smoke and to generate more quit attempts in the general population of smokers. It would be good if the auteurs would try to discuss their findings in the context of what the policy purpose of plain packaging and health warnings might be and what the findings mean in this context. This will lead to further discussion of the limitation of the study findings, since the study is conducted among a sub-sample of the total potential target group of the intervention.

8. Recruitment was done in Bristol, but this was not in the total population, but a convenience sample from the university? Mean age was 22, and respondents were only smoking for an average of 4-5 years. This suggests that most were students, who have little interest in quitting and do not yet perceive much problems with smoking? How many were indeed students? Please indicate. I understand that an attempt was made to also include smokers from the general population, but how many of the 128 were from that group? Did you see differences between the student population and the others? Some more details on this are needed to better understand the relevance of the study findings. In the discussion section, it should be alluded to what the restrictions of study participants mainly to students means for the generalizability of the findings and recommendations for further research,

9. P5, line 81. “allocated to either” (word is missing)

10. P6., line 14. “as it was this warning” (word seems missing)

11. P7., Details on the validity of the questionnaire are missing. What (conceptually) is measured exactly with ‘rating of cigarette pack attributes’?

12. Most of the items are based on previous studies by Moodie et al., but it would be good to know how the items were used in the current analyses (as composite scores or scales?) and what the Cronbach’s #’s were. I wonder if it is OK to construct an overall score from the 8 statements about ‘changes in behaviour’. A the minimum, information on level of internal consistency of the items should be presented.

13. P8. Four items were used to measure “Attitudes to plain packs”. However, these four items seem to measure separate beliefs about what plain packs would do to oneself (3 items) or to children (last item). Moreover, the first items is about “packaging and branding of cigarette”, while the others are about “plain packaging”. So, there are some differences between the items, which might complicate using these a one measure of attitude (again, what is the Cronbach’s #?) and question the validity of the measure as well.

14. A strength of the a study was that real cigarette packs were used, where previous studies used mock packs. However, they had to ‘work’ with the Australian version of respondents’ favourite cigarettes. These might taste and ‘feel’ different to UK consumers in many ways (as is also mentioned in the discussion). This might actually reduce the ecological validity of the study, because the respondents were not confronted with a realistic intervention, but with a substitute. We cannot be sure that UK smokers would respond in the same manner when the UK government would introduce plain packs in the
future, as these 64 study participants. This could be discussed in some more
detail.
15. It is important to know if any additional data were collected which would tell
us anything about whether the respondents in the exp. Group knew ore
suspected that the pack were imported from Australia, since the use of the
Australian packs might pose a threat to the internal validity of the findings. For
example, respondents in the exp. group might be curious how these ‘Aussi’
cigarettes taste, which might impact on how they assess the various
psychological indicators of effect. And a more negative experience of the plain
packs, might be attributed to knowing that the cigarettes in the plain pack are
from abroad, and not from the plain packs and greater health warnings as such.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests