Author’s response to reviews

Title: Socioeconomic Patterning of Vaping by Smoking Status Among UK Adults and Youth

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Reviewer reports:

Pamela Abbott (Reviewer 1): This is a well written paper that adds to our understanding of health inequalities related to smoking among youth and adults by examine health inequalities in vaping

-Thank you.

Jonine Jancey (Reviewer 2): Thank you for the opportunity to review this manuscript, the findings of a cross-sectional study comparing socioeconomic disadvantage to vaping and combustibles behaviours of youth and adults. I think the findings and discussion could be presented more succinctly.

I suggest reviewing the text to make the paper more succinct
-We have made the following edits to shorten the discussion:
Page 13, line 11: we combined the first paragraph with the two following so that it now reads:
“This robust analysis of data from the large and representative UK survey provides evidence of complex variations in vaping inequalities by age and smoking status. Our findings concur with reports of low vaping prevalence among youth, especially youth who have never smoked. Vaping was more likely for youth in disadvantaged than more advantaged groups, especially among youth who had never smoked, though concerns should be tempered by the low overall prevalence, and because some of this unequal take-up of vaping could be replacing unequal take-up of smoking, which would be more health damaging. Regarding adults, like others we found that more advantaged ever-smokers seemed more likely to use e-cigarettes, and to have quit smoking, but the association between socioeconomic advantage and vaping among current smokers disappeared with adjustment for confounding and collider biases. Our adjusted analyses indicated that socioeconomic disadvantage increased the likelihood of vaping among ex-smokers, while there was little to no effect of SEP on vaping among never or current smokers.”
Page 14, line 22: changed “how vaping might lead to smoking” to “vaping leading to smoking”.

Page 15, line 4: removed “Combining youth ever and current smoking was not ideal but necessary due to low prevalence, and allowed never smoking youth (a key population of interest) to be separated out as a distinct group.”

Page 15, line 5: removed “and done so”.

Page 15, line 19: removed “the”.

- study objectives written on page 6 and then placed in a table.
- Background, page 6, line 6-7: removed research questions and changed text to “specifically addressing the three research questions presented in Table 2.” Also, moved Table 2 to here rather than later in the document, and edited Table title to “Research questions and the samples and variables analysed”.

- figures and tables presented then findings stated in text
  - We consider describing the findings presented in the tables within the results text to be best practice, as this can greatly assist the reader in making sense of the tables.

- Could you not combine a few of the tables?
  - Results, page 12: We have combined Tables 5 and 6 into a single Table and edited the Table title and text accordingly (as well as changing Table 7 to Table 6). We did consider combining Tables 3 and 4 but since these are both already very large tables, we did not think this would aid presentation of the results.

- Limitations could be reduced - why is lack of information on motivation a limitation for your study. This study is looking at SES and smoking/vaping outcomes
- Discussion, page 14, line 19: removed “or motivations for” and “Our observed”, and some other edits to shorten this section as noted above.

Other comments
- Abstract: wasn't there no association with current smoking adults?
  - Abstract, page 2, line 16: “while there was little” changed to “with little to no”.

- Background: Line 1 page 4. The reason for dual use may not be health but rather being able to smoke in more places (ecigarettes allowed but not combustible cigarettes)?
  - Background, page 4, line 11-12: changed to “price, preference, or differences in regulation as to where the behaviour is allowed. Vaping…”

Methods: Why were different statistical methods used to answer each research questions?
- The reason the method for RQ2 differed from that for RQ1 is that measures of prior smoking were included as intermediate confounders and previous smoking would only occur among ever smokers (as stated on page 9, line 18-19). We have added a clarification, line 19-20, “and zero probability of being never smokers is problematic for weighting.” The only differences between this method and that used for RQ3 are with respect to which variables are selected as the
outcome and mediator, and that we do not present the effect of SEP on being a non-smoker among never smokers (since all never smokers are non-smokers), which we have added as a clarification on page 10, line 14.

Table 3 and 4 - I would like to see the n values for the following categories a) vaping among never smokers 1.1%; b) Vaping among ever smokers; c) All vaping

-We have added additional columns to the Tables 3 and 4 giving the N values for vaping within each category.