**Author’s response to reviews**

**Title:** Daily stress as link between disadvantage and smoking: An Ecological Momentary Assessment Study

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RESPONSE TO REVIEWERS: “Daily stress as link between disadvantage and smoking: An Ecological Momentary Assessment Study” (PUBH-D-19-02298)

Please find attached our revised paper titled “Daily stress as link between disadvantage and smoking: An Ecological Momentary Assessment Study” (PUBH-D-19-02298). We were pleased to see that the reviewers were positive about the paper, recommending only minor changes and clarifications to the manuscript. Below we list each of the Reviewers comments and our responses. We trust that, with these changes, the paper will be acceptable for publication.

Aaron Drovandi, PhD (Reviewer 1):

1. Clarify if mental health status (e.g. depression, schizophrenia) was an exclusion criteria, as there are links between these mental health issues and smoking.
   Mental Health status was not explicitly stated as an exclusion criterion. We have added this information in the methods section on page 6, line 6-7.

2. Provide a supporting reference (if possible) for the value of $15,000 USD as the point for dichotomizing low and high income. I am unfamiliar with the general cost of living and wages, etc. within the US and this value seems quite low?
   Indeed, as defined by the Office of Management and Budget and updated for inflation using the Consumer Price Index, the weighted average poverty threshold for a family of four in 2010 (the year data collection was completed) was US$22,314. However, we dichotomised income at US$15,000 in order to accomplish balanced group sizes for high and low social disadvantage. We have now added this information to the method section on page 7, line 24.

3. Do the authors believe that using data that is roughly 10 years old constitutes a limitation; for example in that time issues such as the cost of cigarettes, changes in the cost of daily living, and level of public health interventions related to smoking would be significantly different between now and then, possibly reducing the applicability of the data.
   We agree with Reviewer #1 that our data from 2010 may not be representative of the current situation relating to anti-smoking legislations, cost of daily living or cost of cigarettes. We have noted this as a
limitation accordingly (see page 15, line 1-6). However, with a widening gap in wealth and income, we would expect even stronger relationships between SES indicators and daily stress and between daily stress and smoking. This in turn would result in a stronger mediating effect of daily stress on the relationship between SES and smoking. However, this study does not aim to make inferences about the absolute levels of influence. Rather, the aim of this study was to examine the relationships and whether daily stress experience is a mediator of the relationship between social disadvantage and smoking. We would not expect for the passage of time to change the relationships we are looking at. In any case, we believe that our results are still applicable today, but require replication with more recent data.

4. Also regarding limitations - did the authors consider that CPD is not the only cigarette-related factor when it comes to relieving stress? I am referring to puffing topography and the extraction of nicotine per cigarette that could also differ throughout the day based on how much time participants would have to smoke during their day - and could be a suggestion for further research (though it would be difficult to implement)

Reviewer #1 raises an important question and we agree that other cigarette-related factors would be important when exploring smoking as a maladaptive way of coping with stress. However, as Reviewer #1 already noted, measuring puffing topography or extraction of nicotine per cigarette in the context of an EMA study would be difficult to implement. Most importantly however, CPD is the most important driver of nicotine intake. We have included a discussion of other smoking related outcomes for relieving stress in the limitation section of the discussion on page 14, line 1-5. Further, we thank Reviewer #1 for their suggestion for further research, which we have also included in the discussion on page 14, line 6-7.

Tingzhong Yang (Reviewer 2):
1. Occupational status is an important dimension of one's SES. Occupation involves the relationship of power involved in the process of labor reproduction and the relationship of labor reproduction is widely recognized as a fundamental cause beyond income and education. Missing occupational statuses defined in the relational terms is critical for a study attempting at dissolving a SES puzzle.

Although used less often than education and income, occupation represents another facet of SES and differs in its implications on health compared to education and income. Generally, SES has two aspects: resources and status. While education and income represent resources and imply status, occupational prestige is an explicit indicator of someone’s status within a society. Occupation reflects a person’s standing in the societal hierarchy by measuring prestige, responsibility, social influence or power. Thus, the mechanisms that underly social disadvantage and smoking may differ depending on which SES facet is used (as discussed on page 13, line 15-17). Whilst we agree with Reviewer #2 that occupation is an important facet of SES and should be explored further, unfortunately we cannot do so in the current study.

2. While education and race had significant indirect effect of daily stress experience on social disadvantage, no such effects were found for income. Why is this the case in discussion?
Whilst we recognise that we found differing indirect effects of the indicators for social disadvantage on smoking, we discuss potential mechanisms explaining these differences on page 12, line 21-24. Upon receiving your feedback, we have reviewed and revised the discussion on this matter. We hope this clarifies any concerns you have. Please let us know if further clarifications are required.

3. Arguably, the mechanisms of social disadvantage rooted in racial disparity is not the same one as resulted from SES. Race, gender, sexuality, along with other markers of demographic categories are collaterals of SES inequality, but they are conceptually different from inequalities caused by
socioeconomic status. Race should be carefully distinguished here.
We thank Reviewer #2 for their comment and whilst we agree, that race is not a direct indicator of SES, race is an indicator of social disadvantage. To date, we still do not have a great understanding to what extent racial disparities in health (and smoking) are manifestations of differential environmental or social risk exposures. However, the aim of this study was to examine daily stress experience as a mechanism explaining the relationship between three indicators of social disadvantage and smoking. Based on our results, we argue that the mechanisms of how social disadvantage translates into daily stress experience differ, depending on which indicator for social disadvantage is used.