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### **Reviewer Comments**

**The manuscript is relevant and brings new reflections on the subject. However, I have identified several areas that need improvement. Please see my feedback below:**

Thank you so much for your time and feedback.

**Abstract – Results: Line 35: After “However,”, insert “achieving”.**

Done. Thank you.

**What is the implication, and what should change now? - The first point brings a novelty, not an implication. Please restructure or rephrase this point.**

We have modified as follows: “Our findings highlight the importance of promoting education about exposure to secondhand smoking as a factor inversely associated with the adoption of a healthy lifestyle in the young population” (P.2; L.58). Thank you.

**Introduction – Throughout the manuscript there are “secondhand”, “second-hand”, and “second hand”. Please standardize the term.**

Done. Thank you.

**Introduction – In the second paragraph, I ask authors to specify age groups when mentioning preschoolers, children and young people, to avoid misinterpretations. For example, it is mentioned in line 79 that preschoolers should not have any screen time. But what is being understood by preschoolers and toddlers? For example, the CDC classifies preschoolers as 3-5 years old, while the NIH Style Guide classifies children as 1-12 years old. And even then, the information that no screen time is recommended for preschoolers is not entirely accurate, as the WHO makes this recommendation only for infants and children aged 1-2 years old.**

As indicated in the Canadian guidelines, we have decided to replace preschoolers with "children under 5 years of age". We have also included the age ranges for a better understanding. Thank you.

**Introduction – It is interesting that the authors present some relationship between smoking behavior (actively or passively) and 24-hour movement behaviors. How would they be related to the daily lives of young people? Ideally, a lifestyle behaviors approach would be used. The authors did a good presentation on 24-hour movement behaviors; you can do the same by linking these behaviors to smoking.**

Thank you for your comment. The association between tobacco exposure and 24-hour behaviors has previously been defined as follows: “handful of studies have, in an isolated manner, examined the association between environmental tobacco smoke exposure and 24-h movement behaviors (i.e., PA, recreational ST, and sleep duration) among young population<sup>1,2</sup>. For instance, Ebrahimi et al.<sup>2</sup> showed that lower PA and higher ST were notably related to passive smoking. A recent study by Mahabee-Gittens et al.<sup>3</sup> showed that children with tobacco smoke exposure had lower odds of

adhering to a healthy lifestyle (e.g., higher PA, lower ST). Supporting this notion, another study conducted in the US reported that children who are exposed to tobacco smoke are less likely to participate in afterschool activities<sup>4</sup>. Similarly, Merianos et al.<sup>1</sup> showed that children exposed to tobacco smoke had a poorer sleep compared with not exposed children. Based on the above, an inverse relationship between passive smoking and 24-h movement behaviors could also be expected” (P.3; L.88). We have not included the association with smoking since we do not have that information and it is not the focus of this paper. However, we will take it into account for future studies on this subject.

**Methods – The link mentioned on the page displays the following error: “Error 404: Página no encontrada en el portal del Ministerio de Sanidad”. Please provide a link that is active. In the same paragraph, the authors mention the fact that they analyze secondary data and, therefore, do not need approval from the Research Ethics Committee. However, it is important to present the approval number of the Research Ethics Committee of the Spanish National Health Survey (SNHS).**

The next link has been included: <https://www.sanidad.gob.es/estadEstudios/estadisticas/encuestaNacional/encuesta2017.htm> (P.4; L.129). Unfortunately, specific documentation on the ethics committee approval number does not appear in the methodology of the Spanish national health survey ([https://www.sanidad.gob.es/estadEstudios/estadisticas/encuestaNacional/encuestaNac2017/ENSE17\\_Metodologia.pdf](https://www.sanidad.gob.es/estadEstudios/estadisticas/encuestaNacional/encuestaNac2017/ENSE17_Metodologia.pdf)).

**Methods – In the last paragraph of section 2.2. Procedures, is there any reason why the authors did not use the WHO cutoffs or z-score for BMI?**

Thank you for your comment. We have included BMI (raw) in the analyses to avoid collinearity issues. We could have this situation by including age, sex and BMI z-score (which also takes into account age and sex) in the analysis.

**Methods – Section 2.3. Statistical Analysis, line 176: Please substitute the word “numbers” for absolute frequency to avoid misinterpretation. From lines 180-182, the authors mention that there are no significant interactions between gender and 24h movement behaviors with passive tobacco smoking exposure. The authors also tested interactions between age groups and 24-hour movement behaviors with passive tobacco smoking exposure? If not, please try this interaction.**

The word “numbers” has been replaced with “absolute frequencies”. In addition, we previously performed both the interaction with sex and age and the results offered a p-value greater than 0.05 in both cases. Thank you.

**Results – Lines 195-196: What did the authors really want to convey here? The prevalences shown refer to Class 6 (the lowest). These prevalences are neither the lowest nor the highest in both groups (exposed and unexposed).**

Thank you for your indication. It has been modified as follows: “A higher proportion of participants with the lowest SES (i.e., Class 6) was observed in participants with tobacco smoke exposure (23.0%) than in the group not exposed (11.5%) ( $p < 0.001$  for trend)” (P.7; L.192).

**Results – Figure 2: In line 208 it is mentioned that compliance with PA recommendations and sleep duration had low OR in young people exposed in unadjusted models, but this is true only for ST and compliance with the 3 behaviors. Adjust the writing or specify which models you are addressing, as only model 0 is unadjusted. Although Models 1 and 2 are not complete models compared to Model 3, they are still adjusted models.**

Thank you for your comment it has been modified as follows: “Lower odds of meeting ST and all three 24-h movement recommendations were found in those exposed to environmental tobacco smoke in unadjusted models. However, meeting ST (odds ratio [OR] = 0.76; 95% confidence interval [CI], 0.59–0.97), sleep duration (OR = 0.75; 95% CI, 0.58–0.96), and all three 24-h movement recommendations (OR = 0.63; 95% CI, 0.44–0.91) reached significance after adjusting for potential confounders.

**Results – Once approaching the 24h movement behaviors, an option for measuring and analyzing these behaviors is through accelerometers and compositional analysis (with isotemporal substitution), respectively. When this is not possible, an alternative is to follow the behavioral recommendations (as was done in the present study). However, when using this alternative, for a better understanding of the theme and the sample, the ideal would be to present the “intermediate” groups. For example, how many do not meet any of the recommendations and how do they relate to the outcome? How many young people meet the recommendations for PA and TT, PA and sleep, and TT and sleep? And how do these intermediate clusters associate with the outcome? That said, I strongly recommend authors analyze the data this way (i.e., concurrency or co-existence analysis, or simply creating a “group” variable, where attendance and non-compliance on certain behaviors would be a category of that variable). I understand that, analytically, the number of people exposed to passive tobacco smoking is low and this could affect the estimates. However, I reiterate and reaffirm that the authors must carry out these new analyzes (even if they present them as supplementary material). Authors can use the “svy bootstrap” command to correct the 95%CI of the estimates with these new analyses.**

Following your indication, we have further included the meeting with PA+ST, PA+SD, and ST+SD guidelines in Figure 2. However, we must consider that in this study the dependent variable is compliance with the recommendations (individual or combined). Therefore, what the reviewer indicates is possibly more appropriate when the recommendations are examined as predictor variables. Furthermore, although we share the reviewer's point of view, we should not forget that the novelty and the optimal and advisable (according to the guidelines) is meeting with the three guidelines. Thank you.

**Discussion – First paragraph, line 232: there is a “.” more after households.**

Done. Thank you.

**In the paragraph on PA, what is the similarity between the study in Canada (reference 29) and the present study and others that find a relationship between PA and exposure to secondhand tobacco smoke?**

Since this study did not evaluate the direct association between tobacco exposure and the level of physical activity, we have decided to eliminate it. Thank you for your comment.

**Line 263: There is a capital “s” after the “for instance,”.**

Done. Thank you.

## **References**

1. Merianos AL, Mahabee-Gittens EM, Choi K. Tobacco smoke exposure and inadequate sleep among U.S. school-aged children. *Sleep Med.* 2021;86:99-105. doi:10.1016/j.sleep.2021.08.012
2. Ebrahimi M, Aghdam MH, Qorbani M, et al. Passive smoking and cardiometabolic risk factors in Iranian children and adolescents: CASPIAN-V study. *J Diabetes Metab Disord.* 2019;18(2):401-408. doi:10.1007/s40200-019-00429-8
3. Mahabee-Gittens EM, Ding L, Merianos AL, Khoury JC, Gordon JS. Examination of the ‘5-2-1-0’ Recommendations in Racially Diverse Young Children Exposed to Tobacco Smoke. *Am J Health Promot.* 2021;35(7):966-972. doi:10.1177/0890117121995772
4. Merianos AL, Jacobs W, Olaniyan AC, Smith ML, Mahabee-Gittens EM. Tobacco Smoke Exposure, School Engagement, School Success, and Afterschool Activity Participation Among US Children. *J Sch Health.* 2022;92(12):1202-1213. doi:10.1111/josh.13240