Author’s response to reviews

Title: Association of moderate-to-vigorous physical activity with neck circumference in eight Latin American countries

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Author’s response to reviews:

Dear Natalie Pafitis and Eva Szunyogova,

Editors-in-Chief of BMC Public Health
First of all, we are grateful regarding our paper submitted to BMC Public Health by the care and attention given to the manuscript "Association of moderate-to-vigorous physical activity with neck circumference in eight Latin America countries". Our response about comments are bellow.

Reviewer: 1

COMMENT 1: The presented study, sample size, design and statistically is sufficient.

RESPONSE: Thank you for your comment.

Reviewer: 2

COMMENT 1: As previously mentioned, the lack of health related measures (e.g. body composition, cholesterol levels, etc.) limit the utility of this project.

RESPONSE: We respect the reviewer’s observation. However, due to the logistical, technical and budgeting complexity of running a study with a total sample size of 9,218 individuals among eight Latin-American countries, we had to restrict our measurements to the main aim of the study, i.e evaluate the dietary intake and physical activity pattern of this Latin America sample.

COMMENT 2: The analysis of the data that are here are acceptable, but it is the lack of data that hinder this project.

RESPONSE: As discussed above, although it was not possible to collect many health related measurements, we believe this is a unique data which will contribute to a better knowledge of the physical activity in Latin America. To our knowledge, no study has evaluated the accelerometer-determined moderate-to-vigorous physical activity and neck circumference of adolescent and adult populations in Latin America using a standardized methodology across a consortium of several participating countries.

COMMENT 3: The first sentence of the abstract is an incomplete sentence.

RESPONSE: We thank the reviewer. This sentence was corrected to: “Physical activity is a cornerstone in the prevention and treatment of obesity.”
COMMENT 4: There needs to be a better connection between the second and third sentences of the abstract, and it needs to be established that the Latin American countries are not high income countries (is that really a validated classification for a country?).

RESPONSE: We thank the reviewer. The sentences were corrected to:

1- “There are relatively few studies that explore the effect of accelerometer-determined moderate-to-vigorous physical activity (MVPA) on neck circumference (NC), most of them confined to single high-income countries.”

2- “The present study investigated the association of accelerometer-determined MVPA with NC in adolescents and adults from eight Latin American countries, which are mostly upper-middle income countries.”

The classification is from the World Bank


COMMENT 5: Is there any kind of validated basis for the categorization of neck circumference?

RESPONSE: Yes. The sentence below that is in the introduction presents the validation reference.

“NC may likely be a very convenient and valid alternative measure of obesity and may even be a better marker of metabolic risk than standard measures such as BMI and WC [9].”

COMMENT 6: Page 7, line 42. The methods should be written in past tense (use were instead of are).

RESPONSE: We thank the reviewer. It’s already written in past tense.

“The ELANS involved eight LA countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Peru, and Venezuela) representing a total of 9218 individuals, aged 15–65 years, stratified by geographical location (only urban areas), gender, age, and socioeconomic level (SEL). The rationale and design of the study are available in more detail elsewhere.”

COMMENT 7: Page 8, line 12. Revise "The research team found that the data were completed using…” This is how the data were analyzed, but it's not something the research team found.
RESPONSE: This sentence was corrected to: “The research team confirmed that the data were completed using the latest version of Actilife software (version 6.0; ActiGraph, Pensacola, FL) available.”

COMMENT 8: Page 8, line 19. The data sampling rate should be reported somewhere other than this paragraph.

RESPONSE: Thanks for the suggestion. We moved to the previous paragraph.

COMMENT 9: Avoid writing in first person (I, we).

RESPONSE: Thanks for the suggestion. This sentence was corrected to: “Activity cut-points were based on Freedson et al”

COMMENT 10: The section in the methods about cut points need to be improved.

RESPONSE: Thanks for the suggestion. We put that paragraph below in the methods.

“...not including the sleep period and non-wear time. The Actigraph cut-points that were used in the present study were derived from studies of a previous model of the Actigraph [29-31].”

COMMENT 11: The methods section about neck point classification needs considerable improvement. The way it is written is that people were classified as adults or adolescents based on neck circumference, while I think the authors intends to state that these neck circumferences were used to classify people as obese or not.

RESPONSE: Thanks for the suggestion. We put that paragraph below.

Different cut-points of NC were used to classify central obesity in adolescents and adults [8,33].

Reviewer: 3

COMMENT 1: The manuscript "Association of moderate-to-vigorous physical activity with neck circumference in eight Latin American countries" provides interesting data regarding physical activity levels of several populations from a world region in epidemiological transition.

RESPONSE: Thank you for your positive comment.
COMMENT 2: The study was aimed to explore the association between moderate-vigorous physical activity levels and neck circumference. The size of the sample and the use of accelerometers represent the main strengthen points of the investigation.

RESPONSE: Thank you for your positive comment.

COMMENT 3: The methods section in the abstract is not complete.

RESPONSE: We insert the information below into the methods:

..”Times (min/day) in MVPA (defined as time accumulated at ≥1952 activity counts/min) was assessed by ActiGraph GT3X+ accelerometer over 7 days.”

...”were used to study the association between MVPA and NC.

COMMENT 4: It is not clear why the 40% of participants to the ELANS study was involved: was the number of accelerometers available the reason or what else?

RESPONSE: Initially ELANS researchers agreed to monitor physical activity objectively in the entire sample using a triaxial accelerometer (model GT3X+, ActiGraph, Pensacola, FL, USA). However, this decision needed to be revised, due to logistic and financial matters. Therefore, efforts were made to ensure that a minimum of 25% and maximum of 40% of each sample would wear the accelerometer for 7 days. With the goal of complete the information about physical activity, a validated questionnaire (International Physical Activity Questionnaire) (Craig et al, 2003; Hallal et al., 2010) was performed in 100% of the sample from ELANS participants.


COMMENT 5: The reported categorization of NC indicates elevated values? Please specify.

RESPONSE: Yes. We put that paragraph below.

Different cut-points of NC were used to classify central obesity in adolescents and adults [8,33].
COMMENT 6: I think that reporting the accelerometers wearing time is excessive and confusing; Table 1 may be included in supplementary material.

RESPONSE: Thanks for the suggestion. Now table 1 is supplementary material 1.

COMMENT 7: The mean age of the total sample with SD and range should be reported in the results.

RESPONSE: Thanks for the suggestion. Added in the first paragraph of the results section.

…” aged from 15 to 65 years old (M = 36.6, SD = 14.2),” …

COMMENT 8: The study of the association between MVPA and waist circumference, WC and NC, NC and sedentary time would have been useful; please add a comment.

RESPONSE: Actually the variables waist circumference and sedentary time were not used in this manuscript because the authors are developing another manuscript that are being analyzed these suggested variables.

COMMENT 9: How can the Authors distinguish about vigorous activity and walking in the discussion; are related data not reported? Please address.

RESPONSE: Thanks for your comments. We excluded the paragraph from the discussion on vigorous physical activity and walking because we did not analyze the walk in the present study.

Conflict of interest disclosure: Nothing to report.

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This study was conducted in accordance with ethical principles for research involving humans, complying with Resolution CNS 196/96. The overarching ELANS protocol was approved by the Western Institutional Review Board (#20140605) and is registered at Clinical Trials (#NCT02226627). Additional site-specific protocols were also approved by the ethical review boards of the participating institutions. All of the participants provided informed consent/assent for participation in their country-level study.

We look forward to hearing from you as you consider the merits of our work.

Yours sincerely,

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