Peer Review Report

Review Report on Specific type of physical exercises, dietary preferences, and obesity patterns with the incidence of hypertension: a 26-year cohort study

Original Article, Int J Public Health

Reviewer: Vittorio Simeon

EVALUATION

Q 1 — Please summarize the main findings of the study.

In this manuscript entitled 'Specific types of physical exercise,dietary preferences, and obesity patterns with the incidence of hypertension: a 26-year cohort study' the authors examined the associations of specific types of physical exercise, dietary preferences, and obesity patterns with incident hypertension. The study is based on a large population-based cohort with 10713 participants (data obtained from CHNS).
The authors worked on an interesting topic with the intent to provide accurate evidence for control and prevent from hypertension.

Q 2 — Please highlight the limitations and strengths.

The study has limitations in the methodological section and the statistical plan of analysis. The study may be important to provide accurate evidence for control and prevent from hypertension.

Q 3 — Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

Major Concerns
Material and Methods
– It might be of interest to the reader to have some more information, apart from the bibliographical reference, about the cohort under analysis: were the subjects all recruited in 1989 or at a time interval?
– Probably the term 'interesting' is not the most appropriate for the paragraph on the variables under study, it would be more correct to replace it with 'of interest' or 'exposure variables'.
– For both exercise and food the type or preference was assessed by using a questionnaire defined as 'valid', it would be useful to have a bibliographical reference to the questionnaire used in addition to the specific question asked.
– The variables assessed, exercise and food, do not appear to be mutually exclusive. It would be useful to understand how often they perform 1 or more physical activities or prefer more foods. Furthermore, keeping the dichotomous variables (physical activity yes/no, food yes/no), it would be necessary to investigate the correlation between physical activity classes or food using the phi coefficient (Phi Correlation Coefficient, in: The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation, Edited by: Bruce B. Frey, DOI: https://dx.doi.org/10.4135/9781506326139.n517).
– The text indicates how the event under study, hypertension, was recorded in 4346 participants with a relative frequency of approximately 41%. Over what time period were these events recorded? A greater description of incidence over time, perhaps every 5 years, would be helpful. Also, it might be useful as supplemental material to visualize this time-to-event with a Kaplan Meier curve.
– The Cox model for each variable under study was adjusted for a number of covariates and risk factors. It would be interesting to have view of the adjustment model in the supplementary material so as to have an idea of the role of the risk factors studied.

– I disagree with the choice to stratify for sex; I believe this variable should be included among the adjustment covariates. Sex itself is a complex variable that carries with it so many clinical and biological differences that could be a confounding or mediating/moderating factor. In addition, the interaction with sex of some of the variables under study could be assessed.

– Among the covariates used to adjust the model there is 'death'. What exactly does this mean? If it is a way of considering subjects who have died and are no longer at risk of developing hypertension then the correct method is to use Fine-Gray competing risk model considering death as a competitive event.

– Using a multivariable approach, it would be interesting to evaluate in a single model the most promising predictors of physical activity and food type in association with obesity as well (always adjusting for other covariates).

Results
– Table 1 presents a description of the data overall and divided by normal or hypertensive status, I do not see the purpose of including p's at this juncture, Table 1 should usually be purely descriptive.
– In the presentation of results, both in the table and in the text, priority should be given to point and interval estimation (HR and 95%CI) and then to p-value.

Discussion
– In the limits section there is a reference to the variable analysis in the study as a 'time-dependent variable'. Are there other measurements not described in the study? Has obesity and any changes been assessed over time? Has the same been done for physical activity and food preferences?

PLEASE COMMENT

Q 4 Is the title appropriate, concise, attractive?

Yes.

Q 5 Are the keywords appropriate?

Yes.

Q 6 Is the English language of sufficient quality?

English needs revision.

Q 7 Is the quality of the figures and tables satisfactory?

Yes.

Q 8 Does the reference list cover the relevant literature adequately and in an unbiased manner?)

Yes

QUALITY ASSESSMENT

Q 9 Originality — 3/5

Q 10 Rigor — 1/5

Q 11 Significance to the field — 3/5

Q 12 Interest to a general audience — 3/5

Q 13   **Quality of the writing**

Q 14   **Overall scientific quality of the study**

REVISION LEVEL

Q 15   **Please make a recommendation based on your comments:**

Major revisions.