

Peer Review Report

Review Report on Prevalence and Incidence of Metabolic Syndrome and Its Components among Waterpipe Users

Original Article, Int J Public Health

Reviewer: Doo Woong Lee

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EVALUATION

Q 1 Please summarize the main findings of the study.

In this study in Southern Iran, women showed higher rates of both metabolic syndrome and waterpipe smoking. Former waterpipe smokers had stronger associations with metabolic syndrome, including increased waist circumference and altered lipid levels. Current waterpipe use had mixed associations with metabolic syndrome. Women were more likely to smoke waterpipe, and they had higher rates of metabolic syndrome and central obesity compared to men. Both past and current waterpipe users exhibited adverse metabolic profiles. The relationship between waterpipe smoking and blood pressure was inconclusive. The study population's high prevalence of waterpipe smoking and metabolic syndrome provided a unique opportunity for long-term complication investigation. Detailed data collection included comprehensive information on waterpipe usage history.

Q 2 Please highlight the limitations and strengths.

The authors have thoroughly elucidated the potential mechanisms supporting their findings. Another notable strength of this study is the validation of self-reported smoking status through urinary cotinine testing, thereby bolstering the reliability of the results.

However, several limitations should be acknowledged. The generalizability of the results may be limited due to questions about the representativeness of the study population for Iran. Additionally, the findings should be contextualized within Iran, considering the diverse ethnicities present in other countries. Discrepancies in alcohol consumption statistics between countries raise important considerations for the authors. They should investigate potential systematic obstacles in obtaining accurate information on alcohol consumption, which is a crucial confounder in this research area, and address these challenges as limitations.

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

- What are the differences in population characteristics between Valashahr and the general population of the entire country? Understanding these variances is crucial for ensuring the generalizability of results derived from the population in Valashahr.
- Authors need to explain more about information about covariates (at least briefly how they were categorized). For example, there is no explain about how wealth score was measured and used in the analysis.
- Is there statistical evidence supporting the categorization of the number of years using waterpipe and other metrics such as pack-years of smoking or waterpipe-years? It would be beneficial to provide any supporting materials or data to substantiate this categorization.

- The definition of MetS varies depending on ethnicity. The authors should verify and reference relevant citations to support their characterization.
- Authors need to support why these covariates were adjusted in regression model with proper scientific backgrounds.
- Are these statistics accurate for alcohol use (196 people of study population which is only 2.1%) in Iran, or are people not responding correctly due to cultural or religious norms, resulting in underreporting? If so, the authors may need to specify why alcohol use was not accurately reported, as it is a critical confounder to exposures and outcomes in this study. And it will not be correct to say "it did not affect the estimates". If accurate reporting is sought, the authors should elucidate how these statistics are representative of Iranian people, as this differs significantly from other countries such as the US or South Korea, which are more commonly studied in my research.
- I understand that logistic regression was adjusted for age, sex, education, wealth score, physical activity, and pack-year, but is one exposure adjusted for other exposures? For example, when it comes to deriving the adjusted OR between WP smoking status (Never, past, and current) and MetS did you also adjust for how intensity of waterpipe did individual use (such as Waterpipe years that you calculated)? It seems not clear whether you just adjusted the covariates but not adjusted the intensity of Waterpipe smoking. If you did so, please clarify.
- Regarding the sentence "The reason for these differences is not clear, but past waterpipe smokers in our study had a significantly higher intensity of waterpipe use and had started smoking waterpipe at younger ages than current users which may have led the associations to be stronger in past users.", authors need to prove this with some results of descriptive analyses that compare intensity of waterpipe use or starting age of using it between current vs. past waterpipe users.
- About discussing the correlation between cigarette smoking and body fat distribution, it would be better to clarify whether this association stems from biological mechanisms or indirect effects caused by unhealthy lifestyles. Those who smoke are more prone to unhealthy dietary habits, alcohol consumption, and less exercise, which could contribute to this relationship.

Minor

- Regarding the sentence "The high prevalence of waterpipe use in PCS (37.5% ever waterpipe use) and the fact that more than half of the mortality in this population was due to CVD, made it a unique platform to conduct this investigation on the possible association between waterpipe smoking and the underlying mechanisms for CVD mortality such as the metabolic syndrome.", authors must include a proper citation to support this.
- There are no S Table 2 and S Table 3 in the file.
- By the way, there is no annotation for 'a' in Table 2.
- Regarding the sentence "This association was also seen in rats(30)", I think this is not appropriate to cite for current study that targeted human, unless there is unique biological evidence from this study (30) to support current research.
- Regarding the sentence "Other studies have shown that maternal tobacco exposure during pregnancy (32) and breastfeeding (33) increases the offspring's risk of developing the metabolic syndrome.", How does this sentence support your idea? I don't understand why this sentence is needed.
- In conclusion section, it is highly recommended to use the results from your own research. (Better to avoid citing other research)

PLEASE COMMENT

Q 4 Is the title appropriate, concise, attractive?

No appropriate and not attractive.

I am still questioning whether this study population is general or not. With this regard, it is not appropriate to put "prevalence" in the title.

Q 5 Are the keywords appropriate?

I am not sure Hookah is appropriate academic word.

Q 6 Is the English language of sufficient quality?

My first language is not English but it believe it is okay, but recommend to get profession check.

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?)

No answer given.

QUALITY ASSESSMENT

Q 9 Originality



Q 10 Rigor



Q 11 Significance to the field



Q 12 Interest to a general audience



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.