Author’s response to reviews

Title: Knowledge, attitudes, and perceptions towards waterpipe tobacco smoking amongst college or university students: a systematic review.

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Author’s response to reviews:

Technical Comments:

(1) Please remove the 'Key words' from your title page, this should be placed at the end of the abstract.

The ‘Key Words’ have placed at the end of the abstract.

(2) Please change your heading ‘Introduction’ to ‘Background’ in your abstract and in your main text.

Introduction has been changed to ‘Background’ accordingly.

(3) Please change your heading ‘Ethics’ to ‘Ethics approval and consent to participate’ in your Declarations.

Ethics has been altered to ‘Ethics approval and consent to participate’.

(4) Please provide your 'Authors' Contributions' section in text form (and not list form). Please also do not use superscript on the authors' initials.

For example: "FC analyzed and interpreted the patient data regarding the hematological disease and the
transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

Thank you for your comments. The statement of contributions is now in text form.

Editor Comments:

In addition to the referee comments, please address the following editorial points:

PRISMA guidelines. In accordance with BioMed Central editorial policies (http://www.biomedcentral.com/submissions/editorial-policies#standards+of+reporting), could you please ensure your manuscript reporting adheres to PRISMA guidelines (http://www.prisma-statement.org/) for reporting Systematic Reviews and Meta-Analyses. This is so your methodology can be fully evaluated and utilised. Can you please include a completed PRISMA checklist as an additional file when submitting your revised manuscript. Please do ensure your study is reported in line with the relevant parts of this checklist, for example including enough detail on the search strategy that the literature search could be repeated by other researchers.

Thank you for your comments. Our manuscript adheres to the structure of the PRISMA checklist, and we have now included a completed checklist within our resubmission.

As a minor point, please mention in the competing interests that Dr Jawad is a member of the editorial board of the journal.

We have now added that Dr Jawad is a member of the editorial board of the journal in the competing interests.

Please also present your appendix as an additional file. Please see: https://bmcpublichealth.biomedcentral.com/submission-guidelines/preparing-your-manuscript#preparing+additional+files

The appendix is included as an additional file (Appendix 2)

Reviewer reports:
Fadi Hammal (Reviewer 1):

I would like to thank the authors for their work on this manuscript, it is important and well written paper, however there are several points that could improve its quality:

1. The literature search was performed in August 2016. Based on the authors' correctly commented in (page 4, line 19) "plethora of published evidence" and in (page 5, line 37), it is reasonably expected that many relevant studies were published since then and are missed in current review. Probably authors could update their search and include studies published since 2016.

Thank you for this comment. We have now reconducted the searches of the databases that we used to include studies from August 2016 to October 2018 (Methods section, line 47 - 49, page 5). The results
of these have now been included within the analysis.

2. Authors reasoning for performing this review (page 4, line 29) "there is no evidence that WTS use extends once students leave university." and their comment regarding exploring reasons for this uniquely high prevalence. This is a valid and sound research question; however, answering this type of questions could be more thorough and detailed in a primary study.

In (page 5, line 33), it would be good to clarify and support the assumption that university student "may be distinct in their behaviours of WTS compared to other cohorts". Is it possible that age is an important confounder here?

Thank you for this comment. There is a lot of literature to suggest WTS is highly prevalent in university settings. However, population surveys among adults show relatively low use, and therefore this assumption is based on observation of prevalence data among adults (in the community) and university students.

We do however appreciate that the wording of this sentence was confusing, and therefore we have simplified it to state:

“This study aims to assess the knowledge, attitudes and perceptions of WTS amongst college or university students. Given the high prevalence, reasons underlying the use of WTS in this cohort need to be explored. Previous reviews exploring this area do not clearly stratify results by college or university student status (1, 2), and it is plausible that college or university students have distinct WTS behaviours. Furthermore, the rapidly expanding literature in this field makes previous reviews out of date; a fresh review can inform the most recent discussions on policy and intervention.”

(Background, Lines 26 – 32, pages 4/5)

We hope this makes it easier to understand

3. Some of the references especially in the introduction are old and there are some newer studies to use here.

We have updated the references with newer studies in the introduction.

4. No need to include a photo for waterpipe or to describe how waterpipe functions (page 4, lines 6-12), readers will most likely be familiar with that.

We have removed figure 1 from this study.

5. This review is closer to "narrative or scoping review" and I think it should not be called a "systematic review" and so.

Many Thanks for your comment. We believe we followed a systematic methodology in line with the PRISMA statement (see uploaded PRISMA checklist). Furthermore, scoping reviews tend not to evaluate the content of papers (just describe the features). Narrative reviews tend not to follow a systematic approach. The following guide from the University of Toronto details the difference between systematic, narrative and scoping reviews: https://guides.library.utoronto.ca/c.php?g=588615&p=4310109. Altogether, we believe we meet the criteria to be titled as a systematic review.
6. Readers would like to know more about the included studies. Lot of data that were collected according to appendix 1 are not presented in the manuscript. It would be an important addition to the paper to include a table of the characteristics of the included studies (e.g. study design, sample size, tool used, response rate, country, participants, …) (even as appendix).

The characteristics of all the included studies are presented in Appendix 3 and 4, which includes the study design, sample size, response rate, country and key results of each included study, separated as to whether they were conducted in the global north or global south.

7. No critical appraisal for the quality of the included studies was reported (not needed in all types of reviews).

We assessed methodological quality based on previous systematic review assessments in this field. These included:


We considered this appropriate to assess overall quality, given the aims of the review and the analytical approach. We have explained this in the text (Methods, Lines 72 – 73, Page 6).

8. Authors could follow a recently published PRISMA checklist for scoping review to format their manuscript.

Many Thanks for this comment. We ensured our manuscript meets the criteria of the PRISMA checklist, and this has been included as an additional file

9. Detailed search strategy, including terms used, could be presented in the appendix and could be more informative than data extraction form.

We have now included Appendix 1, which has the full list of search terms used in the five databases: Medline, CINAHL, Psychinfo, EMBASE and ISI Web of Science.

10. Authors also reported that they "hand-searched references' lists and used PubMed's related articles function", that was not reported in figure 2 and we do not know how many articles were identified through that route. Also in figure 2, reasons for excluding studies after being retrieved and read in full should be linked to numbers as it was done in the previous box.

Figure 2 is now Figure 1, since the original Figure 1 has been removed.

Figure 1 has been updated with the number of papers that were identified from ‘PubMed related articles function” and “Hand searched articles”. Unfortunately, we don’t have the numbers for each of the reasons underlying why each paper was excluded. This is because we didn’t make note of this during
the assessment process. Our apologies for this.

11. As search was restricted to (1990-present), readers would like to know how it returned 584 pre-1990 articles?

We removed studies as although they had been published after 1990, they included cohorts of students before 1990, and therefore did not meet our inclusion criteria. We have clarified this in the flowchart (Figure 1). We have explained this also in the text (Methods, Line 38/39, Page 5).

12. Finally, an important factor and a major difference between global north and global south that should be addressed. (Herbal vs tobacco), it has major impact on believes and attitude regarding health effects and addictive potential, on waterpipe smoking initiation, and on policy measures regarding waterpipe use including, flavouring, marketing and promotion, and smoking in public places.

Many Thanks for your comment. We unfortunately didn’t abstract whether the type of waterpipe was herbal or tobacco, and we suspect most studies do not report this. Future research should ensure that the type of waterpipe (herbal or tobacco) is captured in surveys. We have added this into the limitations of our study (Discussion section, Lines 372 - 375, page 16).

Olalekan Ayo-Yusuf (Reviewer 2): General comments Although this paper presented a very well written comprehensive review of knowledge, attitudes and perceptions of WTS, the findings are not novel. In fact, similar results were obtained when compared to similar systematic reviews carried out in 2013 and 2014. However, the authors argue these earlier systematic reviews are out of date and did not go into details with regards University students. The authors further suggest that despite a high prevalence of use among university students there is no evidence that WTS use extends once students leave the university thus there is a need to explore this phenomenon. Yet the review itself does not specifically explore the question related to intention to continue or not to continue WTS after completing their University studies. It is therefore important to either reframe the study rationale (see pg 4; lines 28-30) or present data to support the gap identified by the authors themselves. In general, I am not convinced that merely assessing knowledge, attitudes and perceptions towards WTS by itself is enough to inform intervention design as suggested by the authors.

Introduction

Pg 4; lines 28 - 30 - the whole paragraph on study rationale as it suggests here might need to be reframed as this study did not actually answer the question related to the uniquely high prevalence amongst University student cohort nor did it provide evidence of why WTS doesn't extends beyond the students stay at the University.

Thank you for your comment. Our aim was to understand the reasons that underlie the high prevalence of WTS amongst university students. We do however appreciate that the section was confusing, and therefore we have rephrased the aims to the following:

This study aims to assess the knowledge, attitudes and perceptions of WTS amongst college or university students. Given the high prevalence, reasons underlying the use of WTS in this cohort need to be explored. Previous reviews exploring this area do not clearly stratify results by college or university student status (1, 2), and it is plausible that college or university students have distinct WTS
behaviours. Furthermore, the rapidly expanding literature in this field makes previous reviews out of date; a fresh review can inform the most recent discussions on policy and intervention. (Background, Lines 26 – 32, pages 4/5)

We hope this makes our aims clearer and in line with the results we have abstracted.

Pg 5; line 31; delete the word 'towards' and change word 'fail' to 'failed'

Thank you for this comment. This section has been reworded (Background, Lines 26 – 32, pages 4/5)

Results

Pg 7; line 101 -102; What is difference with this 'peer imitation" and "peer pressure" especially considering these were seemingly used in the same papers, i.e ref to 13, 15-17?

Thank you for this comment. We understand that the two terms are confusing, and after discussion, we believe it would be easier to just label the term as peer/social influence; meaning that the students’ friends have influenced their use of waterpipe (Results Section, Line 101, page 7).

Reviewer 2 (Reviewer 3): PEER REVIEWER ASSESSMENTS:

REQUESTED REVISIONS:

In the Discussion section, the authors write "However, these separate systematic reviews fail to conclusively compare findings between the global north and global south, are not specific to the university cohort and finally fail to discuss specific themes such as knowledge and perceptions regarding WTS policy." Although I agree that the presented systematic review has definite advantages and achievements, it is not worth explaining the characteristics of the earlier papers as failures because these are the works you have actually used as a starting point for further inquiry.

Thank you for this comment. We have changed the wording of this section, removing the word ‘fail’ and replacing it with ‘do not’. We believe we do need to compare to other systematic reviews in this subject area in order to highlight what our review has conducted that is different. However, we agree it must be reworded to not sound as negative about the previous studies. (Discussion section, Lines 334 - 335, page 15).

The ending of the Discussion including 'Implications for practice' is in need of revision. In the text, the authors state that the level of knowledge is usually not predictive of initiating or stopping waterpipe smoking. However, in the individual and community level implications, they emphasize educational interventions. This seems contradictory. Further on, in the policy-making subsection, suggestions including location, taxation and advertising issues appear more justified. The prohibition measures suggested at the beginning of this subsection might be counter-productive.

Thank you for this comment. We do agree that it seems a little paradoxical, but we believe as baseline knowledge amongst students is already quite low, it fails correlate with reduced use. So, we still do
need educational interventions as a starting point, and this was one of the main recommendations of the WHO advisory note. Furthermore, it is clear that the current methods of providing health promotion to students are inadequate, and they view current methods with distrust. Overall, we have amended the text in the discussion, stating the above, to make this a little clearer. (Discussion section, Lines 372 – 375, Page 16).

The Conclusion, quite suddenly, switches to 'shisha' terminology which was not used in the rest of the text. From my point of view, it needs to be avoided.

Thank you for spotting this. We have changed the ‘shisha’ term here to WTS, as we have done throughout the text. (Conclusion section, Lines 415 – 418, Page 18).

In the Reference list, some entries need revision. Examples are below: 6. Association AL. Tobacco policy trend alert... - was this 'American Lung Association’? 13. Jackson D AP. - the name of the second author turned into 'AP’ here 42. Maziak Wea. - Problems with the author's name here as well

Thank you identifying these issues with the references. We have amended them accordingly

The text is generally well written. However, it will definitely benefit from professional language editing and observing some of the norms of academic writing. Some of the phrases which obviously require correction are listed below. I keep the line numbers from the pdf to enable the authors to more easily find the listed pieces.

In the Abstract: "We excluded studies where results of waterpipe tobacco smokers could not be distinguished from other forms of tobacco use and studies reported as abstracts where the full text could not be identified." - People could not be distinguished from tobacco.

Thank you for identifying this. We have made the change you have recommended.

"We included observational (cross-sectional, case-control, cohort) and interventional 42 (randomised or non-randomised) quantitative or qualitative studies that addressed college or 43 university students' knowledge, attitudes and perceptions regarding WTS for inclusion in this 44 study." - "included" is used twice.

Thank you for identifying this. We have made the change you have recommended.

"We identified a total of 919 papers related to WTS and satisfied 89 our inclusion criteria." - Grammar problems.

Thank you for identifying this. We have amended the grammar (Results Section, Line 87, Page 7)

"Twenty of these studies demonstrated that the 160 majority of university students worldwide could identify some of the health hazards associated
161 with primary WTS, for example, cardiovascular disease, respiratory disease and cancer (9-11, 162 13, 15-17, 24, 25, 27, 28, 30, 32, 53, 54, 58, 61, 63, 65, 66)." - Not clear what is meant by "primary WTS".

Thank you for this comment. By primary WTS, we meant physically smoking the waterpipe, rather than receiving second hand waterpipe smoke. We have clarified this in the main text (Results Section, Line 157, Page 9)

"194 3. Association between knowledge and WTS use" - Some headlines are numbered, others are not.

We have ensured that our underlining is now consistent

"In one longitudinal study, only students who
200 answered "do not know" to questions regarding their knowledge of WTS, tar, nicotine and
201 carcinogen content were associated with a reduced risk of initiation of WTS after one year (aOR
202 = 0.35, 95% CI = 0.14 - 0.90) (28)." - Students cannot be associated, only phenomena can.

Thank you for identifying this. We have amended the text accordingly (Results Section, Line 196, Page 11).

" In a sample of four universities in Jordan, the belief that cigarette smoking
219 is more harmful than WTS was significantly associated with the outcome of monthly waterpipe
220 use (p < 0.001), but not for the outcome ever use (p = 0.090) (67)." - it would be good to make this
sentence more explicit. Currently, it is not clear which belief was associated with a greater frequency of
use.

Thank you for identifying this. We have clarified the sentence to make it clear that monthly waterpipe
use was associated with the belief that cigarette smoking was more harmful than WTS.

"Specifically, it is interesting to report in our findings how
354 while students are able to report correct knowledge of WTS harms, this fails to deter them
355 from WTS use (a finding that differs from studies of adult WTS users (2))." - This 'how... while'
construction needs some attention.

Thank you for identifying this. We have altered the grammar in this section. (Discussion section, line
337, Page 15).

" 365 students. We followed the PRISMA methodology to conduct this review." - Should it be
PRISMA?

Thank you for identifying this mistake. We have updated it to ‘PRISMA’. (Discussion section, line 348,
Page 15).

" 373 towards WTS as they allow us to explore temporality. Given we found five longitudinal studies,"
" It is
387 necessary to reverse the popularity and prevalence of waterpipe and reduce its contribution
388 to the global tobacco health burden." - This statement, especially "reverse the prevalence" sounds
naive and contradicts the overall relatively mature views of the authors.

Thank you for this comment. We have reworded the section to make it clearer. (Discussion section, Line 354 – 358, Page 16).

"400 of WTS. Therefore, interventions involving religious and community leaders might help 401 decrease the prevalence this habit."

We have amended the grammar in this sentence (Discussion section, Line 390, Page 17).

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