Author's response to reviews

Title: Are the stages of change relevant for the development and implementation of a web-based tailored alcohol intervention? A cross-sectional study

Authors:

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Author's response to reviews: see over
Editor:

Dear editor,

Thank you for providing us with the opportunity to revise our paper entitled “Are the stages of change relevant for the development and implementation of a web-based tailored alcohol intervention? A cross-sectional study”. We appreciate the time and effort you took to help us to improve our manuscript. We herewith resubmit our manuscript. We have addressed all issues. In this document we also respond to the comments made by the two referees.

We hope that the revised manuscript will be accepted for publication.

Yours sincerely,

Daniela Schulz
Stef Kremers
Hein de Vries
Referee 1:

We thank referee 1 for her constructive comments and useful recommendations. Based on her suggestions, we made some changes in the paper. Detailed information can be found below where we also respond to all points of the referee:

**Discretionary revisions:**

1) Though the term ‘healthily’ is technically correct, the authors may want to consider other phrasing such as, ‘healthful’, ‘in a healthier manner’, or ‘change to healthier drinking habits’.

Response 1: We thank the referee for this comment. We now use the phrasing “in a healthy/healthier manner” and “change to healthier drinking habits” instead of the term “healthily”.

2) The term ‘preparator’ is also technically correct but not widely used in the literature; a descriptive use of this stage may assist the reader such as ‘in preparation’ or ‘preparing to change’.

Response 2: The referee is right; the term preparator is not widely used in the literature. We chose to use the term “preparer” which is used by different authors as well (e.g. Hoving et al., 2006; Dijkstra et al., 1998; Perkins-Porras et al., 2004).

3) Table 1 seems unnecessary given that attitude, social influence, and self-efficacy are well described in the methods and factor analysis values are given which seem sufficient. Possibly this could be a supplemental table offered online for interested readers.

Response 3: We thank the referee for this suggestion. We included Table 1 as an additional file.

**Minor essential revisions:**

1) 1st sentence of the background section: Change “High alcohol consumption” to “Heavy alcohol consumption”.

Response 1: We changed the word high into heavy (see page 4).

Sampling procedure and design

2) Please indicate where Limburg province is located within the country (north, south). Is this primarily a rural or urban area?

Response 2: We included a description of the location of the province Limburg and added that it has both rural and urban areas (see page 6).

3) Overall N of the sample as well as failure to give consent and partial completion rates should be reported. How was the present study sample selected from the larger trial? Were
respondents compensated for participation? It appears that only current drinkers were included in the study sample. This should be noted in the methods and in the tables and figure.

Response 3: Referring to the comment of referee 2, we moved the part about the attrition to the method section (see page 6). We now added the overall N so that the reader gets to know how many people refused to give informed consent. This study was used as a pilot test for our larger trial. This means that it is not a selection from the larger trial. Respondents did not receive any incentives for participation. We now added this information in the manuscript, too. In our study, not only current drinkers were included: 8 people reported not to drink. However, since our flyers and advertisement aimed at reaching drinkers (slogan: Is your drinking behavior still healthy? Do the free test and receive personal advice), we expected that most of them would drink alcohol.

Tailored message

4) A typo on Page 8, first paragraph; the sentence “was used as theoretical framework” should be changed to “was used as a theoretical framework”.

Response 4: We changed this typo into “was used as the theoretical framework”.

Statistical analyses

5) A typo on Page 9, first paragraph, “groups were compared as regards the psychosocial determinants…” should be changed to “groups were compared in regards to the psychosocial…”.

Response 5: We sent our paper to a proof reading service in Great Britain before submitting the manuscript to BMC Public Health. Anyway, we now changed it into “groups were compared with regard to” and we hope that the referee is fine with that formulation.

Results

6) Table 2. Chi square comparisons are not valid for cell sizes less than n=5 so chi square values for nationality, education, and marital status should be removed. However, the low/medium educational levels could be combined and chi2 computed.

Response 6: In accordance with the suggestion of the referee, we combined the low and medium educational level now (and computed the chi2 again) and we removed the chi2 value for ‘nationality’. We removed the variable and answer options of ‘marital status’, because the variable ‘relationship status’ is sufficient (see page 21).

7) Figure 2. Giving an additional note describing PC, CP and AM (as is given in Table 3) would be helpful.

Response 7: We added a note describing PC, CP and AM to Figure 2 (see page 20).

8) Table 3. Display N’s for PC, CP, and AM.
Response 8: We included the N’s for PC, CP and AM in Table 2 (which was Table 3 in the previous version of the manuscript, see page 22). We also added the N’s in Table 3, see page 23.

9) Table 4. A minor typo correction for the first item under ‘layout’ is needed.

Response 9: We changed this item into “The advice was nice in terms of layout and readability”, see page 23.

Discussion
10) An unclear sentence on page 12 “respondents may need also other information…” should be reworded for clarity.

Response 10: We changed this sentence into “respondents may need additional information…”.

Major compulsory revisions:

Stages of Change measure:
There is no citation for the stages of change measure so it is assumed that this measure has not been used in prior research nor has it been evaluated with other measures of Stage of Change. The measure asks about drinking ‘no more than 2 drinks per day’ which are guidelines for women but guidelines for men indicated no more than 3 standard drinks at the time the study was conducted. Does the intervention account for the gender of the respondent?

Response: The number of glasses, which is mentioned in the measure of stage of change, was tailored to the gender of the respondent. This means that the measure asked about drinking “no more than 2 drinks per dag” for women, and “no more than 3 drinks per dag” for men. We included an additional explanation in the manuscript (see page 8).

Additionally, other levels of unsafe drinking are not properly addressed such as exceeding weekly limits of drinking. A woman reporting a plan “to drink a maximum of two drinks in a day, but started in the past six months” would be placed in the action stage of change but, if she is drinking two drinks per day on a daily basis, is she exceeding the weekly limits set by the Dutch government? Would she be in the action stage if she is drinking at unsafe levels? These are limitations of the Stages of change measure and should be addressed in the discussion.

Response: That is true. In the Netherlands, there is the additional recommendation for drinkers to have two alcohol-free days each week. We extended the discussion by giving this information and we also included the limitation of our stage of change measure (see page 14).
Alcohol consumption at unsafe levels: The authors make note of unhealthy drinking of more than 2/3 drinks but should also indicate the weekly levels of drinking that are unsafe in the background section. Also, discussion of the most prevalent Dutch drinking patterns (e.g., infrequent binge drinking) would be helpful to allow understanding of potential behaviors that would be targeted in an intervention.

Response: In our introduction, we added some background information about drinking patterns and introduced the term binge drinking (see page 4).

The alcohol measure in the questionnaire content section needs further description of the items used to obtain volume. Additionally, inclusion of frequency, quantity, and pattern of drinking should be included in Table 2. It would be important to know what percent of the participants are drinking at unsafe levels. Of concern is that some individuals may not be drinking at unsafe levels but assigned to a stage of change when no change is needed. For example, are there persons assigned to the action stage that have never violated the safe drinking guidelines? A lifetime measure of maximum drinking would be helpful to identify these persons but if that is unavailable, discussion on the potential for stage of change misclassification is warranted. Additionally, conducting analyses excluding persons that are currently drinking within government guidelines would strengthen the paper and truly target the participants most in need of an intervention.

Response: We included more detailed information about the alcohol measure of our questionnaire (see page 7). Moreover, we added the frequency of drinking (in days) and the number of respondents who complied and did not comply with the national alcohol guideline to Table 1 (see page 21). The quantity (alcohol drinks per dag) was already mentioned. In total, 49 respondents may be misclassified to the stages of change. Since we do not know whether people reported a wrong number of alcoholic drinks they consumed or whether the stage of change item was misunderstood, we decided to include all 170 respondents in the analyses and to report these findings in the manuscript as we already did. However, we also conducted the analyses without persons assigned to a stage that did not correspond with the alcohol intake of that person: the results are comparable; there were no major changes. We now discussed the possible misclassification problem in our revised discussion section (see page 14).

In addition to the changes mentioned above, some small changes were done based on the comments of referee 2: We improved Figure 1 by including titles to the x and y axes and we added the term “standard drink” which consists of 10 g pure alcohol, to make clear what we meant with a glass of alcohol (see page 7). Finally, we moved the part about the attrition to the method section and integrated this information among the sampling procedure and design section (see page 6).
Referee 2:

We thank referee 2 for her useful comments. Based on her suggestions, we made some changes in the paper. Detailed information can be found below where we also respond to all points of the reviewer:

Discretionary revisions:

1. It may add clarity to add in how many people responded to the advertisements etc earlier in the paper (the sampling procedure and design section).

Response 1: We thank the referee for this comment. We moved the part about the attrition to the method section and integrated this information among the sampling procedure and design section (see page 6). In addition, we added the overall N so that the reader gets to know how many people refused to give informed consent.

2. To increase article quality, authors could add in reliability and validity scores of all survey tools (if available), some reliability stats are already presented.

Response 2: In the manuscript, we indeed included the Cronbach’s α’s of the psychosocial constructs (pros, cons, modeling, social support, social self-efficacy, emotional self-efficacy, routine self-efficacy) and the program evaluation constructs (items of the questionnaire, pieces of advice, layout and functionality). The stage of change is measured by use of a single item, alcohol consumption is measured by the five-item Quantity-Frequency-Variability questionnaire, and the other items are measuring demographics, for which it is uncommon to execute the reliability.

3. How are glasses of alcohol defined in the stages of change/self efficacy/social influence questionnaires? A glass of wine would be very different in terms of units than e.g. a glass of beer or a shot and mixer. This would also affect intentions to drink alcohol in the future. i.e. it may be a bigger deal for men to have two glasses of beer a day maximum than it is for women to have two large glasses of wine a day maximum (although I appreciate gender is taken into account in the analyses). If it was defined it would be useful to add this information in.

Response 3: In our questionnaire, we asked for standard glasses, consisting of 10g pure alcohol. Definitions and examples were included in our program as well as a graphic with pictures and descriptions. We now use the term “standard drink” in our manuscript (see page 7).

4. Page 12: “Thus, modelling seems to play an important role in the later stages”. If people in the AM stage had more healthy role models than people in the two other groups, does this not mean that modelling plays an important role generally? i.e. those with good role models are more likely to be engaging in healthier alcohol consumption. Surely it is not just important in the later stages? Similarly “social support seems to become more important in CP” – do the results not suggest that those with greater social support are in the CP category – i.e. that social support is important generally? Perhaps I misunderstand.
Response 4: We are grateful for this comment and agree with the referee’s remark that social support and modeling are important generally, since the scores differ between people in different stages of change. We guess that the word “important” in the manuscript has caused confusion. We now use the word “prevalent” in the sentence regarding social support, and reformulated the sentence about “modeling” (see page 12).

Minor essential revisions:
1. Figures one and two need titles, a key to the stages of change and titles for the x and y axes.

Response 1: According to the guidelines of BMC Public Health, the titles of our figures were placed in the main document (see page 20) instead of underneath the figure. The titles are: “Figure 1 - The Ø–pattern (De Vries & Backbier, 1994)” & “Figure 2 - Standardized T-score patterns of attitude (pros, cons), social influence (modeling, support) and self-efficacy (social, emotional, routine) in the stage groups”. We included titles to the x (stage) and y (score) axes.

2. The reference to Figure one needs adding into the main text.

Response 2: The reference of Figure 1 “De Vries & Backbier, 1994” is stated in the text, in the title of the figure and is included in the reference list (see reference 43).

In addition to the changes mentioned above, some changes were done based on the comments of referee 1: we now use the phrasing “in a healthy/healthier manner” and “change to healthier drinking habits” instead of the term “healthily”; we now use the more widely used term “preparer” instead of “preparator”; we included Table 1 as an additional file; we added a description of the location of the province Limburg and added that it has both rural and urban areas (see page 6); we improved the table about the demographics and drinking behavior variables and added the frequency of drinking (in days) as well as the number of respondents who complied and did not comply with the national alcohol guideline to that table (see page 21); we extended the background section by adding more information about drinking pattern in the Netherlands (see page 4); and we extended the limitations in the discussion section (see page 14).