Reviewer's report

Title: The effects of gender and ageing on health related behaviors

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Reviewer: Sarah Damery

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This paper represents work in an important issue area, namely that of the links between age, gender and behaviour related to health such as screening, or healthy lifestyle choices or actions. The work is based on a large sample of random respondents to a self-completion questionnaire survey, and makes a number of useful claims related to statistically significant findings amongst the survey returns for different groups of respondents.

However, I believe that the claims made in the paper frequently outstrip the significance of what is actually presented within it. In their own words, the authors claim to ‘describe preventative health behaviors including screening practices, beliefs and attitudes, responsibility for better health outcomes and perceived future needs in relation to health across gender and age groups’. It is my opinion that the paper in its current form does not achieve this, particularly with regard to presenting useful information on beliefs and attitudes. The study design, based as it was on a questionnaire survey with (one must assume, for this is not stated in the text) closed questions, cannot give valid information about beliefs and attitudes, and above all risk perceptions, unless there is some associated qualitative element which asks the ‘why’ questions rather than simply the ‘what’ questions that the information presented is based on.

Thus, in stating on p8 (Discussion) that the paper provides ‘an evidence base for health related behavior which we envisage will contribute to informing, educating and supporting healthy ageing’, I would argue that the authors claim more for the significance of their paper and its wider importance, than can possibly be claimed on the basis of the evidence offered. The mismatch between evidence presented and the claims made from that evidence is a serious obstacle to the acceptability of this paper unless some major revisions are made.

- Major Compulsory Revisions

1. More information should be offered about the nature of the questionnaire survey. Issues such as recruitment to the study etc. are covered, and the particular questions that the paper deals with are noted, however, there is no sense of the type of questions these were. Were they open or closed? Were they simple yes/no answers, or did respondents rate their answers on a Likert type scale? This must be addressed, as knowledge about the survey design is fundamental for the reader to be able to judge the significance of the conclusions that the authors draw from the data presented.
2. Consistency: The title relates to the ‘effects of gender and ageing on health related behaviors’, yet the text is inconsistent, referring more frequently to gender and age. Age and ageing are two different things, and it is my view that the paper is more successful at discussing age than it is ageing. I would advise changing the title and standardizing the references to age throughout the text, removing references to ageing, as despite there being a few occasions where the authors discuss the differences between lower age groups and older, these comments are not explicitly related to ageing per se.

3. One of the major results noted in the paper is that ‘screening behaviors were influenced by gender and age’. I would take issue with this – the authors do not demonstrate that there is actually an influence (i.e. a causal link) between gender and/or age on the reported screening behaviors etc. presented. More correctly, this should be stated as there being an association between age, gender and screening behaviors. Correlation does not imply causality, yet on several occasions throughout the paper, the authors treat the data as if such a causal link can be demonstrated.

4. Much is made of the finding that whilst participants tended to state the importance of health promotion, only 42% of respondents had a health plan, as compared to 72% who had a financial plan. On the face of it, this may seem significant, but I believe that the authors are making a spurious comparison here – whether or not an individual has a financial plan cannot be compared to the existence of a health plan, since the reasons for having each of these things could be entirely different. Financial planning is less of an individualized decision and could be influenced by many factors. Treating this and health plan adoption as directly comparable is a mistake, and shows an over-reliance on the significance of the bare numerical responses to particular survey questions, rather than a considered interpretation based on the likely reasons for individuals to have a health or financial plan which might have given rise to the figures. Such spurious comparisons need to be dealt with as they detract from the quality of interpretation of the evidence base outlined in the paper.

5. There is a need for a more considered review of the literature relating to risk perception. Much has been published in this area, and much relates directly to links between individual risk perception and the adoption (or not) of certain pro-health behaviors. However, the literature is only briefly alluded to, and a more thorough review of the relevant literature would greatly strengthen the paper and its theoretical base. In particular, there is much that could be said about the apparent difference between what people understand as being worthwhile pro-health behaviors (eating a nutritionally balanced diet for example) and whether they are in practice prepared to adopt these behaviors. This so-called ‘value-action’ gap is very important and, if considered in detail, could add significantly to the theoretical robustness of the paper.

- Minor Essential Revisions

1. Regarding the response to the survey – is there any sense of non-response
bias that may have an impact on the wider generalisability of the research findings to the population outside the sample studied? And how likely is it that these findings would be generalisable to countries outside the Australian context?

2. I would recommend that instead of listing the statistical significance of the findings solely in the tables, that some of these significant p values be quoted within the text as well. This would make interpretation of the findings presented easier, without the need for the reader to spend a great deal of time poring over the information in the tables. In particular, the first paragraph on p7 (‘Health beliefs’) would benefit from some discussion of statistical significance rather than the current listing of facts and associated percentages.

3. Some points made were rather obvious and could be omitted: for example, on p8 (lines 10-12), much is made of the fact that women were more likely to seek information about breast cancer, cervical cancer etc. whereas men were more likely to seek information on prostate cancer. This is far from surprising given that these conditions are nearly wholly gender-specific. Surely the questionnaire survey yielded other less obvious findings more worthy of a special mention in the text than this!

4. Where the text states e.g. ‘women were significantly more likely to…’ it needs to be made clear (where this is the case), that the word significant does indeed refer to statistical significance, and the corresponding p value should be stated. This occurs several times throughout the paper and greater clarity would tighten up the text considerably.

- Discretionary Revisions

A number of grammatical issues and clarifications to the meaning of what is being said are recommended:

1. p2, ‘Results’ line 6: add comma after however.

2. p4, line 2: add comma after health.

3. p4, line 8: cholesterol is written with a capital ‘C’ here, however, on page 6 ‘Screening practices’ section, line 2, it has a small ‘c’. Choose one and be consistent.

4. p4, line 11: add ‘if’ between or and they at the end of the line.

5. p5, para 2, line 5: ‘future needs for health’ would be better expressed as ‘future health needs’.

6. p6, ‘Screening practices’ section, line 3: ‘Participants aged over 51 years of age’ better expressed as ‘participants over 51 years of age’.

7. Same section, line 7: ‘regular screening for pap smears’ would be better expressed as ‘regular pap smear screening’.
8. Same section, last line: ‘men aged over the age of 51 years’ would be better as ‘men aged over 51 years.’

9. p8, line 9: add comma after ‘on’.

10. p8, ‘discussion’ section, line 5: add comma after study

11. p9, line 9: add comma after screening.

12. p9, line 13-14: ‘rate of cervical adenocarcinoma has increased in young women’. Between which years does this data relate to?

13. p10, line 5: reference to ‘correct risk perception’. I would be very careful here in asserting that there is indeed a ‘correct’ risk perception. The issue with ‘perception’ is that it is highly individual and could be based on a range of factors. This is an issue where a theoretical engagement with the theory of social amplification of risk (Kasperson et al 1988) might be useful.

14. p10, bottom two lines: a repetitive point about the health plan vs. financial plan issue. Would suggest omission on the grounds of point 4 in ‘major compulsory revisions’ above.

15. p11, lines 1-2: some further text might help here – in moving people on from preparedness into active participation (a good point), what sorts of factors might facilitate this change, based on the findings from the research undertaken?

16. p11, ‘Conclusion’ line 3: ‘…Australians do not translate this into sufficient actions’. A clarification of what is meant by ‘sufficient’ is required here. Sufficient for what?

17. Same line as above, ‘western’ is written elsewhere in the paper with a capital ‘W’. Would suggest changing this to be consistent throughout the paper.

18. Reference list: Reference 19 (p.14) and reference 22 (p.15) duplicate each other – one should be removed and the text adjusted accordingly.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.