Author's response to reviews

Title: Gender Differences in Attitudes Impeding Colorectal Cancer Screening

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Author's response to reviews: see over
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Editor, BMC Public Health

To whom it may concern,

Please accept the enclosed manuscript entitled “Gender Differences In Attitudes Impeding Colorectal Cancer Screening”. We are submitting this revised version of the manuscript for consideration as an original research article. It has not been published elsewhere and does not overlap or duplicate any of the authors’ previous published work. This work is not under consideration by any other journal.

We’d like to thank the editors and the reviewers for their careful consideration of our manuscript. We appreciate your input, and have attached a revised version of the manuscript that should address the points of concern raised by the reviewers. Please find a point-by-point listing of our responses attached following this letter.

Sincerely yours,

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We would like to again thank both reviewers for their careful reading of the manuscript, and for their help in improving the quality of this submission. Please find a list of the changes we have made in the manuscript in response to reviewer comments.

1. Please revise and state clearly the study aims and objectives

The background section of the abstract has been revised to more clearly articulate study aims and objectives. (Please see below)

This study randomly sampled unscreened, screening-eligible individuals in Ontario, employing semi-structured interviews to elicit key differences in attitudinal obstructions towards colorectal cancer screening with the aim of deriving informative differences useful in planning promotions of screening uptake.

2. This section under “methods” should include information on the number of participants called to identify response rate to study participation.

These abstract changes have also been made (please see below)

**Methods:** N = 81 participants (49 females, 32 males), 50 years and above, with no prior CRCS, were contacted via random-digit telephone dialling, and consented via phone-mail contact. Altogether, N = 4,459 calls were made to yield N = 85 participants (1.9% response rate) of which N = 4 participants did not complete interviews.

3. Introduction section should address the screening participation rates of males or females and current levels of screening in accordance with guidelines, emphasizing the mixed evidence relating to gender bias and screening participation. Current literature, including recent systematic review evidence should highlighted and critiqued to justify why an evaluation of gender-specific attitudes to screening is needed and whether we need gender specific public health interventions or messages. Some suggested references were provided.

The introduction section has been altered to include requested literature, and critique-justification for further evaluation of gender – specific attitudes towards screening (please see highlighted paper version)

4. The introduction should include a section relating to risk-appropriate screening recommendations for the at-risk population in Canada and identify the target age range specified for population level CRC screening and recommended intervals for screening. It is important to identify the at-risk population and to inform the reader of current CRC screening recommendation.

The introduction has been modified to include the requested section (see below).

As this study was undertaken in Canada, it is important to note that the Canadian Association of
Gastroenterology recommended in their 2010 update [50] of their 2004 screening recommendations [51] that individuals of average risk participate in one or both of the following screening regimes: 1) FOBT every 1-2 years or 2) Flexible Sigmoidoscopy every 10 years or longer, with certain other protocols such as colonoscopy used when judged necessary instead of at the population level. Recommendations for screening vary by region and are continuously reviewed, but generally recommend a similar approach to Cancer Care Ontario’s Colon Cancer Check, (used here as an example) that individuals 50-75 years of age perform an FOBT every 1-2 years or receive a colonoscopy approximately every five to ten years depending on baseline risk.

5. Data Analysis: The authors should provide a little more detail on their procedure. Were transcripts coded separately by gender then themes compared, was coding done blind to gender, were transcripts coded together and then codes and themes compared by gender? Also, how many coders were involved and did they double code all transcripts or some portion? If so, how were final codes determined? Were any procedures used to increase confidence in the accuracy or reliability of coding? How many investigators were involved in identifying common themes in the data, were these investigators also the coders, and how much was determined a priori vs. emerged from the data?

These details have been added to the methods section (see below).

The transcripts of male and female participants were coded, and then codes and themes compared with respect to gender. Two unblended coders were engaged in coding all transcripts, with periodic discussions between coders and the principal investigator used to mediate coding discrepancies and derive final codes. Two individuals (one coder and one-non-coder) identified the common themes in the data. Finally, two investigators reviewed the common themes and identified those most representative of the gender differences observed. These selections were then reviewed by all investigators and, in some cases, the descriptive terms for theme identifiers were revised.

6. In the data analysis section, Table 1 should be improved, with information provided on essential socio-demographic and provider-level characteristics that could influence CRCs attitudes. Please indicate which variables were assessed. For those variables assessed, please update this table to make this table more informative to the reader. In addition, please include either age broken down categorically or the mean age.

Table 1 has been improved with inclusion of socio-demographic data variables that were assessed (please see below)
Table 1 Subject Demographics and Staging

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Age: 51 – 84 years (range)</th>
<th>Age: 63.7 years (mean)</th>
<th>Education:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>49</td>
<td></td>
<td></td>
<td>&lt; High school:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completed High school:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completed Some College/University:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completed College/University:</td>
</tr>
<tr>
<td>Males</td>
<td>32</td>
<td></td>
<td></td>
<td>&lt; High school:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completed High school:</td>
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<td></td>
<td></td>
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<td></td>
<td>Completed Some College/University:</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>Completed College/University:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screening Staging</th>
<th>Females</th>
<th>Males FOBT</th>
<th>Females</th>
<th>Males Flex Sig</th>
<th>Females</th>
<th>Males Flex Sig</th>
<th>Males Colonoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaware</td>
<td>8.1%</td>
<td>31.2%</td>
<td>8.1%</td>
<td>34.4%</td>
<td>6.1%</td>
<td>31.2%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Undecided</td>
<td>58.2%</td>
<td>51%</td>
<td>44.9%</td>
<td>34.4%</td>
<td>51%</td>
<td>31.2%</td>
<td>28.1%</td>
</tr>
<tr>
<td>Decided to do</td>
<td>34.7%</td>
<td>42.9%</td>
<td>47%</td>
<td>34.4%</td>
<td>42.9%</td>
<td>34.4%</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

Five Interview Domains

<table>
<thead>
<tr>
<th>Experience of Pain &amp; Anxiety related to CRCS Adherence</th>
<th>Gender Differences in CRCS Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience at time of interview</td>
<td></td>
</tr>
<tr>
<td>Key Barriers to CRCS Adherence</td>
<td></td>
</tr>
<tr>
<td>Key Factors Predicting CRCS Adherence</td>
<td></td>
</tr>
</tbody>
</table>

7. While differences in screening modality and staged i.e. readiness to screen are highlighted there is no information on the statistical significance of such results. If cell sizes permit please conduct and include chi-square statistic results.

Our biostatistician judged the cell numbers too small for the valid use of chi square analysis.

8. The third paragraph of the introduction should highlight some of the gender differences observed in previous quantitative (or qualitative) research to further justify the need for this study. Some of this information is included in the discussion, but more is needed up front. Also in that paragraph, it should be acknowledged that females may prefer endoscopy and therefore report more rejection for FOBT

Since including new references and literature review requested by Reviewer 2 (related to previous quantitative research) in the introduction, we are concerned with more additions to this section making it too long. Thus we have not moved up additional material and have left the material referred to in the discussion section.
9. The authors should specify the average time spent and the range of time spent on most interviews in total, not just that most were divided into more than one session.

This has been added (please see below).

The mean interview time was 1.8 hours with a range of 0.56 hours to 2.5 hours.

10. It may be helpful to include a footnote indicating that no participants had decided against CRCS so that the table can be more independent of the text.

This footnote has been added (see below)

\[1\] As no participants demonstrated Stage 3 (aware but decided against), the remaining stages were clustered, for reporting purposes, into unaware (Stage 1), undecided (Stage 2 and Stage 4) and decided to do (Stage 5).

11. Although it is described better in the discussion, the term “fragmenting” should be defined or replaced with “blunting” to convey the intended meaning to a broader audience. Several of the quotes illustrate an “accepted denial” strategy for blunting (also see McQueen, Vernon, and Swank, Health Psychology 2012) and should be grouped together in the list of quotes (#1, 2, 8, and maybe 3).

The term “fragmenting” has been replaced by “blunting”. Quote #8 is now grouped together with #1, 2 and 3. The McQueen article had a useful perspective and a citation has been added.

12. The label “unnecessarily refined health care” is unclear. Drawing on participant’s quotes, the “lack of interest” and focus on “symptoms” as a motivator for CRCS illustrates the theme better. The authors don’t report this, but the quotes seem to reflect a low priority or value for prevention in this case.

Based on the perspective that “unnecessarily refined health care” is unclear, we have amended it to the more focused Unnecessary Health Care. The intent was to reflect the opinion of participants who may have felt it was ‘excessive’ or unwarranted to take on relatively major medical procedures such as colonoscopy in response to nonspecific future risk of cancer.

13. The description and number of quotes could be increased for uncomfortable vulnerability (and/or embarrassment) to better support the authors’ argument that although males and females both report barriers due to physical discomfort, the nuances of those barriers are different. The quotes of uncomfortable vulnerability for males suggests that males are uncomfortable submitting “that area” of the body (to another man?) due to masculine roles. It would be useful to more clearly describe how this barrier may be more about social position and roles, rather than the embarrassment of others (male physicians?) viewing “personal” areas of the body, which females reported. Females are socialized to conceal socially-defined private areas of the body and have more concerns about body image, so submitting one’s private areas for examination may be less of a threat to a female’s social role as it is a threat to her social sense of privacy and modesty (which may
be attenuated if the examiner is another female).

We appreciate the sensitivity to nuance expressed in the reviewer’s comments. We have added a sentence that contrasts the personalized embarrassment of females with the male objection to a vulnerable role position.

14. The authors should also examine their data for clues to whether or not participants assumed the endoscopist would be male or female or whether they were more likely to refer to a male vs. female physician in general.
We did the requested examination but it was not clear from transcripts what gender the endoscopist was assumed to be by each participant.

15. It should be noted that the reference about females reporting more pain during endoscopy was without sedation (also see Farraye et al. Am J of Gastroenterology 2004).
This reminder is duly noted, and the text has been adjusted accordingly (see below).

References to pain are better understood in light of an established finding that females regularly report more pain/discomfort with endoscopy (than men) linked to anatomical differences, although this finding does not account for the effects of sedation on females which may attenuate such differences [40].

16. 12th paragraph of discussion: It seems important for future interventions to address the low priority men voiced for prevention, which may undermine any efforts for more “systematic decision-making”.
We agree and have inserted the sentences below into para 12.

On the other hand, from responses observed, males seem to require a concerted effort in alerting them to the need for disease prevention practices altogether. They seem mired in thinking that only symptomatic and disabling medical problems require care. If this finding is accurate, a deliberate effort to change these fundamental attitudes in support of preventive care is required.

17. Additionally, if women prefer female endoscopists then medical schools and residency programs need to address this gap with fellowships, salary incentives, or other recruitment incentives for female physicians to receive specialty training in gastroenterology.
We agree and have added the section found below.

This preference could be addressed by medical schools and residency programs offering fellowships, salary incentives, or other recruitment motivators for female physicians to receive specialty training in gastroenterology.

18. I don’t think the authors meant to link “disadvantage” with “female anatomical features” the way they did. I think “differences” would be a fairer term.
We agree and have replaced the word ‘disadvantages’ with ‘differences’.

19. There is a need to inform the reader of the questions asked in the semi-structured interviews.

The Semi Structured Interview Schedule is now included in the submission via a new Table 2.

20. Table 2. Please remove from manuscript. This information is redundant and is only repeating what is already written in text.

The old Table 2 has been removed and been replaced with the new Table 2.

21. The authors identified that males in particular tended to view CRC screening in the absence of symptoms as unnecessary. Given that early detection and prevention through asymptomatic screening is a key message to the at-risk population, it is important the need for such tailored health messages to male persons is highlighted in the discussion.

We agree and believe we have emphasized the need for a prevention focus in previous para 12.

22. Following from point 8 relating to refinement of table 1 to include relevant sociodemographic and provider-level characteristics of participants, it is important that any characteristics of the sample over or under-represented are addressed in the limitations section…..add over-representation or under-representation to the limitations.

There is now a statement addressing the skew towards including older individuals who are screening-eligible.

23. There appears to be no rationale for including participants over the age of 75 years, whereby the ACS guidelines do not recommend screening. Please comment on the reasons for doing so, for including subjects over 75 years.

We were required to include subjects over 75 years by the funding agency, Canadian Institute for Health Research; that statement is now included in the paper.

24. A single-sample FIT may be an acceptable alternative to a multi-sample FOBT.

The study was undertaken in Ontario where a single sample FIT is current unavailable for CRC.