

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Impact of a mass media campaign on participation rates in a national bowel cancer screening program: a field experiment
AUTHORS	Durkin, Sarah; Broun, Kate; Spittal, Matthew; Wakefield, Melanie

VERSION 1 – REVIEW

REVIEWER	Ms Natalie Dodd University of Newcastle, Australia
REVIEW RETURNED	29-May-2018

GENERAL COMMENTS	<p>Thank you for the opportunity to read this manuscript. It is well written, timely, and fills a research gap in Australia. Please find minor comments for consideration.</p> <p>Abstract</p> <ol style="list-style-type: none"> Page 2 Line 35. Please reconsider including the secondary finding that 'extra people with positive FOBT that could seek follow-up'. It seems slightly out of place here as it is not part of the primary objective and fits better where it is in the body of the paper. Page 2 Line 39. Instead of 'bowel cancer screening program' use NBCSP as abbreviated prior. <p>Introduction</p> <ol style="list-style-type: none"> Page 4 Line 40. I found this reference difficult to follow, consider updating to the recently released AIHW NBCSP Monitoring Report (May 2018). <p>Method</p> <ol style="list-style-type: none"> Page 6 Line 42. Title should be plural Page 6 Line 48. Isn't the full rollout to be complete by 2020? Could also add reference here to support this. Page 6 Line 49. Consider including a brief description of the type of FOBT sent by the program i.e. immunochemical, number of samples etc. Page 8 Line 41. I think it would be good to clearly contextualise the Jodie Lee program as a separate entity outside CCA's campaign. I wonder if this sits well in methods or could this be moved to the limitations section? <p>Results</p> <ol style="list-style-type: none"> Page 10 Lines 29 and 34. Would be more complete to report all p-values regardless of significance. <p>Conclusions</p> <ol style="list-style-type: none"> Page 14 Line 10. The first sentence would be more correct to say 'low levels of participation in the NBCSP' as you previously stated we are unable to capture all national screening i.e. screening outside the program. <p>References</p>
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	10. Update reference 30 to most recent AIHW NBCSP Monitoring Report. 11. Reference 20 – capitalise proper nouns
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REVIEWER	AUBIN-AUGER Isabelle Department of family medicine Paris University Denis Diderot France
REVIEW RETURNED	15-Jul-2018

GENERAL COMMENTS	<p>Thank you for giving me the opportunity to review this article Colorectal mass screening is a major issue and different targets are possible to improve participation rate. This study focused on a mass media campaign and reached a very wide audience. This kind of intervention should be developed in many countries.</p> <p>I have some comments about the form and the content:</p> <p>About the form :</p> <ul style="list-style-type: none"> - the title: what do you mean with "natural experiment"? - the introduction; could be shorter; all items about different kind of interventions could take place in the discussion <p>About the content :</p> <ul style="list-style-type: none"> - It is quite difficult for non Australian people to understand how the different regions of Australia were involved in the project (maybe add a map as a figure for a better understanding) - could you give more information about colorectal screening in Australia : i FOBT is sent to the target population ; how their eligibility is defined ? I mean what about high risk people? is there a central laboratory to analyse all the kits and what about other kits delivered by GPs? - Your primary outcome was the participation rate ; do you have data about colonoscopies performed after a positive test? which can be a secondary outcome - could you give us more details about the intervention ; was it built from previous qualitative data ? - I didn't understand what was the content of the 4 minutes advertorial : could you give us some information ?
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VERSION 1 – AUTHOR RESPONSE

Reviewers' Comments to Author:

Reviewer: 1

Reviewer Name: Ms Natalie Dodd

Institution and Country: University of Newcastle, Australia Please state any competing interests or state 'None declared': None declared

Thank you for the opportunity to read this manuscript. It is well written, timely, and fills a research gap in Australia. Please find minor comments for consideration.

Abstract

1. Page 2 Line 35. Please reconsider including the secondary finding that 'extra people with positive FOBT that could seek follow-up'. It seems slightly out of place here as it is not part of the primary objective and fits better where it is in the body of the paper.

*Response: We have adjusted this conclusion to now reflect the results reported more closely...
"The higher intensity eight-week television-led campaign in Queensland increased the rate of kits returned for analysis in Queensland, ...".*

2. Page 2 Line 39. Instead of 'bowel cancer screening program' use NBCSP as abbreviated prior.

Introduction

Response: Done

3. Page 4 Line 40. I found this reference difficult to follow, consider updating to the recently released AIHW NBCSP Monitoring Report (May 2018).

Response: Done

Method

4. Page 6 Line 42. Title should be plural

Response: This is a specific US CDC campaign that does not use the plural – see following website: <https://www.cdc.gov/cancer/colorectal/sfl/index.htm>

5. Page 6 Line 48. Isn't the full rollout to be complete by 2020? Could also add reference here to support this.

Response: Have updated to indicate it will be complete by 2020 after all of those who turn eligible ages in 2019 have been invited.

6. Page 6 Line 49. Consider including a brief description of the type of FOBT sent by the program i.e. immunochemical, number of samples etc.

Response: The details of the type of test and the follow-up procedures have now been added to the paper, along with the NBCSP website address.

7. Page 8 Line 41. I think it would be good to clearly contextualise the Jodie Lee program as a separate entity outside CCA's campaign. I wonder if this sits well in methods or could this be moved to the limitations section?

Response: The description of the Jodi Lee campaign has been moved to the Statistical Analysis section within the Methods section as it is a covariate in the analyses. We have further clarified that this campaign was a separate entity outside of CCA's campaign.

Results

8. Page 10 Lines 29 and 34. Would be more complete to report all p-values regardless of significance.

Response: All p-values have now been included in the results section

Conclusions

9. Page 14 Line 10. The first sentence would be more correct to say 'low levels of participation in the NBCSP' as you previously stated we are unable to capture all national screening i.e. screening outside the program.

Response: This has been altered as suggested by the reviewer

References

10. Update reference 30 to most recent AIHW NBCSP Monitoring Report.

Response: Done

11. Reference 20 – capitalise proper nouns

Response: Done

Reviewer: 2

Reviewer Name: AUBIN-AUGER Isabelle

Institution and Country: department of family medicine Paris University Denis Diderot, France Please state any competing interests or state 'None declared': none declared

Thank you for giving me the opportunity to review this article Colorectal mass screening is a major issue and different targets are possible to improve participation rate. This study focused on a mass media campaign and reached a very wide audience. This kind of intervention should be developed in many countries.

I have some comments about the form and the content:

About the form :

- the title: what do you mean with "natural experiment"?

Response: We have changed the terminology to "Field Experiment" throughout the paper – see response to the Editors request that more information on the study design be included in the Abstract – above.

- the introduction; could be shorter; all items about different kind of interventions could take place in the discussion

Response: We have included the information about other kinds of interventions aiming to increase screening rates as they provide an important context for the study and a contrast to the wide-spread reach of a mass media campaign. We prefer to leave the Introduction as is, unless required to change or shorten it by the editor.

About the content:

- It is quite difficult for non Australian people to understand how the different regions of Australia were involved in the project (maybe add a map as a figure for a better understanding)

Response: We have added a link to an interactive map of Australia specifying with the states and cities, that can be used to determine the location of the campaign and states involved in the study.

- could you give more information about colorectal screening in Australia : i FOBT is sent to the target population ; how their eligibility is defined ? I mean what about high risk people? is there a central laboratory to analyse all the kits and what about other kits delivered by GPs?

Response: We have provided detail about the target population (eligible age ranges) and roll-out of the program (Table 1). We have added the following link for further detail on eligibility criteria and about the NBCSP:

<http://www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/bowel-campaign-home>

- Your primary outcome was the participation rate ; do you have data about colonoscopies performed after a positive test? which can be a secondary outcome

Response: The focus in this study was how the media campaign may increase the currently low participation rate in the NBCSP. We do not have data about colonoscopies performed after a positive test as we obtained aggregated counts of invitations and returns in various locations – we did not acquire individual level data that would allow that type of tracking.

- could you give us more details about the intervention ; was it built from previous qualitative data ?

Response: please see response to the Editors request to provide more detail about public participation – we detail in that response and in the paper (Under Participant Involvement) the way in which the public were consulted to develop and refine the campaign materials.

- I didn't understand what was the content of the 4 minutes advertorial : could you give us some information ?

Response: This a standard interview segment within a morning show TV program. This detail has been added to the paper if the editor deems it necessary.

FORMATTING AMENDMENTS (if any)

Required amendments will be listed here; please include these changes in your revised version:

- Kindly re-upload each figure under 'Image' file designation with at least 300 dpi resolution and at least 90mm x 90mm of width.

OK

- Please embed your DATA SHARING STATEMENT in your main document file as shown in scholar one.

The iFOBT invite and kit return data used in this study was secondary and originally obtained via a standard data request from the Australian Government Institute of Health and Welfare (AIHW) (<https://www.aihw.gov.au/our-services/data-on-request>). The data can be obtained directly from the Australian Government Institute of Health and Welfare (AIHW) on request (<https://www.aihw.gov.au/our-services/data-on-request>).

VERSION 2 – REVIEW

REVIEWER	Natalie Dodd University of Newcastle
REVIEW RETURNED	01-Oct-2018

GENERAL COMMENTS	The authors have improved the manuscript by comprehensively addressing the editor's and reviewer's comments, well done. The author of Reference 7 needs to be amended. Aside from this I recommend the manuscript be accepted for publication.
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REVIEWER	Isabelle AUBIN-AUGER Paris Diderot University France
REVIEW RETURNED	14-Oct-2018

GENERAL COMMENTS	thank you for your additional material the authors have answered all my questions
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