PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Non-dental primary care providers' views on challenges in providing oral health services and strategies to improve oral health in Australian rural and remote communities: a qualitative study
AUTHORS	Barnett, Tony; Hoang, Ha; Stuart, Jackie; Crocombe, Len

VERSION 1 - REVIEW

REVIEWER	Tony Skapetis University of Sydney Australia
REVIEW RETURNED	29-Jul-2015

GENERAL COMMENTS	This is a well written paper concerning a topic of interest to readers of this journal. The paper would benefit from the following proposed changes: - In the introduction, 4th paragraph, 4th sentence should be referenced and the last sentence is too large. - The methods section overall could be made more succinct as follows: * Last 2 sentences under study sites heading would better fit under discussion. * Table 1 has material not mentioned in the paper such as median weekly household income, proportion of aboriginal & islander people and ASGC score. These headings/content could be removed thereby simplifying the table or should be discussed in the paper. * Under participants, some mention of the take up versus rejection participation rate could be included. * Under data collection, were any changes/improvements made as a result of piloting? * Under data analysis, the last 2 sentences could be simplified & made more effective by using a flow chart. * Under study trustworthiness, this could be incorporated under a strengths & limitation subheading in the discussion. Alternatively, the 1st 3 sentences of this section together with the 3rd & 4th last sentences (Furthermore.... established.) would better belong in discussion. - Under results section: * Table 3 would be better if the number of responses for each theme were also listed. * Under travel costs, number of participants could be provided. * In page 12, under lack of communication between primary & dental care teams, lines 30, 44 & 58, number of responses could be provided rather than the use of terms such as "many, majority and most". * Under Strengths to improve oral health, the second sentence could

	include number of responses for each strategy. * Under Oral health promotion & dental worforce and service provision headings, the number of responses supporting each strategy could be included, similarly in line 45 pg 14, numbers of participants could be included. - Under discussion: * last paragraph of pg16 should be expanded on to briefly mention how the strategies that have emerged in this study are either supported or not supported by other literature. * Last paragraph of discussion is better placed under a strengths & limitations heading as mentioned earlier and could include limitations in piloting, sample selection/size missed oral health care providers as well as biases. - Under conclusion, the last sentence is better removed as preventable hospitalisations has not been elaborated elsewhere in this study.

REVIEWER	Ratilal Lalloo University of Sydney, Griffith University and The University of Adelaide
REVIEW RETURNED	03-Aug-2015

GENERAL COMMENTS	While the Introduction was interesting, it is fairly generic for many oral health studies in Australia, why was it felt important to a conduct qualitative research to investigate the issue? Has similar research been conducted internationally that informed oral health policy and planning, noting that this is the first such study in rural Australia? What were the researchers drives to conduct this study? How many communities were identified by the chief dental officer, and how were the four communities selected? How were participants selected for individual interviews and the two focus groups? Were some in both? How were the two focus groups constructed? Similar gender, age, occupation/role or mixed? Did any invited participants refuse to participate? If yes, were reasons investigated? What is the training and experiences of interviewers in conducting individual interviews and focus groups? What is the team's expertise in using the NVivo software package? More detail of the package may be useful as some readers will not be familiar with the package. The sub-heading Trust Worthiness was initially confusing, the information here was useful but I expected to read about the trust between the interviewers and the participants; as well as the four communities. How was this developed? I assume the team has no prior relationship with these communities and participants. This is especially important in that I note a fairly significant Aboriginal and Torres Strait Islander people presence in these communities. For interest and not necessarily for reporting, were any participants Indigenous Australians? On ethics, I note only one ethics committee is mentioned? Was approval sought from any other ethics committees? For e.g. the local

	ethics committee, and the ethics committee approving research involving Aboriginal and Torres Strait Islander people and communities. Was the same study as reported here also conducted in the other two states? If yes, is this being reported separately? The results were very well presented and interesting to read. I found some of the discussion a repetition of the results, but more importantly, it lacked more concrete proposals to address issues raised by the study. There were conflictings opinions (between dental and non-dental participants) on the issues of communication, an issue especially highlighted in the discussion. How can this be improved? Where is the truth? The issue of health promotion and education is highlighted, this is a common suggestion in many papers but how can this be delivered in remote communities? I appreciate these are complex issues and many of us grapple and struggle to make any headway, however based on the findings from this qualitative study how might this be done? Transport and costs is also a significant issue, in the current climate of budget cuts is finding funds to support this feasible? The limitations are not detailed. The conclusion needs to reflect the findings of the study. For now it goes further. Why do the researchers believe that improving communication and collaboration will do the things listed in the conclusion? Regular training of non-dental providers is suggested in the conclusion, and perhaps earlier in report, however implementing and delivering such training is especially difficult in remote communities. And training in what? There are constraints on scopes of practice that need to be considered or perhaps changed. No checklist for reporting was provided, at least not to me. However based on the full article (Tong et al) attached to the report a number of items were not sufficiently reported, appreciating not all will apply. It would be useful for a tick sheet on these items for easier review. Some of my comments above arise out of a quick check over the items recommended for reporting a qualitative study using interviews and focus groups. Thx again for an interesting piece of research.

REVIEWER	Mark Gussy Professor of Oral Health and Head of Department, Dentistry and Oral Health La Trobe Rural Health School La Trobe University Australia
REVIEW RETURNED	12-Aug-2015

GENERAL COMMENTS	This paper reports the results of a simple, small-scale qualitative study (or component of a larger study) seeking to identify to explore the challenges faced by non-dental primary care providers when providing oral health advice and service information to community members. The area of investigation is important as rural and remote citizens do not enjoy the same ease of access to dental care

	providers but do have frequent contact with other primary health care providers. The choice of qualitative methods is justified given the nature of the question addressed in this research. A small number of participants is common in qualitative studies and is not, in itself, an issue, however; the way in which the participant's views are explored and reported is important and will be considered a little later in specific comments. Page 4 line 41-52 The idea that residence of rural and remote areas incur significant opportunity-costs as well as financial costs as a result of having to travel distances to dental services and that this may impact regular attendance is introduced. This makes intuitive sense but would be stronger if references to empirical research demonstrating this were cited. Data Collection and Data Analysis page 7 An interview guide developed from the authors published review of literature guided the semi-structured interviews. Further information regarding the guide and its contents/elements would be helpful to the reader. This could be a brief description of the main questions/discussion areas or could be provided in full as a supplementary file. This is important as the reader considers the 'themes' and 'subthemes' reported by the authors in the analysis section. Following on from this, more detail of the analysis is required. Were the data analysed using the a-priori ideas from the literature review built into the interview guide or did the themes 'emerge' from the data? Or was it a combination of these two approaches? The data analysis section seems to suggest that the themes and sub-themes were developed from the data and then the data were coded. Conventionally the data is coded first and then themes built from the patterns of recurring codes across the data set. Is this an error in the sequence of the text? Given common criticisms of the use of qualitative methods in dental and medical research, a careful description of the analysis strategy used is important to support credibility of the results and subsequent interpretation. Results As well as semi-structured interviews, two focus groups were conducted. The results (page 9 line 47) suggest that the emergent themes and sub-themes reported came from the 'interview data' and later it is reported that the focus group data formed part of the triangulation process. Does this mean that the themes and subthemes described are built from the interview data only ie 19 participants and that the focus group data (of presumably the remaining 20 participants) or did some of the participants interviewed also participate in the focus groups. This requires clarification. Page 11 line 10-22 Reporting of the results in this subtheme uses actual numbers in brackets next to terms such as 'many' and 'most'. This is not used elsewhere and so perhaps should be avoided altogether for continuity

	The results section is a little light on with the majority of supporting quotations derived from just four of the participants. The results section of a qualitative paper should allow the reader to make some sort of judgment themselves about the trustworthiness of the analysis and subsequent interpretation by the authors. Perhaps a supplementary file with the interview transcripts them selves or a more detailed description of quotations (the unit of analysis in this study) to support the importance of the themes if word count does not allow. Typos Page 5 line 19 Change experienced to experience Page 6 line 47 Again change experienced to experience

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name Tony Skapetis
Institution and Country University of Sydney
Australia
Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below. This is a well written paper concerning a topic of interest to readers of this journal.

The paper would benefit from the following proposed changes:
Comment 1: In the introduction, 4th paragraph, 4th sentence should be referenced and the last sentence is too large.
Response: Thank you for your suggestion. The sentence has been referenced. The last sentence has been divided into two sentences. Please see track changes on p.4.

The methods section overall could be made more succinct as follows:
Comment 2: Last 2 sentences under study sites heading would better fit under discussion.
Response: The last two sentences under study sites heading have been moved under the discussion section.

Comment 3: * Table 1 has material not mentioned in the paper such as median weekly household income, proportion of aboriginal & islander people and ASGC score. These headings/content could be removed thereby simplifying the table or should be discussed in the paper.
Response: Thank you for your suggestion. We have removed the information on weekly household income and proportion of Aboriginal people as suggested. We'd like to keep the ASGC score as it is one of the study inclusion criteria.

Comment 4: Under participants, some mention of the take up versus rejection participation rate could be included.
Response: All identified and invited participants accepted to participate in the interviews.
This has been added to the revised manuscript. Please see track changes on p.7.

Comment 5: Under data collection, were any changes/improvements made as a result of piloting?
Response: Some questions were reworded to make them clearer and some sub-questions added to the interview guide as a result of piloting. For example one sub-question "What kinds of training would

up-skill you for the particular needs you face in your community?" was added as suggested by a pilot participant to better explore primary care providers' needs in oral health training.

This has been included in the revised manuscript. Please see track changes on p.7.

Comment 6: * Under data analysis, the last 2 sentences could be simplified & made more effective by using a flow chart.
Response: Thank you for your comment. We have rewritten the data analysis section to simplify it.

Comment 7: * Under study trustworthiness, this could be incorporated under a strengths & limitation subheading in the discussion. Alternatively, the 1st 3 sentences of this section together with the 3rd & 4th last sentences (Furthermore.... established.) would better belong in discussion.
Response: Thank you for your useful suggestion. We have moved the study trustworthiness section to the new subheading 'Strengths and limitations of the study' in the discussion.
- Under results section:

Comment 8:* Table 3 would be better if the number of responses for each theme were also listed.
Response: Table 3 has been revised. We have listed the number of responses for each theme. Please see track changes on p.11.

Comment 9: * Under travel costs, number of participants could be provided.
Response: the number of participants has been provided. Thank you! Please see track changes on p.13.

Comment 10: In page 12, under lack of communication between primary & dental care teams, lines 30, 44 & 58, number of responses could be provided rather than the use of terms such as "many, majority and most".
Response: Number of responses under this theme has been provided. Please see track changes on p.13-14.

Comment 11: * Under Strengths to improve oral health, the second sentence could include number of responses for each strategy.
* Under Oral health promotion & dental workforce and service provision headings, the number of responses supporting each strategy could be included, similarly in line 45 pg. 14, numbers of participants could be included.
Response: We have provided number of responses for these themes. Please see track changes on p.15-16.
- Under discussion:

Comment 12: * last paragraph of pg16 should be expanded on to briefly mention how the strategies that have emerged in this study are either supported or not supported by other literature.
Response: thank you for your suggestion. We have addressed your suggestion in the revised manuscript. Please see track changes on p.19.

Comment 13: * Last paragraph of discussion is better placed under a strengths & limitations heading as mentioned earlier and could include limitations in piloting, sample selection/size missed oral health care providers as well as biases.
Response: Thank you. Your suggestion has been addressed. A strengths and limitations heading has been created after the discussion section. Please see track changes on p. 19.

Comment 14: - Under conclusion, the last sentence is better removed as preventable hospitalisations

has not been elaborated elsewhere in this study.
Response: The last sentence has been removed as suggested. Thank you.

Reviewer: 2
Reviewer Name Ratilal Lalloo
Institution and Country University of Sydney, Griffith University and The University of Adelaide
Please state any competing interests or state 'None declared': None declared.

Please leave your comments for the authors below Thx for an interesting paper to review, and overall while well- presented I have a number of queries.

Comment: While the Introduction was interesting, it is fairly generic for many oral health studies in Australia, why was it felt important to a conduct qualitative research to investigate the issue? Has similar research been conducted internationally that informed oral health policy and planning, noting that this is the first such study in rural Australia? What were the researchers drives to conduct this study?
Response: Thank you for your comment. Limited studies in the literature suggested that rural and remote people presented to non-dental care providers with oral health problems, one study focused on indigenous residents and one was limited to the oral health presentations to rural pharmacies. To the best of our knowledge, there is no study investing challenges that a wide range of non-dental care providers faced in providing oral health advice in rural and remote areas and their views to improve rural oral health. Their views on these issues could provide insight to informing rural oral health policy and planning.

Please see track changes on p.4-5.

Comment: How many communities were identified by the chief dental officer, and how were the four communities selected?

Response: In total 10 communities were identified. Two communities did not meet the study criteria. A convenience sample of four communities in the same region was then selected after verification that each met the study inclusion criteria.

This has been included in the revised manuscript.

Comment: How were participants selected for individual interviews and the two focus groups? Were some in both? How were the two focus groups constructed? Similar gender, age, occupation/role or mixed?
Response: Participants had a choice of having either an individual interview or a group interview. Group interviews were constructed from different health care services. Each group included staff with different occupations such as doctor, pharmacist and nurse from the same health care service.
Please see track changes on p.7.

Comment: Did any invited participants refuse to participate? If yes, were reasons investigated?
Response: All identified and invited participants accepted to participate in the interviews. This has been included in the revised manuscript.
Please see track changes on p.7.

Comment: What is the training and experiences of interviewers in conducting individual interviews and focus groups?
Response: The two authors (TB and HH) had extensive experiences in conducting individual

interviews and focus groups. JS was trained by TB and HH before joining the team to conduct interviews and focus groups. Please see track changes on p.8.

Comment: What is the team's expertise in using the NVivo software package? More detail of the package may be useful as some readers will not be familiar with the package.
Response: Two authors (HH and JS) both had formal training in using Nvivo by Nvivo experts. HH had extensive experiences in analysing qualitative data using Nvivo software package. More detail of the package has been provided. Please see track changes on p.8.

Comment: The sub-heading Trust Worthiness was initially confusing, the information here was useful but I expected to read about the trust between the interviewers and the participants; as well as the four communities. How was this developed? I assume the team has no prior relationship with these communities and participants. This is especially important in that I note a fairly significant Aboriginal and Torres Strait Islander people presence in these communities. For interest and not necessarily for reporting, were any participants Indigenous Australians?
Response: To avoid confusion, we have moved the information under the sub-heading 'study trustworthiness' to the new added heading 'strengths and limitations of the study' after the discussion section.
The team has no prior relationship with these communities and participants.

For your info, there was only 1 indigenous participant.

Comment: On ethics, I note only one ethics committee is mentioned? Was approval sought from any other ethics committees? For e.g. the local ethics committee, and the ethics committee approving research involving Aboriginal and Torres Strait Islander people and communities.

Response: As set out in the study design and criteria, we did not specifically target Aboriginal and Torres Strait Islander people and communities in our study. Therefore, approval from other ethics committees were not necessary.

Comment: Was the same study as reported here also conducted in the other two states? If yes, is this being reported separately?
Response: Yes, the same study as reported here was also conducted in the other 2 states and we plan to report them separately.

Comment: The results were very well presented and interesting to read.
Response: Thank you for your comment.

Comment: I found some of the discussion a repetition of the results, but more importantly, it lacked more concrete proposals to address issues raised by the study. There were conflicting opinions (between dental and non-dental participants) on the issues of communication, an issue especially highlighted in the discussion. How can this be improved? Where is the truth?

Response: it is difficult to comment on the truth since we learnt the views of both primary and dental care team. However, there is a certain gap to bridge in terms of communication. We have provided some recommendations to improve the situation. For example, there should be regular face to face meetings between the visiting/regional dental practitioners and rural/local primary care providers. The timetables of the visiting dental practitioners to the communities should be circulated to the primary care providers prior to their visits. The contact details of the nearby dental clinics should be available to the small community primary care providers.
We have revised the discussion to accommodate your suggestions. Please see track changes on

p.18-19.

Comment: The issue of health promotion and education is highlighted, this is a common suggestion in many papers but how can this be delivered in remote communities? I appreciate these are complex issues and many of us grapple and struggle to make any headway, however based on the findings from this qualitative study how might this be done?
Response: Thank you for your suggestion. We have proposed things might be done in terms of health promotion and education. Please see track changes on p.18.

Comment: Transport and costs is also a significant issue, in the current climate of budget cuts is finding funds to support this feasible?
Response: Thank you for your comment. We acknowledge that this could be difficult. This has been mentioned in the revised manuscript. Please see track changes on p.19.

Comment: The limitations are not detailed.
Response: We have rewritten the limitations in details. Please see track changes on p.20.

Comment: The conclusion needs to reflect the findings of the study. For now it goes further. Why do the researchers believe that improving communication and collaboration will do the things listed in the conclusion? Regular training of non-dental providers is suggested in the conclusion, and perhaps earlier in report, however implementing and delivering such training is especially difficult in remote communities. And training in what? There are constraints on scopes of practice that need to be considered or perhaps changed.

Response: thank you for your suggestion. We have rewritten the conclusion to address your comments. We have moved the sentence “Better communication and stronger collaborations between mainstream and oral health services may provide additional impetus to oral health promotion initiatives, reduce the discontinuity/disruptions to oral health service provision and help reduce the frequency of problem presentations.” to the discussion section. We have also remove the last sentence of the conclusion.

We have also added some discussion around oral health training for non-dental care providers. Please see track changes on p.19.

Comment: No checklist for reporting was provided, at least not to me. However based on the full article (Tong et al) attached to the report a number of items were not sufficiently reported, appreciating not all will apply. It would be useful for a tick sheet on these items for easier review. Some of my comments above arise out of a quick check over the items recommended for reporting a qualitative study using interviews and focus groups.
Response: Thank you for your suggestion. We have provided a 32- item check list for reporting a qualitative study using interviews and focus groups.

Thx again for an interesting piece of research.

Reviewer: 3
Reviewer Name Mark Gussy
Institution and Country Professor of Oral Health and Head of Department, Dentistry and Oral Health
La Trobe Rural Health School
La Trobe University

Australia
Please state any competing interests or state ‘None declared’: I have no competing interests

Please leave your comments for the authors below This paper reports the results of a simple, small-scale qualitative study (or component of a larger study) seeking to identify to explore the challenges faced by non-dental primary care providers when providing oral health advice and service information to community members. The area of investigation is important as rural and remote citizens do not enjoy the same ease of access to dental care providers but do have frequent contact with other primary health care providers.

The choice of qualitative methods is justified given the nature of the question addressed in this research. A small number of participants is common in qualitative studies and is not, in itself, an issue, however; the way in which the participant’s views are explored and reported is important and will be considered a little later in specific comments.

Comment: Page 4 line 41-52
The idea that residence of rural and remote areas incur significant opportunity-costs as well as financial costs as a result of having to travel distances to dental services and that this may impact regular attendance is introduced. This makes intuitive sense but would be stronger if references to empirical research demonstrating this were cited.
Response: Thank you for your suggestion. A reference has been cited as suggested.

Comment: Data Collection and Data Analysis page 7 An interview guide developed from the authors published review of literature guided the semi-structured interviews. Further information regarding the guide and its contents/elements would be helpful to the reader. This could be a brief description of the main questions/discussion areas or could be provided in full as a supplementary file. This is important as the reader considers the ‘themes’ and ‘subthemes’ reported by the authors in the analysis section.
Response: Thank you for your suggestion. A brief description of the main questions has been added in the revised manuscript. Please see track changes on p.7-8.

Comment: Following on from this, more detail of the analysis is required. Were the data analysed using the a-priori ideas from the literature review built into the interview guide or did the themes ‘emerge’ from the data? Or was it a combination of these two approaches? The data analysis section seems to suggest that the themes and sub-themes were developed from the data and then the data were coded. Conventionally the data is coded first and then themes built from the patterns of recurring codes across the data set. Is this an error in the sequence of the text? Given common criticisms of the use of qualitative methods in dental and medical research, a careful description of the analysis strategy used is important to support credibility of the results and subsequent interpretation.

Response: Thank you for your comment. This is an error in the sequence of the text. This has been revised to accommodate your comment. Please see track changes on p. 9.

Results
Comment: As well as semi-structured interviews, two focus groups were conducted. The results (page 9 line 47) suggest that the emergent themes and sub-themes reported came from the ‘interview data’ and later it is reported that the focus group data formed part of the triangulation process. Does this mean that the themes and subthemes described are built from the interview data only ie 19 participants and that the focus group data (of presumably the remaining 20 participants) or did some of the participants interviewed also participate in the focus groups. This requires clarification.
Response: Thank you for your comment. It was an error in the original submission. In total, 39 participants participated in 25 interviews including 7 group interviews (ranged from 2 to 8 participants). Out of the 25 interviews, 7 group interviews were conducted with 21 non-dental care

providers, 18 individual interviews with 14 non-dental care providers and 4 dental care providers. We hope we have clarified your queries.

The interviews with dental care providers were triangulated with the interviews with non-dental care providers on issues examined especially the communication between the non-dental and dental teams.

Comment: Page 11 line 10-22
Reporting of the results in this subtheme uses actual numbers in brackets next to terms such as 'many' and 'most'. This is not used elsewhere and so perhaps should be avoided altogether for continuity
Response: This has been revised for the consistency throughout the manuscript. Thank you!

Comment: The results section is a little light on with the majority of supporting quotations derived from just four of the participants. The results section of a qualitative paper should allow the reader to make some sort of judgment themselves about the trustworthiness of the analysis and subsequent interpretation by the authors. Perhaps a supplementary file with the interview transcripts themselves or a more detailed description of quotations (the unit of analysis in this study) to support the importance of the themes if word count does not allow.

Response: Thank you for your suggestion. We have added the number of responses to each subtheme to support the importance of the themes. Please see track changes on Table 3 p.11 and p.16 for other correction.

Typos

Comment: Page 5 line 19
Change experienced to experience
Response: Thank you! This has been fixed.

Comment: Page 6 line 47
Again change experience
Response: this has been fixed.

VERSION 2 – REVIEW

REVIEWER	Tony Skapetis Westmead Centre for Oral Health & University of Sydney, Australia.
REVIEW RETURNED	12-Oct-2015

GENERAL COMMENTS	The reviewer completed the checklist but made no further comments.

REVIEWER	Ratilal Lalloo University of Sydney, Australia Griffith University, Australia University of Adelaide, Australia
REVIEW RETURNED	08-Oct-2015

GENERAL COMMENTS	The reviewer completed the checklist but made no further comments.