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# Oral health in Indigenous adults

## Perceptions and beliefs about oral health and dental care

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## Background

Current models of care are not reducing oral health disparities between Aboriginal and non-Aboriginal Australians<sup>1</sup>. Poor oral health in Aboriginal Australians remains a significant concern. Evidence suggests that, despite dental caries being largely (theoretically) preventable, Australian Aboriginal people have worse periodontal disease<sup>2</sup>, more decayed teeth and untreated dental caries than non-Aboriginal Australians<sup>3</sup>. Current health care delivery systems need reviewing for their effectiveness in providing services that are culturally appropriate and understand the issues that many Aboriginal people face including marginalisation, racism and socio-economic disadvantage<sup>4</sup>. Knowledge of Aboriginal perspectives of oral health and dental services is integral to developing responsive and appropriate oral health services that focus on upstream approaches such as preventing disease as well as providing tertiary dental care.

The original concept of this project was suggested by a Noongar elder and developed over time through conversations with Community, Aboriginal health colleagues with leadership roles and with an Aboriginal co-investigator. Exploring perceptions is critical as they form the basis of health behaviour. There are a number of theories in relation to epidemiology, health promotion and behaviour change that investigate stages of change in terms of healthy behaviours and the impact of influences over a lifetime. Designed to respond to a pressing need to generate new knowledge and identify practical solutions to improve the provision of adequate primary oral health care to Aboriginal people, it was anticipated that project findings would provide evidence of how Aboriginal people perceive oral health and dental services, including barriers and enabling factors that can inform policy and practice development and future research projects.

Aboriginal Australians living in rural and remote Australia face similar disparities in oral health which are multifactorial and multigenerational stemming from the legacy of colonisation and loss of culture and identity, but which are compounded by socioeconomic and geographical disadvantage. The maldistribution of the dental workforce and difficulties in retaining and attracting staff in remote areas makes providing dental services in this context an ongoing challenge<sup>5</sup>. Using volunteers to extend dental care to the remote Kimberley region of Western Australia is a novel approach to address the issue. A secondary aim of this project was to understand the potential role volunteers may play in improving oral health outcomes for remote Australian Aboriginal communities. The study explored values and attitudes towards volunteering and the volunteers' perceptions of oral health in remote Aboriginal communities<sup>5</sup>.

## AIMS

- > Explore the issues, perceptions and attitudes regarding oral health among Aboriginal adults in the Perth metropolitan area.
- > Explore the barriers and enablers to support oral health for Aboriginal adults in the Perth metropolitan area.
- > Determine attitudes towards oral health among professionals who work with Aboriginal adults in the Perth metropolitan area.
- > Understand the potential role volunteers play in improving oral health outcomes for remote Australian Aboriginal communities.
- > Explore participants' values and attitudes towards volunteering and their perceptions of barriers and enablers regarding oral health in rural and remote Aboriginal communities.

## Methods

### STAKEHOLDER ENGAGEMENT

This project was the outcome of relationships established and built between the project team and the Aboriginal community and other stakeholders in metropolitan and remote Aboriginal settings. The idea for the project originated in the local Aboriginal community in Perth where oral health was identified as an urgent health need. Preliminary meetings involved various stakeholders to help guide the development of the project and included government, community and other stakeholders. Guidance was also sought on the dissemination and translation of findings and has resulted in collaboration in further funding applications to design and develop an intervention to link findings to practice to improve the oral health outcomes for the Aboriginal community.

Key stakeholders in health service organisations contacted in the early stages of the project were also keen to participate. This included health professionals and the management of various service organisations agreeing to staff being involved in the project as participants and consumers. These included the South Metropolitan Health Service, Dental Health Services, Women's Health and Family Services, Child and Adolescent Health Services, Maa Moorditj, Moorditj Koort, Armadale Medicare Local, Babbingur Mia and Pineview Community Centre. Other consumers e.g. parents of pre-school children, also contributed generously to focus group discussions as participants. In the Kimberley region of Western Australia, relationships were strengthened between the project's team member and the volunteer dental team and remote Aboriginal communities.

Throughout the project there was extensive consultation with the Perth and Kimberley Aboriginal communities and stakeholders. This resulted in good relationships with a number of Aboriginal people interested in liaison and health consumer roles in oral health. Professor Linda Slack-Smith and team have built strong links with the WA Department of Health, and five South Metropolitan District Aboriginal Health Advisory Groups, as well as with numerous Aboriginal NGOs across Perth and the Kimberley to maintain extensive consultation.

### METHODOLOGY

Evidence for this research was produced from narrative literature reviews, simple surveys and semi-structured qualitative interviews. Two bodies of work were undertaken – in the Perth metropolitan area (focused on working through the community) and the Kimberley (focused on working through a volunteer program).

#### Literature Reviews

Narrative style literature reviews were undertaken to determine (i) what could be learnt from international approaches to indigenous dental care and (ii) what interventions had been used in Aboriginal oral health in Australia. These involved suitable searches of the published literature on the required topic. The methodology for the literature review is discussed in more detail in the published paper.<sup>6</sup>

#### Recruitment and data collection

Active consultation with the community led to a rich response to community participation in the research. Semi-structured interviews and focus groups were conducted with 52 Aboriginal adults and 35 Aboriginal Health Workers (AHWs) in the Perth Metropolitan Area to hear participants' perceptions and attitudes to oral health, identify barriers and enablers and options on how to improve oral health. A group discussion or interview was chosen depending on the workplace and the number of AHWs employed there. 35 health workers

(28 females and seven males) from 13 different sites agreed to participate and were interviewed either by an Aboriginal or non-Aboriginal researcher or, where possible, by both. The lower number of male participants reflected the fact that there are nearly three times as many female AHWs employed as male in Australia<sup>7</sup>. (See Appendix A, Paper 1) Participants were provided with information about the project and invited to ask questions prior to signing consent forms to participate in interviews or focus groups. These were recorded, transcribed and imported into NVivo, to assist in the organisation and management of data during the analysis.

In addition, in-depth qualitative interviews were completed with 12 dental professionals who have experience caring for Aboriginal Australians in Perth on their perceptions of the challenges and benefits of working with this population group. The discussion prompts used for the interview and focus group questions covered demographic characteristics (age, gender, highest education qualification, years working as an AHW, postcode) and the following topics: the meaning of oral health; issues facing Aboriginal people and their children related to oral health; the impact on oral health of diet, smoking and alcohol; challenges in promoting oral health and how oral health/dental services could be improved. Data saturation was reached after eight interviews and four focus groups, with no new relevant information emerging.

In the Kimberley region of Western Australia, the Kimberley Dental Team (KDT) is a team of visiting volunteers from the dental profession and allied health professionals with the aim of enhancing current resources and levels of oral health care in the Kimberley region. The KDT is a not-for profit organisation and works with government and community service providers, to provide additional and often urgent services to those most disadvantaged by barriers to care such as decreased access, limited staff resourcing and distance ([www.kimberleydentalteam.com](http://www.kimberleydentalteam.com)). Active members of the KDT (n=64) were sent an anonymous email link to an online survey with questions addressing the aims of the project mentioned above.

### Data analysis

The qualitative responses of the metropolitan based project were analysed independently by two researchers for themes related to the barriers and enablers to oral health. Using an iterative approach, the responses were compared, discussed, revised and organised under key themes. If any anomalies in responses were noted the data was revisited and interpreted for meanings attributed to AHWs' perceptions. Findings were then summarised, interrogated for similarities and differences, and compared with existing evidence in the literature. Participant information was de-identified, abbreviated and classified numerically into Aboriginal Health Worker Female (AHWF) 1–28; Aboriginal Health Worker Male (AHWM) 1–7.

Responses to the online structured survey of volunteers in the remote Kimberley region analysed the demographic characteristics of volunteers involved with KDT, reasons for volunteering and perceptions about barriers and enablers to oral health in remote Aboriginal communities<sup>5</sup>.

## ETHICS CONSIDERATIONS

Ethics approval for this research was granted by the Human Research Ethics Committee at the University of Western Australia and the Western Australian Aboriginal Health Ethics Committee.

# Results

## LITERATURE REVIEW

### International Approaches to Indigenous Dental Care<sup>6</sup>

The first literature review identified that the bulk of the literature concerning Indigenous dental care was from Australia, New Zealand, Canada and the United States. Given the focus of the review was on international literature, this meant that the review concentrated heavily on the literature from the remaining three countries (New Zealand, Canada and the United States) with limited literature from other countries.

Helderman<sup>8</sup> proposed several reasons for the gap in Indigenous oral health status and availability of care which were used to assist in writing this review <sup>6</sup>:

- > Absence of living conditions and health determinants conducive to good oral health.
- > Dominance of the restorative approach and western treatment and education models, as well as inadequate workforce planning.
- > Lack of integration of oral care into primary health care.
- > Resistance of the dental profession to delegate tasks to non-dental personnel together with a failure to address the problems of quackery.
- > Services not based on community needs and demands.
- > The 'inverse care law' – inequitable distribution of services between affluent urban and non-affluent rural areas.
- > Low priority for oral health in relation to other diseases.
- > Lack of professional and political advocacy for oral health and for redistributing resources.

The results of this literature review are presented in more detail and are discussed further in the published paper by Patel et al <sup>6</sup> (See Appendix A, Paper 2).

### Australian interventions

Oral health Interventions used in Australia with Aboriginal Australians were investigated in another literature review that has been submitted for publication and is currently under peer review. (Authors: Patel, J, Durey, A, Hearn, L and Slack-Smith, L.). Findings from 14 publications reviewed focused on reducing early childhood caries, improving water fluoridation and services to remote communities including developing the role of the AHW and addressing oral health literacy. Results indicated the importance of community engagement and developing equitable partnerships between communities' and external agencies to better understand each community's needs and acknowledge the influence of sociocultural factors on oral health. While predicting outcomes of interventions is difficult, the review highlights the need to address upstream determinants of health.

# INTERVIEWS WITH COMMUNITY AND STAKEHOLDERS

## Metropolitan based project: Interviews with Aboriginal Health Workers <sup>7</sup>

Key findings indicated that broader structural and social factors influenced oral health choices. Perceived barriers included:

- > Cost of services and participants providing healthy diets for their families on limited budgets.
- > Attending services for pain not prevention.
- > Insufficient education about oral health and preventing disease.
- > Not enough public dental services to meet demand.
- > Blame and discrimination from some health providers.

Suggested improvements included:

- > Oral health education, delivering flexible services respectful of Aboriginal people.
- > Oral health services for 0–4 year olds.
- > Role modelling of oral health between generations.

Findings also identified structural issues outside individual control<sup>9</sup>. (See Appendix A Paper 3). The legacy of colonisation and discrimination persists for Aboriginal people based on racial and cultural differences. Historically white, Anglo-Australian authorities forcibly removed Aboriginal children from their parents from the 1890s through to the 1970s the so-called 'stolen generation'<sup>10</sup>. The negative effects of this are still experienced across generations in Aboriginal families<sup>11</sup> as reflected in the following comment by one participant that: '... you could go in there with your child and you could go out without your child'.

Education about prevention was another key theme. Most participants felt education about oral health and prevention of dental disease was limited at best and often non-existent. This lack of knowledge had serious consequences for oral health outcomes including for those people diagnosed with other comorbidities:

When we were diagnosed with diabetes, we weren't even told that our teeth were an issue by the doctor.

Accessing public dental services, even at ACCHS often required long waiting times and was compounded when transport was unavailable:

You have to be one of the first five in, in the morning otherwise you don't get to see the dentist you have to wait for the next day. So they do struggle to get in there because you have to be in there by eight o'clock in the morning.

Other barriers to accessing care included perceived racism from health providers towards Aboriginal people and the apprehension this triggered:

You don't want doctors and nurses judging you. They might not say it verbally but by looking at you.

Social issues were also identified where the importance of oral health was seen as a key theme that would impact on the sense of well-being.



## Improving oral health for Aboriginal people

Oral health promotion programs did exist and were effective up to a point, for example increasing its focus during a 'dental health month'(AHWF7) or AHWs implementing the 'Lift the Lip'<sup>12</sup> program for children under five years:

If they come in we can lift up their lip and check if there is plaque and we can see what their teeth are like ... we can refer you and point you in the right direction but it's the parent who has got to take ownership and do the rest of it.

## RURAL BASED PROJECT: SURVEY AND INTERVIEWS WITH VOLUNTEERS<sup>5</sup>

Table 1 shows the demographic characteristics of the volunteers who participated in the study and table 2 shows the different ways in which they heard about the Kimberley Dental Team (KDT) volunteer program.

*Table 1: The demographic characteristics of the volunteers.<sup>5\*</sup>*

	n	%
<b>Gender</b>		
Male	13	32
Female	28	68
<b>Age in years (median age 47.5 years, range 18-68 years)</b>		
Under 25 years	11	27.5
25-50 years	12	30
Over 50 years	17	42.5
<b>Are you currently in paid employment?</b>		
Yes, part-time	9	26
Yes, full-time	25	74
No	1	2
Retired	1	2
Student	5	12
<b>Do you have any children?</b>		
Yes	21	51
No	20	49

\*Although most questions were answered by most respondents there are a very small number of missing values, e.g. gender (n - 1) and age (n - 2).

*Table 2: How the participants found out about the KDT<sup>5</sup>.*

How did you find out about KDT?	n	%
Dental school/university	10	23
Direct contact with coordinators	10	23
Word of mouth	10	23
Health related media	6	14
Other voluntary organisations	5	11
Conferences	3	7

The volunteers were also asked about their reason for volunteering (Table 3). The disparity between oral health in the Perth metropolitan area and the Kimberley was often raised by the volunteers. Generally the oral health of Aboriginal people in the Kimberley is not as good as those in metropolitan Perth, as there is a range of factors such as education, access, affordability and attitudes that are a struggle for these communities.<sup>5</sup> (See Appendix A, Paper 4).

Table 3: Reasons given by participants for volunteering<sup>5</sup>.

How did you find out about KDT?	n	%
Give back to the community/altruistic use of skills	25	23
Opportunity to visit the Kimberley region	15	14
Improve oral health in Aboriginal communities	12	11
Work with Aboriginal communities	11	10
Support KDT's model	9	8
Broaden skills	9	8
Inspired by KDT leaders	8	7
Curiosity	5	5
Area of need	5	5
Learn about Aboriginal culture	3	3
Team environment	3	3

## JOURNAL ARTICLES RESULTING FROM THE PROJECT

The results from this project have been published in the following peer-reviewed journals:

- > Durey A, Bessarab D, Slack-Smith L (2016). The mouth as a site of structural inequalities: the experience of Aboriginal Australians. *Community Dental Journal* 33:79-81(Online - Special Issue) DOI: 10.1922/CDH\_3717Durey03. Accessed from <http://www.cdhjournal.org/journals/>
- > Patel J, Hearn L, Slack-Smith LM (2015) Oral health care in remote Kimberley Aboriginal communities: The characteristics and perceptions of dental volunteers. *Australian Dental Journal*, doi:10.1111adj.12240
- > Durey, A., McAullay, D., Gibson, B., & Slack-Smith, L. (2016). Aboriginal Health Worker perceptions of oral health: a qualitative study in Perth, Western Australia. *International journal for equity in health*, 15(1), 4.

The following papers have been submitted to journals for publication and are under review:

- > Durey, A, McAullay D, Gibson, B and Slack-Smith L. Structural influences on oral health choices: Aboriginal parents' perspectives in Western Australia.
- > Hearn L, Durey A, O'Grady M, Slack-Smith LM. Attitudes and perspectives of dental professionals working with Aboriginal children: a qualitative study.
- > Patel, J, Durey, A, Hearn, L and Slack-Smith, L. Oral health interventions among Australian Aboriginal communities: A Review of the Literature. *Australian Dental Journal*.

## Discussion

### STAKEHOLDER ENGAGEMENT

A key focus of the research was working with the Aboriginal community in Perth to disseminate findings and invite their participation, and that of policy makers and health practitioners in discussing ways to translate findings so they improve practice. The project's Aboriginal Community Liaison/Research Officer worked closely with researchers and the community in facilitating the translation process.

A key finding was that oral health matters to Aboriginal Australians who offered their perceptions, not just of barriers to oral health but also ideas for improvement. This suggests that listening to and engaging Aboriginal people in decisions about their oral health care is important and a step forward in improving oral health outcomes. The project developed a framework to ensure the Aboriginal community were engaged throughout the project, treated equitably and with respect to ensure they felt safe and that their integrity was maintained. This approach was integral to recognising and valuing Aboriginal people's input into the project. Once interviews were completed and analysed, the research team offered to visit all the sites in which group discussions were held –playgroup centres, daycare centres, community centres, health services, to inform participants of research findings and discuss the 'where to next'. All centres welcomed the researchers, often commenting on their appreciation that the research team kept them informed of progress. Given that a key finding was the need for oral health promotion from pregnancy onwards, the research team organised for oral health promotion posters created by third year dental students for a university assignment to be reproduced and taken to the each centre in the spirit of reciprocity and as a sign of appreciation for participating in the research. They were very well received. An unintended consequence of this was that students were informed that their posters were used as a gesture of appreciation to participants, highlighting the value of their work and increasing their awareness by raising the profile of Aboriginal oral health. This aspect has since led to a successful research grant application (Healthway) to adapt students' posters to be more culturally appropriate so they can be used effectively as a resource to promote oral health.

A key theme arising from the findings was the need for the Aboriginal and non-Aboriginal sectors to work together to address this issue if oral health outcomes are to improve. Currently oral health is often siloed from general health. Diverse interdisciplinary and intercultural stakeholders working together have the opportunity to identify the barriers and enablers to strengthening partnerships, sharing knowledge and identifying strategies and new ways to address the oral health needs of Aboriginal people. This includes thinking more creatively about how to address the issue. Flexible, inter-professional models of care that are focused on education, prevention and treatment were seen as more appropriate to addressing the oral health needs of Aboriginal people. Hence different service models utilising these components as well as community liaison workers and in appropriate community based settings require serious consideration. Certainly, a one size fits all approach must be avoided. Rather, tailored culturally appropriate family and community based initiatives that address the multidisciplinary issues confronting families and communities are required.

# Conclusions

## POLICY OPTIONS

### Inadequate models of care

The project seeking the perspectives on oral health of Aboriginal health workers and adults identified that oral health is important to Aboriginal people whether they live in metropolitan or remote communities. While this is good news, our findings identify that current models of care are not meeting their needs nor reducing disparities in oral health between Aboriginal and other Australians. Instead they suggest that accessing services remains a problem particularly if staff discriminate against Aboriginal patients; that more focus needs to be placed on oral health education and prevention of disease from pregnancy onwards using materials that are sensitive to different literacy levels and that oral health needs to be included in general health assessments, including during pregnancy.

### Limited access to services

Key findings from the project included a number of barriers to Aboriginal people accessing dental services often outside individual control. These included cost, waiting times and discrimination from service providers resulting in dental services not being accessed or used mainly for emergency treatment rather than prevention. Suggestions for improvement highlight the need for flexibility and thinking outside the box. One suggestion was to use community centres as sites for education and oral health care, and also to train more Aboriginal Health Workers in oral health. A multidisciplinary team approach was required to ensure oral health was on the agenda of primary health care workers.

### Need for appropriate oral health promotion resources

Flexibility and tailored approaches extend to the production of more available and accessible resources and oral health promotion materials that respond to the particular needs and knowledge gaps within the Aboriginal community, that are culturally appropriate and that are sensitive to different literacy levels. Informing parents and carers about the benefits of promoting appropriate oral health behaviours can significantly improve their confidence in managing the oral health of children.

Findings have generated knowledge that has informed the design and development of an intervention to improve oral health outcomes for Aboriginal Australians using dental student posters that will be adapted by an Aboriginal artist to be more culturally appropriate. These will be evaluated for their effectiveness in raising awareness about oral health among this population. The project team was successful in acquiring funding to conduct this project from Healthway led by Angela Durey (the project is titled 'Culturally appropriate education resources to improve oral health outcomes for Aboriginal people').

### Addressing broader social determinants critical to oral health outcomes

Our findings suggest the need for a much broader focus on how to appropriately address the complex determinants that compromise many Aboriginal people's oral health and acknowledge factors beyond individual control, the social context and lived experience of many Aboriginal families that impact on making optimum decisions around oral health. Many families and communities experience numerous other social inequities and dental health may not be the most important priority given competing demands. However, addressing these inequities may be the key to creating long-lasting changes in the oral health of many Aboriginal people.

Given that broader structural determinants such as cost, the competing demands on limited budgets and discrimination can negatively impact on Aboriginal people's oral health, it is important that Aboriginal people are not held solely responsible or blamed for the state of

their oral health. Policies and practices, some of which are discriminatory, need to be reviewed for whether they compromise or promote the oral health of Aboriginal Australians. Without such a review, policies and practices that do undermine Aboriginal people's oral health need to be called to account otherwise, oral health disparities between Aboriginal and non-Aboriginal Australians are likely to continue.

### Need for ongoing research

To strengthen research capacity and promote relevant research that responds to the oral health needs of communities there is a need for ongoing support for quantitative research to gain a better understanding of disease prevalence and the extent of disparity, supported by qualitative research to identify the underlying socio-cultural factors and their impact/relationships. There is also a need to balance the dire statistics related to oral health for Aboriginal people with success stories that can inspire rather than deflate motivation to change.

### Training /capacity building

The project members are currently in the process of collaborating with key Aboriginal and non-Aboriginal stakeholders across sectors to discuss ways to translate the findings from the CRE Projects into interventions that appeal to the Aboriginal community and have the potential to improve both oral health policies and practice in this context. This will involve building the capacity of Aboriginal communities by developing resources to increase their knowledge of oral health and also offer opportunities for non-Aboriginal health professionals to build their capacity to work respectfully and effectively in an Aboriginal oral health context. While this proposed project is in the early stages of discussion and development, we anticipate this approach to have long term benefits by seeking to understand the lived experience of Aboriginal people, raising awareness and knowledge about oral health with a view to ultimately changing practice and reducing disparities by improving oral health outcomes for Aboriginal Australians.

## STRENGTHS AND LIMITATIONS OF THE STUDY

The qualitative aspect of the project focused only on the metropolitan area of Perth so the perceptions of Aboriginal Australians living in rural or remote areas were not included and may be different. However, a key strength of the project was the richness of the data obtained which offered a deeper and more complex understanding of the social context and lived experience of Aboriginal participants that impacted on making decisions about oral health. Despite the diversity of Aboriginal cultural groups, all are subject to the legacy of colonisation and ongoing discrimination so we suggest that the findings may be applicable to Aboriginal Australians living in other metropolitan areas of Australia. The quantitative project focusing on volunteer dental professionals in remote Aboriginal communities may not be representative of dental professionals generally and not generalisable elsewhere given the small numbers involved. However, with access to additional funding, further research could shed light on dental professionals more broadly across Australia and the appropriateness of models of oral health care in rural and remote communities

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# Appendix A: Paper 1.

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RESEARCH

Open Access



## Aboriginal Health Worker perceptions of oral health: a qualitative study in Perth, Western Australia

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### Abstract

**Background:** Improving oral health for Aboriginal Australians has been slow. Despite dental disease being largely preventable, Aboriginal Australians have worse periodontal disease, more decayed teeth and untreated dental caries than other Australians. Reasons for this are complex and risk factors include broader social and historic determinants such as marginalisation and discrimination that impact on Aboriginal people making optimum choices about oral health. This paper presents findings from a qualitative study conducted in the Perth metropolitan area investigating Aboriginal Health Workers' (AHWs) perceptions of barriers and enablers to oral health for Aboriginal people.

**Methods:** Following extensive consultation with Aboriginal stakeholders, researchers conducted semi-structured interviews and focus groups across 13 sites to investigate AHWs' perceptions of barriers and enablers to oral health based on professional and personal experience. Responses from 35 AHWs were analysed independently by two researchers to identify themes that they compared, discussed, revised and organised under key themes. These were summarised and interrogated for similarities and differences with evidence in the literature.

**Results:** Key findings indicated that broader structural and social factors informed oral health choices. Perceptions of barriers included cost of services and healthy diets on limited budgets, attending services for pain not prevention, insufficient education about oral health and preventing disease, public dental services not meeting demand, and blame and discrimination from some health providers. Suggested improvements included oral health education, delivering flexible services respectful of Aboriginal people, oral health services for 0–4 year olds and role modelling of oral health across generations.

**Conclusion:** Reviewing current models of oral health education and service delivery is needed to reduce oral health disparities between Aboriginal and non-Aboriginal Australians. Shifting the discourse from blaming Aboriginal people for their poor oral health to addressing structural factors impacting on optimum oral health choices is important. This includes Aboriginal and non-Aboriginal stakeholders working together to develop and implement policies and practices that are respectful, well-resourced and improve oral health outcomes.

**Keywords:** Australia, Aboriginal, Oral health, Inequity, Racism

### Background

Poor oral health in Aboriginal Australians is a significant concern, exacerbated by slow progress in reducing health disparities between Aboriginal and other Australians [1]. Evidence indicates that, despite dental caries being largely preventable, Aboriginal Australians have worse periodontal

disease [2], more decayed teeth and untreated dental caries [3], with Aboriginal children having twice the rate of dental caries compared to non-Aboriginal children [4] and worse oral soft-tissue disease [5].

Various studies have identified risk factors contributing to poor oral health in this population including smoking, alcohol consumption [6] and diets high in sugar [7]. A recent study of urban Aboriginal people associated smoking and diabetes with severe periodontal disease [8]. Understanding how broader social determinants can undermine

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Link to journal page: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4709938/>

## Appendix A: Paper 2.

# International approaches to Indigenous dental care: what can we learn?

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## ABSTRACT

Indigenous populations around the world have significantly poorer oral health and inequalities in access to dental care largely attribute to the social determinants of health. Reviewing international literature offers an opportunity to better understand appropriate approaches for policy and practice in Australia. This article is a descriptive narrative review based on primary research literature discussing informative international approaches to Indigenous dental care. Approaches identified in the literature included integration of dentistry with primary health care and traditional practice, training and use of oral health professionals and approaches used at different stages of life, particularly in the management of early childhood caries. The international literature provides a range of approaches to Indigenous oral health. Tailored, culturally appropriate family and community based initiatives that address the multidisciplinary issues confronting Indigenous communities were most highly regarded.

**Keywords:** Indigenous, approaches to care, dental care, international, review, volunteers.

**Abbreviations and acronyms:** ART = atraumatic restorative technique; DHAT = dental health aide therapist; ECC = early childhood caries; OHP = oral health professional; PCC = patient-centred care; WHO = World Health Organization.

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## INTRODUCTION

Indigenous populations face disparities spanning all domains of health care, including oral health. Australian Aboriginal and Torres Strait Islander (Aboriginal) people suffer 2–3 times the rate of untreated dental caries than non-Aboriginal people.<sup>1–3</sup> These inequities in oral health are similar for Indigenous peoples around the world.<sup>4–6</sup> The reasons underlying these disparities are multifactorial and multigenerational, ranging from the historical loss of culture and identity through to socio-economic and geographical disadvantage impacting through factors such as diet and poorer access to care.<sup>7,8</sup> Oral health interventions, although developed with the best of intentions, have all too often failed Indigenous communities.<sup>2,9,10</sup>

Similarities in many of the challenges facing dental care and oral health in Indigenous communities mean the international literature may assist in determining policy and practice in Australia. The aim of this review is to explore approaches used internationally in providing dental care to Indigenous communities.

## METHODS

This article is a narrative review of primary research literature obtained from the following databases: Medline, CINAHL Plus, Web of Science and Academic Search Complete. No restrictions were placed on time period and all international articles were searched for by relevancy to Australia, determined by article title, abstract and complete article. The search terms used included (Indigenous or Aboriginal) AND (dental care OR oral health) AND (models of care OR service delivery OR programmes). Reference lists of relevant articles were also searched.

## RESULTS

Most of the relevant literature focused on the Indigenous populations of four nations: Australia (Aboriginal and/or Torres Strait Islander descent), New Zealand (Maori descent), Canada (North American Indian, Metis and Inuit descent) and United States of America (American Indian or Alaskan Native descent). A smaller number of studies were found from



# Appendix A: Paper 3

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## The mouth as a site of structural inequalities; the experience of Aboriginal Australians

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**Objective:** To address the mouth as a site of structural inequalities looking through the lens of Aboriginal Australian experience. **Research design:** This is a critical review of published literature relevant to our objective. Criteria for selection included articles on: the social context of oral and general health inequalities for Aboriginal Australians; Aboriginal perceptions and meanings of the mouth and experiences of oral health care and the role of the current political-economic climate in promoting or compromising oral health for Aboriginal Australians. **Results:** Evidence suggests oral health is important for Aboriginal Australians yet constrained by challenges beyond their control as individuals, including accessing dental services. Competing demands on limited budgets often led to oral health dropping off the radar unless there was an emergency. **Conclusions:** Structural (social, political and economic) factors often inhibited Aboriginal people making optimum health choices to prevent oral disease and access services for treatment. Factors included cost of services, limited education about oral health, intense advertising of sugary drinks and discrimination from service providers. Yet the literature indicates individuals, rather than structural factors, are held responsible and blamed for the poor state of their oral health. The current neoliberal climate focuses on individual responsibility for health and wellbeing often ignoring the social context. To avoid the mouth becoming an ongoing site for structural inequality, critically reviewing oral health policies and practices for whether they promote or compromise Aboriginal Australians' oral health is a step towards accountability-related oral health outcomes.

**Key words:** inequalities, structural factors, oral health, health services, Indigenous

### Introduction

*"Oral health is a mirror of systemic health, is related to health and disease throughout the body, and is critical to social and economic functioning at all stages of life."* (Kahn, 2013; p55)

We draw on this perspective of oral health to explore the mouth as a site of structural inequalities. Kahn (2013; p55) goes on to describe oral disease as the "silent epidemic". Poor oral health and inadequate access to services persist across the life-span for Australia's Aboriginal and Torres Strait Islander (hereafter Aboriginal) population (Jamiesson *et al.*, 2010; Roberts-Thomson *et al.*, 2008), raising questions of where the problem lies. Despite government commitments to improve oral health, inequalities and significant morbidity persist for Aboriginal Australians suggesting a 'wicked' or intractable problem that is complex and requires innovative solutions (Department of the Prime Minister and Cabinet, 2016; Rittel and Webber, 1973).

If we assume that a measure of good oral health is absence of tooth decay and that dental caries is preventable, at least in theory, and if we follow evidence-based public health messages to maintain oral health including eating a healthy diet with a low sugar intake, tooth-brushing and stopping smoking, then we need to explain why there is a higher rate of dental disease, higher levels of untreated caries, more missing teeth and worse periodontal health or gum disease in Aboriginal compared to non-Aboriginal Australians (Jamiesson

*et al.*, 2010; Roberts-Thomson *et al.*, 2014). Understanding why inequalities in oral health persist between Aboriginal and non-Aboriginal Australians is important, so that such inequities might be suitably addressed in culturally-safe ways.

In Australia, colonisation has left a legacy of discrimination or racism where Aboriginal people continue to be marginalised across a range of social indicators including health, education and employment with ongoing negative effects on health and wellbeing (Saggers and Gray, 2007). White, English-speaking Australians have been privileged as a group since the colonisation and dispossession of Aboriginal Australians by the British in 1788. Aboriginal rights and occupancy were ignored ("terra nullius") and British authority determined policies and practices (Moreton-Robinson, 2009). Being White provided structural advantage, usually invisible to those who were White, and reproduced inequities that continue to shape the lives of the privileged and the marginalised. Such advantage is often taken for granted, unnoticed and unexamined by those who benefit (Moreton-Robinson, 2009; Pease, 2010). However, the legacy of colonisation and discrimination impacting on Aboriginal people's lives across generations is generally ignored, so policies and practices that can compromise oral health are often not called to account for socio-economic and political factors that can adversely affect health yet are beyond individual control (White, 2002).

Given that oral health mirrors systemic health, this paper explores whether Aboriginal perspectives and meanings associated with oral health reflect the mouth as a site of structural inequalities.

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## Appendix A: Paper 4

# Oral health care in remote Kimberley Aboriginal communities: the characteristics and perceptions of dental volunteers

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## ABSTRACT

**Background:** Aboriginal Australians face significant disparities in oral health and this is particularly the case in remote communities where access to dental services can be difficult. Using volunteers to provide dental care in the remote Kimberley region of Western Australia is a novel approach.

**Methods:** This study comprised an anonymous online survey of volunteers working with the Kimberley Dental Team (KDT). The survey had a response fraction of 66% and explored volunteer demographic characteristics, factors that motivated their involvement, perceptions of oral health among Aboriginal communities, and barriers and enablers to oral health in remote Aboriginal communities.

**Results:** Volunteers were more likely to be female, middle-aged and engaged in full-time employment. The two most common reasons reported for volunteering were to assist the community and visit the Kimberley region. Education and access to reliable, culturally appropriate care were perceived as enablers to good oral health for Aboriginal people in the Kimberley while limited access to services, poor nutrition and lack of government support were cited as barriers.

**Conclusions:** Volunteers providing dental services to remote areas in Western Australia had a diverse demographic profile. However, they share similar motivating factors and views on the current barriers and enablers to good oral health in remote Aboriginal communities.

**Keywords:** Aboriginal, Indigenous, oral health, perceptions, volunteers.

**Abbreviations and acronyms:** KDT = Kimberley Dental Team.

(Accepted for publication 13 October 2014.)

## INTRODUCTION

Aboriginal and Torres Strait Islander Australians (hereafter Aboriginal Australians) face significant oral health disparities, with poorer periodontal health, higher levels of total caries, untreated caries and missing teeth than non-Aboriginal Australians.<sup>1–5</sup> Furthermore, differences in the determinants of health such as socioeconomic status, remoteness, access to services, cultural factors and environmental factors have all been shown to have a significant influence on current patterns of oral health and disease.<sup>1</sup> As there are limited dental professionals working with Aboriginal communities, especially in remote areas, it is important to understand what motivates dentists and others in delivering oral care to these communities.<sup>4</sup>

The Kimberley region, located in the northern part of Western Australia, covers over 400 000 square kilometres. It is home to an estimated 40 000 people with approximately half of Aboriginal descent.<sup>6</sup> There is limited access to oral health care in rural and, in

particular, remote regions of Western Australia.<sup>1,7–9</sup> Steele *et al.* previously highlighted that some post-codes of the Kimberley had no dentists and some with more than 10 000 residents were serviced by a single dentist.<sup>10</sup> Attracting and retaining more dental personnel to work in this region is critical for maintaining and improving the oral health of Kimberley residents.

Factors cited as contributing to the current disadvantage in oral health faced by Aboriginal Australians include: the maldistribution of dentists, inadequacies in the public system, inappropriate models of care and government expenditure for dental services being substantially less per head for Aboriginal people than the Australian average.<sup>4,11</sup> As has been the case internationally, volunteer organizations may be an important and sustainable option for complementing the existing health infrastructure in Australia.<sup>12,13</sup> To this end, the Kimberley Dental Team (KDT), a not-for-profit, non-government volunteer organization, was established in 2009 to provide oral health care and education for Aboriginal children and their families in