Oral health of Aboriginal and Torres Strait Islander Australians

Kaye F Roberts-Thomson, A John Spencer and Lisa M Jamieson

Oral health problems faced by Indigenous peoples are worsening and require practical long-term solutions

In the 1970s, reports noted that oral health was one area in which Indigenous children enjoyed an advantage over other Australian children.[1,2] However, as research improved our understanding of oral diseases, interventions to prevent common oral diseases like dental caries became available to most Australian children and oral health steadily improved. Furthermore, the dental caries that was experienced by most Australian children began to be effectively treated by ready access to dental care through school dental services or private dentists. As Indigenous children were largely unable to access these services for geographical and/or financial reasons, their oral health has worsened over time, with the result that Indigenous children now have poorer oral health than non-Indigenous children.[3]

Indigenous children are on a trajectory of developing further caries through to adulthood, with increasing numbers of teeth affected and eventually extracted. The teeth that are retained will also suffer from much higher levels of periodontal disease, which is likely to be earlier in onset and of greater severity than periodontal disease in other Australian adults.[4] This may be the result of complications arising from other non-dental chronic diseases such as diabetes. The higher prevalence and severity of periodontal disease may subsequently place these Indigenous adults at risk of further chronic degenerative diseases such as diabetes and cardiovascular disease.

Child oral health

A recent study showed that, compared with non-Indigenous Australian children, Indigenous children are now more likely to have dental caries at all ages. At the age of 6 years, 72% of Indigenous children had some tooth decay compared with 38% of other Australian children.[4] The number of teeth with caries experience (ie, with past and/or present caries) among Indigenous children is about twice the number in non-Indigenous children, in relation to both deciduous and permanent teeth. Indigenous 6-year-olds have an average of 3.7 teeth with experience of caries compared with 1.5 teeth for other Australian children.[5] Among 12-year-old children, the relative difference is somewhat less (1.3 compared with 0.8 teeth, respectively). The proportion of caries experience that is untreated is also higher among Indigenous children. Without early diagnosis and prompt treatment, multiple affected teeth present with advanced decay and tooth breakdown. This translates into higher numbers of young Indigenous children in remote areas undergoing hospitalisation for treatment under general anaesthetic.[6]

Solutions lie with caries prevention through adapting successful fluoride programs to the physical and social circumstances in which these children live. A number of approaches are being implemented, including fluoridating water supplies in larger remote communities with deficient levels of fluoride, clinical trialling of 6-monthly applications of fluoride varnish to the teeth of preschool children by primary health care workers, and introducing tooth-brushing and drinking water programs in preschools and schools.

Adult oral health

The National Survey of Adult Oral Health 2004–06[7] in Australia found that Indigenous adults have a higher perceived need for dental treatment than other Australians, particularly for dentures, fillings and extractions. More Indigenous than non-Indigenous adults reported that they were in urgent need of treatment. Although cohorts of Indigenous adults have similar overall past and present experience of caries to that of other Australian adults, they have higher levels of untreated caries and missing teeth and lower numbers of filled teeth.[7] These findings indicate poorer access to timely dental care, resulting in either no care or care that is delayed until the disease process has reached an advanced stage and tooth extraction is required. These dental problems have further repercussions, with more Indigenous people avoiding certain foods because of dental problems, more ranking oral health as fair or poor, and more reporting experience of toothache.[7]

Indigenous adults have a higher prevalence of severe periodontal disease than non-Indigenous adults and are more than twice as likely to have advanced periodontal disease (after controlling for a number of sociodemographic characteristics).[4] Periodontal disease accounts for 30% of tooth loss,[8] contributing to the higher number of missing teeth in Indigenous Australians.

The increased severity of periodontal disease and tooth loss for adults with non-insulin-dependent diabetes mellitus in Indigenous communities in Central Australia was first identified 20 years ago (Bruce Simmons, Dentist, Northern Territory Health, unpublished data, 1988). To this association between diabetes and risk of periodontal disease has more recently been added an association between periodontal disease and poor control of diabetes.[9]

Solving the oral health problems faced by Indigenous adults requires two complementary approaches. Firstly, access to dental care needs to be greatly improved. While the experience of dental caries among Indigenous people is no higher than among non-Indigenous Australians, the delay in accessing any care and the resource constraints of the services involved lead to high rates of tooth extraction and its consequences among Indigenous people. Specific dental care could reduce the progression or recurrence of destructive periodontal disease. Secondly, there is an imperative to integrate dental care with medical care, including dental disease in a group of related chronic degenerative diseases. Periodontal disease in Indigenous adults needs to be included alongside nutrition, obesity and diabetes in community health promotion programs. Some possible ways to address these issues are to include oral health in the training and practice of primary health care workers in

Indigenous health, to develop pathways to providing priority dental care involving dentists and allied dental professionals, and to ensure that programs have strong community participation, capacity building and skills development for all major health problems.

Author details

Kaye F Roberts-Thomson, BDSc, MPH, Director, Dental Practice Education Research Unit[1]
A John Spencer, MDSc, PhD, MPH, Professor,[1] and Director[2]
Lisa M Jamieson, PhD, Senior Research Fellow[1]
1 Australian Research Centre for Population Oral Health, University of Adelaide, Adelaide, SA.
2 Dental Statistics and Research Unit, Australian Institute of Health and Welfare, University of Adelaide, Adelaide, SA.
Correspondence: john.spencer@adelaide.edu.au

References

1 Kailis DG. Dental conditions observed in Australian Aboriginal children resident in Warburton and Cundeelee mission, Western Australia. *Aust Dent J* 1971; 16: 44-52.
2 Kailis DG. Prevalence of dental caries in Australian Aboriginal children resident in Carnarvon, Western Australia. *Aust Dent J* 1971; 16: 109-115.
3 Davies MJ, Spencer AJ, Westwater A, Simmons B. Dental caries among Australian Aboriginal, non-Aboriginal Australian-born, and overseas-born children. *Bull World Health Organ* 1997; 75: 197-203.
4 Brennan DS, Roberts-Thomson KF, Spencer AJ. Oral health of Indigenous adult public dental patients in Australia. *Aust Dent J* 2007; 52: 322-328.
5 Jamieson LM, Armfield JM, Roberts-Thomson KF. Oral health of Aboriginal and Torres Strait Islander children. Canberra: Dental Statistics and Research Unit, Australian Institute of Health and Welfare, 2007. (AIHW Cat. No. DEN 167; Dental Statistics and Research Series No. 35.) http://www.arcpoh.adelaide.edu.au/publications/report/statistics/html_files/ATSI_children.pdf (accessed Apr 2008).
6 Jamieson LM, Roberts-Thomson KF. Dental general anaesthetic trends among Australian children. *BMC Oral Health* 2006; 6: 16.
7 Slade GD, Spencer AJ, Roberts-Thomson KF, editors. Australia's dental generations: the National Survey of Adult Oral Health 2004–06. Canberra: Dental Statistics and Research Unit, Australian Institute of Health and Welfare, 2007. (AIHW Cat. No. DEN 165; Dental Statistics and Research Series No. 34.) http://www.arcpoh.adelaide.edu.au/project/distribution/nsaoh_pdf%20files/nsaoh_report.pdf (accessed Apr 2008).
8 Richards W, Ameen J, Coll AM, Higgs G. Reasons for tooth extraction in four general dental practices in South Wales. *Br Dent J* 2005; 198: 275-278.
9 Taylor GW, Borgnakke WS. Periodontal disease: associations with diabetes, glycemic control and complications. *Oral Dis* 2008; 14: 191-203. ❑