The Impact of Dental Disease on a sample of Aboriginal adults living in the Central Coast Region of New South Wales Australia

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Objective: To record the impact of dental disease on the quality of life of Aboriginal* adults. **Setting:** An Aboriginal dedicated dental clinic in the Central Coast Region of NSW, Australia. **Methods:** Adult patients attending the clinic were interviewed about the impact of dental disease on their day to day lives. **Results:** Fifty adults were interviewed of the 61 who attended for care, giving a response rate of 82%. The major impacts were an aching, painful mouth 76%, self conscious about their teeth 62%, embarrassed about their teeth 62%, and diet impacted by poor oral health 64%. Nearly half required the extraction of at least one tooth. Cost was a major barrier for not seeking care for 62% of the participants. **Conclusion:** Poor oral health impacted on the lives of the Aboriginal respondents, but the offer of free dental care in an Aboriginal dedicated clinic encouraged attendance for treatment, especially amongst women.

*In this paper, the term 'Aboriginal' is inclusive of both Aboriginal and Torres Strait Islander people.

Key words: Adult Aboriginal dental health, impact of dental disease, cost of dental care

INTRODUCTION

The poor oral health of Aboriginal adults and children is a serious problem and is much worse than that of the broader Australian community (Hopcraft & Chow, 2007). There is considerable evidence that Aboriginal children have up to twice the rate of dental caries (tooth decay) when compared with their non- Aboriginal counterparts (Kruger E *et al*., 2005; Jamieson et al., 2007; Phelan et al., 2009). The picture for adults is less clear, because epidemiological studies are difficult to organise and participant recruitment rates are often low (Slade GD et al., 2007). Never the less, Jamieson *et al*. (Jamieson *et al*., 2010) found large differences in oral health between a cohort of young Australian Aboriginal adults (16-20 years) and aged matched national level counterparts; for example the mean number of decayed teeth was eight times higher in the Aboriginal group. An earlier study reporting 2001-2 data on the oral health of Indigenous adult public dental patients in Australia, noted that they had more decayed and missing teeth than non- Indigenous patients (Brennan *et al*., 2007).

In recognition of the extent and severity of dental disease the control of dental caries has been identified as a key indicator in the reduction in Indigenous disadvantage (SCRGSP, 2009).

Although it is important to measure the prevalence of oral diseases in Aboriginal communities, it is possibly of more value to record the impact dental problems have on the day to day lives of individual people (Ingelhart & Bagramian, 2002). Such studies are rare in Aboriginal communities but of great importance as they help in the formation of policy on how dental services for Aboriginal people should be developed, and funded. This information will assist in the refinement of Australia's National Oral Health Plan (2004-2013) (Australia's National Oral Health Plan).

The opportunity to record the impact of oral diseases on Aboriginal adults was presented when Northern Sydney Central Coast Area Health Service (NSCCAHS) Aboriginal Health Branch identified oral disease as a major issue for their chronic disease clients, who were not eligible for free dental treatment funded by the Federal Government; they agreed to pilot and fund an oral health programme utilising a public dental clinic resources. As part of the evaluation process the impact of oral health problems on the lives of adult patients was recorded utilising a structured interview.

METHODOLOGY

Following discussions between Central Coast Local Health District and community Aboriginal leaders at 'Yerin' Aboriginal Health Service on the Central Coast of New South Wales Australia, a clinic for Aboriginal families was opened for a four-month trial period. Public oral health service staff provided dental care at Wyong Hospital dental clinic on a Wednesday evening for a period of three hours between 5 and 8pm. All treatment provided was free, preventive advice and treatment was given, and oral health gift bags containing toothbrushes and toothpaste were given to all individuals who had a dental inspection. Two dentists provided the clinical interventions and one hygienist provided the preventive care, oral health education and conducted the study interviews. The Model of Care (MOC) was designed with an Oral Health

Promotion focus. The aim was to improve the oral health and general health of patients by the inclusion of a dental hygienist. The initial appointment was made with a dentist for full dental charting and relief of any immediate pain. Every patient was then appointed with the hygienist who would interview the patient, make clinical recordings for data collection, give oral hygiene instruction and if necessary diet and smoking cessation advice. Once a patient had healthy gums they were referred back to the dentist to commence any dental treatment that was required. By using this MOC patients were educated before fillings or extractions on how to care for their teeth and gums to prevent further dental disease.

As part of the pilot study all adults presenting at the clinic during the first month were interviewed about how oral health problems impacted on their lives. The interview schedule collected information on gender, general and dental health behaviours, smoking and alcohol consumption. In addition questions from commonly used oral health impact assessment questionnaires were also included in the interview (Slade & Spencer, 1994; Slade & Spencer, 1997). There are problems utilising social measurement instruments developed for Western communities, but having an interviewer helped the Aboriginal adults to discuss their answers or suggest that certain topics were not relevant.

Ethical approval for the study was granted by the Harbour Research Ethics Committee of Northern Sydney Central Coast Area Health Service. All data collected were anonymous but age and gender were available.

RESULTS

A total of 61 Aboriginal adults presented for their first visit for dental care at a designated weekly evening clinic over the data collection period. In total five sessions of clinical care were offered in the first month, with a mean attendance rate of 11.9 patients per 3 hour session. Fifty individuals agreed to be interviewed giving a response rate of 82%.

The demographic data are represented in *Table 1*. It can be seen that most patients were under the age of 50 years (41; 82.0%) and the majority (33; 66.0%) were female. Seven per cent of patients failed to attend for their follow-up appointment. The main treatments offered to the 50 participants during the course of care over the study period, were initial oral examination (100%), extraction (46%), scale and polish (38%), radiographs (76%), and restorations (28%). Preventive advice consisted mainly of oral hygiene instruction (98%), dietary advice (82%), and smoking cessation information (42%).

General health behaviours are shown in *Table 2*. There was a high level of reported alcohol consumption and cigarette smoking, but over half (all women) reported they were either non-, or ex-smokers; 58% put sugar in their tea/coffee, with 14% having three teaspoons in each cup consumed. However 42% did not take sugar in their hot drinks and most drank less than three cups of carbonated sugary drinks per day (30%) or rarely had them at all (54%).

Table 3 shows that most people interviewed brushed their teeth at least once a day, but only a small proportion (8%) used dental floss regularly. The cost of dental treatment was a major barrier to seeking care and this is reflected in the high proportion (60%) of individuals who had not visited a dentist for two years or more.

The impact of oral health problems on the quality of life of adults attending the dental clinic is shown in *Table 4*. Their oral problems certainly impacted on this group of individuals, particularly in terms of an aching painful mouth (76%), being self- conscious about their teeth (62%), embarrassed (62%) and reporting their diet was unsatisfactory (64%). There were no statistically significant differences in terms of the oral health impacts for men and women.

Table 1. Demographic data of Aboriginal adult patients attending the oral health clinic who agreed to be interviewed

Age range	**Male**		**Female**		**Total**	
	Number	**(%)**	**Number**	**(%)**	**Number**	**(%)**
18 -29	5	(29.4%)	10	(30.3%)	15	(30.0%)
30 -39	5	(29.4%)	10	(30.3%)	15	(30.0%)
40-49	4	(23.5%)	7	(21.2%)	11	(22.0%)
50 -59	3	(17.7%)	3	(9.1%)	6	(12.0%)
60 -69			2	(6.1%)	2	(4.0%)
Over 70			1	(3.0%)	1	(2.0%)
Total	**17**	**(34%)**	**33**	**(66%)**	**50**	**(100%)**

Table 2. Reported general health related behaviours

	Number	%
Alcohol consumption		
More than 4 drinks a day	30	60%
A drink every day	2	4%
Drink on most days	2	4%
Ex-drinker	1	2%
Non-drinker	15	30%
Smoking status		
20+ cigarettes a day	5	10%
Up to 20 cigarettes a day	16	32%
Non/ex smoker	29	58%
Sugar in tea/coffee		
3 teaspoons a cup	7	14%
2 teaspoons a cup	9	18%
1 teaspoon a cup	13	26%
No sugar used	21	42%
Consumption of carbonated sugary drinks		
8+ cups a day	1	2%
4-7 cups a day	7	14%
1-3 cups a day	15	30%
Rarely consume	27	54%
Consumption of tap water		
8+ cups a day	14	28%
4-7 cups a day	20	40%
1-3 cups a day	12	24%
Rarely consume	4	8%

Table 3. Reported dental health related behaviours

	Number	%
Toothbrushing habit		
Brush 2 x per day	32	64%
Brush 1 x per day	15	30%
Rarely brush	3	6%
Use of Dental floss		
Once a day	4	8%
Occasionally	21	42%
Never	25	50%
Time since last dental visit		
Less than 6 months	6	12%
7 months - 2 years	14	28%
2 years+	30	60%
Main barrier to obtaining dental care		
No dental service available	3	6%
Cost	31	62%
Fear	5	10%
Transport	2	4%
No barriers	9	18%

Table 4. Distribution of participants who experience oral health impacts often or fairly often (answers not mutually exclusive)

Oral Impacts	Number	%
Functional limitation		
Taste affected	9	18%
Physical pain	38	76%
Aching painful mouth	38	76%
Uncomfortable to eat	33	66%
Psychological Discomfort		
Self-conscious	31	62%
Physical Disability		
Diet unsatisfactory	32	64%
Had to avoid certain foods	32	64%
Psychological Disability		
Felt embarrassed	31	62%
Social Disability		
Difficulty doing a job	7	14%
Bad breath	3	6%
Handicap		
Life less satisfying	7	14%

DISCUSSION

This snapshot of Aboriginal adults attending a free dental clinic has shown that poor oral health had a major impact on many of the individuals interviewed. The high numbers reporting pain, embarrassment, being self-conscious and unable to eat properly is a testament to the need for affordable and readily available dental care for Aboriginal adults.

The focus of the evening clinic was on prevention of oral disease as well as the provision of dental treatment; the inclusion of a hygienist in the team meant it was possible to give preventive advice including smoking cessation information. However, it was interesting to note that the majority of the respondents were non- or ex-smokers, which is contrary to many reports on Aboriginal smoking behaviour which show that Indigenous Australians are more than twice as likely to smoke than their non-Indigenous counterparts (McDonald *et al*., 2003; Australian Bureau of Statistics, 2010). The clinic was set up specifically for Aboriginal families and the fact that the community actively supported the scheme seems to have encouraged women to utilise the service, as 66% of patients were female. The real value to the Aboriginal community was the policy decision by the local Aboriginal Health Service to buy in from the Local Public Dental Service dental clinicians to provide free dental care an evening a week. This is an enlightened response to the poor oral health amongst Aboriginal adults, as most cited cost as the main reason for not seeking dental care.

Before individuals were discharged following their course of care the hygienist asked "What has been the best outcome from coming to the clinic?"

The main responses were:

- To be free of pain
- Have my teeth fixed
- To eat anything I want.

The impact of oral disease on this group of adults can be confirmed by the clinical care offered. Nearly half (46%) were scheduled for extraction of decayed teeth despite the fact that modern dentistry views extraction as a treatment of last resort. The clinical service included oral health advice and also promoted smoking cessation. This is a promising initiative as many diseases such as stroke, cancer, diabetes, gum problems and dental caries share common risk factors (Sheiham &Watt, 2000), including smoking, poor diet, alcohol and stress are more common in Aboriginal communities, so there is scope to expand the advisory role of dental hygienists.

Clearly providing a cost neutral dental service at a convenient location dramatically reduced the impact of poor oral health on these individuals.

The shortcomings of the research are the small sample size and the gender imbalance. However data for this group of people is very hard to collect and the reported high levels of the impact of oral health problems on day to day living are clearly unacceptable. Dealing with dental health problems is part of the process of reducing the health inequality between Aboriginal people and other Australians. This research has shown it will be important to ensure adequate funding is available for primary dental care services in order to overcome the cost disincentive which is the major barrier for individuals in Aboriginal Communities attending for dental advice and treatment.

CONCLUSION

Poor oral health impacted on the social functioning of this group of Aboriginal adults, but providing free dental care in a specified 'Aboriginal only' clinic certainly encouraged many individuals to complete a course of treatment and thereby reduce the major impact dental disease had on their day to day lives.

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