

## Social determinants of oral health

### Abstract

Despite the generally high standards of living enjoyed by most Australians, not all adults experience a high standard of oral health. Previous epidemiological research has documented marked differences in the distribution of oral health status between social groups in Australia. Typically, adults who face greater financial constraint have more untreated oral disease and more missing teeth compared to more advantaged adults. While the evidence for social inequality in adult oral health is established, the pathways that connect social position to oral health are not well understood. To date, research has addressed separate aspects of the social context in which oral health is produced, but has not integrated these into a more complete model. Hence, the objectives of this research were to describe the social distribution of oral health, explore its behavioural and psychosocial correlates, estimate the importance of these in multivariate models, and propose a conceptual framework that explained reasons for social variation in oral health. Social determinants were defined as mutable social conditions that influence life opportunities, affect access to resources, and shape patterns of behaviour that impact on oral health.

### Method

Data were drawn from the 1999 National Dental Telephone Interview Survey (NDTIS) and its supplementary mail survey. The sampling design involved a stratified random selection of residential telephone numbers listed in the Electronic White Pages drawn from the capital city of each Australian state and territory, and the residual populations of each mainland state. The NDTIS obtained cross-sectional population surveillance information on the sociodemographic distribution of oral health status, and access and utilisation of dental services. The mail survey posted to adult first-person interviewees further explored self-assessed oral health and its behavioural and psychosocial correlates. Oral health was evaluated with five self-reported measures: decayed teeth; missing teeth; oral symptom experience; the social impact of oral conditions; and a global self-rating of oral health. Socioeconomic position was measured with conventional individual level indicators of household income, educational attainment, occupational group and prestige, and a small area measure of socioeconomic disadvantage. Data were weighted to adjust for over-sampling in non-metropolitan areas and of single occupant households, and were standardised to the age and sex distributions for each sampled stratum at the time of the survey. Analysis was limited to the 92.6% of respondents aged 18 to 91 years who were dentate (n=3,974).

### Results

Analysis of the social distribution of oral health revealed a systematic distribution characterised by progressively better oral health status at each step up the scale of social advantage.

Not only did persons with fewer resources report greater morbidity, but the consequences of their oral conditions in terms of functional impairment and physical, psychological and social disability were greater, and they rated their oral health less favourably than did adults with greater socioeconomic resource. The fact that this graduated effect applied even among advantaged individuals indicated that inequality in oral health was not simply a function of absolute material deprivation. It also implied that the distribution in oral health reflected underlying inequalities in the

social environment. Investigation of the proximate determinants of oral health revealed that dental behaviour was closely tied to oral health status. Monotonic behavioural gradients in oral status revealed strong positive associations between the utilisation of dental services and dental self-care practices and oral health outcomes. Moving beyond a behavioural view of oral health, attention was directed toward psychosocial factors. Such factors are shown in previous research to affect health indirectly by influencing behaviours that have consequences for health. Indeed, psychosocial factors have been found to affect health directly through biological and physiological pathways. Psychosocial factors examined in this study were personal control, social support, psychological stress and life satisfaction. Not only was this set of factors found to systematically differ by socioeconomic position, but negative gradients in control, support and life satisfaction were associated with increasing prevalence of untreated decay, missing teeth, social impact, oral symptoms and poor self-rated oral health. Similarly, greater perceived stress was positively associated with oral morbidity.

While these findings demonstrated strong evidence for associations between socioeconomic position, psychosocial resource, dental behaviour and oral health, the cross-sectional research design precluded inference made about causality. Intuitively, socioeconomic position and dental behaviour precede oral health outcomes, but a case for social selection whereby poor oral health leads to unfavourable socioeconomic circumstances could not be discounted. In order to investigate possible life course influences on oral health, aspects of the childhood environment at the age of ten years were retrospectively recalled. Childhood socioeconomic position was indexed by parental occupation, and the quality of the psychosocial environment was evaluated by parental cohabitation and rearing style. Individuals with paternal occupation classified as manager, administrator or professional reported fewer decayed and missing teeth and fewer oral symptoms, and a greater proportion rated their oral health positively. Similar, but not identical, associations were observed according to maternal occupation.

Individuals whose parents coresided reported fewer decayed and missing teeth, less social impact and fewer oral symptoms. Those who described their rearing as positive and supportive reported less social impact and fewer oral symptoms, and a higher proportion rated their oral health as being good or better.

Moreover, favourable childhood conditions were also associated with a more advantaged psychosocial profile in adulthood, strengthening the case that social differences in adult oral health reflect the social structuring of advantage from childhood.

Finally, psychosocial conditions of the workplace and their relationships with oral health were investigated. The workplace represents a microcosm of the broader social environment, complete with features of hierarchical position, control, support, stress, security and reward. As expected, socioeconomically disadvantaged workers reported greater psychosocial hazards. Workers who experienced a threat to job security or a risk of skill obsolescence, those with demanding jobs and less control over their work, and in particular, adults who experienced work and home interference, reported poorer oral health.

In multivariate analyses, socioeconomic position was associated with each of the five oral health outcomes, although no single variable was significant in each model. After controlling for the effects of socioeconomic and demographic factors, social support or networks were significant for three outcomes, and distress and coping were also significant for three outcomes. Work-home interference was significantly associated

with four outcomes. Dental behavioural factors were important, with dental visiting and dental self-care significantly associated with four outcomes.

### **Conclusions**

Oral health in adulthood is affected by exposure to a range of social conditions that are linked to socioeconomic position. Such resources modify the exposure to stressful social conditions and are likely to influence people's response to stress in ways that have consequences for oral health. This study showed that a set of social characteristics systematically differed by socioeconomic position. Socioeconomic gradients in personal control, social support, stress and life satisfaction underlie patterns of dental behaviour that in turn are associated with oral health. While gradients were observed across the social hierarchy, oral health gains were steeper at the bottom of the social distribution than at the top for each incremental increase in socioeconomic or psychosocial resource. The study of the relationships between social conditions and oral health offers an alternative way to approach population oral health, not merely by access to dental care alone, but also by modifying the broader social environment in which people live, work and seek dental care.