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Research Article

Sociodemographic, Health and Lifestyle Factors Affecting Dental Attendance by Young Adults in Australia

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Abstract

Background: Dental attendance is less than recommended amongst all age groups, with young adults (18-24 years) shown to visit a dentist less often than other age groups. The aim of this study was to investigate how different sociodemographic and health and lifestyle factors are associated with dental attendance by young adults in the past 12 months. **Methods:** This study was conducted using population-based data from the 2014-5 National Health Survey (1125 participants). Univariate logistic regression analyses were performed to determine associations between variables of interest and dental attendance. Significant single association variables were modelled together in a multivariate logistic regression analysis. **Results:** 42% of young adults had attended a dentist in the past 12 months. Three factors were found to be significantly associated with dental attendance, including female sex (P=0.045; OR 1.3; 95% CI 1.1-1.9), speaking English at home (P=0.008; OR 2.8; 95% CI 1.3-5.9), and having private health insurance (P<0.001; OR 2.3; 95% CI 1.6-3.2). **Conclusions:** These results provide useful information that can be used to direct oral health policy, guide resource allocation, and assist oral health promotion efforts. Changes to existing oral health policies and promotions may be needed to improve dental attendance in this age group.

Keywords: Attendance patterns; Dental; Oral health; Young adult

Abbreviations and Acronyms: ABS: Australian Bureau of Statistics; NHS: National Health Survey

Introduction

Oral health is an important factor affecting our overall health and wellbeing [1,2]. Good oral health is positively associated with a person's general quality of life, allowing one to eat, speak and socialise normally. Conversely, when oral health is compromised it can result in pain, discomfort and embarrassment [3]. Furthermore, there are known links between poor oral health and a number of chronic diseases, including diabetes, stroke, and cardiovascular disease [4].

Regular dental attendance is important for the maintenance of good oral health [4]. Despite this, it is known that dental attendance is less than recommended amongst all age groups, with young adults (18-24 years) shown to visit a dentist less often than other age groups [5,6]. In Australia, it has been reported that young adults are more likely to attend a dentist for emergency treatment rather than regular check-ups [7-9]. Some possible reasons to explain this trend include a lack of importance placed on oral health, previous negative experiences, and the belief that we have little control over our oral health [9,10].

Young adulthood brings with it many changes, including new independence and relationships, the transition from school to university or the workforce, and changes in behavioural patterns [7]. During this period, the importance of oral health cannot be understated due to its influence on appearance and self-esteem [8]. Additionally, the behaviours and attitudes which develop during this period are likely to persist into adulthood, with good oral health in young adulthood translating to fewer oral health problems later in life [7].

Despite the positive association between good oral health and general health and wellbeing, there appears to be a sharp

decrease in dental attendance as young adults move away from public school-based dental services towards self-funded care [7]. Variations in attendance patterns can be attributed to several factors, encompassing both sociodemographic and health and lifestyle factors. The contribution of these factors towards accessing dental care can be explained by Andersen's healthcare utilisation model [11]. According to this model, health care use is determined by one of three factors: (1) predisposing factors, such as race and age, (2) enabling factors, such as access to health insurance, and (3) need.

Some factors which have been shown to be associated with dental attendance by young adults include age, gender, ethnicity, education levels, socioeconomic levels, private health insurance, and smoking status. For some of these factors, the direction of association is clear; for example, those with private health insurance are more likely to attend the dentist. For other factors such as gender, the association requires more detailed investigation [7].

As outlined by the World Health Organization, one of the key components of a well-functioning health system is to improve the health status of individuals, families and communities [12]. To achieve this, individuals must have adequate knowledge about the health services available to them, and the factors that are associated with their use [12]. Given that regular dental attendance has a positive impact on oral health, then research into the attendance patterns of young adults would provide useful information that can be used to direct oral health policy, guide resource allocation and assist oral health promotion efforts.

This study investigates the relationship between sociodemographic and health and lifestyle factors on dental attendance by Australian young adults (18-24 years) in the past 12 months. There has been a lack of research conducted looking into the dental attendance patterns of young adults in Australia, with the most recent published article by Slack-Smith et al. in 2007. In this study, data from the 2001-2 National Health Survey (NHS) was utilised, an almost 20-year gap in our knowledge. An extensive literature search revealed few studies looking into the relationship between sociodemographic or health and lifestyle factors with dental attendance in young adults specifically, and none more recent than 2007. The aim of this study is to update the research using data from the Australian Bureau of Statistics (ABS) 2014-5 National Health Survey (NHS) and investigate how dental attendance patterns have changed in this time. The results of this study could be used to better direct oral health policy, guide resource allocation and assist oral health promotion efforts.

Materials and Methods

Ethics committee review or approval was not required for this project, as it uses publicly available data, in line with the data custodian's requirements.

This study was conducted using population-based data from the Australian Bureau of Statistics (ABS) 2014-5 National Health Survey (NHS). The data was made available as a Confidentialised Unit Record File (CURF), which was downloaded from the ABS MicrodataDownload website [13]. The 2014-5 NHS was the seventh comprehensive survey designed to obtain national benchmark and trend information on a wide variety of health-related issues. It was conducted throughout Australia from July 2014 to June 2015. In total, 14,723 households responded to the survey, representing a response rate of 82% and yielding a total sample size of 19,259 persons [14]. There has been a more recent NHS in 2017-8, however this survey did not collect information pertaining to dental attendance and was deemed unsuitable for this study.

The NHS data included a range of sociodemographic and health and lifestyle variables against which dental attendance in the past 12 months could be compared. The outcome of interest in this study was attendance by young adults (18-24 years) to a dentist in the past 12 months. There were twelve independent variables chosen for inclusion in the study, primarily guided by the existing knowledge base and availability of data within the NHS CURF file. There were 1125 respondents aged 18-24 years in the data set. Of the variables included in this study, two had a small number of responses missing, including private health insurance (24 of 1125 respondents) and government concession card (39 of 1125 respondents). A third variable, household income had a larger number of responses missing (376 of 1125 respondents). All other variables included in the study had complete data.

Data analysis was conducted using IBM SPSS Version 25 (SPSS Inc., Chicago, IL). The proportion of young adults attending a dentist in the past 12 months was calculated both overall and for each variable. To determine variables for inclusion in the final logistic regression analysis, univariate analyses were first conducted. Univariate analyses allowed us to determine significant single associations between each variable and dental attendance in the past 12 months.

Independent variables which were found to be either significant via univariate analysis, or had a p-value of <0.20, were modelled together in a multivariate logistic regression analysis. In this way, we have been able to assess the impact of each independent variable on the dependent variable (i.e. dental attendance by young adults in the past 12 months), both independently and subsequently with all other independent variables controlled for.

Results

The sociodemographic and health and lifestyle factors of those in the sample are shown in Tables 1 and 2, respectively. Overall, 42% of survey respondents had attended a dentist in the past 12 months (476/1125). Univariate analysis showed multiple

sociodemographic factors as having a significant single association with dental attendance in the past 12 months. Specifically, females were 1.3 times more likely, those who had completed high school were 1.6 times more likely, those born in Australia were 1.7 times more likely, those who spoke English at home were 2.2 times more likely, those in the highest socioeconomic group were 2.0 times more likely, and those with private health insurance were 2.9 times more likely to have attended a dentist in the past 12 months, compared to their respective reference groups (Table 1). Of the sociodemographic factors investigated, living in a major city and possession of a government concession card did not show a significant association with dental attendance in the past 12 months.

Sociodemographic characteristics	Total n (%)	Attended a dentist in past 12 months n (%)	OR (95% CI)	P-value
Gender				
Male	560 (49.8)	217 (38.8)	Ref	
Female	565 (50.2)	259 (45.8)	**1.3 (1.1-1.7)**	**.016**
Completion of high school				
Yes	834 (74.1)	377 (45.2)	**1.6 (1.2-2.1)**	**.001**
No	291 (25.9)	99 (34.0)	Ref	
Country of birth				
Australia	933 (82.9)	411 (44.1)	**1.7 (1.2-2.6)**	**.006**
Main English-speaking country	61 (5.4)	24 (39.3)	1.4 (0.7-2.7)	.274
Other	131 (11.6)	41 (31.3)	Ref	
Language spoken at home				
English	1034 (91.9)	452 (43.7)	**2.2 (1.3-3.5)**	**.002**
Other language	91 (8.1)	24 (26.4)	Ref	
Household income				
Quintile 1 (Lowest)	141 (18.8)	45 (31.9)	Ref	
Quintile 2	133 (17.8)	42 (31.6)	1.0 (0.6-1.6)	.952
Quintile 3	156 (20.8)	61 (39.1)	1.4 (0.8-2.2)	.197
Quintile 4	188 (25.1)	82 (43.6)	**1.7 (1.0-2.6)**	**.032**
Quintile 5 (Highest)	131 (17.5)	63 (48.1)	**2.0 (1.2-3.2)**	**.007**
Living in a major city				
Yes	782 (69.5)	341 (43.6)	1.1 (0.9-1.5)	.185
No	343 (30.5)	135 (39.4)	Ref	
Private health insurance				
Insured	529 (48.0)	291 (55.0)	**2.9 (2.3-3.7)**	**<.001**
Not insured	572 (52.0)	170 (29.7)	Ref	
Government concession card				

Yes	282 (26.0)	108 (38.3)	Ref	
No	804 (74.0)	349 (43.4)	1.2 (0.9-1.6)	.135
Numbers written in bold represent statistically significant findings				

Table 1: Sociodemographic characteristics of young adults attending a dentist in past 12 months.

Univariate analysis showed only one health and lifestyle factor to be significantly associated with dental attendance in the past 12 months. Those who had met guidelines for level of physical activity were 1.5 times more likely than those who did not meet guidelines to have attended a dentist in the past 12 months. Other health and lifestyle factors, including general health, smoking status, and alcohol consumption, were not found to be individually associated with dental attendance in the past 12 months (Table 2).

Health and lifestyle factors	Total n (%)	Attended a dentist in past 12 months n (%)	OR (95% CI)	P-value
General health				
Excellent	242 (21.5)	123 (50.8)	2.4 (0.9-6.5)	.081
Very good	430 (38.2)	177 (41.2)	1.6 (0.6-4.3)	.325
Good	337 (30.0)	133 (39.5)	1.5 (0.6-4.1)	.402
Fair	96 (8.5)	37 (38.5)	1.5 (0.5-4.1)	.474
Poor	20 (1.8)	6 (30.0)	Ref	
Smoking status				
Smoker	212 (18.8)	78 (36.8)	Ref	
Non-smoker	913 (81.2)	398 (43.6)	1.3 (1.0-1.8)	.072
Level of physical activity				
Met guidelines	647 (57.5)	299 (46.2)	**1.5 (1.1-1.9)**	**.002**
Did not meet guidelines	478 (42.5)	177 (37.0)	Ref	
Alcohol consumption				
Medium to high	167 (14.8)	60 (35.9)	Ref	
None to low	958 (85.2)	416 (43.4)	1.4 (1.0-1.9)	.071
Numbers written in bold represent statistically significant findings				

Table 2: Health and lifestyle factors of young adults attending a dentist in past 12 months.

Factors found to have a significant association with dental attendance by young adults in the past 12 months are shown in Table 3. Logistic regression analysis revealed three factors to be significant predictors of dental attendance by young adults in the past 12 months. Specifically, females were 1.3 times more likely (P=0.045), those who spoke English at home were 2.8 times more likely (P=0.008), and those who had private health insurance were 2.3 times more likely (P<0.001) to have attended a dentist in the past 12 months compared to their respective reference groups (Table 3).

Variables	Adjusted OR (95% CI)	p-value
Sex		
Female	1.3 (1.1-1.9)	.045
Male	Ref	
Language spoken at home		
English	2.8 (1.3-5.9)	.008
Other language	Ref	
Private health insurance		
Insured	2.3 (1.6-3.2)	<.001
Not insured	Ref	

Table 3: Factors associated with young adults attending a dentist in past 12 months.

Discussion

It is known that young adults (18-24 years) are among the least likely age group to utilise health services [6] and in some studies, dental care is reported to be the most under-utilised health service [15]. Our findings are consistent with this knowledge, with only 42% of young adults shown to have attended a dentist in the past 12 months. This figure remains consistent with the Slack-Smith et al. study in 2007, which found that 41% of young adults had seen a dentist in the past 12 months.

Lack of dental attendance amongst young adults is not random in nature and can be accounted for by multiple factors [6]. In the literature, links have been made between poor dental attendance and factors including age, gender, socioeconomic status, ethnic background, general health behaviours such as smoking, and poor self-perceived oral health status [6]. Considering our finding that dental attendance remains low amongst young adults, it could be argued that oral health policies and promotion efforts targeted at this age group have been unsuccessful over the past 20 years. Furthermore, with our knowledge that dental attendance tends to sharply decrease during young adulthood [16], it is suggested that greater emphasis on oral health is required to positively impact dental attendance in this age group.

As expected from Andersen's healthcare utilisation model [11], our study identified multiple factors, which were associated with dental attendance by young adults in the past 12 months. Univariate analysis yielded six sociodemographic factors, which showed significant association with dental attendance. Using Andersen's model, these factors can be categorised as either predisposing factors (gender, completion of high school, country of birth, language spoken at home) or enabling factors (household income, private health insurance). Specifically, females, those with higher education levels, those born in Australia, those who speak English at home, those in higher socioeconomic groups, and those with private health insurance showed greater attendance compared to their respective reference groups.

Whilst the association between some factors and dental attendance is clear, others require more detailed investigation. For example, it is widely known that individuals in higher socioeconomic groups and with access to private health insurance will be more likely to pay for dental visits [17]. Similarly, higher education levels have been shown to have a clear association with improved oral health literacy, translating into better attendance rates [18]. However, whilst our findings that females are more likely than males to attend the dentist are in keeping with current literature [19], the reasons behind this disparity are less well-researched. One suggestion to explain this trend is that there are often more specialised services offered to females, such as family planning, which bring women into contact with health services more frequently, thereby improving education regarding available health services [19]. Conversely, it is suggested that a lack of health facilities targeted towards males, as well as cultural norms dictating males to avoid seeking help, contributes to decreased dental attendance in this group [19].

Of the six sociodemographic factors found to be individually associated with dental attendance in the past 12 months, three were found to be no longer significant when modelled together. Upon logistic regression analysis, completion of high school, country of birth, and household income were removed as significant factors. However, given the established links between socioeconomic status and education levels with dental attendance [17,18], it is suggested that further studies with larger sample sizes are required to assess the true impact of these factors.

When considering health and lifestyle factors individually, only one was shown to be significantly associated with dental attendance in the past 12 months. Young adults who had met guidelines for physical activity were 1.5 times more likely than those who had not met guidelines to have attended a dentist in the past 12 months. Despite 'general health' not showing a significant association with dental attendance in our results, given the established link between health-promoting activities such as exercise with increased rates of dental attendance [20], this finding is not unexpected. Interestingly, our study did not find any significant association between smoking status or alcohol consumption with dental attendance. These results are in disagreement with previous findings, which have shown significant associations for both of these factors [7]. Based on the current literature, we would expect that both smoking and alcohol consumption (high risk factors for poor oral health outcomes) would be negatively associated with dental attendance [21]. These practices are well-established markers of an unhealthy lifestyle, incur significant financial burden which reduces the capacity to pay for dental services, and reflect an overall lack of concern for health [22].

When modelled together, having met physical activity guidelines was removed as a significant predictor of dental attendance in the past 12 months. Considering this, in addition to the fact that both smoking and alcohol consumption did not show any significant association with attendance despite robust evidence in the literature [7,21], it is suggested that further studies with a larger sample size, as well as further investigation into the smoking habits and alcohol consumption of young Australian adults is required to determine the relevance of our findings.

Overall, three factors were found to be significant predictors of dental attendance by young adults in the past 12 months, including gender, language spoken at home, and private health insurance. Compared with Slack-Smith, et al.'s 2007 study, gender and private health insurance remain consistent findings. However, whilst alcohol consumption was not significant in our study, language spoken at home has been shown to be a significant predictor of dental attendance. Specifically, females, those who spoke English at home, and those with private health insurance were more likely to have attended in the past 12 months.

Our findings that young adult females and those with private health insurance were more likely to attend have already been discussed. However, given the lack of information regarding the causes of disparity between female and male dental attendance, it is suggested that further research is required to identify the causes of this pattern. It is also suggested that further research is required to investigate the relationship between private health insurance and dental attendance in young adults. Whilst it is known that private health insurance is associated with an increased ability to pay for dental services [22], there are complexities that have not been addressed in the NHS data. Specifically, young adulthood (18-24 years) is a transition period during which an individual may continue to be insured under a pre-existing policy held by their parents, or alternatively have their own insurance. Unfortunately, the wording of the survey questions pertaining to private health insurance did not distinguish between these scenarios and as such, it is difficult to accurately assess the role of this factor on dental attendance.

Whilst alcohol has previously been found to be a significant factor affecting dental attendance amongst young adults [7], the results of this study do not support this. Previous studies have shown that that young adults with medium to high intake of alcohol are less likely to attend a dentist, presumably due to a lack of concern for their general health [7]. However, our findings are in agreement with more recent literature that show no association between higher than recommended alcohol consumption and dental attendance [21]. The reasons behind this shift in pattern remain unclear and require further investigation.

Lastly, language spoken at home was found to be a significant predictor of dental attendance by young adults. Specifically, those who spoke English were 2.8 times more likely than those who spoke another language to have seen a dentist in the past 12 months. Our findings are in keeping with the existing literature, with studies reporting those who spoke a language other than English as having the least favourable oral health outcomes, and conversely more favourable outcomes if English was spoken at home [23]. Speaking a language other than English at home is usually associated with overseas-born persons, and these population groups have been associated with emergency-oriented dental attendance patterns (as opposed to regular check-ups), lower levels of private health insurance, lower socioeconomic status, and an overall cultural difference in the utilisation of dental services [23].

The main strengths of this study has been the use of population-based data with a large sample size and high response rate [7]. As a nationwide survey, the NHS data ensures that an appropriate representative sample could be selected, helping to avoid selection bias and improving the external validity of our results [24]. Despite this, there are inherent weaknesses associated with survey-based studies. Non-response by survey participants, as well as the inability to validate self-reported data, could result in bias of the measures of outcome. Furthermore, there has been no distinction made within the survey questions to differentiate between dental attendance for regular check-ups, emergency care, or for other reasons.

Conclusion

Dental attendance by young adults (18-24 years) in Australia remains low and can be accounted for by multiple factors [6]. Our findings show that being female and having private health insurance are both significant predictors of dental attendance in the past 12 months. In addition, young adults who speak English at home were found to be significantly more likely to attend a dentist, a finding which is supported by the literature [23]. The Slack-Smith et al. 2007 study found alcohol consumption to have a significant association with dental attendance, however this has not been the case using updated data from the 2014-5 NHS and is in keeping with more recent studies [21].

Given the lack of research into this topic, it is suggested that further studies are required to determine how different sociodemographic and health and lifestyle factors affect dental attendance in the young adult age group. Focus should be given to the long-term oral health and general health outcomes associated with regular dental attendance. Ultimately, findings from these studies could be used to better direct oral health policy, guide resource allocation and assist oral health promotion efforts.

References

1. Council of Australian Governments Health Council (2015) Healthy Mouths, Healthy Lives: Australia's National Oral Health Plan 2015–2024. Adelaide: South Australian Dental Service. 105p.

2. Petersen PE (2003) The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century- the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 31: 3-23.

3. Australian Institute of Health and Welfare (2020) Oral health and dental care in Australia.

4. Richards W, Ameen J (2002) The impact of attendance patterns on oral health in a general dental practice. Br Dent J 193: 697-702.

5. Roberts-Thomson KF, Stewart JF (2003) Access to dental care by young South Australian adults. Aust Dent J 48: 169-174.

6. Lopez R, Baelum V (2007) Factors associated with dental attendance among adolescents in Santiago, Chile. BMC Oral Health 7: 1-7.

7. Slack-Smith L, Mills CR, Bulsara MK, O'Grady MJ (2007) Demographic, health and lifestyle factors associated with dental service attendance by young adults. Aust Dent J 52: 205-209.

8. Kaur P, Singh S, Mathur A, Makkar DK, Aggarwal VP, et al. (2017) Impact of Dental Disorders and its Influence on Self Esteem Levels among Adolescents. J Clin Diagn Res 11: ZC05-ZC08.

9. Australian Institute of Health and Welfare (2011) Dental attendance patterns and oral health status.

10. Fitzgerald RP, Thomson WM, Schafer CT, Loose MA (2004) An exploratory qualitative study of Otago adolescents' views of oral health and oral health care. N Z Dent J 100: 62-71.

11. Andersen RM (1995) Revisiting the behavioural model and access to medical care: does it matter? J Health Soc Behav 36: 1-10.

12. World Health Organization (2010) Key components of a well function health system.

13. Australian Bureau of Statistics. MicrodataDownload. Canberra ACT.

14. Australian Bureau of Statistics (2015) National Health Survey: First results, 2014-15. Canberra ACT.

15. Hawley GM, Davies RM (1996) Documented dental attendance patterns during childhood and adolescence. Br Dent J 180: 145-148.

16. Australian Institute of Health and Welfare (2003) Australia's young people 2003: their health and wellbeing.

17. Russell LM (2014) Closing the dental divide. Med J Aust 202: 477.

18. Ellershaw AC, Spencer AJ (2011) Dental attendance patterns and oral health status.

19. De Lima Saintrain MV, Marques PLP, de Almedia LHP, Lourenco CB, da Silva RM, Viera APGF (2014) The relationship between gender in the access to dental services and goods. Rev Bras Promoc Saude 27: 381-388.

20. Ireland RS, Bowyer V, Ireland A, Sutcliffe P (2012) The medical and dental attendance pattern of patients attending general dental practices in Warwickshire and their general health risk assessment. Br Dent J 212: E12.

21. McGeown M, Fitzpatrick P (2015) Dental attendance and self-reported oral status among adults at high risk for oral cancer. J Epidemiol Community Health 69: A75.

22. Australian Research Centre for Population Oral Health, The University of Adelaide, South Australia (2008) Factors associated with infrequent dental attendance in the Australian Population. Aus Dent J 53: 358-362.

23. Australian Institute of Health and Welfare (2005) Oral health and access to dental care-Migrants in Australia.

24. Carneiro I, Howard N (2011) Introduction to Epidemiology. 3rd Edition. Great Britain: Open University Press.