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'Dentistry in a Decade': Recent Lessons from the Adult Dental Health Survey

Contemporary dentistry is facing unprecedented challenges in the next decade. Under a new government in an unstable financial climate, dentistry is seeing changes in how healthcare as a whole is managed and delivered. The provision of dentistry is evolving with emphasis on improvements in quality of care from a patient-centred approach. In 2008, the Darzi Report highlighted the importance of care driven by quality.¹ The recent introduction of the Care Quality Commission (CQC) seeks to ensure that all providers of adult health and social care operate within a single and consistent set of standards.² In order to integrate these messages into current practice, it is imperative that one understands the current dental needs of the population going forward.

Since 1968, the Adult Dental Health Survey (ADHS) measured prognostic indicators of dental health amongst the adult population, effectively becoming an instrumental tool effecting policy and service provision.^{3,4} One significant trend since 1968 highlights the decline in numbers of edentulous patients.³ With a greater proportion of the population maintaining their natural teeth, it is important to understand the functional versus non-functional dentition and the impact of both on dental services. The World Health Organization (WHO) defines a functional dentition as containing a minimum of 20 teeth.⁵ This categorization is considered to have good long-term prognosis benefiting from disease prevention and management strategies. Poor oral health and increased tooth loss leading to a non-functional dentition is directly linked to poor general health.⁶

It is important to assess the impact of the two groups of patients in terms of treatment need and management in the future. Can lessons taken from the past assist in planning for the future of dentistry? Concern



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must be raised for both groups of adults as those without a functional dentition have a reduced long-term prognosis which may lead to an increased burden on healthcare.^{4,5}

The recent 2009 ADHS identified that the majority of dentate adults less than 45 years of age had, on average, more than 20 natural and unrestored teeth.³ This shows a change in the profile of the middle-aged patient in the years since the 1968 survey.

This paper will consider the needs of the adult population over 45 years sampled in the 2009 ADHS, with particular reference to males. Supporting evidence will be used to anticipate their oral healthcare needs and postulate the impact on service provision, research and policy.

snapshot of the dental needs of patients in England, Wales and Northern Ireland. In order to postulate future dental needs, one can look to the past for guidance. Previous ADHS data has highlighted changes in disease trends and DMFT. In the ten years since the 1998 survey, there has been continued improvement across a majority of the indicators of oral health and disease.³ With the predicted gradual decrease in the edentulous population rate to around 4% over the next 20 years⁷ there will be a greater need for dental professionals to assist in maintenance of those defined to have a functional dentition.

The series of surveys has allowed those in healthcare to track population cohorts, enabling one to monitor the prevalence and distribution of oral disease. From this it is possible to identify trends and appraise the effectiveness of contemporary oral service provision. The data presented allow researchers to identify differences amongst age groups and gender. Whilst men and women have similar

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Adult Dental Health Survey: past and present

In 2009, the fifth ADHS was published, giving health professionals a

DMFT values, women typically present with more filled teeth, whereas men show higher rates of decay and periodontal disease.^{3,8} The Steele review highlights the latter as the most common oral pathologies.⁴ Their impact on dental service is chronic and cumulative. Contemporary dentistry is still managing and treating the sequelae of disease processes which began years earlier. The 1978 ADHS identified young adults between the ages of 16 and 34 as having a high incidence of decay and restorations (average restored teeth = 8). This generation may be traced through subsequent surveys of 1988 and 1998 revealing a progressive increase in restored teeth over 20 years (1998 average restored teeth = 11).^{3,4,9} It can be postulated that this trend will continue and be reflected in males aged 45–54 who will present with greater dental needs than their female counterparts.

In the past 35 years there has been a significant increase (31%) in the over 65 age demographic.¹⁰ If this trend continues, the growth in the present 45–54 year-olds surveyed, who had higher statistical levels of dental need, will result in dental professionals facing a large group requiring more complex treatment needs. As life expectancy increases, patients are outliving the expected survival rates of direct and indirect restorations, leading to greater demand on repair and replacement.⁴ Where dentists were skilled at placing restorations in the last two decades, materials and techniques once poorly understood have been developed over the past 20 years. As a result, we now have a generation with restorations reaching their lifespan. The current ADHS reports levels of secondary decay and failing restorations, which although briefly recorded in 1998 (average number of teeth = 0.2) was not an indicator included in earlier surveys.^{3,9} As oral health continues to improve in the general population, this statistic may become more prevalent as people maintain their teeth for longer. In 2009, 26% of those surveyed with at least one restoration were found to have secondary caries or failing restorations.³

It will now be the case that, as restorations fail in the over 45 year-old male population, there will be increased use of crowns, bridges and removable partial dentures. In 2009, 55–59% of those aged 45–74 had a tooth restored with a crown (average = 3 teeth). Of those aged 55–64, 14% had bridgework, and over 10% of 45–54 year-olds had a removable partial denture.³

With rising food prices there will be an expected drop in the diversity of the average diet, leading to consumption of foods high in fat and simple carbohydrates.¹¹ Increased carbonated drink consumption and a

low pH diet will leave patients at considerable risk of not only dental disease, but future toothwear. Toothwear rates are on the rise, mainly seen with moderate tooth surface loss where values have risen from 11% in 1998 to 15% in 2009.^{3,9}

Regional variations in ADHS data highlight discrepancies in disease prevalence, particularly in areas of social deprivation: South-west, West Midlands and Wales.³ Low socio-economic status and geographic location show a correlation between good and poor oral health states. Problems accessing a dentist were found to be higher in rural areas, whilst those on low incomes frequently cited cost as a barrier to care.⁴ People who are in most dental need are often the least likely to attend the clinical setting, where physical and psychosocial barriers to care contribute to inequalities in oral health.⁶ With 30% of all men up to the age of 54 likely to attend only when in pain, and lower dental attendance rates than women on average (54% compared to 68%), it is likely that the current 45–54 year-old late middle-aged male population will need more complex care when they do attend.

Today there are many treatment options available. Communication and patient awareness of contemporary provision enable the informed patient to make choices regarding their care. NHS treatment may be supplemented with treatment options presently on offer from the private sector. Aesthetically-driven procedures dominate this area of patient choice owing to the influence of Western media ideals. As dental implants become more mainstream in general practice, there will be a rise in implant placement from the current 1% of 45–54 year-old males.³

Discussion

Evidence from the 2009 ADHS highlights the question: Are the needs and expectations in contemporary dentistry developing faster than research and policy makers' ability to restructure and make adequate provision?

Dental disease will continue to impact both patient and practitioner through continued maintenance of restorations long after elimination of disease. The high levels of decay which impacted earlier generations is evident in the data for those currently over 45 years of age.³ This 'heavy metal generation'¹⁴ will place the greatest demands on the health service in the coming decade, where males in particular will pose challenges in both restoration and replacement of teeth, periodontal disease and toothwear.

Likewise, there will be an increasingly small percentage of edentulous

patients who will continue to require care. As a result, both dental undergraduates and professionals alike will coincidentally experience a depreciation in skills for complete denture prosthodontics. This is already reflected in current undergraduate education.⁷ In order to provide quality of care, practitioners will need to work with dental care professionals (DCPs) to provide comprehensive treatment. Registered DCPs, such as clinical dental technicians, are assuming new responsibilities in order to meet the current demands on health services. Thus the dental undergraduate curriculum should evolve to emphasize the diverse roles of the dental team.^{12,13} It will be interesting to see the outcome of the pilots currently being trialled in general practice¹⁴ and whether they will be effective in the needs of the target group highlighted in this paper.

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