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A summary of knowledge about the oral health of older people in England and Wales

D. Moore[1] and G.M. Davies[2]

[1]*Dental Public Health, School of Dentistry, University of Manchester, UK and Public Health England, UK;* [2]*Specialist in Dental Public Health, Public Health England, UK*

Objective: To summarise what is currently known about the oral health of older adults in England and Wales. ***Basic research design:*** Summary of the main findings from a recent review of oral health surveys and demographic and health data relating to older people in the UK (West Midlands, North West, Bolton and Kirklees, East London and the City of London and Wales). Their findings were compared, where possible to estimates from the 2009 Adult Dental Health Survey. ***Findings:*** A higher proportion of older adults in England and Wales have untreated caries and signs of severe caries than the general adult population. The majority of dentate residents in the care homes surveyed had untreated caries. Despite the poorer oral health of residents in care homes, managers of such services report difficulty in accessing routine and emergency dental care. ***Conclusions:*** Existing epidemiological data in England and Wales show that older people in residential and nursing care homes have poorer oral health than the general adult population and inequitable access to dental services. Greater comparability and utility would be gained from regional oral health surveys if standards were agreed for this age group with regard to sampling, consent, questionnaires and clinical measures.

Key words: *dental epidemiology, older people, commissioning, oral health, England, Wales*

Introduction

There are currently 11 million people in the UK over the age of 65 (UK ONS, 2014), a figure that is predicted to rise to 14 million by 2032 (The King's Fund, 2015a). The World Health Organization's "active ageing" policy framework (WHO, 2002) highlights that good oral health is essential for older people to continue to participate in social and, for as long as they wish, economic life. The ability to eat a range of nutritious foods is particularly important for older people, because they are at increased risk of malnutrition and it's sequelae of increased susceptibility to infections, poor wound healing and increased risk of mortality (Milne *et al*., 2009).

It is now accepted that the right of older people to continue to enjoy and contribute to society means that the structural barriers built into transport, social and leisure facilities, workplaces and health care systems must be removed (Boudiny, 2013). Yet there are continued reports of poorer oral health in older people, poorer access to care and lower dental service utilisation. This pattern has been observed in the UK (Al-Haboubi *et al*., 2013; BDA, 2012) and internationally (Kiyak and Reichmuth, 2005; Ling *et al*., 2014).

The UK benefits from a nationally co-ordinated dental epidemiology programme that has carried out five decennial surveys of adult dental health, ADHSs, since 1968. The most recent was the ADHS 2009 (HSCIC, 2011). However, the sampling frame for these surveys uses individual residential addresses and therefore does not provide any information on older people who live in communal establishments such as residential or nursing care homes, or in 'sheltered housing'. In addition, the numbers of adults over the age of 85 in the ADHS 2009 sample were small, producing unreliable estimates for some indicators.

To bridge this gap, Public Health England and the British Association for the Study of Community Dentistry (BASCD) have collated the findings of existing local and regional surveys of oral health in older people. This paper aims to summarise the findings of the collated epidemiological data and the current related literature on predicted social, demographic and health trends.

Method

The search for relevant surveys involved contacting dental public health colleagues in the UK and requesting the results. Five surveys were identified and the results obtained. One other survey was identified but due to problems with the consent procedures used, it was not possible to use those results. Due to variation in sampling frames, data collection methods and indicators used in the surveys it was not possible to pool the estimates in a meta-analysis. Instead, the surveys were read thoroughly to identify common areas where comparisons could reasonably be made. Data were extracted by DM and checked for errors by GD. Where possible, tables were produced detailing the comparable indicators across the surveys.

To give context to the oral health data and aid the planning of dental services for services for older people, a literature review was undertaken to provide information on the predicted future trends in their residential, health and care arrangements. This review included grey and published literature, besides national statistical data. The key findings of the literature review are included in the discussion.

Correspondence to: Deborah Moore, Dental Public Health, School of Dentistry JR Moore Building, University of Manchester, Manchester, M13 9PL, UK. Email: deborah.moore-2@manchester.ac.uk

Table 1. Survey characteristics

Region: (Citation)	*Methods of data collection (n)*	*Sampling frame*
Wales: (Morgan *et al*., 2010; 2015; Welsh Oral Health Information Unit and Cardiff University School of Dentistry, 2008)	Clinical examination (655) Older adult self-report questionnaire (708) Service manager questionnaire (957)	Residential and nursing care homes
West Midlands: (West Midlands Dental Epidemiology Programme, 2011a;b)	Clinical examination (815) Older adult self-report questionnaire (836) Service manager questionnaire (1,170)	Residential and nursing care homes
North West: (Public Health England, 2013a;b;c),	Service manager questionnaire (230)	Residential and nursing care homes and hospices
	Service manager questionnaire (196) Hospital ward manager (96)	'Care in your home' services Hospitals with in-patient facilities
East London and the City: (Marcenes *et al*., 2011)	Clinical examination (523) Older adult self-report questionnaire (772)	Household resident adults >65 years
Bolton and Kirklees: (Healthwatch Bolton and Healthwatch Kirklees, 2014)	Service manager questionnaire (76)	Residential care homes

Results

The characteristics of the surveys that returned data and were included in the review are provided in the Table 1. The regional data were compared where possible to data from the ADHS 2009 (HSCIC, 2011).

Older adults living in residential and nursing care homes are more likely to be edentulous and less likely to have a functional dentition than older adults living in individual residential addresses (hereafter referred to as "household resident") who were included in the 2009 ADHS. In the 2009 ADHS 30% of participants aged 75 to 85 were edentulous, compared to 43% in West Midlands care homes (mean age of that sample, 80 years). In the ADHS, 47% of those aged over 85 were edentulous, compared with 58% in Wales care homes (mean age of sample 86 years). In the London household resident sample only 2.8% were edentulous.

Untreated caries appears to be more common in household resident older adults than in the general adult population, where the proportion affected is 40% among those aged 75 to 84 and 33% of those over 85 (unreliable estimate, small sample), compared to 31% for all age groups in the ADHS 2009 sample. However, older adults living in care homes appear to have even higher caries prevalence than household resident older adults. In the two clinical examination surveys carried out in care homes, the majority of dentate residents had active caries - 73% in Wales and 56% in the West Midlands.

Signs of severe untreated caries (open Pulp, Ulceration, Fistula or Abscess, PUFA) appear to be more common in the oldest age groups across all settings. In the ADHS 2009 dentate sample for England, 7% of those examined had one or more PUFA indicators, rising to 8% in those 75-84 and 10% in those over 85 (unreliable estimate, small sample). This can be compared to 15% of dentate participants in the West Midlands care homes survey and 10% of all 75 to 84-year-olds and 16% of all those over 85 in the London household resident survey. The London estimate includes edentate participants, therefore for a dentate-only sample it could be a higher proportion.

In the regional surveys of older adults, the proportion of participants experiencing current pain was slightly higher than was reported by the ADHS 2009. In the dentate-only ADHS 2009 sample, 6% of 65 to 74-year-olds, 4% of 75 to 84-year-olds and 5% of those over 85 (unreliable estimate, small sample) reported current pain, which was slightly lower than the 9% reported for all age groups. In the West Midlands care homes survey and the London household resident older adults survey, 11% and 10% reported current pain, respectively. Again, the regional estimates also include edentate participants, where the ADHS 2009 does not. If it were available, the estimate for the dentate-only participants in the regional surveys may be higher.

Periodontal disease is most common in the age groups of 55-84, with about 60% of dentate participants in the 2009 ADHS affected by pocketing greater than 4mm. In the Wales care home survey 40% of all dentate participants had pocket depths greater than 4mm, compared to 61% of 75 to 84 year olds and 47% of those over the age of 85 in the ADHS 2009 sample. Due to differences in the choice of indicators it is difficult to say how this compares across other settings. The London household resident survey reports bleeding on probing for the total sample (including edentate), but not pocket depths and the West Midlands survey reports tooth mobility and a visual assessment of gingival condition, but no pocket depths or bleeding on probing.

Residential care home managers report that they experience much more difficulty in accessing dental care for their residents than household resident older adults do. The ADHS 2009 shows that older adults are less likely to attempt to make an appointment than the younger ages, with 43% of 75 to 84 year olds and 34% of those older than 85 having tried to make an appointment in the last three years, compared to 58% for all age groups. However, if an attempt was made, success appears broadly similar for all household resident adults over the age of 65, at more than 93% in both the ADHS and in the London household resident sample. In contrast, in Wales care homes, 17% of managers surveyed experienced difficulties in accessing routine care for residents and in the West Midlands, 23% always and 16% occasionally experienced difficulties.

In Bolton and Kirklees just under half of the care homes did not have a regular relationship with a dental provider of routine or emergency care. This meant that in 8% of care homes surveyed, the managers had previously taken a resident to a local accident and emergency department due to urgent dental problems. No information was available on whether managers of 'care in your home' services had attempted to access dental care for their clients or how successful they may have been.

Oral health policies, oral health needs assessments, staff training on oral health care and a system to ensure oral hygiene support is received when needed, are all more common in residential and nursing care homes than in 'care in your home' services, or hospitals with in-patient facilities. Oral health needs assessments and staff training seems to focus mostly on the presence of teeth and dentures and oral hygiene or denture cleaning skills. What is less common is training in the recognition of urgent problems in residents and how to access urgent or emergency dental care.

Further detail on the available comparisons is provided in the original report, including numerical tables for each indicator (Public Health England and BASCD, 2015).

As can be seen from Table 1, most information on the oral health of older adults in the UK relates to those who live in residential and nursing care homes.

Discussion

Variation in sampling frames, consent arrangements and the use of non-standardised questionnaires and clinical indicators meant that it was not possible to pool the results of all of the existing regional surveys of oral health in older adults in England and Wales. Some comparisons were made between slightly different indicators or subgroups of participants due to differences in reporting. Whilst care was taken not to compare inappropriately, this has meant that for some indicators, particularly measures of periodontal disease and quality of life - no real comparisons or summaries could be made.

Despite these difficulties, this review of the existing surveys of the oral health of older people in the UK shows that in general, the oral health of older people is poorer than that of the younger age groups, particularly for those who live in residential and nursing care homes. However, in contrast to this higher need, there appears to be lower dental service utilisation by older age groups in the UK (HSCIC, 2011). This has previously been reported in the UK (Borreani *et al*., 2008) and the US (Kiyak and Reichmuth, 2005). Lower utilisation of dental services has been attributed to a lack of perceived need, functional limitations and prioritisation of the treatment of multiple long-term conditions (Niesten *et al*., 2013). Lack of transport is also cited as a barrier to attendance for dental care (Chideka *et al*., 2015; Kiyak and Reichmuth, 2005). Transport as a barrier was described in the London household resident survey, where 12% had not attended the dentist in the previous two years because they found it "*difficult to get to and from the dentist*" (Marcenes *et al*., 2011).

In contrast to the picture of lower utilisation of dental services by household resident older adults, but high success if an attempt is made, managers of care services for older people report that they struggle to access both routine and emergency care for their residents. This inequity of access to services for some of the most vulnerable members of society is in direct contrast to the WHOs rights-based active ageing policy of "*optimising opportunities for health, participation and security in order to enhance quality of life as people age*" (WHO, 2002). That equitable access to dental services is a right that older people are entitled to, is a view held by older people themselves, as reported in a recent community consultation (Chideka *et al*., 2015).

The majority of the epidemiological data included in this review relates to older people who are living in residential and nursing care homes. However, there were more people receiving home care in England in 2012-13 (372,000) than were living in all communal establishments in England and Wales in the 2011 census (HSCIC, 2014). Sadly, many adults with additional support needs do not receive any formal or informal care. For example, 29% of 'frail' older people in England do not receive any help from other people (Gale *et al*., 2015). The ADHS 2009 sampling frame and the small numbers of participants over the age of 85 cannot be expected to have provided reliable estimates for this hard-to-reach sub-group. The survey of managers from the North West suggests that 'care in your home' services are less likely to have oral health assessments, policies and training in place than residential and nursing care homes. No information was available on ease of access to routine or emergency dental care for older people receiving 'care in your home' services. More information on the oral health of this vulnerable, and growing, population is therefore necessary.

Dental health has improved greatly since national population level surveys began in 1968. The proportion of all adults in England who are edentate has fallen by 22 percentage points in the last 30 years from 28% in 1978 to 6% in 2009 (HSCIC, 2011). A surprising finding was the very low prevalence of edentulousness in the London household resident survey. This may be partly explained by the high numbers of residents in those local authorities who were not born in the EU (UK ONS, 2012) perhaps leading to different dietary patterns, cultural views about treatment and health system factors. Though more people are retaining their natural teeth, there is a cohort of adults who are now 50-60 years of age, who have extensively restored teeth and complex dental treatment such as crowns, bridges and large restorations (White *et al*., 2012). This complex restorative dentistry will require maintenance in the future, which has implications for the facilities required to provide care.

In addition to increasing dental complexity, it is predicted that increasing numbers of older people will be living with multiple long-term conditions for which they are likely to be prescribed poly-pharmacy. Chronic health conditions affect 58% of people over 60, compared to 14% in those under 40 (The King's Fund, 2015b). Whilst the numbers of people with one long-term condition is expected to be relatively stable over the next ten years, the number of people with three or more long-term conditions is expected to increase from 1.9 million in 2008, to 2.9 million in 2018 (The Department of Health, 2012).

This combination of increasing complexity and risk means that the facilities of a dental surgery are much more likely to be required than in the past, when the majority of treatment involved constructing dentures. A responsive and equitable dental service for older people in all residential settings needs to include domiciliary care for preventive programmes and simple or urgent treatments, alongside access to well-equipped mobile or 'field' dental units and the availability of transport services to multi-specialist centres for more complex treatments, as part of a single care pathway.

The high caries rates observed in older people living in residential and nursing care homes calls for increased access to preventive advice and treatments such as high fluoride toothpastes and fluoride varnish. Staff in residential and nursing care homes, as well as 'care in your home' and in-patient service providers may benefit from further training on oral care, particularly recognising urgent conditions and how to access emergency dental care.

Conclusion

Existing epidemiological data in England and Wales shows that older people in residential and nursing care homes have poorer oral health than the general population and inequitable access to dental services. Little is known about the increasing proportion of older adults with care and support needs who are remaining in their own homes.

Greater comparability and utility would be gained from regional surveys if standards were agreed for this age group. This would include defining the population-sampling frame, approach to gaining consent, choice of indicators and the content of questionnaires.

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