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Gerodontology: Now and the Future

Abstract: In this the first article in a series, the discipline of Gerodontology is placed in context and the issues of what constitutes ageing, the demography of the older population, and changes in oral health are considered. Future clinical challenges to the profession and in the delivery of oral healthcare are also outlined.

Clinical Relevance: Older patients present a range of challenges for the oral healthcare practitioner.

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It is over 20 years since *Dental Update* published a series on Gerodontology.¹ The journal has decided to revisit the topic, considering demographic, systemic and oral health changes, as well as developments in treatment strategies and the delivery of care.

Unfortunately, oral care for the older patient can be seen as a burden for the practitioner as there is a perception that this population cohort is in deteriorating systemic and oral health. Furthermore, polypharmacy, increasing time spent delivering care, logistical challenges in the delivery of care and perceived compromised treatment planning combine to reinforce this negative perception.

However, in reality it is more likely that the converse applies and that working with older patients will provide a stimulating and challenging opportunity for the profession.

What is elderly?

What constitutes being elderly may be an emotive and subjective topic.

It can be viewed in different ways.

Biological

Oral health and the ability to undergo treatment can be influenced by the

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Figure 1. Patient with premature ageing due to medical status.

patient's systemic health and medication. In some circumstances, poor general health can affect not only the oral state but also the clinician's ability to deliver oral care.

The patient in Figure 1 had Paget's Disease, severe arthritis and a cardiac lesion. As a result of her conditions she was housebound, very dependent and she required antibiotic prophylaxis prior to treatment. Although chronologically she was in her early fifties, biologically her physical state was considerably older and this impacted on the delivery of her care.

Chronological

Traditionally, being elderly has been held to be synonymous with retirement age. In the United Kingdom, this is currently



Figure 2. A retired academic who is enjoying being a member of the young elderly.

65 years and social and healthcare planning is based on this threshold. The majority of people of this age are medically fit and they place little additional burden on healthcare. This cohort is known as the *young elderly*.

In general, it is usually about 10 years later that there is a physical and medical diminution in function; this cohort develop a greater number of medical conditions and are more dependent. These are the *old elderly*.



Figure 3. Premature ageing of dentition due to erosion.

Attitude

Figure 2 shows a retired academic, who is over 70 years of age. He edits an international academic journal, plays golf and has just released his second compact disc of songs. Such an individual is characteristic of the Third Age of Life, as has been described by Laslett,² which is based on life stage rather than chronological age. The majority of older people are in their Third Age; an age of personal fulfilment, without excessive limitations due to disability or illness. This age normally commences at retirement and lasts until death or the onset of the Fourth Age, which is characterized by dependence, deterioration, and eventually death.

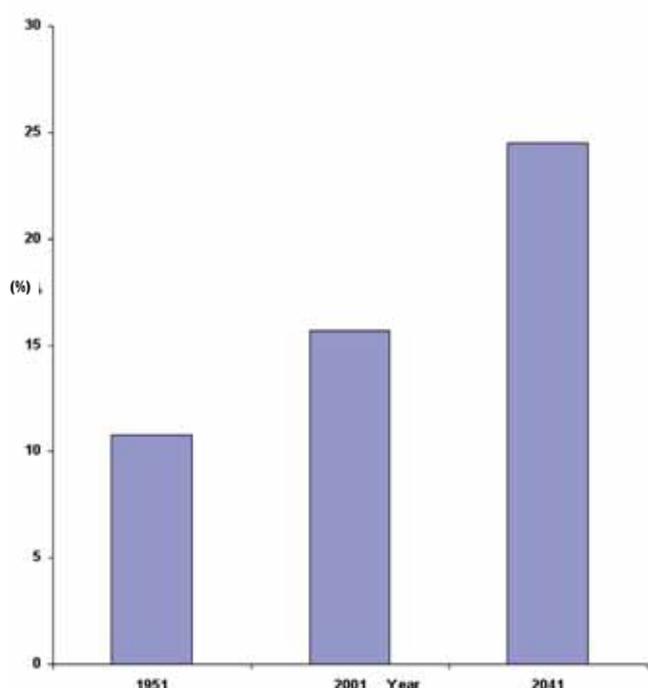


Figure 4. UK population over 65 years old (%).

Oral

Figure 3 shows a 14-year-old patient with toothwear consistent with erosion. He has lost copious amounts of enamel and dentine. The amount of dental destruction that he has suffered is far in advance of his chronological age. Conversely, some older patients may show very few signs of oral deterioration.

In truth, what is seen with our older patients is a combination of all these biological, chronological, attitudinal and oral characteristics. Each patient is a specific, individual combination of these influences and this is what serves to make delivery of care for individual older patients a unique and challenging experience.

In terms of quantifying the extent of the issue, some demographic and oral health data will be considered. While taking the foregoing considerations of what constitutes ageing into consideration, the threshold for elderly will be taken as 65 years. This is because this is the pensionable age and as such is a marker for healthcare planning.

Demographic background

The world's older population is increasing at a considerably faster rate than that of the total population. In absolute terms, the number of older people has tripled over the last 50 years and is projected to more than triple again over the next half century. Currently, the growth rate of the older population (1.9%) is significantly higher than that of the total population (1.2%) and, in the near future, the difference between the two rates is expected to become even larger as the baby boomer generation starts reaching older ages in several parts of the world.³

As the older population has grown faster than the total population, the proportion of older people relative to the rest of the population has increased considerably.

In 1950, 1 in every 20 adults was at least 65 years, by the year 2000, this had increased to 1 in every 14 and, by the year 2050, nearly 1 in every 6 is projected to be at least 65 years old. These changes in the age structure of populations will have a profound impact on a broad range of economic, health and social policies.⁴ Older people are typically more vulnerable to chronic diseases. Accordingly, increasing longevity can also result in rising medical costs and increasing demands for health services.^{5,6}

Not only are more people surviving to old age but, once there, they tend to live longer. Over the next 50 years, global life expectancy at age 65 is expected to increase from 15.3 to 18.2 years and from 7.2 to 8.8 years at age 80. Those figures indicate that the older the age group, the more remarkable are the expected relative gains in life expectancy. In the more developed regions, average life expectancy at age 80 is projected to increase by 27% over the next half century, as compared with 19% at age 60 and 9% at birth.³

The population of the elderly in the United Kingdom has increased and it is likely that it will continue to increase (Figure 4). The percentage of the older elderly, those over 75 years, is also likely to show a similar increase.⁷

Oral health

The National Diet and Nutrition Survey (1998)⁸ has demonstrated an evolution of oral health in older people, with more of the free-living population retaining their teeth (Figure 5). This change is due to a combination of changes in patient attitude towards tooth loss coupled with improvements in oral care.

The cumulative nature of the two main destructive dental diseases (caries and periodontal disease) dictate that age is always likely to be a principal factor associated with total tooth loss. According to the projections, it is unlikely that a stage will be reached where edentulousness disappears completely from the population. However, it is estimated that, by 2028, only 4% of the UK population will be edentate.⁹

Although the overall prevalence of total tooth loss has fallen sharply over recent decades, patients are now becoming edentulous at an older age, when they are generally less able to adapt to the limitations of complete dentures. Added to

this are higher expectations of dental treatment by patients and a reluctance to accept functional compromise that has long been the acknowledged consequence of total tooth loss.¹⁰

It seems that the elderly population is evolving from an edentulous to a partially dentate group. In the National Diet and Nutrition Survey, the average number of

remaining teeth in the free-living cohort was 15.5, of which only 7.4 were sound. Of the dentate population, 48% were wearing partial dentures.⁸ This raises questions about whether the edentulous spaces should be restored and, if so, how this can be accomplished. Not only will consideration have to be given to the management of the spaces, but also to how this impacts on the health of the remaining teeth and their supporting structures.

In future, older patients will present with a variety of oral conditions including caries, toothwear, pulpal pathology, periodontal diseases, aesthetic concerns and the management of missing teeth. Superimposed on these oral conditions will be systemic changes, polypharmacy and heightened patient expectations. This will place increasing demands on the dental profession; it is noteworthy that older dentate patients are much more likely to attend the dentist than edentulous patients (Figure 6).⁸



Figure 7. Partially dentate patient with Parkinson's Disease.

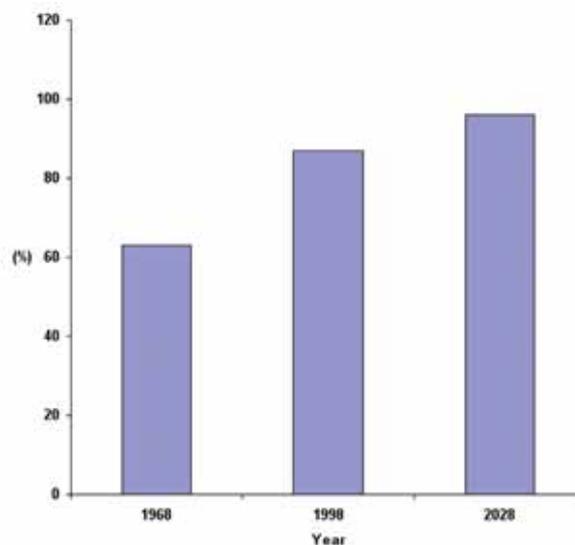


Figure 5. Dentate population in the UK (%).

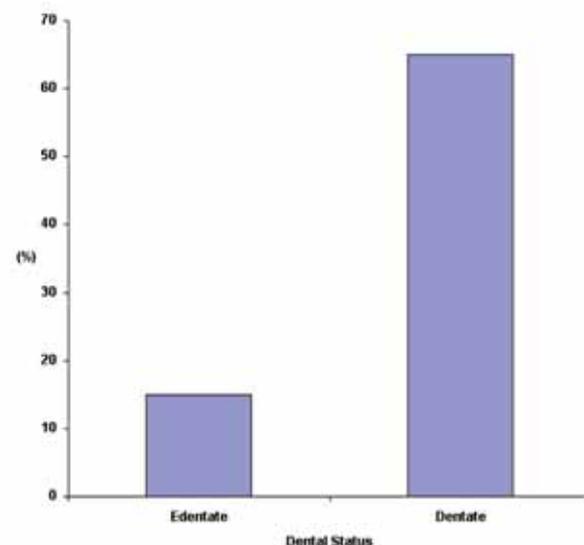


Figure 6. Dental attendance in previous twelve months (%).

While many older patients are independent and mobile, some are more dependent and may have difficulties accessing oral care. This will present a range of challenges for the delivery of oral care.^{11,12}

The patient in Figure 7 has missing teeth, evidence of toothwear and possible secondary caries. He also has Parkinson's Disease. He is typical of the clinical challenges with which clinicians are presented.

Conclusion

The elderly are a diverse population group; their numbers have increased and will continue to increase. Over the past 40 years there has been a dramatic change in the oral health of the elderly, with increasing numbers remaining dentate, and this trend is likely to continue. Furthermore, medical conditions and polypharmacy have increased the complexity of the delivery of oral care.

This presents a fresh range of issues for the dental practitioner. The following series of articles on Gerodontology will help the dental practitioner to address these stimulating challenges.

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