

BASCD 2024 Abstract #27**Forecasting dental caries and periodontal diseases
until 2050 using system dynamics***Elamin, A.,¹ Ansah, J.P.²**¹School of Human Sciences, Faculty of Education, Health and Human Sciences,
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School of Medicine, Case Western Reserve University, Cleveland, Ohio, USA***Background:**

With the United Kingdom's (UK) ageing population projected to increase, a rise in oral diseases is expected.

Objectives:

To use a multi-state population model to project the burden of dental caries and periodontal diseases among UK adult population to provide evidence to support population-level intervention evaluation.

Methods:

Based on the UK 2009 adult dental health survey (ADHS) data a system dynamics methodology was employed to develop multi-state population simulation models. Dental caries population was divided into states: no caries, treated caries, and untreated caries. Periodontal pocketing and loss of attachment (LOA) sub-models were delineated based on pocketing depth (PD) and LOA severity. PD sub-model comprised four health states: no PD, PD=4 to <6mm, PD=6 to <9mm, and PD≥9 mm. The LOA sub-model comprised: no LOA, LOA=4 to <6mm, LOA=6 to <9mm, and LOA≥9mm.

Results:

By 2050, the older adult population is projected to constitute 62.1% of individuals with carious teeth, an 89.4% increase from 2020 to 2050. The number of people with severe pocketing (PD≥9mm) is projected to increase by 56.7% from 2020 to 2050, while those with LOA are projected to increase from 18.6 million in 2020 to 20.8 million by 2050. The burden of carious teeth and periodontal diseases is expected to shift from the adult population (16-59 years) to the older adult population aged ≥60 years.

Conclusion:

These models inform future oral health demands, aiding policymakers in planning oral health capacity. The study findings are crucial given ongoing challenges in the UK's oral healthcare system. There's an urgent need for greater focus and investment, integrating oral healthcare into the broader healthcare framework to address the needs of aging populations and alleviate the economic burdens of oral diseases.

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