

Time to take oral health seriously



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Oral health has long been neglected in the global health agenda. However, in the past 3 years, increasing recognition has been placed on the global public health importance of oral diseases and the need for radical policy and system reform.^{1,2} Despite being largely preventable, oral diseases, including dental caries, periodontal disease, and oral cancers, are very common chronic conditions affecting 3.5 billion people globally. Oral diseases are progressive conditions that affect people across the life course, from early life to older age. Oral diseases have a substantial effect on quality of life, causing pain, sepsis, and disruption to daily functions, including problems with eating, speech, and social interactions.³ The costs of treating oral diseases impose a major economic burden to the individuals affected and to wider health-care systems. Oral diseases disproportionately affect poorer and marginalised groups being closely linked to socioeconomic status and the underlying social determinants of health.

In the past two decades, a considerable body of research has focused on exploring the potential association between oral health and several general health outcomes. The Global Burden of Disease Study has reported that poor oral health was one of the ten leading causes of loss of healthy longevity among older people.⁴ However, there are questions as to whether the relationship between poor oral health and general health is causal or not.⁵ Of particular concern is the possibility of residual confounding—the presence of unmeasured confounding factors that affect both oral health and general health outcomes of interest. Oral diseases certainly share a range of common risk factors with other non-communicable diseases.

In their study, Kimble and colleagues⁶ investigate the longitudinal relationships over an 8-year period between oral health and decline in physical function in participants 70 years or older from the British Regional Heart Study (BRHS) and the US Health Aging and Body Composition (Health ABC) Study. The authors report that in the BRHS, tooth loss and difficulty eating were associated with weaker grip strength, and periodontal status was associated with decline in both chair stand and gait speed. In the Health ABC Study, complete tooth loss, poor self-rated oral health, and cumulative measures of poor oral health were associated with

slower gait speed. In both cohort studies, measures of dry mouth were associated with decline in physical function. In addition, in the BRHS, changes in oral health and physical function were explored and showed that the loss of the number of teeth and deterioration in difficulty eating over the follow-up period were both associated with decline in chair stand speed.

As highlighted by the authors, the findings of this research need to be viewed with a degree of caution because observational cohort studies have limitations. For example, it is important to acknowledge the bidirectional association between oral health and physical function—people with functional limitations might struggle to adopt basic oral health behaviours, such as oral hygiene practices, and might encounter barriers in accessing dental care. Although the authors adjusted for various confounders, they did not include baseline depression in their adjustment, despite this being an important comorbidity for both oral health and physical function. Therefore, the possibility of residual confounding cannot be excluded. Exploring the potential pathways linking poor oral health with physical function is also important. The authors highlight inflammatory and nutritional pathways, but a potential social pathway could also be considered. Oral diseases negatively affect speech and social confidence, thereby affecting social interactions and social relationships, which are important determinants of health.⁷

Future research assessing the potential link between oral health and general health needs to move beyond purely observational studies with their inherent methodological weaknesses to include more innovative causal inference methods and interventional studies. For example, instrumental variable analysis studies have shown that the causal effects of tooth loss on depression and decline in instrumental activities of daily living in later life.^{8,9} Developments in causal inference methods can be used to further explore the effects of oral diseases on health. It is also important to include oral health outcomes in the methodological and analytical developments that are focusing on addressing the challenges of multimorbidity.¹⁰ Finally, as a greater proportion of people in midlife and early later life retain more of their natural teeth as they age, opportunities arise for undertaking interventional studies to assess

if maintaining and promoting good oral health in this cohort also has a beneficial effect on improving physical and social functions and wellbeing in later life.

We declare no competing interests.

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