

# Intergenerational and Social Interventions to Improve Children's Oral Health



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## KEYWORDS

- Children's oral health • Oral health equity • Dental caries • Periodontal disease
- Intergenerational interventions • Parental interventions • Social interventions
- Community-based interventions

## KEY POINTS

- Community context and the influence of the broader social determinants of health such as education, race/ethnicity, and income are important considerations in achieving oral health equity for children.
- Intergenerational influences, including caregivers' attributes, attitudes, and knowledge, may be viewed as intermediary mechanisms through which societal and community influences affect children's oral health.
- Promising social intervention approaches to improving children's oral health include improving access to fluoride in its various forms and reducing sugar consumption.
- Linking community-based dental services with settings where children live, learn, and play, such as day care centers and schools, is important for oral health promotion.
- Integrating oral health education with supervised tooth brushing with fluoridated toothpaste or professional oral care practices may prevent dental caries in children.

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## INTRODUCTION

Dental caries and gingival and periodontal diseases are the most common preventable chronic oral diseases of childhood.<sup>1</sup> Both dental caries and periodontal disease are progressive in nature and initiated early in the life course, yet both are also largely preventable.<sup>2</sup> If left untreated, however, oral health problems in children not only cause pain and suffering and lead to oral health problems in later life, they also influence growth, development, and cognitive function.<sup>1,3</sup> **Fig. 1** presents the estimated number of people affected by common diseases, with dental caries (tooth decay) affecting almost half (44%) and severe periodontitis (periodontal disease) affecting 11% of the world population in 2010.

Widespread fluoridation of community drinking water in the United States has been credited in part with the decline in dental caries achieved during the second half of the twentieth century.<sup>4</sup> Among the striking results of this community-level intervention is that tooth loss is no longer considered inevitable.<sup>4</sup> Despite documented improvements for the US population as a whole, however, dental caries and gingival and periodontal disease disproportionately affect underprivileged, disadvantaged, and socially marginalized communities, leading to oral health inequities.<sup>5,6</sup>

Therefore, treating children solely in clinical settings and focusing entirely on those at high risk for oral disease is an ineffective strategy to reach the large numbers of children at risk for oral disease worldwide.<sup>6,7</sup> Dental providers ought to be aware of interventions to prevent oral disease and promote oral health that begin with effective intergenerational and social interventions, which are the focus of this review.

## CONCEPTUAL FRAMEWORKS

Three conceptual frameworks with origins in public health scholarship are key to understanding how intergenerational and social interventions may potentially improve children's health at the individual and population levels and promote health equity. Each of these frameworks is presented next in a stylized version with accompanying descriptions and their original sources.

First, the life course approach is the study of long-term effects on chronic disease risk of physical and social exposures during gestation, childhood, adolescence, young adulthood, and later adult life.<sup>8</sup> For instance, in disadvantaged populations and underserved communities, poor nutrition, lack of preventive oral health care, violence leading to face trauma, and excessive alcohol and tobacco use may affect teeth and their supporting structures, leading to dental caries (beginning in early childhood), periodontal disease (especially in adults), and eventually tooth loss (particularly in older adults).<sup>9</sup> **Fig. 2** presents a simplified version of the developing dentition over the life course, along with health behaviors at critical periods that foster healthy teeth.

Second, socio-ecological approaches recognize the multidimensional and multi-level influences on children's oral health. Adapting the concentric oval design from the report, *Shaping a Health Statistics Vision for the 21st Century* by the National Committee on Vital and Health Statistics,<sup>10</sup> Fisher-Owens and colleagues<sup>11</sup> identified domains of determinants of oral health at 3 levels of influence: the child level, the family level, and the community level. A stylized version of this socio-ecological model, which emphasizes that tooth decay (dental caries) is a multifactorial disease that develops over time, is presented as **Fig. 3**.

The third conceptual framework is derived in part from a health promotion model that considers dynamic social processes through which social and environmental inequalities—and associated health disparities—are produced, reproduced, and potentially transformed.<sup>12</sup> Patrick and colleagues<sup>13</sup> drew upon this model as well as the life

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