care is classified as a mandated marketplace offering rather than a mandated covered service. Directive legislation is likely to be required to achieve further expansion of IOH in the private sector. Optimistically, IOH may benefit from the movement by public funding sources to pay for performance, episodes of care, and a desire to achieve cost reductions and provide better patient experiences.

Casamassimo PS, Hammersmith K, Gross EL, et al: Infant oral health: An emerging dental public health measure. *Dent Clin N Am* 62:235-244, 2018

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PERIODONTAL DISEASE

Prevalence of periodontitis in US adults

BACKGROUND

A surveillance project to determine the prevalence of periodontitis among adults in the United States was undertaken by the Centers for Disease Control and Prevention and the American Academy of Periodontology (AAP). The CDC/AAP Workgroup formed to conduct this project created periodontitis case definitions based on a full-mouth periodontal examination (FMPE) to ensure the consistency of the definitions. The data were collected in the National Health and Nutrition Examination Survey beginning in 2009 and ending in 2014. The final estimates of periodontitis prevalence among US adults were reported.

METHODS

The 10,683 subjects were dentate adults age 30 years or older from the civilian noninstitutionalized population. Their periodontitis status was evaluated by performing a FMPE at 6 sites per tooth on all teeth except third molars. The analysis included severity of disease related to minimum clinical attachment loss (CAL) and periodontal probing depth (PPD).

RESULTS

The mean age of the population examined periodontally was 50.8 years. About 17% were current smokers, and 9.6% self-reported having diabetes. The mean number of teeth present was 24, with 34.6% of the subjects having a complete 28-tooth dentition. Over half of the sample reported they had visited a dentist in the past 6 months, and 72% reported they used dental floss in the previous 7 days.

Total periodontitis percentage was 42.2%. Of these individuals, 7.8% had severe periodontitis and 34.4% had nonsevere periodontitis, defined as mild or moderate. The prevalence of nonsevere and total (but not severe) periodontitis increased with age. The highest prevalence of periodontitis was found among men, Mexican Americans, adults below 100% of the federal poverty level, current smokers, and those who had reported having diabetes. Prevalence increased with an increased number of missing teeth but did not increase with increasing body mass index (BMI).

Subgroups of individuals who were associated with dental health−related behaviors were evaluated. The prevalence of total periodontitis was highest among adults who didn't use dental floss regularly and increased with increasing duration since the last dental visit. For those who had not seen a dentist within the past year, the prevalence was 54.8%.

A considerable increase in the prevalence of total and moderate periodontitis was seen with increasing age (Figure 1). The prevalence of severe periodontitis remained generally at 15% or less. Ten percent or fewer of adults age 30 to 80 years had mild periodontitis. Age groups were also compared. A comparison of those age 30 through 44 years and those age 65 years or older yielded a prevalence of severe periodontitis that was more than 3-fold higher among Mexican Americans, non-Hispanic blacks, and current smokers. Similar differences, although at a lower prevalence, were shown for nonsmokers. The highest prevalence across all age groups for total periodontitis was consistently found in adults age 65 years or older. The highest prevalence in these comparisons was found for Mexican Americans, non-Hispanic blacks, persons reporting 'other race including multiracial', current smokers, and people who were missing 6 to 27 teeth.

CAL AND PPD ANALYSIS

The mean population CAL was 1.7 mm and increased with increasing age. Approximately 89% of the subjects had 1 or more sites with a CAL of 3 mm or greater. The prevalence of adults with CAL of 3 mm or greater did not vary significantly with age, but the number of sites and teeth per person did.

The prevalence of more severe CAL values was consistently higher in men, Mexican Americans, and non-Hispanic blacks,

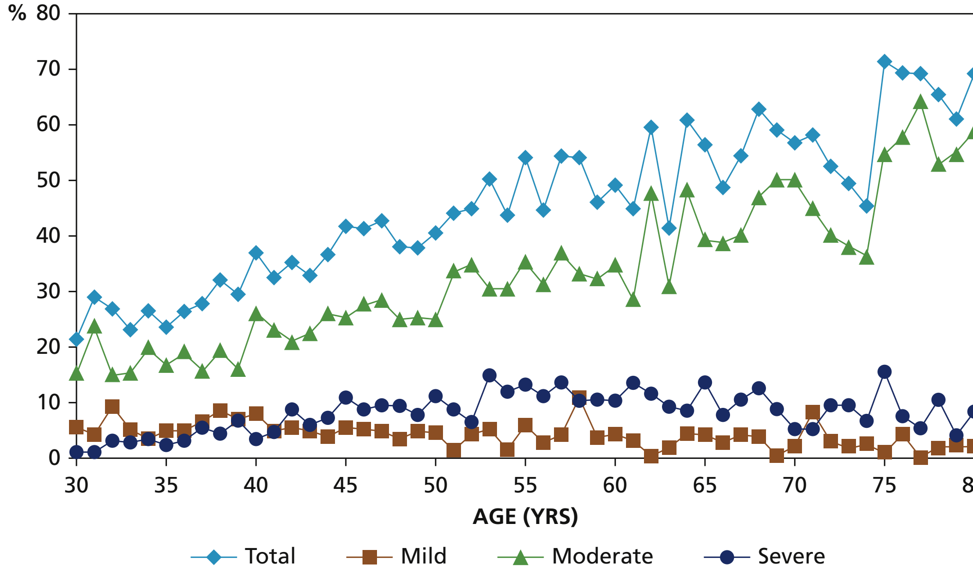

Figure 1. Prevalence of periodontitis classified by the CDC/AAP (Centers for Disease Control and Prevention/American Academy of Periodontology) case definitions according to age among dentate adults 30 years or older: total (mild, moderate, or severe; aqua), mild (brown), moderate (green), and severe (dark blue) periodontitis—National Health and Nutrition Examination Survey 2009-2014 (N = 10,683). (Courtesy of Eke PI, Thornton-Evans GO, Wei L, et al: Periodontitis in US adults: National Health and Nutrition Examination Survey 2009-2014. *J Am Dent Assoc* 149:576-588, 2018.)

with the greatest prevalence found in the oldest age group, current smokers, adults below 100% of the federal poverty level, adults who reported having diabetes, and those missing 6 to 27 teeth. More than 50% of these groups had CAL of 5 mm or greater and more than 20% had CAL of 7 mm or greater. BMI was not associated with any increase in the prevalence of CAL at either level. Just 11.2% of the population did not have any CAL of 3 mm or greater, and two thirds did not have any CAL of 5 mm or greater.

PPD prevalence was consistently higher in men, Mexican Americans, and non-Hispanic blacks. Current smokers, adults below 100% of the federal poverty level, those reporting they had diabetes, and those who did not use dental floss regularly had the highest prevalence of PPD. Increased prevalence was noted with increasing number of teeth missing, length of time since the last dental visit, and increasing BMI. Low socioeconomic groups and smokers had the greatest prevalence. No PPD of 4 mm or greater characterized 62.5% of the sample; 82.5% had no PPD of 5 mm or greater; and 91.4% had no PPD of 6 mm or greater.

DISCUSSION

The prevalence of periodontitis among adults in the United States was found to be high, especially in certain racial/ethnic groups and those who practiced unhealthy behaviors or had comorbid conditions. Severe, moderate, or mild periodontitis was found to affect 42% of US adults, with 7.8% having severe periodontitis. In addition, over half of the participants had CAL of 3 mm or greater at 5% or more of the sites, which affected a mean of 37% of the teeth tested. Fifteen percent had 5% or more sites and 29.3% of their teeth with a PPD of 4 mm or greater. Often the groups that had less healthy oral conditions reported some modifiable behavior, such as smoking, not using dental floss regularly, or not visiting the dentist regularly. Increasing age was seen to accompany an increased prevalence of total periodontitis.

Clinical Significance

Dentists need to be aware that periodontitis is highly prevalent among the adult population of the United States. In addition, they need to make their patients aware of the problem and guide them to healthier lifestyle choices in many cases. Public health advocates should plan activities to increase awareness of the problem and to foster preventive actions. Dentists will need to institute management plans, counseling programs, and referrals as appropriate.

Eke PI, Thornton-Evans GO, Wei L, et al: Periodontitis in US adults: National Health and Nutrition Examination Survey 2009-2014. *J Am Dent Assoc* 149:576-588, 2018

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