



Periodontal disease prevalence in the United States: a paradigm shift towards the worse?

Until recently, our knowledge of the prevalence of periodontal disease in the United States gave us an optimistic approach. Many Americans have very good oral health.¹ They generally have a high level of access to dental care compared with their counterparts living in many developing countries in the world.

Using the data from National Health and Nutrition Examination Survey [NHANES III] and NHANES 1999–2004, Dye et al² in 2007 evaluated the 15-year trend in oral health status in the United States and reported a great decline in the prevalence of periodontitis over that period. The recent epidemiological study on periodontal status derived from the 2009–2010 cycle of NHANES published from the Centers for Disease Control and Prevention (CDC)³ is the first nationally surveyed probability sample that utilized a full-mouth examination protocol as opposed to the random half mouth, “two sites per tooth” examination methodology that was used in prior NHANES studies. The results of this study were stunning. Over 47% of the sample (N = 3,742, aged 30 years and above), representing approximately 64.7 million adults, had periodontitis (mild, moderate, or severe). For ages 65 years and older, 64% of the sampled population had either moderate or severe periodontitis. These figures are astounding. The study also reported that the prevalence of periodontitis was highest in the following groups in their sample: men, Mexican Americans, adults with less than high school education, adults who fell below 100% federal poverty levels, and current smokers. While some of the above associations like “smoking” were known to be serious risk factors for promotion of periodontal disease, the overall prevalence of this magnitude was unforeseen. The research work also confirmed the existence of substantial disparities of periodontitis preva-

lence among certain racial/ethnic groups. The socioeconomic state of the population also emerged as one of the prime predisposing factors for high prevalence of periodontitis. The methodological variation undertaken in the recent NHANES study from the prior NHANES periodontal studies was the introduction of the “six sites per tooth on all remaining teeth” pattern of examination. This examination method perhaps led to more accurate sampling of the data, increased reliability, and less chance for underestimation of the morbidity.

The current state of the prevalence of periodontal disease among the adult population in the United States represents the highest burden ever documented in the literature for this population group.

Would the higher-than-expected prevalence of periodontitis reflect the blurred distinction between periodontal health and disease? What would be a reasonable justification for the increased prevalence of periodontitis? In fact, Papapanou⁴ discussed this very facet in a recent editorial and wondered if the lack of a universally accepted definition of periodontitis led to the blur in the first place. Papapanou⁴ added that since 70% of the US adults aged 65 and older had some form of periodontitis, according to the CDC/AAP (American Academy of Periodontology) definition,⁵ and that 86% and 45% of them respectively showed attachment loss of >4 mm and >6 mm, one would wonder if the “norms” change as the age advances? There are more unanswered questions now than ever and perhaps future research in periodontology could be aimed at a universally acceptable definition of periodontitis so that it forms a solid basis for all future research in this field, eliminates the ambiguities in the delineation of health versus disease, and perhaps gives us more

accurate data on the more realistic prevalence of periodontal disease among the population.

The traditional diagnosis of periodontal disease is “based on the presence and extent of gingival inflammation, frequently measured as bleeding on probing, pocket depth, and clinical attachment loss, and the pattern and extent of alveolar bone loss assessed radiographically.”⁴ Researchers Page and Eke noted that case definitions of periodontitis that are used in population-based surveillance of periodontitis now rely to a lesser extent on the radiographic evidence of alveolar bone loss.⁵ Since we are aware that public health policy frameworks depend on the population-based surveillance studies to identify interventional measures, should the current case definitions for use in the population-based surveillance of periodontitis be revisited and perhaps revised? The ramifications for future research could be grave if we do not bolster the argument.

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