

Java project on periodontal diseases: causes of tooth loss in a cohort of untreated individuals

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Abstract

Objective: To assess the relative contribution of caries and periodontal disease to tooth loss over 24 years in a cohort deprived of regular dental care.

Material & Methods: The study population consisted of 98 subjects from a tea estate on West Java, Indonesia, that had been part of a prospective longitudinal study and provided full datasets of clinical assessments between 1987, 1994 and 2002. In 2011, complete sets of dental radiographs were made which was combined with the survey forms and clinical slides from the previous assessments in order to estimate reasons for tooth loss.

Results: Thirty-seven subjects lost no teeth, whereas 61 subjects lost 185 teeth. In this group, 45.9% lost ≤ 2 teeth, 32.8% lost 3 to 4 teeth and 19.7% lost ≥ 5 teeth. The majority of teeth were lost due to caries. In five subjects, tooth loss could be attributed solely to periodontitis, whereas in four subjects teeth were lost due to both caries and periodontitis. Analyses of the predictor variables age, gender, smoking, education, presence of caries and severe periodontitis showed that male gender and caries were significantly associated with tooth loss.

Conclusion: The majority of teeth in this population were lost due to caries.

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Tooth loss impairs aesthetics and chewing function and as a consequence has a negative effect on the quality of life (Gerritsen et al. 2010). Cross-sectional epidemiological

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studies identified, in addition to caries and periodontal disease, a number of risk indicators for tooth loss, e.g. smoking (Mai et al. 2013), education level (Urzua et al. 2012) and socioeconomic status (Wennström et al. 2013). However, tooth survival has been related to frequent supportive periodontal therapy (Saminsky et al. 2015). In most cases, teeth are not spontaneously lost but extracted by dentists or physicians for reasons of pain, caries, periodontal disease, endodontic complications or as part of orthodontic and prosthodontic treatments. In general, caries and periodontal disease are regarded as

the main reasons for tooth loss although the relative contribution of these two diseases varies between studies. In this respect, numerous studies have been carried out all over the world. Many studies concluded that caries is the main reason for tooth extraction (Corbet & Davies 1991, Hull et al. 1997, Chestnutt et al. 2000, McCaul et al. 2001, Jovino-Silveira et al. 2005, Chrysanthakopoulos 2011, Jafarian & Etebarian 2013, Lee et al. 2015). However, several other studies showed the opposite, where periodontal disease was found to be the main reason for tooth extraction