



# **Smoking and Periodontal Disease in Vietnamese Middle-Aged Population.**

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## ABSTRACT

Current understanding of periodontal disease derives from studies mostly conducted in developed countries. However, the disease process among those studied populations may be confounded by the professional dental care. There have been few attempts to investigate factors related to the disease among populations of developing countries where the natural history of the disease is minimally confounded by care. This imbalance is evident in risk assessment research on the associations between periodontal disease and smoking-one of the most significant risk factors for the disease. Also, most studies on smoking used convenience or purposive samples, which may bias the findings. Therefore, there is a need for research conducted among a representative sample of a developing country.

The present study aimed to describe the prevalence, extent and severity of chronic adult periodontitis among representative Vietnamese middle-aged adults. Also, it aimed to investigate smoking, which is highly prevalent in Vietnam, as a risk indicator for periodontal disease in a population with minimal access to dental care.

The study was designed as a cross-sectional population-based study with a multistage, stratified random sample with probability of selection proportional to population size. The US National Institute of Dental Research (NIDR) protocol was used to assess loss of periodontal attachment among 575 dentate subjects in two randomly selected provinces. Assessment was made at mesial and buccal sites of every present tooth, excluding third molars. A parallel social survey collected socio-demographic information and smoking history, which were assessed for possible association with the disease status.

Periodontal disease was highly prevalent among the sample. The patterns of the disease were similar to those reported from other populations. Virtually all subjects expressed some levels of disease, whereas only a few subjects or sites had severe disease.

Bivariate analyses revealed significant associations between smoking and lower socio-economic status with more severe expression of the disease. Smoking was consistently associated with poorer periodontal status irrespective of outcome measure investigated. Multivariate models showed that smoking was the most predictive factor for the disease. The Odds Ratio of having severe periodontitis (that is, having 2+sites with loss of attachment more than or equal to 5 mm and 1+sites with pocket depth more than or equal to 4 mm) was 7.93 for heavy smokers compared to non-smokers. A dose-response effect of the association between smoking and the outcomes of the disease was also evident.

The study provided a picture of the periodontal status of the representative sample from Vietnamese middle-aged adult population where the disease was less confounded by dental care. Furthermore, the study contributes *consistency, strength and dose-response effect* to the association of smoking as a risk indicator for periodontal destruction. The study should be used to assist the public health agencies in planning appropriate policies for Vietnam to address smoking and periodontal disease.

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