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Kanaan, M.^a, Brabant, A.^a, Eckert, G.J.^b, Hara, A.T.^c, Carvalho, J.C.^a

Non-Biological and Biological Risk Indicators for Tooth Wear Outcomes in Adults

(2022) *Caries Research*, 56 (4), pp. 407-418. Cited 2 times.

DOI: 10.1159/000527091

^a Faculty of Medicine and Dentistry, UCLouvain, Brussels, Belgium

^b Department of Biostatistics, Indiana University School of Medicine, Indianapolis, IN, United States

^c Department of Cariology, Operative Dentistry and Dental Public Health, Indiana University School of Dentistry, Indianapolis, IN, United States

Abstract

This study was undertaken to estimate the prevalence and severity of tooth wear (TW), as well as to assess non-biological and biological risk indicators for TW outcomes in adults. A cross-sectional study, adhering to the reporting STROBE guidelines, was conducted and had a convenience sample of adults ≥ 18 years of age who had at least one bilateral posterior molar contact. A total of 570 participants, seeking consultation at the University Hospital in Brussels, Belgium, were allocated to three age groups: 18-34 years ($n = 232$), 35-54 years ($n = 256$), and ≥ 55 years old ($n = 79$). Participants answered a self-applied questionnaire regarding sociodemographics, oral hygiene, and lifestyle behavior. The questionnaire was tested-retested (intraclass correlation coefficient = 0.71). Inter-examiner reliability for clinical examinations was $k = 0.76-0.80$. The prevalence of TW was 75% (95% CI: 71.7-78.9). Out of these patients, 42% (95% CI: 38.0-46.3) had as the primary etiological factor the process of dental erosion, while 22% (95% CI: 18.9-25.9) and 11% (95% CI: 8.6-13.9) had the processes of dental attrition and dental abrasion, respectively. The severity of TW according to BEWE highest score was mild in 31%, moderate in 28%, and severe in 17% of participants. The hierarchical logistic regression model for the association between risk indicators and TW irrespective of the etiology was significant for age ($>35-54$ years: OR = 2.35 and ≥ 55 years: OR = 3.89; $p < 0.001$), gender ($>male$: OR = 2.03; $p < 0.001$), toothpaste ($>sensitive$ teeth: OR = 2.34; $p = 0.005$), occlusal splint ($>yes$: OR = 1.62; $p = 0.03$), and acidic beverages ($\geq once$ per day: OR = 1.62; $p = 0.044$). Consumption of acidic beverages was not associated with TW having as the primary etiological factor the process of dental attrition or dental abrasion, while it was significantly associated with the process of dental erosion ($>once$ per week: OR = 1.69; $p = 0.043$ and $\geq once$ per day: OR = 1.73; $p = 0.016$). Medical conditions were equally associated with the latter (OR = 3.11; $p < 0.001$). These findings could contribute to improving the effectiveness and sustainability of awareness in contemporary adult populations. In conclusion, the prevalence and severity of TW in adults were substantial. Medical conditions and consumption of acidic beverages were risk indicators for TW having as the primary etiological factor the process of dental erosion, although associations were moderate and weak, respectively. © 2022

Author Keywords

Adults; Dental abrasion; Dental attrition; Dental erosion; Prevalence; Risk indicators; Tooth wear

Index Keywords

adolescent, adult, cross-sectional study, human, male, middle aged, reproducibility, tooth disease, young adult; Adolescent, Adult, Cross-Sectional Studies, Humans, Male, Middle Aged, Reproducibility of Results, Tooth Abrasion, Tooth Attrition, Tooth Erosion, Tooth Wear, Young Adult

Correspondence Address

Carvalho J.C.; Faculty of Medicine and Dentistry, Belgium; email: joana.carvalho@uclouvain.be

Publisher: S. Karger AG

ISSN: 00086568

CODEN: CAREB

PubMed ID: 36116437

Language of Original Document: English

Abbreviated Source Title: Caries Res.

2-s2.0-85143198756

Document Type: Article

Publication Stage: Final

Source: Scopus