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Review Article

Impact of Dental Wear on Oral Health-Related Quality of Life among Adults: A Narrative Review

Julio César Flores Preciado[1]*, Ana Luisa Rentería Campos[1], Bryan Gerardo Rodriguez Mendoza[1], Keila Caro Méndez[1]

[1]Faculty of Dentistry Mexicali, Autonomous University of Baja California, Mexicali, Baja California, Mexico

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Abstract: ***Background:*** Dental wear is a multifactorial condition characterized by the progressive and irreversible loss of dental hard tissues due to attrition, abrasion, erosion, or a combination of these processes. Although commonly associated with aging, increasing evidence suggests that dental wear may have important consequences beyond structural tooth loss, affecting oral function, aesthetics, and overall well-being. ***Objective***: To review the available scientific evidence regarding the relationship between dental wear and oral health-related quality of life (OHRQoL) among adult populations and to discuss its clinical implications for patient-centered dental care. ***Review Findings***: Current evidence indicates that dental wear may negatively influence multiple dimensions of oral health-related quality of life. Functional limitations, dentin hypersensitivity, masticatory difficulties, aesthetic concerns, and psychological discomfort have been identified as factors that may affect patients' perceptions of oral health and well-being. Patient-reported outcome measures, particularly the Oral Health Impact Profile (OHIP), have become valuable tools for assessing the broader impact of dental wear beyond traditional clinical indicators. ***Conclusion***: Dental wear should be recognized not only as a clinical condition involving the loss of dental tissues but also as a factor that may influence quality of life. The incorporation of patient-centered assessments into routine dental practice may contribute to a more comprehensive understanding of the impact of dental wear and support preventive and therapeutic strategies aimed at improving oral health outcomes and overall well-being.

Keywords: Dental Wear, Tooth Wear, Oral Health-Related Quality of Life, OHIP, Adult Patients, Patient-Centered Care.

1. INTRODUCTION

Dental wear is a multifactorial condition characterized by the irreversible loss of dental hard tissues that is not caused by dental caries or trauma. It results from the interaction of physical, chemical, and mechanical processes, including attrition, abrasion, and erosion, which may occur independently or simultaneously. Although a certain degree of tooth wear is considered a physiological consequence of aging, excessive wear may compromise oral health and require clinical intervention [1].

In recent years, dental wear has become an increasingly relevant topic in clinical dentistry due to changes in lifestyle, dietary habits, longer life expectancy, and greater retention of natural dentition. Studies have reported a growing prevalence of tooth wear among adult populations, making it an important public health concern. Severe wear may lead to dentin exposure, hypersensitivity, loss of occlusal anatomy, reduced masticatory efficiency, and aesthetic alterations that can negatively affect patients' daily lives [2].

Beyond its clinical manifestations, dental wear may have significant consequences for patients' physical, psychological, and social well-being. Difficulties in chewing, dental sensitivity, dissatisfaction with appearance, and concerns regarding oral function may influence an individual's perception of health and quality of life. Consequently, contemporary dentistry increasingly recognizes the importance of evaluating patient-reported outcomes in addition to traditional clinical indicators [3].

Oral health-related quality of life (OHRQoL) is a multidimensional concept that reflects the impact of

***Corresponding Author:** Julio César Flores Preciado
Faculty of Dentistry Mexicali, Autonomous University of Baja California, Mexicali, Baja California, Mexico

oral conditions on daily functioning, emotional well-being, social interactions, and overall life satisfaction. It has become an essential component of patient-centered care and an important outcome measure in oral health research. Among the available instruments, the Oral Health Impact Profile (OHIP) is one of the most widely used and validated tools for assessing the influence of oral conditions on quality of life [4].

Although numerous studies have investigated the prevalence, etiology, and clinical characteristics of dental wear, growing attention has been directed toward understanding its impact on oral health-related quality of life. Evaluating this relationship may provide valuable information for improving clinical decision-making, identifying patient needs, and promoting more comprehensive approaches to oral healthcare.

Therefore, the aim of this narrative review is to examine the available scientific evidence regarding the relationship between dental wear and oral health-related quality of life and to discuss its clinical implications for patient-centered dental care.

2. Dental Wear: Definition and Etiology

Dental wear is defined as the irreversible loss of dental hard tissues that is not caused by dental caries, trauma, or developmental disorders. It is considered a multifactorial condition resulting from the interaction of mechanical and chemical processes that progressively affect the enamel and dentin throughout an individual's lifetime [1]. While a certain degree of wear is regarded as a physiological consequence of aging, excessive tooth wear may compromise oral health and require preventive or restorative intervention.

Traditionally, dental wear has been classified into three principal categories: attrition, abrasion, and erosion. Attrition refers to the loss of tooth structure caused by tooth-to-tooth contact during mastication or parafunctional activities such as bruxism. Abrasion is associated with mechanical wear produced by external factors, including aggressive toothbrushing techniques, abrasive dentifrices, or the use of oral hygiene devices. Erosion, in contrast, results from chemical dissolution of dental tissues caused by exposure to acids of intrinsic origin, such as gastric reflux, or extrinsic origin, including acidic foods and beverages [1, 2].

The etiology of dental wear is complex because multiple factors often act simultaneously. Biological factors, including saliva composition, tooth morphology, and enamel characteristics, may influence susceptibility to wear. Behavioral factors such as dietary habits, oral hygiene practices, and parafunctional activities also play an important role. In addition, environmental and occupational exposures may contribute to the development and progression of tooth wear in certain populations [2].

The increasing prevalence of dental wear has generated growing concern among oral health professionals. Modern lifestyles, increased consumption of acidic beverages, longer retention of natural teeth, and higher awareness of oral health have contributed to the recognition of tooth wear as an important clinical condition. As a result, the early identification of risk factors and the implementation of preventive measures have become essential components of contemporary dental practice.

Because dental wear often progresses gradually and may remain asymptomatic during its early stages, regular clinical assessment is important for detecting changes in tooth structure before significant functional or aesthetic complications occur. Understanding the mechanisms and causes of dental wear is fundamental for developing appropriate preventive, diagnostic, and therapeutic strategies aimed at preserving oral health and improving patient outcomes.

3. Clinical Consequences of Dental Wear

The clinical consequences of dental wear vary according to its severity, progression, and the individual's susceptibility. While mild wear may be considered a normal physiological process associated with aging, excessive tooth wear can lead to significant structural, functional, and aesthetic alterations that may compromise oral health and quality of life [2].

One of the most common consequences of advanced dental wear is the loss of enamel and subsequent exposure of dentin. This process frequently results in dentin hypersensitivity, characterized by short and sharp pain in response to thermal, chemical, tactile, or osmotic stimuli. Dentin hypersensitivity may interfere with eating, drinking, and oral hygiene practices, affecting patients' comfort and daily activities [1].

As dental wear progresses, alterations in tooth morphology and occlusal anatomy may occur. The flattening of occlusal surfaces, reduction of cusp height, and loss of incisal edges can negatively affect masticatory efficiency and oral function. In severe cases, extensive tooth structure loss may contribute to changes in occlusion and vertical dimension, potentially increasing the complexity of dental rehabilitation [2].

Aesthetic concerns also represent an important consequence of dental wear. Changes in tooth shape, shortening of anterior teeth, discoloration due to dentin exposure, and irregular tooth surfaces may negatively influence smile appearance and facial aesthetics. These alterations can affect patients' self-confidence and satisfaction with their oral health, particularly when anterior teeth are involved.

Beyond the physical manifestations, dental wear may have psychological and social implications. Individuals experiencing sensitivity, functional

limitations, or dissatisfaction with dental appearance may report discomfort in social interactions, reduced self-esteem, and concerns regarding their oral condition. Such effects highlight the importance of considering both clinical and patient-reported outcomes when evaluating the impact of dental wear.

Given its multifactorial nature and potential consequences, early diagnosis and preventive management are essential for minimizing the progression of dental wear and preserving oral function, aesthetics, and overall oral health. Comprehensive clinical assessment plays a critical role in identifying risk factors and implementing individualized treatment strategies that address both the biological and psychosocial aspects of the condition.

4. Oral Health-Related Quality of Life

Oral health-related quality of life (OHRQoL) is a multidimensional concept that describes how oral health conditions affect an individual's daily functioning, psychological well-being, social interactions, and overall quality of life. In recent decades, OHRQoL has become an important outcome measure in dental research because it provides information regarding the patient's perception of oral health and its impact on everyday activities [3].

Traditionally, oral health assessments have relied primarily on clinical indicators such as disease prevalence, severity, and treatment needs. However, clinical findings alone may not fully reflect the burden experienced by patients. Two individuals presenting similar oral conditions may perceive and respond to those conditions differently depending on personal, social, cultural, and psychological factors. Consequently, patient-reported outcomes have gained increasing importance in contemporary dentistry [3].

The incorporation of OHRQoL measures into clinical practice supports a patient-centered approach to care. This perspective recognizes that successful treatment outcomes should not be evaluated solely by clinical improvement but also by their ability to enhance patients' comfort, function, appearance, and overall well-being. Understanding how oral conditions affect daily life may contribute to more individualized treatment planning and improved healthcare delivery.

Among the available instruments for assessing oral health-related quality of life, the Oral Health Impact Profile (OHIP) is one of the most widely used and validated questionnaires worldwide. Developed by Slade and Spencer, the OHIP was designed to measure the social impact of oral disorders and has been applied extensively in both clinical and epidemiological studies [4]. The original OHIP-49 evaluates seven dimensions: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap.

The use of OHRQoL instruments has expanded considerably in studies investigating chronic oral conditions, including dental wear, tooth loss, temporomandibular disorders, periodontal disease, and oral rehabilitation. These instruments provide valuable information regarding the broader consequences of oral diseases and facilitate the evaluation of treatment outcomes from the patient's perspective.

As dentistry continues to evolve toward more holistic and patient-centered models of care, the assessment of oral health-related quality of life has become an essential component of both clinical practice and research. Evaluating patient experiences alongside traditional clinical indicators may contribute to a more comprehensive understanding of oral health and its impact on overall well-being.

5. Impact of Dental Wear on Oral Health-Related Quality of Life

5.1. Functional Impact

Dental wear may affect several aspects of oral function, particularly when tooth structure loss becomes extensive. The progressive reduction of enamel and dentin may alter occlusal morphology, compromise masticatory efficiency, and increase dentin hypersensitivity. These changes may interfere with essential daily activities such as eating and drinking, particularly when patients experience discomfort associated with thermal, chemical, or mechanical stimuli [1].

Functional limitations resulting from severe dental wear may also influence speech and oral comfort. As a result, affected individuals may perceive a reduction in their ability to perform routine activities, which can negatively affect their overall quality of life. The assessment of these functional consequences has become increasingly important within patient-centered models of oral healthcare.

5.2. Psychological Impact

The psychological consequences of dental wear should not be underestimated. Alterations in tooth shape, size, and appearance may negatively affect patients' self-perception and satisfaction with their smile. Individuals presenting visible signs of wear, particularly in anterior teeth, may experience concerns regarding aesthetics, attractiveness, and aging.

These perceptions may contribute to feelings of embarrassment, reduced self-confidence, and psychological discomfort. Studies evaluating oral health-related quality of life have shown that oral conditions affecting appearance frequently influence emotional well-being and patient satisfaction, highlighting the importance of considering psychological outcomes when assessing the impact of dental wear [3,4].

5.3. Social Impact

In addition to functional and psychological consequences, dental wear may affect social interactions and interpersonal relationships. Individuals who experience dissatisfaction with dental appearance or discomfort during speaking and eating may become more self-conscious in social situations. Such concerns may reduce participation in social activities and negatively influence social confidence.

The social dimensions of oral health-related quality of life are increasingly recognized as important indicators of overall well-being. Consequently, evaluating the social impact of dental wear may contribute to a more comprehensive understanding of the burden associated with this condition.

5.4. Evidence from Previous Studies

Current evidence suggests that oral conditions involving pain, functional limitations, and aesthetic concerns are associated with poorer oral health-related quality of life. Although the relationship between dental wear and quality of life has received less attention than other oral conditions, available studies indicate that severe tooth wear may negatively affect patient-reported outcomes, particularly in domains related to physical discomfort, psychological well-being, and social functioning.

The growing use of instruments such as the Oral Health Impact Profile (OHIP) has facilitated the evaluation of these associations and has reinforced the importance of integrating patient perceptions into clinical decision-making. Understanding how dental wear affects quality of life may help clinicians identify treatment priorities, improve communication with patients, and develop more comprehensive management strategies.

Overall, the available evidence supports the view that dental wear should be considered not only a structural dental condition but also a potential determinant of oral health-related quality of life. Future research is needed to further clarify the magnitude of this relationship and to identify factors that may influence patient experiences and outcomes.

The available evidence suggests that dental wear may influence multiple dimensions of oral health-related quality of life. The principal consequences described in the literature are summarized in Table 1.

Table 1: Main consequences of dental wear and their potential impact on oral health-related quality of life

Domain	Potential Consequences
Functional	Reduced masticatory efficiency, dentin hypersensitivity, discomfort during eating and drinking
Aesthetic	Changes in tooth shape, shortening of teeth, enamel loss, dentin exposure
Psychological	Reduced self-confidence, dissatisfaction with smile appearance, emotional discomfort
Social	Impaired social interactions, concerns regarding appearance, reduced social confidence
Quality of Life	Negative effects on daily activities, well-being, and patient satisfaction

6. Clinical Implications

The evidence reviewed suggests that dental wear should be considered a relevant oral health condition with potential consequences that extend beyond the loss of dental tissues. Its impact on oral function, aesthetics, psychological well-being, and social interactions highlights the importance of adopting a comprehensive approach to patient assessment and management.

Early identification of dental wear is essential for preventing disease progression and minimizing its long-term consequences. Routine clinical examinations should include the assessment of tooth wear patterns and the identification of potential etiological factors such as dietary habits, parafunctional activities, and medical conditions associated with acid exposure.

In addition to traditional clinical evaluation, the incorporation of oral health-related quality of life measures may provide valuable information regarding the patient's perception of their oral condition. Instruments such as the Oral Health Impact Profile (OHIP) can help clinicians better understand the functional, psychological, and social effects of dental wear, facilitating more individualized and patient-centered treatment planning.

Preventive strategies, including patient education, dietary counseling, behavior modification, and early therapeutic interventions, may contribute to reducing the progression of dental wear and preserving oral health. Furthermore, interdisciplinary collaboration among dental professionals may enhance the management of complex cases requiring comprehensive rehabilitation.

Overall, the integration of clinical findings and patient-reported outcomes may improve decision-making processes and contribute to more effective approaches for the prevention and management of dental wear in adult populations.

7. CONCLUSION

Dental wear is a multifactorial and increasingly prevalent oral condition that may affect individuals beyond the loss of dental hard tissues. The available evidence suggests that its consequences can extend to functional, aesthetic, psychological, and social domains, potentially influencing oral health-related quality of life.

The assessment of oral health-related quality of life has emerged as an important component of contemporary dentistry, providing valuable information regarding how patients perceive and experience oral conditions in their daily lives. Instruments such as the Oral Health Impact Profile have contributed to a better understanding of the broader effects of oral disorders and have supported the adoption of more patient-centered approaches to care.

The evidence reviewed in this article highlights the importance of recognizing dental wear as a condition that may have meaningful implications for patient well-being. Early identification of risk factors, comprehensive clinical assessment, and the incorporation of patient-reported outcomes may contribute to improved diagnosis, prevention, and management strategies.

Future research should continue to explore the relationship between dental wear severity and oral health-related quality of life in different populations and clinical settings. A better understanding of these associations may support the development of preventive interventions and treatment approaches aimed at preserving oral health, improving quality of life, and promoting comprehensive patient-centered dental care.

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