



PREVENTION AND CONTROL OF DENTAL EROSION: PROFESSIONAL CLINIC CARE

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Abstract

Objective: The target of this study was to evaluate the effectiveness of clinical practices in the prevention and control of dental erosion. The research analyzed the prevalence of dental erosion, the strategies employed by dental experts for its management, and the outcomes of these interventions in a clinical setting.

Methodology: A cross-sectional examination design was utilized in this research. The sample comprised 150 dental experts from various specialties, including general dentistry, pediatric dentistry, and periodontics. Participants were selected using purposive sampling. Data were collected through structured surveys, semi-structured interviews, and case studies. The research utilized the dental erosion scale to classify erosion severity, ranging from initial enamel changes (grade 1) to severe dentine exposure (grade 4). Quantitative data analysis was performed using spss software, while qualitative data were analyzed using thematic analysis.

Results:Independent t-tests, correlation, and multiple regression analysis were conducted to test the hypotheses. Independent t-tests showed significant differences in the prevalence and management of dental erosion among different specialties ($t = -2.45$, $p = .02$). Correlation analysis revealed a significant negative relationship between the use of preventive measures and the severity of dental erosion ($r = -0.32$, $p < .05$), and a significant positive relationship between continuous professional education and the effectiveness of erosion control measures ($r = 0.41$, $p < .01$). Regression analysis showed that the use of fluoride treatments and protective sealants were significant predictors of reduced erosion severity ($\beta = -0.35$, $t = 3.76$, $p < .001$, $r^2 = .12$).

Conclusion: The research aimed to assess the effectiveness of professional dental practices in preventing and controlling dental erosion. The findings revealed that continuous professional education and the use of fluoride treatments and protective sealants significantly reduce the severity of dental erosion. The research concludes that comprehensive preventive measures, early intervention, and ongoing education for dental professionals are essential for the successful management of dental erosion. This examination highlights the need for tailored interventions and cost-effective treatment strategies to improve patient compliance and outcomes.

Keywords: Dental erosion, prevention, control, clinic practice, mixed-methods, treatment results, dental professionals, spss analysis, dental professional.

Introduction

Dental erosion, described by the irreversible loss of tooth structure due to substance disintegration, has become increasingly prevalent in recent years (lussi, carvalho, & erosion, 2014). It presents aesthetic concerns as well as significant risks to oral health, including increased susceptibility to caries and tooth sensitivity (bartlett, shah, & sherriff, 2006). Professional clinic care plays a crucial role in both preventing the progression of erosion and managing its effects (zero, lussi, & sobrinho, 2005). Despite advancements in treatment modalities, challenges remain in implementing effective erosion prevention and control strategies in clinical practice (parnas, wagner, & sant`anna, 2019).

Effective management of dental erosion requires a multifaceted approach, incorporating patient education, preventive measures, and clinical interventions (zero, lussi, & sobrinho, 2005). Professional dental clinics serve as important settings for implementing these strategies (american dental association, 2018). This research aims to explore current practices and approaches used by dental professionals in clinics to address dental erosion, with a focus on prevention and control measures.

Methodology

This research utilizes a mix-methods way to deal with look at the prevention and control of dental erosion in professional center settings. This design incorporates both quantitative and qualitative techniques to give a far reaching comprehension of the point (creswell and plano clark, 2011). The research members incorporate dental specialists working in professional clinic settings, enveloping general dentistry, pediatric dentistry, and periodontics. A sample of 150 dental professionals was chosen involving purposive sampling to guarantee variety in clinical background and experience (etikan, musa, and al kassim, 2016).

Quantitative data were accumulated through independent overviews conveyed to taking an interest dental professional . The study was intended to survey the experts' information, mentalities, and works on in regard to dental erosion anticipation and treatment (fowler, 2014). The collected data remembered data for erosion prevalence, treatment techniques utilized, and treatment results. Dental erosion scale the seriousness of dental erosion was arranged utilizing the dental erosion scale, which groups erosion from initial enamel changes (grade 1) to extreme dentine openness (grade 4). Qualitative data were collected through semi-organized interviews led with a subset of the participating specialists. These meetings were sound recorded and translated word for word to catch the professional viewpoints on erosion the board rehearses in clinical settings. The qualitative data incorporated the experts' encounters, difficulties, and suggestions connected with erosion prevention and control. Quantitative data analysis the research information were examined utilizing enlightening insights to sum up the prevalence of erosion, treatment modalities, and treatment results. Spss programming was used for quantitative data analysis, which included leading autonomous t-tests, connection, and various regression analysis to test the hypotheses. Independent t-test used to analyze the prevalence and the board of dental erosion among various strengths. Correlation analysis to analyze the connection between preventive measures and erosion seriousness, as well as the effect of professional education on the viability of control measures. Regression analysis recognized critical indicators of diminished erosion seriousness, like fluoride medicines and defensive sealants. Qualitative data analysis the meeting information were broke down specifically to distinguish normal topics, examples, and experiences with respect to erosion the executives rehearses in proficient center consideration (visitor, namey, and mitchell, 2013). Ethical approval for this study was gotten from the pertinent institutional research board (irb) to guarantee the assurance of members' privileges and privacy. Informed assent was gotten from all participating dental professionals before their contribution in the research (world clinical affiliation, 2013).

Limitations

Impediments of the research remember the dependence for self-revealed information from studies and meetings, which might be likely to inclination (babbie,2016). Furthermore, the research`'s discoveries might be restricted to the specific geographical locale and clinical settings remembered for the research sample.

Results

Quantitative insights from tables uncover erosion prevalence, treatment methods utilized in facilities, patient socioeconomics, and treatment results (guest, namey, & mitchell,2013) . Qualitative discoveries from interviews shed light on normal topics, challenges, and fruitful procedures erosion by dental professionals .

Table 1: prevalence of dental erosion in professional clinic settings

Clinic setting	Number of cases	Prevalence (%)
General density	150	65%
Pediatric density	50	45%
Periodontics	75	80%

Table 2: treatment methods employed in professional clinics

Treatment method	Number of cases	Success rate (%)
Fluoride application	120	70%
Sealants	90	60%
Restorative procedures	200	85%
Dietary counseling	80	75%

Table 3: patient demographics and treatment outcomes

Patient characteristics	Age (years)	Gender	Treatment outcome
Pediatric patients	6-12	Male	Improvement
Adult patients	25-45	Female	Stability
Geriatric patients	65+	Male	Recurrence

Statistical analysis result

Independent t-tests:

huge contrasts were tracked down in the commonness and the board of dental erosion among claims to fame ($t = - 2.45$, $p = .02$).

Correlation analysis:

Critical negative connection between's the utilization of preventive measures and erosion seriousness ($r = - 0.32$, $p < .05$) and a positive connection between's professional education and the viability of control measures ($r = 0.41$, $p < .01$).

Regression analysis:

Fluoride treatment and defensive sealants were critical indicators of diminished erosion seriousness ($\beta = - 0.35$, $t = 3.76$, $p < .001$, $r^2 = .12$).

Discussion

The findings highlight the significance of comprehensive preventive measures and early intervention in addressing dental erosion (bartlett, shah, & sherriff, 2006). Recommendations for dental practice include the need for ongoing education and training for dental professionals, as well as the development of tailored interventions based on patient demographics and risk factors (american dental association, 2018). Suggestions for future research include longitudinal studies to assess the long-term effectiveness of erosion prevention strategies.

Table 4: summary of key findings and recommendations

Key findings	Recommendations
Variability in erosion prevalence across clinic settings	Conduct further research to identify factors contributing to variations in prevalences
High success rate of restorative procedure	Emphasize the importance of timely interventions and restoration of eroded teeth
Variation in treatment outcomes based on patient demographics	Tailor treatment approaches to specific patient groups, considering age and gender differences
Challenges in patient compliance with preventive measures	Implement educational programs to improve patient understanding and adherence to preventive recommendations

Difference between dental erosion and dental attrition

Dental disintegration and dental attrition separated in view of cuspal morphology and enamel surface. Dental erosion commonly gives smooth, adjusted edges on the cusps and a silky, coated appearance of the enamel . Interestingly, dental attrition, which is mechanical wear because of tooth-to-tooth

contact, is described by sharp, unpleasant edges on the cusps and a more matte, worn surface on the finish surfaces. This distinction was basic for exact conclusion and proper treatment planning.

Table: differentiate between dental erosion and dental attrition

Criteria	Dental erosion	Dental attrition
Cuspal morphology	Smooth, rounded edges	Sharp rough edges
Enamel texture	Silky, glazed appearance	Matte, worn texture
Cause	Chemical dissolution (e.g, dietary acids, gerd)	Mechanical wear (tooth-to-tooth contact)
Typical appearance	Uniform surface loss	Uneven surface wear
Location	Generally, affects all tooth surfaces	Primarily affects occlusal and incisal surfaces
Symptoms	Sensitivity, especially to acidic foods	Flattened tooth surfaces, sensitivity to pressure
Diagnosis	Based on chemical history, dietary habits	Based on bite analysis, occlusion patterns

Conclusion:

In conclusion, this research enhances our understanding of the prevention and control of dental erosion in professional clinic settings. By examining current practices and challenges faced by dental professionals, this study aims to inform evidence-based strategies for improving clinical care and ultimately enhancing oral health outcomes for patients.

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