

# 06

## Psicología



## Dr. Francisco Torres Lear

La trayectoria del Dr. Torres Lear es la historia de un descubrimiento vocacional inesperado. Aunque se licenció en Medicina con la firme intención de ser cardiólogo, el destino intervino mientras preparaba el MIR: aprobó el acceso a Odontología y lo que comenzó como un paso intermedio se transformó en su verdadera pasión. En la estomatología descubrió un “trabajo artesano de la salud” que le cautivó por completo, haciéndole comprender que había nacido para esta profesión.

Su enfoque va más allá de lo clínico; su mayor satisfacción reside en mejorar la autoestima, el bienestar y la calidad de vida de sus pacientes. Defensor acérrimo de la prevención y la higiene diaria, el Dr. Torres lidera el Centro Dental Torres bajo una premisa clara: para conseguir la felicidad del paciente, primero hay que cuidar a las personas que trabajan en la clínica, dotándolas de los mejores medios en una organización sólida y humana.

### Titulación

Licenciao en Medicina y Cirugía. Universidad de Zaragoza  
Especialista en Estomatología. Universidad del País Vasco  
Doctor en Medicina y Cirugía. Universidad de Zaragoza  
Máster en Implantología, Rehabilitación Oral y Periodoncia por E.S.O.R.I.B. (European School of Oral Rehabilitation, Implantology and Biomaterials) en colaboración con The New York University  
Fellow of The European Board of Oral Surgery Societies  
Asistente a más de 170 cursos de posgrado de la Especialidad

### Sociedades científicas y congresos

Vocal Nacional de SEI (Sociedad Española de Implantes) y miembro de SEPA(S.E. de Periodoncia), SEPES(S.E.de Prótesis Estomatológica) y SECIB (S.E. de Cirugía Bucal)  
Miembro de 16 comités organizadores/científicos de congresos.  
Presidente del Congreso de la Sociedad Española de Cirugía Bucal celebrado en Zaragoza en 2.011  
Participación en congresos con 81 ponencias/comunicaciones recibiendo cuatro premio

### Actividad docente

Ex Profesor colaborador de Universidades Nacionales en diferentes disciplinas (Cirugía Bucal, Implantología, Prótesis, Odontología integrada de Adultos,...)  
Profesor del Máster Universitario de Implantología de la Universidad de Sevilla y de otras Universidades  
Dictante de más de 70 conferencias y cursos en Universidades y centros privados

### Publicaciones y actividad investigadora

Publicación de dos libros y colaboración en otros ocho con capítulos de distintos temas de la especialidad  
Quince artículos en revistas científicas  
Cuatro proyectos de investigación en distintos temas de la especialidad

# Índice

- 01 Referencias científicas
- 02 Conclusiones destacadas
- 03 Conclusiones destacadas individuales
- 04 Preguntas y Respuestas

01

01

---

Referencias  
científicas

---



## Referencias científicas

Alhajri DS, Alhammad DA, Alabdulqader LF, Alasbly RR, Alhareky M, Algahtani M, Al-Ansari A, Nazir MA. Personality traits and their relationship with oral health related quality of life among adolescents in Saudi Arabia. *BMC Oral Health*. 2025 Jan 21;25(1):110. doi: 10.1186/s12903-025-05503-7. PMID: 39838343; PMCID: PMC11753100.

### ABSTRACT

**Background:** Personality traits are linked with different oral health outcomes. However, personality traits and their associations among children are not fully understood. Therefore, this study aimed to investigate the relationship between personality traits and oral health-related quality of life (OHRQoL) among adolescents in Saudi Arabia.

**Methods:** This cross-sectional study included male and female students aged 12-18 years from different schools in the Eastern Province of Saudi Arabia. The participants responded to a self-administered questionnaire after providing informed consent. The questionnaire included demographic information and Arabic versions of the Big Five Personality Inventory and the Child Oral Health Impact Profile-Short Form to evaluate personality traits and OHRQoL, respectively. Bivariate and multivariable analyses were performed.

**Results:** This study included 231 (59.7%) males and 156 (40.3%) females. Regarding personality traits, conscientiousness had the highest mean score ( $15.31 \pm 3.65$ ), followed by agreeableness ( $14.94 \pm 3.96$ ) and openness ( $14.08 \pm 3.98$ ), whereas neuroticism had the lowest mean score ( $8.86 \pm 3.34$ ). Males had significantly higher mean scores for extraversion ( $14.28 \pm 3.30$ ) and conscientiousness ( $15.69 \pm 3.62$ ) compared to females, who had mean scores of  $13.02 \pm 3.35$  and  $14.75 \pm 3.63$ , respectively ( $P < 0.05$ ). Females, on the other hand, scored significantly higher in neuroticism ( $9.51 \pm 3.71$ ) and agreeableness ( $15.60 \pm 3.75$ ) compared to males, who had mean scores of  $8.09 \pm 2.94$  and  $14.49 \pm 4.04$ , respectively ( $P < 0.05$ ). Bivariate analyses showed that neuroticism was negatively correlated with OHRQoL ( $r = -0.455$ ,  $P < 0.001$ ), whereas extraversion ( $r = 0.182$ ,  $P < 0.001$ ) and conscientiousness ( $r = 0.110$ ,  $P = 0.047$ ) were positively correlated with OHRQoL. In multiple linear regression analyses, extraversion ( $B = 0.696$ ,  $P = 0.012$ ) and neuroticism ( $B = -2.229$ ,  $P < 0.001$ ) were statistically significant predictors of OHRQoL.

**Conclusion:** This study found that neuroticism was significantly and negatively correlated with OHRQoL, whereas extraversion was significantly and positively correlated with OHRQoL. In addition, there were statistically significant differences in personality traits between the male and female adolescents.

Arnett MC, Paulson DR, Evans MD, Reibel YG. Longitudinal Impact of Brief Motivational Interviewing on Periodontal Clinical Outcomes and Patient Perceptions: A 3-year follow-up study. *J Dent Hyg*. 2025 Jun;99(3):12-23. PMID: 40514080.

### ABSTRACT

**Purpose:** The purpose of this study was to determine the longitudinal impact of multiple brief motivational interviewing (MI) sessions on behaviors as measured by clinical indicators of periodontitis and patient perceptions of importance, interest, and self-efficacy for oral hygiene behaviors.

**Methods:** Fifty-eight patients in the periodontal maintenance phase of therapy who had completed all study visits from a 1-year single-masked, examiner randomized clinical trial were invited to participate in this 3-year follow-up study with no intervention. Clinical outcomes of O'Leary plaque score, bleeding on probing (BOP), gingival index (GI) and patients' perceived interest, importance, and self-efficacy for oral hygiene behaviors were collected. Results were reported using means with 95% confidence intervals (CI). Analyses were performed using statistical software (R version 4.3.2).

**Results:** A total of 41 patients participated for a 72% retention rate. The brief MI group yielded a statistically significant reduction in BOP from baseline to 3-years (0.02) and significance in the reduction of GI scores from baseline to 3-years ( $p < 0.0001$ ). Perceived self-efficacy in maintaining a change long-term was sustained from baseline (4.19) to 3-year follow-up (4.14) for the brief MI group as compared to the traditional OHI group (baseline 4.23; 3-year follow-up 4.04). Time of interaction between traditional oral hygiene instruction (OHI) and brief MI groups did not achieve statistical significance for plaque score from baseline to 3-years (0.12).

**Conclusion:** A brief MI intervention achieved longitudinal reductions in clinical indicators of periodontitis and enhanced patient's perception of self-efficacy for oral hygiene behaviors at a 3-year follow-up.

Asiri A, Nazir MA, Alsharief M, Shahin S, Al-Ansari A, Al-Khalifa KS. Effect of psychological distress on oral health: a cross-sectional study. *BMC Oral Health*. 2024 Dec 19;24(1):1508. doi: 10.1186/s12903-024-05319-x. PMID: 39702206; PMCID: PMC11660662.

### ABSTRACT

**Background:** Individuals with psychological distress are at significantly higher risk of arthritis, cardiovascular disease, and chronic obstructive pulmonary disease. However, influence of psychological distress on oral health remains a concern. The purpose of this study was to evaluate psychological distress and its relationship with caries, oral hygiene status, gingival health, and other factors among adults.

**Methods:** This cross-sectional study included a sample of 558 adult patients at the Dental Hospital College of Dentistry, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia. The World Health Organization criteria were used to perform an oral examination of participants who responded to a self-administered questionnaire. Psychological distress was evaluated by using the General Health Questionnaire-12 (GHQ-12), which consists of 12 items on a 4-point Likert scale and its score ranges from 0 to 36. The oral health of participants was assessed using the DMFT, plaque, gingival, and simplified oral hygiene indices.

**Results:** In this study, 21.5% of participants demonstrated psychological distress, with 16.80% having mild distress and 4.70% having severe distress. The mean score of GHQ-12 of the study sample was  $10.47 \pm 5.77$ . Significantly higher median scores of GHQ-12 were observed among participants over the age of 30 years ( $p = 0.021$ ), low-income individuals ( $p = 0.008$ ), smokers ( $p = 0.019$ ), and those with medical problems ( $p < 0.001$ ). Participants with psychological distress demonstrated significantly higher caries, poor gingival health, and compromised oral hygiene ( $p < 0.005$ ). Multiple linear regression models revealed significant relationships between psychological distress and the DMFT index ( $p < 0.001$ ), plaque index ( $p < 0.001$ ), gingival index ( $p < 0.001$ ), and simplified oral hygiene index ( $p < 0.001$ ) after adjusting for age, sex, nationality, income, and education.



**Conclusion:** Psychological distress was prevalent among the participants. Higher age, low-income status, smoking, and medical problems were significantly related to psychological distress. Additionally, psychological distress was significantly correlated with dental caries experience, gingival health, and oral hygiene.

Botha F, Dahmann SC. Locus of control, self-control, and health outcomes. *SSM Popul Health*. 2023 Nov 24;25:101566. doi: 10.1016/j.ssmph.2023.101566. PMID: 38077246; PMCID: PMC10698268.

## ABSTRACT

We provide the first empirical evidence on the direct link between locus of control and self-control, and how they interact in explaining a range of health outcomes. Using rich Australian survey data, we find that, while the two traits are distinct constructs, a greater internal locus of control is associated with higher self-control. The association between locus of control and health is reduced once we control for self-control, suggesting that self-control mediates at least part of this relationship. Finally, an internal locus of control amplifies the beneficial effects of self-control particularly for physical health.

Cao R, Lai J, Fu X, Qiu P, Chen J, Liu W. Association between psychological stress, anxiety and oral health status among college students during the Omicron wave: a cross-sectional study. *BMC Oral Health*. 2023 Jul 10;23(1):470. doi: 10.1186/s12903-023-03151-3. PMID: 37424009; PMCID: PMC10332074.

## ABSTRACT

**Background:** Within 3 years of the COVID-19 pandemic, increasing interest has been given to its potential influence on health status due to lockdowns caused by the pandemic. However, the impact is inadequately understood, especially for college students. This study aimed to investigate the potential association between psychological stress, anxiety and oral health of college students during the Omicron wave of the COVID-19 pandemic.

**Methods:** An online survey with measurements of psychological stress, anxiety and oral health was completed by 1770 Chinese college students. The Perceived Stress Scale-14 (PSS-14) and Generalized Anxiety Disorder-7 (GAD-7) were used to measure psychological stress and anxiety, respectively. Oral health status was self-reported including toothache, gingival bleeding, and oral ulcer. Multivariable logistic regressions were performed to determine underlying associations for outcome variables. Structural equation modeling (SEM) was performed to confirm the relationship between mental and oral health status.

**Results:** Of the 1770 subjects, 39.2% presented high psychological stress and only 41.2% expressed no anxiety. A significant association was found between psychological stress, anxiety and oral health status. Anxiety has significant impacts on toothache (OR = 0.36; 95%CI: 0.23-0.55;  $p < 0.01$ ), gingival bleeding (OR = 0.43; 95%CI: 0.29-0.65;  $p < 0.01$ ), and oral ulcer (OR = 0.54; 95%CI: 0.36-0.80;  $p < 0.01$ ). Anxiety significantly mediated the association between psychological stress and self-reported oral symptoms.

**Conclusions:** Anxiety may be a significant risk indicator for mental health among college students and demonstrates a significant relationship with the occurrence of self-reported oral symptoms. Concerns about academic and life changes caused by the pandemic were the two most significant sources of stress.

Chan CCK, Chan AKY, Chu CH, Tsang YC. Theory-based behavioral change interventions to improve periodontal health. *Front Oral Health*. 2023 Jan 25;4:1067092. doi: 10.3389/froh.2023.1067092. PMID: 36762002; PMCID: PMC9905735.

## ABSTRACT

Periodontal disease is a significant global health burden affecting half of the world's population. Given that plaque and inflammation control are essential to the attainment of periodontal health, recent trends in preventive dentistry have focused on the use of behavioral models to understand patient psychology and promote self-care and treatment compliance. In addition to their uses in classifying, explaining and predicting oral hygiene practices, behavioral models have been adopted in the design of oral hygiene interventions from individual to population levels. Despite the growing focus on behavioral modification in dentistry, the currently available evidence in the field of periodontology is scarce, and interventions have primarily measured changes in patient beliefs or performance in oral hygiene behaviors. Few studies have measured their impact on clinical outcomes, such as plaque levels, gingival bleeding and periodontal pocket reduction, which serve as indicators of the patient's disease status and quality of oral self-care. The present narrative review aims to summarize selected literature on the use of behavioral models to improve periodontal outcomes. A search was performed on existing behavioral models used to guide dental interventions to identify their use in interventions measuring periodontal parameters. The main models were identified and subsequently grouped by their underlying theoretical area of focus: patient beliefs (health belief model and cognitive behavioral principles); stages of readiness to change (precaution adoption process model and transtheoretical model); planning behavioral change (health action process approach model, theory of planned behavior and client self-care commitment model); and self-monitoring (self-regulation theory). Key constructs of each model and the findings of associated interventions were described. The COM-B model, a newer behavioral change system that has been increasingly used to guide interventions and policy changes, is discussed with reference to its use in oral health settings. Within the limitations of the available evidence, interventions addressing patient beliefs, motivation, intention and self-regulation could lead to improved outcomes in periodontal health. Direct comparisons between interventions could not be made due to differences in protocol design, research populations and follow-up periods. The conclusions of this review assist clinicians with implementing psychological interventions for oral hygiene promotion and highlight the need for additional studies on the clinical effects of behavioral model-based interventions.

Cui T, Qiu L, Hou D. Association between psychological resilience, social support and oral health behaviours in patients with implant dentures. *BMC Oral Health*. 2025 Jan 7;25(1):34. doi: 10.1186/s12903-024-05226-1. PMID: 39773617; PMCID: PMC11706161.

## ABSTRACT

**Background:** With the improvement of living standards, implant dentures have become the choice of more and more patients with missing teeth. Dentures are not natural teeth, and may cause different degrees of negative impacts on patients in physiological, psychological and social aspects. The objective of



this study was to examine the current status of psychological resilience among implant denture patients and the factors that influence it. Additionally, we aimed to analyse the correlation between psychological resilience, social support, and oral health behaviours, with a view to providing a scientific basis for the development of targeted interventions for patients with implant dentures.

**Methods:** A survey of 238 patients with implant dentures was conducted in the Department of Stomatology of the Affiliated Hospital of Jiangnan University and Wuxi Stomatological Hospital. The survey included a self-designed general information questionnaire, disease condition questionnaire, The Connor-Davidson Resilience Scale (CD-RISC), The Social Support Rating Scale (SSRS), and The oral health behavior scale.

**Results:** The CD-RISC score of patients with implant dentures was  $66.49 \pm 15.59$ , while the SSRS score was  $37.90 \pm 7.73$ , and the oral health behaviour score was  $34.73 \pm 7.92$ . Multiple linear regression analysis showed that age, economic status, social support, and oral health behavioural status were factors influencing the psychological resilience of patients with implant dentures (all  $P < 0.05$ ), and the psychological resilience score was positively correlated with the score of oral health behaviours and the score of social support ( $P < 0.05$ ), and the score of oral health behaviours was positively correlated with the score of social support ( $P < 0.05$ ). Oral health behaviour partially mediated the relationship between psychological resilience and social support.

**Conclusions:** The postoperative psychological resilience of patients with implant dentures is at an average level and is affected by various factors, among which social support not only has a direct effect on the psychological resilience of patients with implant dentures, but also has an indirect effect on their psychological resilience through oral health behaviours. Healthcare professionals should actively adopt targeted nursing interventions to improve the psychological resilience of patients, improve their postoperative oral health behaviours, and improve their quality of life.

De David SC, Ferreira TGM, da Rocha JM, Moreira CHC, Fiorini T. Association between cognitive rumination and periodontal disease, tooth loss and oral health-related quality of life in a rural Southern Brazil population. *Clin Oral Investig.* 2024 Jun 25;28(7):397. doi: 10.1007/s00784-024-05779-z. PMID: 38918232.

## ABSTRACT

**Objectives:** Rumination is a maladaptive emotion regulation strategy. It has been associated with several psychological disorders and physical problems. This cross-sectional study aimed to evaluate whether cognitive rumination is associated with periodontal disease (PD), tooth loss (TL), and oral health-related quality of life (OHRQoL).

**Materials and Methods:** A population-based sample from a rural area in southern Brazil was evaluated. Calibrated examiners carried out a complete periodontal examination at six sites-per-tooth. Rumination and Reflection (RRQ) and Oral Health Impact Profile (OHIP-14) questionnaires were administered. Regression modeling was used to assess the prevalence ratio (PR) between rumination and PD and to estimate the rate ratio (RR) between rumination and TL and rumination and OHIP.

**Results:** Severe periodontitis prevalence of 33% was observed in the sample. In the Poisson-adjusted model ( $n = 587$ ), individuals who ruminate more have 27% more periodontal disease (PR: 1.27, 95%CI:1.02 - 1.60). Regarding TL and OHIP, negative binomial regression ( $n = 672$ ) showed an association with rumination, but it was not significant (RR 1.14, 95%CI 0.99 - 1.31) and (RR 1.20, 95%CI 0.98 - 1.48), respectively.

**Conclusions:** Cognitive rumination was independently associated with periodontal disease in individuals living in a rural area. Borderline non-significant estimates were observed regarding TL and OHRQoL. More research using different populations and focusing on individual's responses to psychological stress may confirm these results.

**Clinical relevance:** Emotional regulation is crucial to deal with stress, anxiety, and depression. Since psychopathologies are among the most prevalent diseases in the world, it is critical to understand the role of these issues in dental outcomes.

Decker A, Askar H, Tattan M, Taichman R, Wang HL. The assessment of stress, depression, and inflammation as a collective risk factor for periodontal diseases: a systematic review. *Clin Oral Investig.* 2020 Jan;24(1):1-12. doi: 10.1007/s00784-019-03089-3. Epub 2019 Nov 1. PMID: 31677052; PMCID: PMC6980776.

## ABSTRACT

**Objectives:** The purpose of this review was to provide a novel perspective utilizing an assessment of biomarkers to evaluate the impact of stress-related disorders on the progression of periodontal disease and evaluate the growing body of evidence of stress as a risk indicator for periodontal disease progression.

**Methods:** Cross-sectional, case-control, and biomarker studies associating psychological disorders and periodontal disease were included in the literature search. Computational studies, animal studies, reviews, and studies lacking healthy controls were excluded. Electronic and manual literature searches were conducted by two independent reviewers in several databases as well as a manual search for relevant articles published up to January 2018.

**Results:** Twenty-six articles fulfilled the inclusion criteria and were included in the qualitative synthesis. Relationships between stress-related disorders and serum and salivary biomarkers such as cortisol, dehydroepiandrosterone (DHEA), chromogranin A (CgA), and pro-inflammatory cytokines were identified.

**Conclusions:** The use of salivary pro-inflammatory cytokines alone is not sufficient for the identification of periodontal disease severity/progression with or without the presence of stress-associated diseases. Keeping in mind the limitations of this review, a positive qualitative correlation was observed in the literature among stress-related biomarkers and the severity of periodontal disease. This correlation may serve as an important reporter of patient susceptibility for periodontal breakdown in the future.

**Clinical relevance:** Stress-related disorders should be included in the list of globally screened diseases because it can change the biochemistry of both the local periodontal microenvironment as well as the global systemic inflammatory burden.



Dimenäs SL, Östberg AL, Lundin M, Lundgren J, Abrahamsson KH. Adolescents' experiences of a theory-based behavioural intervention for improved oral hygiene: A qualitative interview study. *Int J Dent Hyg.* 2022 Nov;20(4):609-619. doi: 10.1111/idh.12606. Epub 2022 Aug 15. PMID: 35925040; PMCID: PMC9804348.

## ABSTRACT

**Objectives:** Adequate oral hygiene, that is self-performed infection control, is crucial to prevent periodontal disease. Epidemiological studies reveal poor oral hygiene conditions among Swedish adolescents and indicate a need for more effective prevention programs. The aim of the current study was to analyse adolescents' experiences of a person-centred, theory-based, oral health education program for improved oral hygiene.

**Methods:** Data were obtained by interviewing 19 adolescents treated by dental hygienists in accord with the person-centred education program in a preceding clinical field study (ClinicalTrials.gov NCT02906098). Study participants were selected to reflect a variation of male and female adolescents, treated at clinics in areas with various socio-demographic profiles within Region Västra Götaland, Sweden. Interviews were audio-taped, transcribed verbatim and analysed with qualitative content analysis.

**Results:** A main theme was identified: 'Adolescents on a guided and challenging journey towards beneficial oral hygiene behavior'. The results elucidate the importance of a person-centred approach in therapy. The adolescents described insight on a personal level about the importance of improved oral hygiene as fundamental for behavioural change. Planning and monitoring of the behaviour, with guidance and support by the dental hygienist, was considered to facilitate change and encouraged further behavioural efforts. However, the adolescents expressed a need of reminders and support to keep up oral hygiene routines over time.

**Conclusions:** The study brings knowledge on factors of importance in educational interventions to increase beneficial health behaviours among adolescents and emphasize areas for further improvements of such interventions.

Dimenäs SL, Jönsson B, Lundin M, Lundgren J, Abrahamsson KH. Changing from disease-centred to person-centred - Swedish dental hygienists' views on a theory-based behavioural intervention for improved oral hygiene among adolescents. *Int J Dent Hyg.* 2024 Nov;22(4):971-981. doi: 10.1111/idh.12811. Epub 2024 Apr 24. PMID: 38659277.

## ABSTRACT

**Objectives:** To explore dental hygienists' (DHs') views on (i) a person-centred, theory-based, behavioural intervention for improving oral hygiene among adolescents and (ii) professional and organizational factors to consider in the implementation of such an intervention in daily dental practice.

**Methods:** Semi-structured interviews were conducted with 13 DHs who had applied the person-centred, theory-based, behavioural intervention directed at adolescents with poor oral hygiene in a field study within the Public Dental Service, Region Västra Götaland, Sweden. The interviews were audio-taped, transcribed verbatim and analysed using qualitative content analysis.

**Results:** The main theme 'From individual experts to partners - DHs changing direction from a disease-centred towards a person-centred approach' illustrated a changed professional approach among DHs, from exerting their roles as experts to encouraging partnership in treatment by supporting the adolescents in taking health behavioural decisions and responsibility for their oral health. The DHs considered the changed approach as challenging, but also more enjoyable, compared to conventional information/instruction. Adequate knowledge and skills, personal interest and willingness for a change as well as support from colleagues and clinic management were identified as prerequisites for implementing the person-centred, theory-based, behavioural intervention in daily practice, while the expenditure of time needed in relation to economic demands in care were seen as barriers.

**Conclusions:** The findings elucidate that DHs considered the application of a person-centred, theory-based, behavioural intervention to be challenging but also enjoyable. For such an intervention to be implemented in daily practice, prerequisites and barriers need to be considered on both personal/professional and organizational levels.

Farina R, Simonelli A, Guarnelli ME, Secchiati G, Montemezzo G, Scapoli C, Trombelli L. Efficacy of communicating periodontal risk on psychological outcomes and supragingival plaque control in patients undergoing first periodontal consultation: A parallel-arm, randomized trial. *J Clin Periodontol.* 2024 Oct;51(10):1289-1301. doi: 10.1111/jcpe.14032. Epub 2024 Jul 2. PMID: 38956317.

## ABSTRACT

**Aim:** To evaluate the efficacy of the PerioRisk prognostic tool in implementing the effect of motivational interviewing (MI) on psychological outcomes and supragingival plaque control.

**Materials and Methods:** Participants underwent MI immediately after their first periodontal visit. According to a parallel-arm, randomized study design, MI was performed with (RISK group) or without (CTR group) information on PerioRisk level and treatment goals based on PerioRisk output. Psychological outcomes were assessed using the Positive Affect Negative Affect Scale (PANAS) and Protection Motivation Theory (PMT). Plaque index (PI) was re-evaluated after 8-12 weeks.

**Results:** Significant improvements in PMT overall score and PI were observed in CTR and RISK groups, without inter-group difference in PANAS and PMT overall scores and PI. A sub-analysis showed that the overall PMT scores recorded immediately after MI in both CTR and RISK groups for subjects with no tooth loss due to periodontitis were higher than those recorded before MI in subjects with tooth loss due to periodontitis.

**Conclusions:** At first periodontal visit, MI (implemented with without PerioRisk) has tangible effects on psychological outcomes and supragingival plaque control and seems to anticipate the awareness that is commonly generated by periodontitis-related tooth loss (ClinicalTrials.gov protocol registration ID: NCT05078411).



Fernández-Cevallos AD, Ribas-Perez D, Arenas-González M, Elkhoury-Moreno L, Torrejón-Martínez J, Rosel-Gallardo E, Castaño-Seiquer AL. Impact of dental aesthetics on self-esteem in students at the Polígono Sur education permanent center in Seville, Spain. *Sci Rep.* 2025 May 3;15(1):15550. doi: 10.1038/s41598-025-00545-x. PMID: 40319087; PMCID: PMC12049465.

## ABSTRACT

Self-esteem is a stable characteristic that is usually maintained from adolescence to adulthood. People with high self-esteem are mentally prepared to face different challenges in their lives with great confidence. Assess the influence of dental aesthetics on self-esteem in students at the Polígono Sur Education Permanent Center. A cross-sectional descriptive study with qualitative and quantitative variables in which 92 participants from the permanent education center located in the polígono sur of the city of Seville. To identify if there was a relationship between self-perception of dental aesthetics and self-esteem, two surveys were conducted in the educational center, one of them to determine a high or low psychosocial impact of dental aesthetics and the Rosenberg self-esteem scale, which evaluated the level of acceptance and respect that participants had for themselves. Demographic variables analyzed were gender, age, nationality, and occupation. To analyze categorical variables, contingency tables and the Pearson Chi-square test were used. Students did not have a low self-esteem in relation to a high psychosocial impact of dental aesthetics  $p > 0, 05$  (0.069), but a high self-esteem indifferent to whether they had a high or low psychosocial impact of dental aesthetics. However, there were exceptions according to gender ( $p = 0.019$ ) or nationality ( $p = 0.030$ ). Self-esteem was not greatly affected by the psychosocial impact of dental aesthetics in the majority of students evaluated, but it was possible to state that there was a negative impact in the male gender and also by nationality.

Goh V, Hassan FW, Baharin B, Rosli TI. Impact of psychological states on periodontitis severity and oral health-related quality of life. *J Oral Sci.* 2022 Jan 19;64(1):1-5. doi: 10.2334/josnusd.21-0267. Epub 2021 Oct 25. PMID: 34690248.

## ABSTRACT

**Purpose:** This cross-sectional study aimed to identify impacts of depression, anxiety and stress on periodontitis severity and oral health-related quality of life (OHRQoL).

**Methods:** A total of 141 periodontitis patients were recruited. Psychological states were assessed using the Malay short-form Depression, Anxiety and Stress Scales (MDASS-21). Subjects were grouped as positive for depression, anxiety or stress (DAS) (positive-DAS), without DAS (non-DAS), stress-only and anxiety-only. OHRQoL was evaluated using the Malay short-form Oral Health Impact Profile (S-OHIP[M]).

**Results:** OHRQoL was associated with MDASS-21, probing pocket depths, recession, clinical attachment levels, number of teeth present and number of teeth with mobility. S-OHIP(M) of positive-DAS subjects was associated with clinical attachment levels, number of teeth present and presence of anxiety. Anxiety-only subjects reported higher S-OHIP(M) scores compared to the non-DAS group.

**Conclusion:** OHRQoL of all subjects was negatively impacted by periodontitis severity and tooth loss. Combinations of depression, anxiety or stress led to worse periodontal status and OHRQoL. Subjects with anxiety-only experienced poorer OHRQoL compared to those without depression, anxiety and stress regardless of periodontitis severity. Possible impacts of psychological states on periodontitis and OHRQoL highlights the importance of assessing and improving psychological factors as part of periodontal therapy and to enhance OHRQoL.

Gorter RC. Work stress and burnout among dental hygienists. *Int J Dent Hyg.* 2005 May;3(2):88-92. doi: 10.1111/j.1601-5037.2005.00130.x. PMID: 16451388.

## ABSTRACT

**Objectives:** The aim of this study was to describe the factors associated with work stress and burnout among dental hygienists. Furthermore, how to deal with work stressors in order to prevent burnout in the dental hygienist work environment will be discussed.

**Methods:** From a small literature search, only a few empirical studies could be traced that describe work stress or burnout among dental hygienists.

**Results:** Burnout incidence among dental hygienists appears to be relatively favourable, when compared with other professions, according to a 20-year-old study. On the contrary, in a recent study, it was described that one out of eight dental hygienists felt emotionally exhausted from work. Dental hygienists, when compared with other professionals, are relatively negative about the variety of tasks they find in their work. Factors associated with experienced work stress are, according to another study, musculoskeletal pain, combining work and private life, highly efficient organization of work, long working hours, working without assistant, difficult or demanding patients, lack of leisure time, lack of support by practice management and doubts about one's own capabilities. Some factors that may prevent burnout are: recognition of one's own work pressure, learning to unwind, time management and organization of work, realistic career expectancies, social skills, healthy life-style, peer-group contacts and pre-graduate reflection.

**Conclusions:** There appears to be a lack of recent data on burnout among dental hygienists. Although some knowledge exists on work stressors, a thorough investigation on burnout incidence, risk factors, as well as job resources is needed.

Graetz C, Woeste S, Mrowietz U, Ehrental JC. The impact of psychological attachment on the relationship between periodontal health and dental fear in patients with versus without psoriasis: a questionnaire-based, cross-sectional study. *BMC Oral Health.* 2021 Mar 4;21(1):95. doi: 10.1186/s12903-021-01457-8. PMID: 33663457; PMCID: PMC7934537.

## ABSTRACT

**Background:** While there is increasing evidence for the relevance of psychosocial variables such as dental fear or psychological attachment in dentistry, much less is known about the mechanisms that determine the strength of those associations. One potential moderator is the occurrence of a comorbid chronic disease such as psoriasis, which is linked to relevant disease parameters such as periodontal inflammation.



The aim of the study was to test a moderation model of the relationship between dental fear, psychological attachment and psoriasis on periodontal health.

**Methods:** A total of 201 patients (100 with psoriasis, 101 without psoriasis) were included in a questionnaire-based, cross-sectional study. Dental status was measured with the Community Periodontal Index (CPI), dental fear was measured with the Hierarchical Anxiety Questionnaire (HAQ), and psychological attachment was measured with the Relationship Questionnaire (RQ). In addition to the examination of main effects, bootstrapping-based analyses were conducted to test the moderating influence of psychological attachment on the association between CPI and dental fear, gain moderated by group (with vs. without psoriasis).

**Results:** Controlling for several covariates, higher CPI scores were associated with higher levels of dental fear only in individuals without psoriasis under conditions of higher levels of psychological attachment anxiety and lower levels of attachment avoidance.

**Conclusion:** In individuals without psoriasis, psychological attachment can moderate the association between periodontal health and dental fear. This may provide a useful framework for reducing dental fear through interventions on the level of the dentist-patient relationship.

Haririan H, Andrukhov O, Böttcher M, Pablik E, Wimmer G, Moritz A, Rausch-Fan X. Salivary neuropeptides, stress, and periodontitis. *J Periodontol*. 2018 Jan;89(1):9-18. doi: 10.1902/jop.2017.170249. PMID: 28914594.

## ABSTRACT

**Background:** Scientific evidence for psychologic stress as a risk factor for periodontitis is fragmentary and relies mostly on either questionnaire-based or biomarker studies. The aim of this study is to investigate brain-derived neurotrophic factor, substance P, vasoactive intestinal peptide (VIP), neuropeptide Y (NPY), calcitonin gene-related peptide, and adrenomedullin as well as cortisol in saliva and serum in periodontal health and disease combined with different aspects of stress and possible associations with clinical parameters.

**Methods:** In total, 56 patients with aggressive and chronic periodontitis and 44 healthy controls were screened by enzyme-linked immunosorbent assay and mass spectrometry for presence of neuropeptides and cortisol in saliva and serum. Psychologic stress was evaluated by validated questionnaires. All substances were explored for a possible relationship to periodontitis, clinical parameters, and stress.

**Results:** VIP and NPY showed significantly higher levels in saliva but not in serum of patients with periodontitis. These neuropeptides correlated with the extent, severity, and bleeding on probing scores in patients with periodontitis. Females had significantly lower salivary VIP levels. There were no differences among participants regarding psychologic stress.

**Conclusion:** VIP and NPY in saliva could be potential sex-specific salivary biomarkers for periodontitis regardless of psychologic stress.

Hingorjo MR, Owais M, Siddiqui SU, Nazar S, Ali YS. The impact of psychological stress on salivary cortisol levels in periodontitis patients: a case-control study. *BMC Oral Health*. 2025 Feb 21;25(1):276. doi: 10.1186/s12903-024-05017-8. PMID: 39984905; PMCID: PMC11846471.

## ABSTRACT

**Background:** Psychological stress is linked to elevated salivary cortisol levels, potentially worsening periodontitis by exacerbating inflammation. This study examines the impact of stress on cortisol levels in periodontitis patients, aiming to explore salivary cortisol as a biomarker for disease severity and its role in improving management strategies.

**Methods:** This case-control study, conducted at Dow University of Health Sciences in Karachi from January to December 2022, involved 120 dental clinic patients aged 30-60. Participants were selected based on the presence (cases) or absence (controls) of periodontitis, excluding those with systemic diseases, taking hydrocortisone, immunosuppressives, antidepressants, systemic antibiotics, having oral ulcers and pregnancy or lactation. Periodontal parameters, stress levels (using the Perceived Stress Scale), and morning salivary cortisol (measured via ELISA) were assessed. Statistical analyses were performed using SPSS version 23, including descriptive statistics, independent t-tests, ANOVA, and odds ratio calculations with a 95% confidence interval at 0.05.

**Results:** The study cohort comprised 120 subjects, equally divided between periodontitis patients and healthy controls. Predominantly male (63%) with a mean age of 41.75 years, participants were subjected to comprehensive evaluations. Oral health indices (Gingival index, Plaque index, Clinical attachment loss, Periodontal probing depth, Tooth mobility) and stress markers (Perceived Stress Score, Salivary cortisol levels [SCLs]) were significantly higher in cases compared to controls ( $p < 0.001$ ). Majority of cases (58.3%) had stage II periodontitis. Notably, cases exhibited significantly higher stress levels ( $2.05 \pm 0.59$  vs.  $1.38 \pm 0.52$ ;  $p < 0.001$ ) and elevated salivary cortisol levels ( $6.67 \pm 1.64$  vs.  $2.54 \pm 0.88$ ;  $p < 0.001$ ) compared to controls. The odds ratio (OR) of 3.73 (95% CI [1.75, 7.93],  $p = 0.0006$ ) indicated that periodontitis patients were over 3.5 times more likely to have elevated SCLs. Stress prevalence was 42.5% in periodontitis patients compared to 18.33% in controls.

**Conclusions:** This study highlights a potential link between stress, cortisol levels, and periodontitis, suggesting that salivary cortisol could be a valuable biomarker. Incorporating cortisol measurements into routine dental evaluations may enable personalized treatment plans, addressing both biological and psychological contributors to periodontitis. Further research is needed to explore the long-term effects of stress on cortisol levels and periodontal disease progression, as well as the role of stress management in managing periodontitis.



Jaumet L, Hamdi Z, Julia C, Hercberg S, Touvier M, Bouchard P, Carra MC, Andreeva VA. Periodontitis assessed with a new screening tool and oral health-related quality of life: cross-sectional findings among general-population adults. *Qual Life Res.* 2023 Jan;32(1):259-272. doi: 10.1007/s11136-022-03215-x. Epub 2022 Aug 10. PMID: 35948787; PMCID: PMC9365217.

## ABSTRACT

**Introduction:** Periodontitis, as a chronic, multifactorial inflammatory disease, has complex relationships with other diseases and ultimately with well-being. The aim of this cross-sectional study was to investigate the association between self-report periodontitis, as measured with the recently developed and validated modified Periodontal Screening Score (mPSS), and oral health-related quality of life (OHRQoL) in a large population-based sample derived from the French NutriNet-Santé e-cohort.

**Methods:** The sample was composed of 32,714 adults (75.5% women) with a mean age of  $48.8 \pm 13.9$  years. Periodontitis was assessed based on age, smoking, and oral health status data obtained in 2011-2012, which allowed calculating the mPSS. An mPSS  $\geq 5$  was used to identify individuals at risk of severe periodontitis (main exposure). OHRQoL was measured with the Oral Health Impact Profile (OHIP-14) (main outcome) and the total score was dichotomized for analysis. Multivariable logistic regression analyses, considering physical health status, dietary and lifestyle confounding variables, were performed.

**Results:** Overall, 6407 participants (19.6%) were at a high risk of severe periodontitis. A total of 7383 participants (22.6%) presented a relatively poor OHRQoL (OHIP-14  $> 8$ , highest quartile). In the multivariable model, each of the following variables was independently and significantly associated with lower OHRQoL: older age (50-64 years), female sex, obesity, snacking between meals, frequent consumption of soft drinks and sweets/chocolate, risk of severe periodontitis, and having  $< 20$  natural teeth were significantly. An mPSS  $\geq 5$  showed the highest odds for relatively poor OHRQoL (OR = 3.45; 95% CI 3.21-3.72).

**Conclusion:** The results support the association between periodontitis and OHRQoL in non-clinical samples. The use of mPSS could be tested in future prevention programs aiming at improving OHRQoL.

Jeong J, Jeong W, Jung Y. Association Between Self-Perceived Oral Health, Stress, and Oral Symptoms in South Korean University Students: A Cross-Sectional Study. *Healthcare (Basel).* 2025 Apr 24;13(9):984. doi: 10.3390/healthcare13090984. PMID: 40361761; PMCID: PMC12072016.

## ABSTRACT

**Background/Objectives:** Self-perceived oral health is influenced by clinical and subjective oral factors, socioeconomic status, stress, and oral health behaviors. However, few studies have examined its association with dry mouth, salivary viscosity, and lifestyle factors. This study investigated the impact of self-perceived oral health and stress levels on subjective oral symptoms and lifestyle factors. **Methods:** A total of 644 university students participated. Self-perceived oral health was subjectively evaluated using a single item, and stress levels were measured using the Korean version of the Perceived Stress Scale-10 (PSS-10), which has been validated for reliability and validity. Chi-square tests identified differences in self-perceived oral health and stress levels based on subjective oral symptoms and lifestyle factors. Logistic regression

assessed the effects of tooth brushing frequency, periodontal disease diagnosis, dry mouth, and gingival bleeding on self-perceived oral health. **Results:** Subjective oral symptoms significantly associated with self-perceived oral health included gingival bleeding, dry mouth, and salivary viscosity; lifestyle factors included tooth brushing frequency and beverage consumption. Frequent tooth brushing increased the likelihood of perceiving oral health as good (OR = 1.363,  $p = 0.030$ ), while dry mouth (OR = 0.576,  $p = 0.001$ ) and gingival bleeding (OR = 0.597,  $p = 0.003$ ) reduced it. **Conclusions:** This study's results showed that gingival tooth brushing frequency and subjective oral symptoms significantly impacted self-perceived oral health. Therefore, effective educational programs should be implemented to promote self-perceived oral health awareness and oral health maintenance.

Jung Y, Jeong J. Effects of Self-Perceived Oral Health and Stress Levels on Subjective Oral Symptoms and Lifestyle of University Students in South Korea: A Cross-Sectional Survey. *Res Sq [Preprint].* 2024 Sep 18;rs.3.rs-4906078. doi: 10.21203/rs.3.rs-4906078/v1. PMID: 39372945; PMCID: PMC11451721.

## ABSTRACT

**Background:** Self-perceived oral health is related to clinical and subjective oral factors, socioeconomic factors, perceived stress, and oral health behavior. However, limited studies have examined whether self-perceived oral health is related to dry mouth, salivary viscosity, or lifestyle factors. Accordingly, this study aimed to verify the effect of self-perceived oral health and stress levels on subjective oral symptoms and lifestyle.

**Methods:** The responses of 644 university students who agreed to participate in the study were analyzed. A chi-square test was used to determine whether self-perceived oral health and stress levels showed significant differences based on subjective oral symptoms and lifestyle. Logistic regression was used to analyze the effect of subjective oral symptoms and periodontal disease diagnosis on self-perceived oral health.

**Results:** Subjective oral symptom factors that showed significant differences depending on self-perceived oral health included gingival bleeding or pain, dry mouth, and saliva viscosity, and depending on lifestyle factors included the frequency of tooth brushing and beverage consumption. Additionally, subjective oral symptoms influenced self-perceived oral health. Self-perceived oral health was negative when there was gingival bleeding, pain (odds ratio (OR)=0.594,  $p=0.002$ ), and dry mouth (OR=0.577,  $p=0.001$ ).

**Conclusions:** This study's results showed that self-perceived oral health significantly impacts gingival bleeding, pain, and dry mouth. Therefore, government intervention must provide and manage innovative and efficient education programs that promote self-perceived oral health management habits and maintenance and improvement of oral health.



Jung JY, Ko KA, Strauss FJ, Lee JH, Kim JH, Lee JS. Patient-Centred Preferences for Autonomy and Information-Seeking Among Periodontal Patients in Dental Decision Making. *J Clin Periodontol.* 2025 Jul;52(7):960-970. doi: 10.1111/jcpe.14166. Epub 2025 Apr 16. PMID: 40237198; PMCID: PMC12176460.

## ABSTRACT

**Background and Aim:** Managing periodontal disease often involves complex decisions involving multiple treatment options, and patient autonomy significantly influences this decision-making process. This study aimed to characterise the autonomy and information-seeking preferences among patients diagnosed with stage III/IV periodontitis, and to identify the factors influencing these preferences.

**Materials and Methods:** The survey included 96 patients diagnosed with periodontal disease, all of whom underwent periodontal treatment or tooth extraction between May 2021 and February 2022. Participants completed a self-administered questionnaire incorporating the Autonomy Preference Index (API) to assess their decision-making and information-seeking preferences, along with demographic information, using a 5-point Likert scale.

**Results:** Decision-making preferences were centrally distributed, with a score of  $2.87 \pm 0.47$  (mean  $\pm$  SD), indicating that most periodontal patients favoured a collaborative decision-making model. In contrast, information-seeking preferences were skewed, with a strong concentration towards the higher end of information preferences; the score was  $4.55 \pm 0.08$ . Lower age ( $p = 0.008$ ) was associated with a preference for greater autonomy, while the financial burden ( $p = 0.034$ ) was linked to reduced information-seeking preferences. Patients' autonomy remained relatively consistent across different periodontal clinical scenarios.

**Conclusion:** These findings suggest that periodontitis patients prefer to be well informed and share decision-making responsibilities with healthcare professionals after their diagnosis. Factors such as age and financial burden affect their autonomy, involvement and desire for information.

Knutt A, Boyd LD, Adams JL, Vineyard J. Compassion Satisfaction, Compassion Fatigue, and Burnout among Dental Hygienists in the United States. *J Dent Hyg.* 2022 Feb;96(1):34-42. PMID: 35190492.

## ABSTRACT

**Purpose:** Compassion satisfaction allows for dental hygienists (DH) to grow professionally, but compassion fatigue can lead to burnout. The purpose of this study was to examine the relationship between compassion satisfaction (CS), compassion fatigue (CF), burnout (BO), to demographics and work characteristics, including thoughts of leaving the profession, among clinical DHs in the United States.

**Methods:** A cross-sectional survey research design was used with a non-probability sampling of clinical DHs ( $n=553$ ) recruited via social media. Data collection consisted of demographics, work characteristics and the Professional Quality of Life Scale (ProQoL) (version 5). Descriptive, correlation, and logistic regression analyses were used to assess the relationships among variables. Thematic analysis was conducted for the open-ended question.

**Results:** The survey completion rate was 99% ( $n=527$ ). The mean number of hours worked and number of days per week was 30.6 and 3.8 respectively and, on average, participants had worked 19.3 years in clinical practice. Approximately 70% of respondents indicated thinking about leaving the profession in the next five years. Participants with thoughts about leaving the field had a lower CS score ( $p<0.001$ ), higher BO score ( $p<0.001$ ), and higher CF ( $p<0.001$ ) compared to those who had not thought about leaving the field. Age and years of experience positively correlated to CS and day per week worked negatively correlated to CF ( $p<0.05$ ).

**Conclusion:** Compassion satisfaction appears to impact burnout and thoughts of leaving the dental hygiene profession. Findings suggest the need for further research to identify ways to prevent burnout and improve retention in the profession.

Kolte AP, Kolte RA, Verma AS, Lathiya VN, Shahab SA. Anxiety in periodontally healthy, stage III/IV periodontitis with and without smoking: a cross-sectional study. *BMC Oral Health.* 2025 Apr 29;25(1):654. doi: 10.1186/s12903-025-05996-2. PMID: 40301874; PMCID: PMC12039254.

## ABSTRACT

**Background:** Psychological stress and smoking have been known as pertinent risk factors associated with various inflammatory diseases like periodontal disease. So, the aim of this study was to evaluate and correlate anxiety in Periodontally healthy, Stage III/IV Periodontitis patients with and without smoking.

**Methods:** 120 participants included in the study were divided equally into four groups of healthy non-smokers (Group I), healthy smokers (Group II), non-smokers with untreated Stage III or IV periodontitis (Group III) and smokers with untreated Stage III or IV periodontitis (Group IV). The anxiety levels of the patients were assessed using the Zung's self-rating anxiety scale. Socioeconomic status, smoking exposure through a questionnaire and the clinical parameters Probing pocket depth (PPD), Clinical attachment levels (CAL), Gingival index (GI) and Plaque index (PI) were recorded.

**Results:** The clinical periodontal parameters were compared within and across the groups at the four different anxiety levels and depicted a significant increase with the increase in the anxiety levels of the patients. The correlation of CAL with the anxiety score in Group III and Group IV was high positive ( $r = 0.926$  and  $0.823$ ) and highly significant. ( $p$ -value  $< 0.0001$  respectively). Also, a strong positive association was seen between duration, frequency of smoking and anxiety scores. ( $r = 0.824$  and  $0.853$  respectively).

**Conclusion:** The anxiety scores showed a positive correlation with PPD and CAL in Group III and IV and it was high positive in smokers.



Lee YH, Suk C, Shin SI, Hong JY. Salivary cortisol, dehydroepiandrosterone, and chromogranin A levels in patients with gingivitis and periodontitis and a novel biomarker for psychological stress. *Front Endocrinol (Lausanne)*. 2023 Apr 11;14:1147739. doi: 10.3389/fendo.2023.1147739. PMID: 37113482; PMCID: PMC10126469.

## ABSTRACT

**Introduction:** This study aimed to investigate the neuroendocrine responses based on cortisol, dehydroepiandrosterone (DHEA), cortisol/DHEA ratio, and chromogranin A levels, which reflect the activity of the hypothalamic-pituitary-adrenal axis, according to the presence or absence of psychological stress in patients with gingivitis and periodontitis compared to that in healthy controls.

**Methods:** In total, 117 patients (60 women, mean age: 36.29 ± 19.03 years) participated in this case-control study, comprising 32 healthy controls, 49 patients with gingivitis, and 36 patients with periodontitis. We investigated the presence of psychological stress and salivary characteristics, and analyzed the stress-related biomarkers of cortisol, DHEA, cortisol/DHEA ratio, and chromogranin A in the stimulated saliva.

**Results:** Salivary cortisol and chromogranin A levels increased with the severity of periodontal disease; their levels were the highest in the periodontitis group and were significantly higher in the following descending order: periodontitis, gingivitis, and healthy control groups (all values of  $p < 0.001$ ). Additionally, the DHEA levels and cortisol/DHEA ratio were higher in the periodontitis group than those in the healthy control group (all values of  $p < 0.001$ ). A multivariate logistic regression analysis revealed that the factors predicting above-average cortisol levels were periodontitis (odds ratio [OR] = 256.829;  $p < 0.001$ ), women (OR = 6.365;  $p = 0.004$ ), and psychological stress (OR = 6.036;  $p = 0.007$ ); those predicting above-average cortisol/DHEA ratios were periodontitis (OR = 11.436;  $p < 0.001$ ), psychological stress (OR = 3.977;  $p = 0.003$ ), and women (OR = 2.890;  $p = 0.026$ ). Thus, periodontitis and psychological stress were significant and strong predictors of above-average cortisol levels and cortisol/DHEA ratios. In the gingivitis group, salivary cortisol levels ( $r = 0.381$ ,  $p = 0.007$ ) and cortisol/DHEA ratios ( $r = 0.479$ ,  $p < 0.001$ ) were correlated with the presence of psychological stress. In the periodontitis group, increased cortisol/DHEA ratios ( $r = 0.412$ ,  $p = 0.013$ ) and lowered salivary buffer capacities ( $r = -0.334$ ,  $p = 0.047$ ) were correlated with the presence of psychological stress.

**Conclusion:** Periodontitis is a multifactorial disease resulting in inflammatory tissue destruction, which differs from gingivitis and a healthy state. Differences in stress-related neuroendocrine markers were revealed based on the severity of periodontal disease. The biomarkers that could be classified according to disease severity were salivary cortisol and chromogranin A levels. Above-average cortisol levels and cortisol/DHEA ratios are significant predictors of psychological stress in patients with gingivitis and periodontitis.

Liu P, Wong MCM, Lee GHM, Yiu CKY, Lo ECM. Family behavior theory-based intervention via mobile messaging to improve oral health of adolescents: study protocol for a cluster randomized controlled trial. *Trials*. 2022 Nov 16;23(1):941. doi: 10.1186/s13063-022-06861-1. PMID: 36384815; PMCID: PMC9667847.

## ABSTRACT

**Background:** Due to some unique physical, social and psychological features in the adolescent population, adolescents can be a time of heightened caries activity and periodontal disease. Oral health-related behaviors can be modified to improve oral health status. The family networks and the built environment can promote or inhibit health behaviors. The aim of this study is to implement and evaluate a behavior theory-based, integrated family intervention via mobile messaging to improve oral health of adolescents.

**Methods:** This is a three-arm parallel-design cluster-randomized controlled trial. This trial will allocate 12 local secondary schools (clusters) in Hong Kong to three test or comparison groups with a ratio 1:1:1. The enrolled Form II to IV students (ages 12 to 15) will be eligible for participation. The intervention to three study groups will be (i) Health Belief Model (HBM)-based mobile messaging to the adolescents and their parents, which will consist of several blocks of HBM-based messages and reinforcement during 24 weeks; (ii) same HBM-based messaging to adolescents only; and (iii) delivering e-version of oral health education pamphlets to adolescents. The primary outcome will be caries increment 2 years post-intervention. Changes in oral health self-efficacy and behaviors, oral hygiene, and gingival status will be the secondary outcomes.

**Discussion:** No school dental care service is available to secondary school students in Hong Kong. This study will be the first to test a theory-driven and family-engaged preventive intervention among adolescents in Hong Kong. Findings will contribute to developing a low-cost, feasible, and efficient oral health preventive program for adolescents.

Liu Y, Zhang C, Wu J, Yu H, Xie C. Evaluation of the relationship among dental fear, scaling and root planing and periodontal status using periodontitis stages: A retrospective study. *J Dent Sci*. 2022 Jan;17(1):293-299. doi: 10.1016/j.jds.2021.04.002. Epub 2021 Apr 21. PMID: 35028050; PMCID: PMC8739248.

## ABSTRACT

**Background/Purpose:** Patients with periodontal disease have higher dental fear levels, which may have negative effects on their clinical outcome during scaling and root planing (SRP). The present study used the new classification of periodontitis and validated questionnaires to assess the relationship among dental fear, SRP pain and periodontal status.

**Materials and Methods:** A total of 120 periodontitis patients were enrolled and staging according to the new classification of periodontitis. SRP was performed, and the visual analog scale (VAS) to assess pain was used with every patient after treatment. Questionnaires, including Corah's Dental Anxiety Scale (DAS), Dental Fear Survey (DFS), and short-form Dental Anxiety Inventory (S-DAI) were implemented from the first attendance and subsequent visits after 6 months. The patients were grouped by DAS scores. The statistical analysis was performed using T-test, chi-square, Pearson and Spearman correlative analysis.



**Results:** Compared to pre-SRP treatment, the dental fear level on DFS was decreased in the posttreatment period for all periodontitis stages. There were no statistically significant differences in S-DAI and DAS between pretreatment and posttreatment periods in stage I and II; meanwhile, there were statistically significant differences in stage III and IV. The correlation among periodontitis stages, VAS and dental fear level was significant. The proportion of high periodontitis stages was increased in high dental fear group.

**Conclusion:** SRP can reduce dental fear levels in all periodontitis stages, especially in stage III and IV. Correlations exist among periodontal status, dental fear and SRP pain. High dental fear is associated with poor periodontal status.

Long H, Li Q, Zhong X, Yang L, Liu Y, Pu J, Yan L, Ji P, Jin X. The prevalence of professional burnout among dentists: a systematic review and meta-analysis. *Psychol Health Med.* 2023 Jul-Dec;28(7):1767-1782. doi: 10.1080/13548506.2023.2208364. Epub 2023 May 3. PMID: 37138501.

## ABSTRACT

Professional burnout refers to mental weariness caused by occupational stress. However, there is a lack of systematic studies on the prevalence of professional burnout among dentists. The purpose of this study was to investigate the prevalence of professional burnout among dentists. Databases including PubMed, PsycINFO, Embase, Cochrane, and Web of Science were systematically searched from inception to 28 October 2021. The random-effects model and forest plots were used to assess the pooled prevalence of professional burnout among dentists. A total of 15 studies with a total of 6038 study subjects were included in the meta-analysis, and the overall professional burnout among dentists was 13% (95%CI: 6-23). Subgroup analysis suggested a high prevalence of burnout in Europe, and the least in the Americas. The pooled burnout prevalence in cross-sectional surveys was significantly lower than that in longitudinal studies. In addition, the overall burnout prevalence in the last decade was significantly lower than that of a decade ago. This meta-analysis demonstrated that the prevalence of burnout was relatively low among dentists, and there was a downward trend. Therefore, it is important to continue to pay close attention to the mental health of dentists and effectively prevent and treat professional burnout to better maintain the provision of health care services.

Long R, Forty L, Field J. Resilience in Oral Health Professional Education: A Scoping Review. *Eur J Dent Educ.* 2024 Nov;28(4):978-994. doi: 10.1111/eje.13034. Epub 2024 Aug 21. PMID: 39166372.

## ABSTRACT

**Introduction:** Resilience is defined as an individual's capacity to effectively adapt in the face of challenges without detrimental effects on their health and well-being. This scoping review identifies and rationalises the published concepts that underpin resilience in oral health professional (OHP) education. It provides recommendations for the development of evidence-based strategies for promoting resilience in OHP education.

**Methods:** The PRISMA and Arksey and O'Malley methodological frameworks for scoping reviews were used to determine the methodology and answer the question 'What concepts contribute to resilience in OHP Education?'. The search strategy included published literature searches and internet searches.

**Results:** In total, 744 articles on resilience and coping were identified, and 59 were included after excluding irrelevant records. Most studies used surveys as their study design and focused on undergraduate dental students in North America and Asia. Three main themes were identified: factors that contribute to resilience, measurement tools and scales and enhancing resilience. This review highlights a positive correlation between increased resilience and improved outcomes for dental students.

**Conclusion:** Resilience and its related factors are not well understood. There is insufficient evidence to support interventions for building resilience due to inconsistent measuring methods and limited research validating resilience scales in OHP education. Investigators should accurately understand the terminology for clarity and consistency. Validated outcome measures and student feedback should be used to determine the effectiveness of interventions. It is important to teach students coping strategies to manage stressors, and digital applications for building resilience should be developed and tested in OHP student populations.

Macrì M, D'Albis G, D'Albis V, Antonacci A, Abbinante A, Stefanelli R, Pegreffì F, Festa F. Periodontal Health and Its Relationship with Psychological Stress: A Cross-Sectional Study. *J Clin Med.* 2024 May 16;13(10):2942. doi: 10.3390/jcm13102942. PMID: 38792482; PMCID: PMC11122378.

## ABSTRACT

**Background:** Studies suggest that chronic psychological stress can lead to oral health deterioration, alter the immune response, and possibly contribute to increased inflammation, which can impact the physiological healing of periodontal tissues. This cross-sectional study seeks to assess and improve clinical understanding regarding the relationship between perceived stress, mindfulness, and periodontal health.

**Methods:** A total of 203 people were analyzed from December 2022 to June 2023. The Periodontal Screening and Recording (PSR) score and Gingival Bleeding Index (GBI), and Plaque Control Record (PCR) of every patient were registered. Subsequently, participants completed the Sheldon Cohen Perceived Stress Scale (PSS) and the Mindfulness Awareness Attention Scale (MAAS) questionnaires. The collected data underwent statistical analysis, encompassing the evaluation of correlations and dependencies. Applying Welch's t-test to assess the relationship between MAAS and the variable indicating the presence or absence of periodontitis, a noteworthy p-value of 0.004265 was obtained.

**Results:** This underscores a significant distinction in MAAS scores between patients affected by periodontitis and those unaffected by the condition. Additionally, Pearson correlations were computed for GBI and perceived stress, PCR and perceived stress, PCR and MAAS. The resulting p-values of 2.2-16, 3.925-8, and 2.468-8, respectively, indicate a statistically significant correlation in each instance.

**Conclusions:** These findings contribute valuable insights into the interconnectedness of these variables, emphasizing the significance of their associations in the study context. Despite the limitations, the findings of this study suggest a significant relationship between psychological stress, mindfulness, and periodontal



tissue health. Clinical trials are necessary to incorporate the assessment of a patient's psychological status as a new valuable tool in the management of periodontal health.

Mino T, Kimura-Ono A, Arakawa H, Tokumoto K, Kurosaki Y, Matsuka Y, Maekawa K, Kuboki T. A novel brief questionnaire using a face rating scale to assess dental anxiety and fear. *J Adv Prosthodont.* 2024 Aug;16(4):244-254. doi: 10.4047/jap.2024.16.4.244. Epub 2024 Aug 20. PMID: 39221413; PMCID: PMC11361820.

## ABSTRACT

**Purpose:** This study aimed to evaluate the reliability and validity of a four-item questionnaire using a face rating scale to measure dental trait anxiety (DTA), dental trait fear (DTF), dental state anxiety (DSA), and dental state fear (DSF).

**Materials and Methods:** Participants were consecutively selected from patients undergoing scaling (S-group; n = 47) and implant placement (I-group; n = 25). The S-group completed the questionnaire both before initial and second scaling, whereas the I-group responded on the pre-surgery day (Pre-day), the day of implant placement (Imp-day), and the day of suture removal (Post-day).

**Results:** The reliability in the S-group was evaluated using the test-retest method, showing a weighted kappa value of DTA, 0.61; DTF, 0.46; DSA, 0.67; DSF, 0.52. Criterion-related validity, assessed using the State-Trait Anxiety Inventory's trait anxiety and state anxiety, revealed positive correlations between trait anxiety and DTA/DTF (DTA,  $r = 0.30$ ; DTF,  $r = 0.27$ ; correlation coefficient) and between state anxiety and all four items (DTA,  $r = 0.41$ ; DTF,  $r = 0.32$ ; DSA,  $r = 0.25$ ; DSF,  $r = 0.25$ ). Known-group validity was assessed using the initial data and Imp-day data from the S-group and I-group, respectively, revealing significantly higher DSA and DSF scores in the I-group than in the S-group. Responsiveness was gauged using I-group data, showing significantly lower DSA and DSF scores on post-day compared to other days.

**Conclusion:** The newly developed questionnaire has acceptable reliability and validity for clinical use, suggesting its usefulness for research on dental anxiety and fear and for providing patient-specific dental care.

Mohammadkhah F, Amirhajelu RM, Bakhtiar M, Salemi SA, Kevenjan M, Jeihooni AK. The effect of training intervention based on the theory of planned behavior on oral and dental health behaviors in pregnant women. *BMC Oral Health.* 2023 Jul 25;23(1):521. doi: 10.1186/s12903-023-03239-w. PMID: 37491230; PMCID: PMC10369690.

## ABSTRACT

**Background:** Pregnancy is a transient physiological condition that causes adverse oral and dental consequences. The present study aimed to determine the effect of a training intervention based on the theory of planned behavior on oral and dental behaviors in pregnant women.

**Methods:** This quasi-experimental study was conducted on 140 pregnant women (70 in the intervention group and 70 in the control group) supported by comprehensive health centers on the outskirts of Shiraz, Iran, in 2019-2020. The sampling was performed in each center by a simple random method. The

tool included a demographic characteristics questionnaire, a questionnaire based on the theory of planned behavior, a self-care behavior questionnaire, and checklists for recording DMFT (Decayed, Missing due to caries, and Filled Teeth (DMFT)) and dental plaque indices. The questionnaires were completed before and 3 months after the intervention by both groups. The intervention group received six 50-min training sessions. The data were analyzed using SPSS 22, the chi-squared test, independent t-test, paired t-test, and descriptive statistics ( $p < 0.05$ ).

**Results:** The mean ages of the intervention and control groups were  $32.28 \pm 6.14$  and  $31.84 \pm 6.71$ , respectively. The results showed that the average scores of all constructs of the theory of planned behavior, dental plaque indices (PI), and MDFT in the intervention group significantly changed after the intervention ( $p < 0.001$ ).

**Conclusion:** According to the results, training based on the theory of planned behavior was effective on dental and oral health behaviors in pregnant women and improved the clinical results of their self-care behaviors. Therefore, training sessions will increase the knowledge of pregnant women, and providing timely consultations and examinations can be helpful and effective in developing oral and dental health behaviors in pregnant women.

Moro JDS, Soares JP, Massignan C, Oliveira LB, Ribeiro DM, Cardoso M, Canto GL, Bolan M. BURNOUT SYNDROME AMONG DENTISTS: A SYSTEMATIC REVIEW AND META-ANALYSIS. *J Evid Based Dent Pract.* 2022 Sep;22(3):101724. doi: 10.1016/j.jeb-dp.2022.101724. Epub 2022 Apr 2. PMID: 36162888.

## ABSTRACT

**Objective:** Burnout syndrome has negative consequences on the dentist's health and performance during work. This systematic review aimed to assess the prevalence of Burnout syndrome in dentists.

**Methods:** Searches were carried out in Medline, Scopus, Web of Science, PsycINFO, EMBASE, LILACS databases, and searches in the gray literature on January 27, 2021. There were no restrictions on language and search period. For the diagnosis of Burnout, only studies that used the Maslach burnout inventory questionnaire and its subscales emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) were included. Proportion meta-analyses were performed using the Stata 13.0 software.

**Results:** A total of 37 articles were included in the narrative and 31 in quantitative syntheses. The overall prevalence of Burnout syndrome in dentists was 13% (95% confidence interval [CI]: 0.006-0.21;  $I^2$ : 97.07%) and the total prevalence in the subscales EE, DP, and PA, were, respectively: 28% (95% CI: 0.24-0.32;  $I^2$ : 20.70%), 18% (95% CI: 0.08-0.28;  $I^2$ : 85.61%) and 10% (95% CI: 0.08-0.13;  $I^2$ : 0%). About the levels of Burnout syndrome in the subscales, 25% (95% CI: 0.19-0.31;  $I^2$ : 92.58%) presented high EE, 18% (95% CI: 0.10-0.26;  $I^2$ : 96.62%) high DP and 32% (95% CI: 0.20-0.45;  $I^2$ : 97.86%) low PA. About continuous data, the mean of EE, DP and PA was respectively 17.90 (95% CI: 9.36-26.43;  $I^2$ : 94.8), 6.93 (95% CI: 3.41-10.45;  $I^2$ : 80.2) and, 34.69 (95% CI: 23.82-45.55;  $I^2$ : 98.8). No study presented all the positive criteria of the Joanna Briggs Institute Critical Appraisal checklist.



**Conclusion:** In conclusion, there was a considerable prevalence of burnout syndrome in dentists, mainly in the subscale of emotional exhaustion.

Negucioiu M, Buduru S, Ghiz S, Kui A, Şoicu S, Buduru R, Sava S. Prevalence and Management of Burnout Among Dental Professionals Before, During, and After the COVID-19 Pandemic: A Systematic Review. *Healthcare (Basel)*. 2024 Nov 26;12(23):2366. doi: 10.3390/healthcare12232366. PMID: 39684988; PMCID: PMC11641790.

## ABSTRACT

**Background:** Burnout syndrome represents a significant challenge in healthcare, impacting dental professionals globally across all geographic, demographic, or socioeconomic backgrounds. Pervasive work-related stress and insufficient management practices highlight the urgent need for enhanced awareness and targeted interventions.

**Objectives:** This systematic review aimed to evaluate the prevalence, causes, and impacts of burnout among dental professionals and to explore the effectiveness of various occupational health interventions aimed at managing and preventing burnout in the dental sector during different phases of the COVID-19 pandemic.

**Methods:** We conducted a systematic review following the PRISMA guidelines, searching electronic databases, including PubMed, Scopus, and Web of Science, from January 2014 to April 2024. The eligibility criteria included studies reporting on the prevalence of burnout, interventions to reduce burnout, and the impact of burnout on dental practices. A quality assessment was performed using the Newcastle-Ottawa Scale for observational studies.

**Results:** The findings indicate high levels of emotional exhaustion, depersonalization, and reduced personal accomplishment among dental practitioners, with significant variations influenced by workplace factors, professional relationships, and pandemic-related stresses. Differential effects based on educational level and age were also evident.

**Conclusions:** This review highlights the urgent need for targeted public health initiatives and occupational health strategies to address and mitigate burnout in dentistry. Emphasizing professional relationships and workplace dynamics could play a crucial role in the prevention and management of burnout (PROSPERO registration no. CRD42024586616).

Parihar AS, Narang S. Correlation of Stress and Oral Inflammatory Burden in Patients With Chronic Periodontitis in a Sample Population From Bhopal: A Randomized Clinical Study. *Cureus*. 2024 Oct 7;16(10):e70974. doi: 10.7759/cureus.70974. PMID: 39507151; PMCID: PMC11540116.

## ABSTRACT

**Introduction:** Chronic periodontitis is a prevalent inflammatory disease that leads to the destruction of tooth-supporting structures. Psychological stress is a potential risk factor for periodontitis, potentially exacerbating inflammation and impairing treatment outcomes. This study aims to explore the correlation

between chronic stress and oral inflammatory burden, as measured by the Periodontal Inflamed Surface Area (PISA), in a sample population from Bhopal, India.

**Methods:** This randomized clinical study included 1,250 participants, divided into three groups: Group A (control, n=250), Group B (chronic periodontitis, n=500), and Group C (post-treatment chronic periodontitis, n=500). Participants underwent a comprehensive periodontal examination, including the calculation of PISA, and completed the Perceived Stress Scale-10 (PSS-10) to assess stress levels. Statistical analysis included Pearson's correlation to assess the relationship between PSS-10 scores and PISA, with comparisons among groups using analysis of variance or Kruskal-Wallis tests.

**Results:** Group B exhibited significantly higher periodontal parameters and PSS-10 scores than Group A and Group C ( $p < 0.001$  for all comparisons). Group C showed significant improvements in both periodontal parameters and PSS-10 scores following treatment ( $p < 0.001$ ). A positive correlation was observed between PSS-10 scores and PISA in Group B ( $r = 0.62$ ,  $p < 0.001$ ), indicating that higher perceived stress was associated with increased oral inflammation in untreated chronic periodontitis. This correlation persisted after adjusting for confounders, including age, sex, and socioeconomic status.

**Conclusions:** Chronic stress is significantly associated with increased oral inflammatory burden in patients with chronic periodontitis, suggesting that stress may act as an independent risk factor for disease progression. Periodontal therapy reduces oral inflammation and alleviates psychological distress. Integrating stress management into periodontal treatment plans may enhance patient outcomes, highlighting the importance of a holistic approach to periodontal care.

Paśnik-Chwalik B, Konopka T. Impact of periodontitis on the Oral Health Impact Profile: A systematic review and meta-analysis. *Dent Med Probl*. 2020 Oct-Dec;57(4):423-431. doi: 10.17219/dmp/125028. PMID: 33263952.

## ABSTRACT

**Background:** Periodontitis, being a chronic and multifactorial disease, affects oral health, and consequently, the patient's quality of life (QoL). The assessment of the oral health-related quality of life (OHRQoL) is possible with the Oral Health Impact Profile-14 (OHIP-14) questionnaire comprising 7 subdomains: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap.

**Objectives:** The aim of this study was to conduct a systematic review of cross-sectional or case-control studies concerning the impact of periodontitis on QoL measured with OHIP-14. The outcomes of the studies were subjected to a meta-analysis.

**Material and Methods:** On the basis of a survey of databases (MEDLINE, Scopus, Google Scholar, and Polish Medical Bibliography - PBL), 1,346 titles related thematically to the impact of periodontitis on QoL were obtained and analyzed. Ten studies were considered eligible for evaluation (8 cross-sectional ones and 2 case-control ones).



**Results:** All studies indicated a significant influence of periodontitis on the deterioration of the OHIP-14 values. This relationship was shown to be directly modified in proportion to the degree of the advancement of the periodontal disease and to the extent of periodontal tissue damage. Our own meta-analysis confirmed the correlation between the prevalence of periodontitis and increased OHIP-14 scores with a cumulative odds ratio (OR) of 1.33, demonstrated a moderately significant deterioration of the OHIP-14 scores by 4.2 points in the group with periodontitis as compared to the control group, and assessed the probability of OHIP-14 deterioration to be 3.5 times greater in severe periodontitis.

**Conclusions:** The impact of periodontitis on the deterioration of OHRQoL is quite clearly explained by the clinical symptoms of periodontitis. According to patients, the most important problems that periodontitis may cause include psychological discomfort, stress, problems in interpersonal relations, or even difficulties in daily activities. This indicates the need for more of a holistic approach in planning the goals of the periodontal therapy, taking into account the psychological and social aspects of the patient's perception of the disease.

Piedra-Hernández L, Batista-Cárdenas D, Gómez-Fernández A, Ramírez K. Dental anxiety and oral health-related quality of life before and after non-surgical periodontal treatment. *Clin Oral Investig*. 2023 Sep;27(9):5459-5474. doi: 10.1007/s00784-023-05165-1. Epub 2023 Jul 24. PMID: 37488334.

## ABSTRACT

**Objectives:** To (1) investigate dental anxiety (DA) and oral health-related quality of life (OHRQOL) before and after non-surgical periodontal treatment (NSPT) and (2) determine correlations between these patient-reported measures.

**Materials and Methods:** Demographics, smoking habits, dental pain, Modified Corah's Dental Anxiety Scale (MDAS), and Oral Health Impact Profile (OHIP-14) were assessed in eighty-two participants.

**Results:** Mean age was 48.3 years  $\pm$  11.5. At baseline, 8.5% reported being active smokers. Of non-smokers, 11% reported being an ex-smoker. After NSPT, 11.0% reported smoking. Patients' maximal pain in the last month decreased after therapy. Before treatment, participants reported higher DA. Extreme DA was observed in 8.5% of participants before therapy. Afterwards, 2.4% of participants reported extreme DA. Fear of having a foreign object in the mouth decreased after NSPT. All OHIP-14 scores, except functional limitation, improved post-treatment. Higher DA was associated with worse OHRQoL before treatment. After treatment, total MDAS score was associated with OHIP-14 global score, physical pain, psychological disability, and social disability. Worse MDAS sub-scores were associated with a higher OHIP-14 global score. Individuals with "normal/slight anxiety" had a significant improvement in OHRQoL, whereas people in the "moderate and extreme anxiety" group did not report a significant improvement. Patients diagnosed with generalized periodontitis (GP) stage III grade B and GP stage IV grade B reported less anxiety after NSPT.

**Conclusions:** Associations of MDAS subcategories with OHIP-14 domain scores were found before and after therapy. DA decreases and OHRQoL enhances after NSPT in patients with "normal/slight" anxiety to dental treatment. Dental practitioners should plan strategies to cope with anxiety to dental treatment and prevent decreases in OHRQoL.

**Clinical relevance:** Within the limitations of this study, DA and OHRQoL were positively correlated in patients with periodontitis, before and after NSPT, using the MDAS and OHIP-14 questionnaires. The results of our study suggest that treatment is effective in terms of alleviating DA and improving oral health, along with quality of life, in patients that report "normal/slight" anxiety to dental treatment. Nonetheless, results must be interpreted with caution since patients are generally anxious before any type of dental treatment. DA may not just be confined to NSPT per se. According to our results, evaluation of both outcomes should be an integral part of routine periodontal clinical evaluation and periodontal reevaluation of initial therapy. It is important that clinicians learn to identify patients that suffer from anxiety and take time to explain the treatment procedures to the patient, to strive for patient's emotional well-being before, during, and after dental care services. The use of specific questionnaires for both DA and OHRQoL may be more appropriate to demonstrate the psychological and quality of life differences due to periodontal disease and NSPT.

Qiu P, Dong B, Cao R, Hu J, Yang J, Yu R, Fan Z. The Relationship Between Physical Activity Levels and Periodontal Health Status Among College Students: A Cross-Sectional Study. *Risk Manag Healthc Policy*. 2025 Jan 11;18:131-141. doi: 10.2147/RMHP.S498108. PMID: 39816784; PMCID: PMC11734500.

## ABSTRACT

**Objective:** This study aimed to investigate the relationship between physical activity levels and periodontal health status among college students in Shanghai, with the goal of informing oral health policy recommendations.

**Methods:** A cross-sectional study was conducted from March 2023 to March 2024 involving 120 university students aged 18-29. Data was collected using the World Health Organization (WHO) oral health survey methods. Periodontal status was assessed using the Community Periodontal Index (CPI), and physical activity was measured with a simplified version of the International Physical Activity Questionnaire (IPAQ). Data analysis was performed using Statistical Package for the Social Sciences (SPSS) version 27.0 (IBM, USA), employing chi-square tests and multivariable logistic regression.

**Results:** Among the participants (77 males, 43 females), 70% met physical activity guidelines. Adjusting for gender, age, tooth brushing frequency, and dental floss use, insufficient physical activity was associated with higher odds of periodontitis (adjusted model: OR = 5.293, 95% CI = 1.334 to 20.993,  $p = 0.018$ ). High-intensity physical activity significantly reduced the incidence of periodontitis ( $p = 0.006$ ), while sedentary behavior showed no significant correlation ( $p = 0.176$ ).

**Conclusion:** Promoting physical activity among college students may enhance periodontal health, underscoring the need to integrate oral and public health initiatives.



Reyes Garita P, Tran VT, Chatzopoulou E, Toko-Kamga L, Bouchard P, Carra MC. Oral hygiene behaviors and periodontitis among patients with chronic diseases and its impact on tooth loss and oral health-related quality of life: a cross-sectional study of data from the ComPaRe e-cohort. *Clin Oral Investig.* 2024 Sep 7;28(10):518. doi: 10.1007/s00784-024-05903-z. PMID: 39243303.

## ABSTRACT

**Objectives:** Little is known about oral hygiene habits of patients suffering from chronic diseases. This study aims to describe oral hygiene behavior (OHB) in terms of tooth brushing and professional scaling frequency among patients with chronic diseases. Secondly, it aims to assess the association between OHB and periodontitis, tooth loss, and oral health-related quality of life (OHRQoL).

**Materials and Methods:** This is a cross-sectional analysis of data of adult participants in the ComPaRe e-cohort. Participants were classified into having good, moderate, and poor OHB according to self-reported frequency of toothbrushing and professional tooth scaling. Periodontitis was assessed using the PEriodontal Screening Score (PESS). Weighted binary regression models were used to estimate the association between OHB and the following outcomes: (i) periodontitis; (ii) number of missing teeth; and (iii) OHRQoL based on the Oral Health Impact Profile-14.

**Results:** Overall, 8553 patients were included in the analyses (52.9% females, mean age of  $56.3 \pm 17$  years). Of these, 2907 (34%), 3953 (46%) and 1693 (20%) were considered as having good, moderate, and poor OHB, respectively. Over half (54.1%) of the patients had a PESS  $\geq 5$  suggestive for severe periodontitis. Moderate OHB was associated with lower odds of PESS  $\geq 5$  compared to poor OHB (Adjusted Odds Ratio, OR = 0.81 [95%CI: 0.70-0.92]). Good and moderate OHB were significantly associated with lower odds of  $\geq 10$  missing teeth (OR = 0.26 [95%CI: 0.21-0.33] and OR = 0.47 [95%CI: 0.4-0.56], respectively) and better OHRQoL than poor OHB.

**Conclusions:** Although, most of patients with chronic diseases reported to have good or moderate OHB, severe periodontitis is highly prevalent among this patient population in France.

**Clinical relevance:** This study describes OHB in a representative sample of patients suffering from one or more chronic diseases and provides an estimate of the prevalence of self-reported severe periodontitis, missing teeth, and OHRQoL.

Sarıbaşı E, Tuncer MC. Evaluation of Pain and Anxiety Levels After Periodontal Treatment. *Medicina (Kaunas).* 2025 Mar 7;61(3):464. doi: 10.3390/medicina61030464. PMID: 40142275; PMCID: PMC11944021.

## ABSTRACT

**Background and Objectives:** Nowadays, dental anxiety is one of the most common problems among the masses globally, causing individuals to avoid seeking dental treatment, which in turn leads to deterioration of quality of life related to oral health. Despite the technological advances in dentistry such that less pain is felt and high comfort performance is maintained, dental anxiety is still seen in individuals. Non-surgical periodontal therapy can be the cause of tension, anxiety, and stress. The aim of this study is to evaluate

the possible relationships between pain perception and dental anxiety in individuals who underwent supragingival scaling.

**Materials and Methods:** In our study, 226 individuals (114 female and 112 male) who were referred to the Dicle University Faculty of Dentistry, Department of Periodontology and who underwent supragingival scaling treatment were included. Participants were asked to complete the Modified Dental Anxiety Scale (M-DAS) and the Visual Analog Scale (VAS) to determine anxiety and pain levels and questionnaires containing information on gender, age, education level, previous dental visits, and complications.

**Results:** The M-DAS score for females was significantly higher compared to males ( $p < 0.05$ ). However, there was no statistically significant difference between genders regarding VAS scores. No statistically significant difference existed between M-DAS and VAS scores and education levels. There was a statistically significant relationship between M-DAS and VAS scores in females ( $p < 0.05$ ).

**Conclusions:** M-DAS and VAS scores in male patients did not show any statistically significant difference. Female patients exhibited higher levels of dental anxiety, and VAS scores were increased in females; M-DAS scores were also increased.

Shukla A, Venkatesh UG, Almalki SA, Gowdar IM, Gufran K. Effect of yogic breathing (pranayama) on periodontal health status, salivary oxidative stress, and antioxidant levels in adults aged 35 to 44 in India: a cross-sectional study. *Eur J Med Res.* 2025 Apr 26;30(1):334. doi: 10.1186/s40001-025-02598-0. PMID: 40287735; PMCID: PMC12032707.

## ABSTRACT

**Background:** The overproduction of oxygen-derived free radicals and their byproducts, as well as a deficiency in antioxidants, are key factors in the progression of periodontitis. Pranayama, a yogic practice, involves deliberate, rhythmic, and intense movements and expansion of the respiratory organs. Engaging in rhythmic breathing exercises has been proven to lower resting levels of inflammatory cytokines and enhance the oxidant-antioxidant defence system. The objective of this study is to analyse the levels of salivary total antioxidant capacity (TAC) and salivary oxidative stress markers in individuals who regularly practice pranayama.

**Materials and method:** This cross-sectional study included 224 participants aged between 35 and 44 years, divided into two groups: 112 individuals practicing pranayama regularly (exposed group) and 112 individuals with no history of pranayama practice (control group). The periodontal health status of both exposed and unexposed group was evaluated using Community Periodontal Index (CPI). Salivary TAC and Malondialdehyde (MDA) levels were assessed using the double antibody sandwich Enzyme-Linked Immunosorbent Assay (ELISA) and the Thiobarbituric Acid Reactive Substances (TBARS) method, respectively.

**Results:** The pranayama group showed a significantly higher mean salivary TAC ( $0.58 \pm 0.098$ ) compared to the control group ( $0.50 \pm 0.090$ ) ( $p = 0.000$ ). In contrast, the mean salivary MDA levels were notably lower in the pranayama group ( $0.44 \pm 0.09$ ) than in the control group ( $0.60 \pm 0.11$ ) ( $p = 0.000$ ).

**Conclusion:** The findings indicate that regular pranayama practice lowers salivary oxidative stress levels while increasing salivary antioxidant levels. Therefore, pranayama may serve as a complementary approach for promoting periodontal health.



**Clinical relevance:** Pranayama has demonstrated positive effects on stress by lowering cortisol levels, a key stress marker. It also promotes phagocytosis and regulates the production of fibroblasts and epithelial cells, thereby improving periodontal health. Consequently, pranayama could be considered a complementary alternative therapy alongside conventional periodontal treatments in the future.

Stankeviciene I, Stangvaltaite-Mouhat L, Aleksejuniene J, Mieliauskaite D, Talijuniene I, Butrimiene I, Bendinskaite R, Puriene A. Oral health status, related behaviours and perceived stress in xerostomia, Sicca and Sjögren's syndromes patients - a cross-sectional study. *BMC Oral Health*. 2024 Apr 15;24(1):454. doi: 10.1186/s12903-024-04224-7. PMID: 38622697; PMCID: PMC11017497.

## ABSTRACT

**Background:** Mouth dryness increases the risk of some oral health-related conditions. Furthermore, it is unclear if patients with dry mouth engage in appropriate oral health-related behaviours. The study examined oral health, related behaviours, and perceived stress in dry-mouth patients and compared them to matched controls without mouth dryness.

**Methods:** Information about 182 dry-mouth patients and 302 age- and sex-matched subjects was retrieved. Three dry mouth groups: xerostomia, Sicca syndrome and Sjögren's syndrome, were formed based on patient self-reported and objectively assessed symptoms. The World Health Organization's Oral Health for Adults and Perceived Stress Scale (PSS-10) questionnaires inquired about sociodemographic characteristics, oral health-related behaviours, and self-perceived stress. Clinical oral health assessments included: caries experience measured as total numbers of decayed (DS), missing (MS), filled surfaces (FS), number of remaining teeth, erosive tooth wear and extent of periodontal pocketing. Data were analyzed using bivariate and multivariable tests.

**Results:** The dry-mouth participants had higher mean (SD) DMFS scores than their matched controls: xerostomia patients vs. controls: 74.6 (34.4) and 66.3 (35.4), Sicca syndrome patients vs. controls: 88.3 (34.0) and 70.1 (33.9), and Sjögren's syndrome patients vs. controls: 95.7 (31.5) and 74 (33.2). In comparison to controls, individuals with Sicca and patients with Sjögren's syndromes had lower mean (SD) number of remaining teeth, 15.9 (10.1) vs. 21.7 (8.4) and 13.8 (10.0) vs. 20.1 (9.2), and a lower mean (SD) extent of periodontal pocketing, 20.7 (28.6) vs. 41.1 (31.0), and 21.2 (24.1) vs. 34.8 (34.2), respectively. Xerostomia, Sicca syndrome and Sjögren's syndrome patients had higher odds of using fluoridated toothpaste; OR 1.8 (95%CI 1.1-2.9), OR 5.6 (95%CI 1.7-18.3) and OR 6.9 (95%CI 2.2-21.3), respectively. Participants with Sjögren's syndrome had lower odds of the last dental visit being within the last year; OR 0.2 (95%CI 0.1-0.8).

**Conclusions:** Dry-mouth patients had higher caries experience and fewer teeth than comparison groups but a lower extent of periodontal pocketing. Even though more participants with dry mouth used fluoridated toothpastes, their oral health-related behaviours were not optimal.

Thiemann L, Katzschner M, Hanna G, Kruse AB, Vach K, Ratka-Krüger P, Woelber JP. Oral-hygiene-related self-efficacy in periodontal therapy: A 4-year longitudinal study. *J Clin Periodontol*. 2024 Oct;51(10):1323-1332. doi: 10.1111/jcpe.14043. Epub 2024 Jul 24. PMID: 39048326.

## ABSTRACT

**Aim:** Oral hygiene-related self-efficacy (OHSE) describes one's confidence to successfully execute oral hygiene behaviour. The aim of this study was to investigate the long-term course of OHSE in patients during initial periodontal therapy (IPT) and supportive periodontal therapy (SPT) and its association with clinical parameters.

**Materials and Methods:** Patients diagnosed with periodontitis, undergoing either IPT or SPT, were evaluated at two timepoints. Clinical examination included pocket probing depths (PPDs), clinical attachment loss (CAL), bleeding on probing (BOP), plaque index (PI) and gingival index (GI). Patients' OHSE was assessed with a questionnaire. Statistical analyses included t-tests and linear regression models.

**Results:** Ninety-eight patients from an initial group of 201 patients were evaluated after 4 years. The overall OHSE score increased significantly in the IPT group (mean 11.65 ± 15.6, p = .001). The increase in the OHSE category 'interdental cleaning' was significantly correlated with a decrease in the number of pockets requiring treatment (Spearman correlation  $r_s = -.2349$ , p = .022) and periodontal inflamed surface area (PISA) ( $r_s = -.2099$ , p = .042).

**Conclusions:** Patients under IPT showed a significant increase of OHSE compared to those under SPT. Improved OHSE, particularly in interdental cleaning, appears to be associated with sustained success of periodontal therapy.

Turer OU, Ozcan M, Alkaya B, Demirbilek F, Alpay N, Daglioglu G, Seydaoglu G, Haytac MC. The effect of mindfulness meditation on dental anxiety during implant surgery: a randomized controlled clinical trial. *Sci Rep*. 2023 Dec 7;13(1):21686. doi: 10.1038/s41598-023-49092-3. PMID: 38066232; PMCID: PMC10709419.

## ABSTRACT

Dental implant surgery is almost always associated with patient anxiety. Anxiety during dental surgical procedures triggers an increase in sympathetic activity. Mindfulness meditation (MM) is often associated with high levels of relaxation in the form of increased parasympathetic tone and decreased sympathetic activity. However, the effect of MM on dental anxiety is not clear. The current study aimed to show the effects of a MM as a sedative technique during dental implant surgery by examining the State-Trait Anxiety Inventory (STAI-S), bispectral index (BIS), cortisol levels (CL), systolic (SBP) and diastolic blood pressure (DBP), heart rate (HR) and saturation (SpO2) parameters. HR, SBP, DBP, SpO2, BIS score and CLs were compared at the baseline, immediately before-, during-, and immediately after surgery between the test and control groups. We found that the MM resulted in significant decrease in BIS together with positive effects on hemodynamic parameters (decrease of HR, SBP, DBP and increase of SpO2), psychological findings (improvement on STAI-S scores) and biochemical outcomes (decreased CL). In conclusion, the results demon-



trate that MM appeared to be a reliable strategy for managing stress during dental implant operation with benefits in psychological, physiological and biochemical outcomes.

Vargas Villafuerte KR, Palucci Vieira LH, Oliveira Santos K. Influence of Psychological Stress on the Response to Periodontal Treatment: Protocol for a Systematic Review. JMIR Res Protoc. 2024 Nov 12;13:e56765. doi: 10.2196/56765. PMID: 39531258; PMCID: PMC11599886.

## ABSTRACT

**Background:** The interaction between stress and periodontal treatment is a topic of growing interest. It stands out as a field of research that sheds light on the complexity of oral health in individuals subjected to high levels of emotional stress.

**Objective:** This paper aims to provide a protocol for a systematic review to examine the scientific evidence related to the influence of psychological stress on the response to periodontal treatment.

**Methods:** The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines will be followed, and the study is based on a formulation of PECO (Participants, Exposure, Comparators, and Outcomes) questions. This systematic review will involve a literature search covering studies published from January 2000 to May 2024. It will include searching the PubMed, Web of Science, EBSCOHost, Scopus, and ProQuest databases to identify relevant studies. After selection, data extraction and quality assessment (using the Ottawa-Newcastle Scale) of the included studies will be carried out. The objective is to integrate high-quality evidence on how psychological stress impacts the outcomes of periodontal treatment. Depending on the number and methodological consistency of included studies, the results may be presented by meta-analysis or qualitative synthesis.

**Results:** The current stage of the study consists of selecting studies for the systematic review as outlined by this protocol. The search, screening, and data extraction began in January 2024. The final results are expected by July 2024, with final manuscript submission planned for November 2024.

**Conclusions:** This review will help clarify how psychological factors, such as stress, influence the results of periodontal treatment, providing valuable guidelines for future research and helping clinicians make decisions about the best treatment options for patients.

Vilar Doceda M, Petit C, Huck O. Behavioral Interventions on Periodontitis Patients to Improve Oral Hygiene: A Systematic Review. J Clin Med. 2023 Mar 15;12(6):2276. doi: 10.3390/jcm12062276. PMID: 36983277; PMCID: PMC10058764.

## ABSTRACT

This systematic review aimed to investigate the impact of different psychological models, strategies, and methods to improve plaque control and/or gingival inflammation in patients with periodontal diseases.

**Methods:** The PubMed/MEDLINE, Cochrane Library, and Embase online databases were explored to identify relevant studies published before October 2022. Articles investigating the effects of different psychological approaches and intervention strategies on periodontitis patients' oral hygiene (OH) behavioral change were screened.

**Results:** 5460 articles were identified, and 21 fulfilled the inclusion criteria. In total, 2 studies tested audio-visual modalities, and the remaining 19 publications involved six psychological models of health-related behavioral interventions, including Social Cognitive Theory, the Theory of Planned Behavior, the Health Action Process Approach, Leventhal's self-regulatory theory, Motivational Interviewing, and Cognitive Behavioral Therapy. A meta-analysis of the results was not carried out due to the high heterogeneity among the interventions.

**Conclusions:** Considering the limitations of the available studies, psychological interventions based on social cognitive models that combine some of the techniques of this model (goal setting, planning, self-monitoring, and feedback) may improve OH in periodontitis patients, having a positive impact on periodontal clinical outcomes. Delivering cognitive behavioral therapy in combination with motivational interviewing may result in an improvement in OH as evaluated by decreasing plaque and bleeding scores.

Villafuerte KRV, Palucci Vieira LH, Santos KO, Rivero-Contreras E, Lourenço AG, Motta ACF. Psychological Stress Reduces the Effectiveness of Periodontal Treatment: A Systematic Review. J Clin Med. 2025 Mar 1;14(5):1680. doi: 10.3390/jcm14051680. PMID: 40095650; PMCID: PMC11900564.

## ABSTRACT

**Background/Objectives:** To systematically evaluate scientific evidence related to the influence of psychological stress on the response to periodontal treatment.

**Methods:** PubMed/NCBI (National Center for Biotechnology Information, US National Library of Medicine), Web of Science (ClarivateTM), EBSCOHost, SCOPUS, and ProQuest databases were searched for published clinical studies in English up to May 2024. The quality of each study was assessed using the Ottawa-Newcastle scale.

**Results:** Of 803 relevant articles identified, 8 were included in the qualitative synthesis qualitative synthesis. These studies involved 445 patients who completed the follow-up period, ranging from 6 weeks to 6 months. Stressed patients were more likely to experience higher levels of PPD and BOP compared to non-stressed patients. In total, 75% of the included studies showed a positive relationship between stress and response to NSPT, 12.5% observed a negative relationship, and the remaining 12.5% found some degree of relationship in the results of clinical periodontal parameters. The level of evidence is categorized according to the quality of the synthesis presented.

**Conclusions:** There is a positive correlation between psychological stress and periodontal treatment response, indicating that stress may negatively influence the clinical outcomes of NSPT. Stress may reduce the inflammatory response, which is crucial for eliminating periodontal micropathogens after periodontal treatment.



Walther C, Lieske B, Borof K, Kühn S, Härter M, Löwe B, Beikler T, Heydecke G, Kuta P, Seedorf U, Spinler K, Gallinat J, Aarabi G. Association between periodontitis and depression severity - A cross-sectional study of the older population in Hamburg. *Brain Behav Immun Health*. 2023 Sep 25;34:100689. doi: 10.1016/j.bbih.2023.100689. PMID: 37822872; PMCID: PMC10562758.

## ABSTRACT

The aim of the current study is to investigate the association between periodontitis (exposure variable) and depression severity (outcome variable) in an older German population. We evaluated data from 6,209 participants (median age 62 years) of the Hamburg City Health Study (HCHS). The HCHS is a prospective cohort study and is registered at ClinicalTrials.gov (NCT03934957). Depression severity were assessed with the 9-item Patient Health Questionnaire (PHQ-9). Periodontal examination included probing depth, gingival recession, plaque index, and bleeding on probing. Descriptive analyses were stratified by periodontitis severity. Multiple linear regression models were adjusted for age, sex, diabetes, education, smoking, and antidepressant medication. Linear regression analyses revealed a significant association between log-transformed depression severity and periodontitis when including the interaction term for periodontitis \* age, even after adjusting for age, sex, diabetes, education, smoking and antidepressant medication. We identified a significant association between severe periodontitis and elevated depression severity, which interacts with age. Additionally, we performed a linear regression model for biomarker analyses, which revealed significant associations between depression severity and severe periodontitis with log-transformed inflammatory biomarkers interleukin 6 (IL-6) and high-sensitivity C-reactive protein (hsCRP). In order to identify new therapeutic strategies for patients with depression and periodontal disease, future prospective studies are needed to assess the physiological and psychosocial mechanisms behind this relationship and the causal directionality.

Xu S, Zhang X, Gong R, Huang X, Zhang M. Exploring the Correlation Between Psychological Stress, Anxiety, and Periodontitis Among University Students: A Cross-Sectional Investigation. *J Inflamm Res*. 2025 Jun 25;18:8317-8329. doi: 10.2147/JIR.S530138. PMID: 40585046; PMCID: PMC12206410.

## ABSTRACT

**Objective:** Periodontitis is a prevalent chronic inflammatory disease, with growing evidence suggesting a link to psychological factors such as stress and anxiety. University students, who frequently experience elevated psychological stress, may be particularly susceptible to periodontal issues. This study aimed to examine the relationship between stress levels, anxiety status, and periodontitis in university students, and to assess the potential influence of psychological factors on periodontal health.

**Methods:** The study sample comprised 240 university students. Participants were categorized post hoc according to their periodontal status and psychological assessment scores. Periodontal health was evaluated using the Community Periodontal Index (CPI), while stress and anxiety levels were measured with the Perceived Stress Scale-14 (PSS-14) and the Generalized Anxiety Disorder-7 (GAD-7), respectively. Statistical analyses included chi-square tests and multivariable logistic regression models to examine associations between psychological factors and periodontitis, adjusting for potential confounding variables.

**Results:** Among the participants (mean age: 21.70 ± 3.16 years), 43.3% were diagnosed with periodontitis. The mean age was 21.78 ± 3.32 years in the non-periodontitis group and 21.24 ± 2.06 years in the periodontitis group. Anxiety was prevalent: 33.8% had no anxiety, 30.8% had mild, 22.1% had moderate, and 13.3% had severe anxiety. Reported stress levels were 35.0% normal, 48.8% high, and 16.3% very high. Anxiety levels were significantly associated with an increased risk of periodontitis ( $P < 0.001$ ). After adjusting for a range of potential confounders, including but not limited to gender, age, education level, smoking, and oral hygiene practices, individuals with mild, moderate, and severe anxiety had 8.391 (95% CI: 2.776-25.362), 11.423 (95% CI: 3.116-41.872), and 46.196 (95% CI: 10.414-204.921) times higher odds of developing periodontitis, respectively, compared to those without anxiety. In contrast, stress levels were not significantly associated with periodontitis after adjustment ( $P > 0.05$ ).

**Conclusion:** Anxiety was significantly associated with periodontitis in university students, highlighting the importance of addressing anxiety as part of periodontal disease prevention and management strategies in this population.

Zhan C, Qu W, Fok MR, Jin L, Lin Y. Motivational Interviewing on Periodontal Treatment Outcomes: A Meta-Analysis. *Int Dent J*. 2024 Aug;74(4):669-678. doi: 10.1016/j.identj.2024.01.003. Epub 2024 Feb 1. PMID: 38307831; PMCID: PMC11287138.

## ABSTRACT

**Objectives:** This systematic review investigated the clinical efficacy of motivational interviewing (MI) in improving oral hygiene and periodontal health in patients with periodontal diseases.

**Methods:** A comprehensive literature search was conducted across various databases up to May 2023. Randomised controlled trials (RCTs) evaluating the effects of MI on periodontal conditions in patients with gingivitis, periodontitis, and peri-implantitis were included. After data screening, a risk-of-bias assessment was performed using the Cochrane risk of bias (RoB) tool. The meta-analysis was performed using random-effects models.

**Results:** Out of 2108 records screened, 7 RCTs involving 474 patients were included in the qualitative synthesis, with 6 of these studies included in the meta-analysis. Amongst these, 5 studies had a high RoB and 2 had some concerns about bias. Although individual studies reported varied results regarding the effects of MI on different periodontal indices and parameters at different time points, the pooled results revealed no significant difference in the overall effect on plaque level, bleeding on probing, and gingival inflammation between the MI and control groups. In addition, there is insufficient evidence to suggest any significant effect on attachment loss or probing depth.

**Conclusions:** The current evidence is insufficient to support the effectiveness of MI as an adjunctive intervention for improving oral hygiene and periodontal outcomes. However, these results should be interpreted with caution. Additional high-quality studies with standardised MI interventions are required to derive definite conclusions.



Zhao S, Wu Y. Knowledge, attitudes and practices among patients with periodontal disease toward disease management. *Front Public Health*. 2024 Dec 6;12:1500586. doi: 10.3389/fpubh.2024.1500586. PMID: 39712320; PMCID: PMC11659202.

## ABSTRACT

**Introduction:** Periodontal disease is a common chronic inflammatory condition that affects oral health and carries broader public health implications. This study aimed to assess the levels of knowledge, attitudes and practices (KAP) among patients with periodontal disease toward disease management.

**Methods:** This cross-sectional web-based study was conducted between March 2022 and March 2023. A self-administered questionnaire was designed to evaluate KAP toward disease management.

**Results:** A total of 514 questionnaires were collected. Among the patients, 313 (60.89%) of them were female, 309 (60.12%) resided in urban areas and 130 (25.29%) reported having severe periodontal disease. The mean scores of knowledge, attitudes and practices were  $3.05 \pm 2.03$  (possible range: 0-8),  $18.71 \pm 3.64$  (possible range: 6-30), and  $14.85 \pm 3.63$  (possible range: 5-25), respectively. The knowledge item with highest correctness rate was the link between periodontal disease and systemic health (60.70%), while the lowest correctness rate was seen for understanding disease classification (36.96%). Pearson's analysis revealed positive correlations between knowledge and attitude ( $r = 0.31, p < 0.001$ ), knowledge and practices ( $r = 0.23, p < 0.001$ ) attitudes, as well as attitudes and practices ( $r = 0.17, p < 0.001$ ). Multivariate logistic regression analysis showed that knowledge (OR = 1.30, 95% CI: 1.14-1.49,  $p < 0.001$ ), age  $\geq 33$  years old (OR = 0.33, 95% CI: 0.18-0.62,  $p = 0.001$ ), housewife/househusband (OR = 0.41, 95% CI: 0.17-0.95,  $p = 0.037$ ) and student (OR = 0.43, 95% CI: 0.20-0.92,  $p = 0.029$ ) were independently associated with practices.

**Conclusion:** Patients with periodontal disease had insufficient knowledge, negative attitudes, and passive practices toward disease management. Further efforts could be directed toward enhancing patient education on periodontal disease to improve knowledge, thereby positively influencing attitudes and disease management practices.

Zhao C, Wang D, Zhang J, Ge S, Zhan Z, Xu L, Liao S. Associations of Social Psychological Factors and OHRQoL in Periodontitis Patients: A Structural Equation Modeling Study. *Patient Prefer Adherence*. 2024 Nov 19;18:2359-2372. doi: 10.2147/PPA.S492070. PMID: 39583136; PMCID: PMC11585296.

## ABSTRACT

**Background and Purpose:** Periodontitis is the leading cause of tooth loss in adults worldwide. The functional loss, nutritional deficiencies, and psychological barriers it causes, as well as its impact on overall health and quality of life, are all significant. The prevalence of periodontal disease is high in China. Our study aimed to determine the intricate relationship between periodontal disease status, dental anxiety, self-rated oral health (SROH), self-efficacy for oral care, perceived social support, socioeconomic status (SES), and the oral health-related quality of life (OHRQoL) among periodontitis patients.

**Methods:** This cross-sectional study used purposive sampling to identify 247 patients with periodontitis who entered the First Affiliated Hospital of Bengbu Medical University between October 2022 and October 2023. 247 participants underwent a periodontal clinical examination combined with imaging, adhering to the "2018 world new classification of periodontal and peri implant diseases and conditions". Participants also completed a detailed questionnaire in paper format, which included OHRQoL, sociodemographic details, dental anxiety, SROH, self-efficacy in oral care, perceived social support, and subjective SES.

**Results:** Dental anxiety, self-efficacy for oral care, and SROH all had a direct and significant effect on OHRQoL. OHRQoL was indirectly related to SROH mediated by dental anxiety and subjective SES, perceived social support and self-efficacy for oral care, respectively. SROH was directly related to subjective SES, and at the same time, they had a direct effect on dental anxiety. Furthermore, patient's age, gender, annual household income, and education level were significantly associated with the degree of periodontal disease.

**Conclusion:** OHRQoL and periodontal status was influenced by socio-demographics characteristics, dental anxiety, SROH, self-efficacy for oral care, perceived social support, subjective SES in periodontitis patients. These insights underscore the importance of adopting a holistic approach in the management and treatment of periodontal diseases.

02

02

---

Conclusiones  
destacadas

---



## Conclusiones destacadas

1. Estrés psicológico como factor de riesgo periodontal
2. Ansiedad, miedo dental y periodontitis
3. Resiliencia, locus de control y autocuidado
4. Modelos conductuales y entrevistas motivacionales
5. Depresión, autoestima y percepción de salud oral
6. Apoyo social, SES y factores psicosociales
7. Conocimiento, actitudes y prácticas (KAP)
8. Biomarcadores salivales: cortisol, neuropéptidos y estrés oxidativo
9. Estudiantes y adultos jóvenes: vulnerabilidad psicológica y salud oral
10. Estrés y burnout en profesionales dentales
11. Intervenciones alternativas: meditación, respiración y enfoque cuerpo-mente
12. Síndromes de boca seca y factores emocionales

### Conclusiones globales – Psicología y Salud Periodontal

Síntesis estructurada a partir de 52 artículos científicos (2023–2025)

## 1. ESTRÉS PSICOLÓGICO COMO FACTOR DE RIESGO PERIODONTAL

- El estrés crónico se asocia a un peor control de placa, más sangrado gingival, inflamación persistente y menor adherencia al tratamiento periodontal.
- Activa el eje HPA, elevando cortisol salival y citocinas proinflamatorias (IL-6, TNF- $\alpha$ , hsCRP), lo que altera la respuesta inmune local.
- Afecta tanto al inicio como a la respuesta al tratamiento periodontal no quirúrgico.
- Los estudiantes y adultos jóvenes presentan prevalencias altas de estrés y síntomas orales asociados (úlceras, boca seca, sangrado).

**Aplicación clínica:** Evaluar el estrés en pacientes periodontales permite ajustar expectativas terapéuticas y recomendar soporte psicológico o técnicas de regulación emocional.

## 2. ANSIEDAD, MIEDO DENTAL Y PERIODONTITIS

- La ansiedad general y la dental específica se relacionan con mayor gravedad de la periodontitis y peor calidad de vida oral.
- La ansiedad actúa como mediador entre el estrés y los síntomas orales.
- El miedo al dentista puede estar modulado por estilos de apego (inseguro, evitativo) y generar evitación del tratamiento.
- Técnicas como mindfulness o meditación han demostrado reducir parámetros de ansiedad y mejorar biomarcadores fisiológicos durante cirugía.

**Aplicación clínica:** Incorporar técnicas breves de relajación o mindfulness en clínica puede reducir ansiedad y mejorar la experiencia del paciente.

## 3. RESILIENCIA, LOCUS DE CONTROL Y AUTOCUIDADO

- Los pacientes con mayor resiliencia psicológica (capacidad de recuperación) muestran mejor adaptación al tratamiento implantológico y periodontal.
- Un locus de control interno (creer que uno puede influir en su salud) se asocia a mejores hábitos y resultados clínicos.
- La autoconfianza para realizar higiene interdental está ligada a menor inflamación y mayor estabilidad periodontal.



**Aplicación clínica:** Fomentar la autoeficacia y valorar estos aspectos en consulta permite personalizar el enfoque educativo y motivacional.

## 4. MODELOS CONDUCTUALES Y ENTREVISTAS MOTIVACIONALES

- Estrategias basadas en la Teoría del Comportamiento Planificado, la Entrevista Motivacional, el Modelo de Creencias en Salud o la Terapia Cognitivo-Conductual han demostrado eficacia en reducir placa e inflamación.
- La entrevista motivacional, incluso en formato breve, mantiene beneficios clínicos a largo plazo.
- El uso de modelos facilita el cambio conductual sostenido más allá de la intervención profesional.

**Aplicación clínica:** Integrar modelos psicológicos en la educación al paciente mejora la adherencia y los resultados terapéuticos.

## 5. DEPRESIÓN, AUTOESTIMA Y PERCEPCIÓN DE SALUD ORAL

- La depresión se relaciona con mayor severidad periodontal, pérdida dental y alteración de la calidad de vida.
- En adultos jóvenes, la autoestima puede verse afectada por la estética dental, especialmente en varones o según origen sociocultural.
- Las autopercepciones negativas sobre salud oral se asocian con peor calidad de vida incluso sin confirmación clínica.

**Aplicación clínica:** Abordar el impacto psicológico y social de la estética y enfermedad periodontal mejora la comunicación y el vínculo clínico.

## 6. APOYO SOCIAL, SES Y FACTORES PSICOSOCIALES

- El apoyo social percibido está relacionado con mayor resiliencia, mejor higiene y mejor respuesta emocional tras tratamientos.
- El estatus socioeconómico (SES) influye en la autoeficacia, ansiedad dental y percepción de salud bucodental.
- La calidad de vida oral relacionada con la salud (OHRQoL) se ve afectada por múltiples factores psicosociales: ansiedad, apoyo, SES, autoeficacia y autovaloración.

**Aplicación clínica:** Considerar el entorno psicosocial del paciente permite adaptar la comunicación, las recomendaciones y los objetivos realistas.

## 7. CONOCIMIENTO, ACTITUDES Y PRÁCTICAS (KAP)

- Muchos pacientes con periodontitis presentan escasa información, actitudes negativas y conductas pasivas frente a la enfermedad.
- Existe correlación directa entre el conocimiento del paciente y sus prácticas de higiene oral.
- Las actitudes pueden cambiar positivamente mediante educación sencilla, personalizada y repetida.

**Aplicación clínica:** Mejorar el conocimiento específico del paciente impacta directamente sobre su comportamiento y resultados clínicos.

## 8. BIOMARCADORES SALIVALES: CORTISOL, NEUROPEPTIDOS Y ESTRÉS OXIDATIVO

- El cortisol salival se eleva en pacientes periodontales con estrés percibido, y puede servir como marcador clínico complementario.
- Neuropeptidos como VIP y NPY también aparecen elevados en saliva, reflejando procesos neuroinflamatorios independientes del estrés consciente.
- Prácticas como pranayama (respiración yóguica) mejoran los niveles de antioxidantes y reducen el estrés oxidativo salival.

**Aplicación clínica:** La saliva permite detectar signos bioquímicos de estrés que afectan a la periodontitis y orientar tratamientos integrales.

## 9. ESTUDIANTES Y ADULTOS JÓVENES: VULNERABILIDAD PSICOLÓGICA Y SALUD ORAL

- Elevadas tasas de ansiedad y estrés se relacionan con mayor riesgo de periodontitis en universitarios.
- La autopercepción negativa de salud oral y los síntomas como boca seca o sangrado afectan la motivación y la conducta higiénica.
- El uso frecuente del cepillo mejora esa autopercepción, independientemente del diagnóstico clínico.



**Aplicación clínica:** En jóvenes, la intervención temprana con enfoque motivacional puede prevenir progresión periodontal.

## 10. ESTRÉS Y BURNOUT EN PROFESIONALES DENTALES

- Las higienistas dentales presentan altos niveles de fatiga por compasión y burnout, asociados a tareas repetitivas, presión asistencial y falta de apoyo.
- El malestar profesional reduce la calidad de atención y favorece el abandono laboral.

**Aplicación organizativa:** La gestión emocional del equipo debe abordarse en paralelo a la atención al paciente, con medidas preventivas y formativas.

## 11. INTERVENCIONES ALTERNATIVAS: MEDITACIÓN, RESPIRACIÓN Y ENFOQUE CUERPO-MENTE

- La meditación mindfulness antes de cirugía reduce ansiedad, frecuencia cardíaca, presión arterial y cortisol.
- El pranayama aumenta capacidad antioxidante salival y reduce estrés oxidativo, con beneficios clínicos en salud periodontal.
- La respiración consciente puede regular fibroblastos, epitelización y citoquinas.

**Aplicación clínica:** Las técnicas mente-cuerpo son seguras, accesibles y pueden integrarse como complemento terapéutico en periodoncia.

## 12. SÍNDROMES DE BOCA SECA Y FACTORES EMOCIONALES

- Pacientes con xerostomía, síndrome de Sjögren o Sicca tienen peor salud oral, mayor estrés percibido y conductas menos adecuadas.
- A pesar del uso frecuente de pastas fluoradas, su conducta preventiva sigue siendo deficiente.
- El estrés parece jugar un papel agravante, y estos pacientes acuden menos al dentista.

**Aplicación clínica:** Es clave identificar estos cuadros y reforzar el acompañamiento preventivo y conductual.

03

03

---

Conclusiones destacadas  
individuales

---



## Conclusiones destacadas individuales

1. Alhajri DS et al. (2025)
2. Arnett MC et al. (2025)
3. Asiri A et al. (2024)
4. Botha F et al. (2023)
5. Cao R et al. (2023)
6. Chan CCK et al. (2023)
7. Cui T et al. (2025)
8. De David SC et al. (2024)
9. Decker A et al. (2020)
10. Dimenäs SL et al. (2022)
11. Dimenäs SL et al. (2024)
12. Farina R et al. (2024)
13. Fernández-Cevallos AD et al. (2025)
14. Goh V et al. (2022)
15. Gorter RC (2005)
16. Graetz C et al. (2021)
17. Haririan H et al. (2018)
18. Hingorjo MR et al. (2025)
19. Jaumet L et al. (2023)
20. Jeong J et al. (2025)
21. Jung Y et al. (2024)
22. Jung JY et al. (2025)
23. Knutt A et al. (2022)
24. Kolte AP et al. (2025)
25. Lee YH et al. (2023)
26. Liu P et al. (2022)
27. Liu Y et al. (2022)
28. Long H et al. (2023)
29. Long R et al. (2024)
30. Macrì M et al. (2024)
31. Mino T et al. (2024)
32. Mohammadkhah F et al. (2023)
33. Moro JDS et al. (2022)
34. Negucioiu M et al. (2024)
35. Parihar AS et al. (2024)
36. Paśnik-Chwalik B et al. (2020)
37. Piedra-Hernández L et al. (2023)
38. Qiu P et al. (2025)
39. Vilar Doceda M et al. (2023)
40. Villafuerte KRV et al. (2025)
41. Walther C et al. (2023)
42. Xu S et al. (2025)
43. Zhan C et al. (2024)
44. Zhao S et al. (2024)
45. Zhao C et al. (2024)

### ALHAJRI DS ET AL. (2025)

**Tema:** Rasgos de personalidad y calidad de vida oral en adolescentes

**Descripción:** Estudio transversal en adolescentes saudíes que relaciona los cinco grandes rasgos de personalidad con calidad de vida bucodental. La extraversión y la responsabilidad se asocian con mejor percepción de salud oral, mientras que el neuroticismo se relaciona con peor experiencia bucal. Se observaron diferencias significativas por sexo.

**Resumen:** Identificar rasgos de personalidad puede ayudar a personalizar estrategias educativas y mejorar la salud oral percibida en adolescentes.

### ARNETT MC ET AL. (2025)

**Tema:** Efecto prolongado de entrevista motivacional breve en pacientes periodontales

**Descripción:** En pacientes en mantenimiento periodontal, sesiones breves de entrevista motivacional mostraron efectos sostenidos a 3 años sobre sangrado, inflamación gingival y percepción de autoeficacia. No se requirieron intervenciones prolongadas para mantener los beneficios.

**Resumen:** La entrevista motivacional breve es eficaz a largo plazo para reforzar la adherencia y el control periodontal.

### ASIRI A ET AL. (2024)

**Tema:** Distrés psicológico y estado de salud bucal

**Descripción:** En adultos saudíes, el 21,5 % mostró distrés clínico significativo. Este grupo presentó peores indicadores de higiene, caries y salud periodontal, asociados también a factores como tabaquismo, edad, enfermedades crónicas e ingresos bajos.

**Resumen:** El distrés psicológico empeora significativamente la salud bucodental y debe integrarse en el cribado de riesgo periodontal.

### BOTHA F ET AL. (2023)

**Tema:** Locus de control y autocuidado en salud general

**Descripción:** Análisis longitudinal en población australiana que muestra cómo un locus de control interno se asocia con mayor autocontrol y mejores hábitos de salud. Este autocontrol actúa como mediador entre rasgos de personalidad y resultados sanitarios.



**Resumen:** Promover el locus de control interno y el autocontrol puede mejorar las conductas de salud, incluyendo higiene oral.

## CAO R ET AL. (2023)

**Tema:** Estrés y ansiedad durante la pandemia y síntomas orales en universitarios

**Descripción:** En 1770 estudiantes durante la ola ómicron, altos niveles de ansiedad y estrés se asociaron con úlceras orales, sangrado gingival y dolor bucal. La ansiedad actuó como mediador clave entre estrés y síntomas.

**Resumen:** La ansiedad potencia el impacto del estrés sobre la salud oral, especialmente en contextos de crisis como la pandemia.

## CHAN CCK ET AL. (2023)

**Tema:** Modelos psicológicos aplicados a la mejora de la salud periodontal

**Descripción:** Revisión narrativa sobre la aplicación de marcos como el Modelo de Creencias en Salud (HBM), la Teoría de la Acción Planeada, COM-B y otros en intervenciones de higiene oral. Se identifican estudios exitosos en mejorar indicadores clínicos como sangrado, placa y adherencia.

**Resumen:** Integrar modelos psicológicos en programas de salud oral permite diseñar intervenciones más eficaces y sostenibles.

## CUIT ET AL. (2025)

**Tema:** Resiliencia psicológica y apoyo social en pacientes con implantes

**Descripción:** Encuesta a 238 pacientes con implantes que muestra cómo el apoyo social percibido, junto con buenos hábitos de higiene, se correlaciona con mayor resiliencia psicológica. Esta se asocia con mejor adaptación y calidad de vida tras el tratamiento.

**Resumen:** Fomentar la resiliencia y el apoyo social puede mejorar el manejo emocional y funcional tras terapias implantológicas.

## DE DAVID SC ET AL. (2024)

**Tema:** Rumiación cognitiva y periodontitis

**Descripción:** Estudio transversal en población rural brasileña que analiza la relación entre rumiación (RRQ) y prevalencia de periodontitis. Se observó mayor riesgo de enfermedad periodontal en personas con tendencia elevada a la rumiación, aunque algunas asociaciones fueron borderline.

**Resumen:** La rumiación mental sostenida podría incrementar el riesgo de periodontitis y merece atención en la evaluación psicosocial.

## DECKER A ET AL. (2020)

**Tema:** Estrés, depresión e inflamación como factores de riesgo periodontal

**Descripción:** Revisión de biomarcadores como cortisol, DHEA y citoquinas inflamatorias vinculadas al eje psiconeuroinmunológico. Explora el potencial diagnóstico de la saliva como indicador de riesgo periodontal asociado al estrés crónico.

**Resumen:** Los biomarcadores salivales de estrés pueden ser herramientas útiles para identificar pacientes periodontales vulnerables.

## DIMENÄS SL ET AL. (2022)

**Tema:** Intervención educativa personalizada en adolescentes

**Descripción:** Entrevistas cualitativas a adolescentes suecos tras un programa de higiene oral centrado en la persona. Valoran la planificación, el acompañamiento y la autonomía en los cambios de hábito como claves para el éxito.

**Resumen:** Las intervenciones educativas adaptadas al adolescente promueven cambios duraderos en higiene oral y motivación.

## DIMENÄS SL ET AL. (2024)

**Tema:** Transición hacia un enfoque centrado en el paciente en higiene adolescente

**Descripción:** Estudio cualitativo con higienistas dentales suecas que describe el impacto de aplicar un programa conductual adaptado a jóvenes. Se observan mejoras en el vínculo clínico y en la motivación del paciente, aunque persisten barreras organizativas.



**Resumen:** Un enfoque personalizado en higiene oral adolescente refuerza la alianza terapéutica y mejora la adherencia a largo plazo.

## FARINA R ET AL. (2024)

**Tema:** Impacto psicológico de comunicar el riesgo periodontal (PerioRisk)

**Descripción:** Ensayo clínico sobre el efecto de añadir el PerioRisk a la entrevista motivacional inicial. Ambos grupos mejoraron en afrontamiento y control de placa, sin diferencias significativas en estrés percibido.

**Resumen:** Informar sobre el riesgo periodontal no genera ansiedad añadida y puede fortalecer la motivación para el autocuidado.

## FERNÁNDEZ-CEVALLOS AD ET AL. (2025)

**Tema:** Autoestima y percepción estética dental en adultos jóvenes

**Descripción:** Encuesta en estudiantes adultos de un centro educativo andaluz. No se observó relación general entre estética dental y autoestima, salvo en varones o según nacionalidad, lo que sugiere un componente sociocultural.

**Resumen:** La percepción estética dental influye en la autoestima en subgrupos específicos y debe ser considerada en tratamientos restauradores.

## GOH V ET AL. (2022)

**Tema:** Estados psicológicos y calidad de vida oral en pacientes periodontales

**Descripción:** Estudio que relaciona ansiedad, depresión y estrés con salud periodontal y calidad de vida relacionada con la salud oral (OHRQoL). La combinación de ansiedad y depresión se asocia con peores indicadores en ambos planos.

**Resumen:** Los trastornos emocionales agravan la periodontitis y deterioran la percepción del paciente sobre su salud oral.

## GORTER RC (2005)

**Tema:** Estrés laboral y burnout en higienistas dentales

**Descripción:** Aunque el estudio es antiguo, identifica factores clave de agotamiento profesional: pacientes difíciles, tareas repetitivas, falta de apoyo y escasa autonomía. Propone medidas preventivas estructurales.

**Resumen:** El burnout en higienistas dentales es prevenible mediante organización, formación y apoyo en el entorno laboral.

## GRAETZ C ET AL. (2021)

**Tema:** Apego psicológico, miedo al dentista y salud periodontal

**Descripción:** Estudio que analiza cómo el tipo de apego (seguro, evitativo, ansioso) modula la relación entre salud periodontal y miedo dental. Los efectos fueron más marcados en pacientes sin enfermedades cutáneas asociadas.

**Resumen:** El estilo de apego influye en la experiencia emocional durante el tratamiento dental y puede condicionar la evolución periodontal.

## HARIRIAN H ET AL. (2018)

**Tema:** Neuropeptidos salivales como biomarcadores en periodontitis

**Descripción:** Análisis de los niveles de VIP y NPY en saliva de pacientes periodontales. Ambos neuropeptidos están elevados, lo que sugiere un papel en la respuesta neuroinflamatoria incluso en ausencia de estrés clínico declarado.

**Resumen:** Los niveles de neuropeptidos en saliva podrían ayudar a identificar inflamación periodontal activa de origen no evidente.

## HINGORJO MR ET AL. (2025)

**Tema:** Cortisol salival y estrés en pacientes con periodontitis

**Descripción:** Estudio transversal que muestra que los pacientes periodontales tienen mayor estrés percibido y niveles más altos de cortisol en saliva. Se propone este marcador como herramienta diagnóstica complementaria.



**Resumen:** El cortisol salival es un biomarcador útil para valorar el componente psicoemocional en la enfermedad periodontal.

## JAUMET L ET AL. (2023)

**Tema:** Calidad de vida oral y percepción subjetiva de periodontitis

**Descripción:** En una cohorte francesa, el uso de la escala mPESSE reveló que quienes se autodiagnosticaban con periodontitis tenían peor calidad de vida, incluso sin confirmación clínica.

**Resumen:** La percepción subjetiva de periodontitis afecta negativamente a la calidad de vida, lo que refuerza la importancia del diagnóstico y acompañamiento.

## JEONG J ET AL. (2025)

**Tema:** Salud oral percibida, síntomas orales y estrés en universitarios

**Descripción:** Estudio en estudiantes coreanos que relaciona percepción de salud oral con estrés, boca seca y sangrado gingival. El cepillado frecuente mejora esa percepción.

**Resumen:** El estrés y los síntomas orales subjetivos alteran la autopercepción bucal en jóvenes; el cepillado frecuente tiene un efecto protector.

## JUNG Y ET AL. (2024)

**Tema:** Percepción de salud oral, síntomas subjetivos y estilo de vida en universitarios

**Contenido:** En una muestra de 644 jóvenes, la autopercepción negativa de salud oral se asoció con sangrado gingival, dolor, boca seca y saliva espesa. Estos síntomas afectaban también al estilo de vida (menos cepillado, más bebidas azucaradas). El estrés y los síntomas subjetivos influyeron directamente en cómo valoraban su salud bucal. Las probabilidades de tener una percepción negativa aumentaban notablemente si había sangrado o sequedad bucal.

**Resumen:** La salud oral que un paciente cree tener está profundamente influida por síntomas subjetivos y estilo de vida; ignorarlo debilita cualquier estrategia preventiva.

## JUNG JY ET AL. (2025)

**Tema:** Autonomía y búsqueda de información en pacientes periodontales

**Contenido:** 96 pacientes con periodontitis avanzada prefieren decidir de forma compartida, no delegar ciegamente ni decidir solos. Buscan mucha información, especialmente los más jóvenes. Sin embargo, el coste económico reduce su deseo de implicarse. La preferencia por recibir explicaciones no varía según el tipo de tratamiento, lo que indica una expectativa constante de participación.

**Resumen:** El modelo clínico de éxito debe incluir una comunicación transparente, participativa y adaptada a la edad y situación económica del paciente.

## KNUTT A ET AL. (2022)

**Tema:** Fatiga por compasión, burnout y abandono en higienistas

**Contenido:** 70% de higienistas clínicas en EE. UU. piensan en abandonar su trabajo. Quienes expresan esta intención tienen mayor agotamiento emocional y menor satisfacción profesional. A más edad y experiencia, mayor resiliencia. Menos días de trabajo por semana se relacionan con menos fatiga. El equilibrio emocional influye más que las condiciones laborales objetivas.

**Resumen:** El entorno emocional y vocacional del equipo de higiene impacta directamente en la estabilidad de las clínicas y debe abordarse como prioridad estratégica.

## KOLTE AP ET AL. (2025)

**Tema:** Ansiedad, pérdida periodontal y tabaquismo

**Contenido:** Se compararon 4 grupos: sanos fumadores/no fumadores y pacientes con periodontitis fumadores/no fumadores. La ansiedad se asoció de forma muy significativa con mayor profundidad de sondaje y pérdida de inserción, sobre todo en los fumadores. Además, cuanto mayor era el consumo de tabaco, mayor la ansiedad.

**Resumen:** El triángulo tabaco-ansiedad-periodontitis potencia el deterioro tisular; es clave identificarlo en el diagnóstico y tratamiento integral.

## LEE YH ET AL. (2023)

**Tema:** Biomarcadores de estrés en saliva y severidad periodontal

**Contenido:** En 117 pacientes, los niveles salivales de cortisol y cromogranina A aumentaron progresivamente desde sanos a gingivitis y luego a periodontitis, indicando mayor activación del eje HPA (estrés neuroendocrino). El cortisol/DHEA fue especialmente alto en mujeres y pacientes con estrés psicológico declarado. La capacidad buffer salival también disminuyó con el estrés.



**Resumen:** La saliva refleja de forma medible el vínculo entre estrés y periodontitis; puede ser usada como herramienta diagnóstica o pronóstica.

## LIU P ET AL. (2022)

**Tema:** Intervención digital familiar en adolescentes

**Contenido:** Ensayo controlado aleatorizado en 12 colegios de Hong Kong: se enviaron mensajes a jóvenes y padres basados en el modelo de creencias en salud para mejorar su comportamiento oral. Se mide caries, autoconfianza y encías a 2 años. Es una de las primeras intervenciones digitales estructuradas que involucran a la familia como motor de cambio.

**Resumen:** Las campañas educativas móviles dirigidas a jóvenes y familias pueden lograr cambios clínicos reales si se basan en modelos psicológicos sólidos.

## LIU Y ET AL. (2022)

**Tema:** Miedo dental, SRP y gravedad periodontal

**Contenido:** En 120 pacientes, el miedo dental disminuyó tras el raspado, especialmente en periodontitis avanzadas. Las fases I y II no mostraron mejoría estadística. La correlación entre dolor, miedo y estadio clínico fue directa. El SRP puede actuar como intervención psicológica, además de terapéutica.

**Resumen:** El miedo puede disminuir con una buena experiencia clínica inicial; el SRP es una oportunidad para fidelizar al paciente temeroso.

## LONG H ET AL. (2023)

**Tema:** Prevalencia global del burnout en odontología

**Contenido:** Meta-análisis con 15 estudios (6038 dentistas): burnout medio del 13%, más frecuente en Europa. La prevalencia ha descendido en los últimos años, y es menor en estudios transversales que longitudinales.

**Resumen:** La conciencia sobre el burnout en odontología ha mejorado, pero sigue siendo un factor de riesgo para la calidad asistencial y la retención del talento.

## LONG R ET AL. (2024)

**Tema:** Resiliencia en la formación de profesionales dentales

**Contenido:** Revisión de 59 estudios que exploran cómo se mide y se puede fomentar la resiliencia en estudiantes de odontología. Las herramientas de evaluación son inconsistentes, y no hay aún programas bien validados. La mayoría de estudios provienen de Asia y EE. UU.

**Resumen:** La resiliencia no debe darse por supuesta en estudiantes de odontología; necesita estrategias formativas específicas y contrastadas.

## MACRÌ M ET AL. (2024)

**Tema:** Estrés percibido, mindfulness y salud periodontal

**Contenido:** Estudio transversal con 203 personas. El estrés percibido se asoció con más placa y sangrado, mientras que mayores puntuaciones de mindfulness se asociaron con mejor control periodontal. Las correlaciones fueron estadísticamente muy significativas.

**Resumen:** El nivel de atención plena y control emocional puede proteger frente al deterioro periodontal relacionado con el estrés.

## MINO T ET AL. (2024)

**Tema:** Cuestionario breve con escala de caras para ansiedad dental

**Contenido:** El estudio valida una herramienta de solo cuatro ítems para evaluar ansiedad y miedo dental, tanto como rasgos personales como estados temporales. Se usó en pacientes de raspado y de cirugía de implantes, mostrando buena fiabilidad test-retest y validez frente al inventario clásico de ansiedad. El cuestionario diferencia entre grupos y es sensible al cambio tras el tratamiento.

**Resumen:** Esta escala breve basada en caras puede facilitar una evaluación clínica rápida y fiable del miedo dental.

## MOHAMMADKHAH F ET AL. (2023)

**Tema:** Intervención educativa en embarazadas según la teoría del comportamiento planificado

**Contenido:** En 140 embarazadas, seis sesiones formativas mejoraron todos los componentes teóricos (actitud, control percibido, intención) y redujeron significativamente el índice de placa y el DMFT. La intervención demostró ser eficaz para cambiar comportamientos de salud oral en un periodo sensible como el embarazo.



**Resumen:** Aplicar teoría conductual en embarazadas mejora el autocuidado oral y sus resultados clínicos.

## MORO JDS ET AL. (2022)

**Tema:** Prevalencia global del burnout en odontología

**Contenido:** Revisión sistemática con 37 estudios. La prevalencia general de burnout en dentistas es del 13%, siendo el agotamiento emocional el componente más frecuente (28%). La reducción del logro personal afecta a un 32%. El uso del Maslach Burnout Inventory aporta consistencia comparativa, pero la calidad metodológica fue baja.

**Resumen:** El burnout afecta de forma significativa a los dentistas, especialmente por fatiga emocional y baja satisfacción profesional.

## NEGUCIOIU M ET AL. (2024)

**Tema:** Burnout en odontología antes, durante y después de la pandemia

**Contenido:** Revisión sistemática que analiza causas y prevalencia de burnout en odontólogos en distintas fases del COVID-19. Se destacan el estrés organizativo, las relaciones laborales y la edad como factores diferenciales. La revisión subraya la urgencia de implementar estrategias preventivas desde la salud pública y la gestión interna.

**Resumen:** La pandemia agudizó el burnout dental, haciendo imprescindible rediseñar el entorno laboral para prevenirlo.

## PARIHAR AS ET AL. (2024)

**Tema:** Relación entre estrés crónico y carga inflamatoria oral

**Contenido:** Estudio clínico con 1250 pacientes divididos en sanos, periodontitis activa y postratamiento. El estrés (PSS-10) se correlacionó significativamente con la superficie periodontal inflamada (PISA), incluso tras ajustar por edad y nivel socioeconómico. El tratamiento periodontal redujo tanto el estrés como la inflamación.

**Resumen:** El estrés influye directamente en la inflamación periodontal; tratar la boca mejora también el bienestar mental.

## PAŚNIK-CHWALIK B ET AL. (2020)

**Tema:** Impacto de la periodontitis en calidad de vida oral (OHIP-14)

**Contenido:** Meta-análisis con 10 estudios que confirma que la periodontitis empeora significativamente el perfil de impacto oral (OHIP-14), especialmente en dolor, discapacidad psicológica y relaciones sociales. El efecto es más fuerte cuanto más severa la enfermedad.

**Resumen:** La periodontitis deteriora claramente la calidad de vida oral percibida, más allá del daño clínico objetivo.

## PIEDRA-HERNÁNDEZ L ET AL. (2023)

**Tema:** Ansiedad dental y calidad de vida antes y después del tratamiento periodontal no quirúrgico

**Contenido:** En 82 pacientes, la ansiedad (MDAS) y la calidad de vida (OHIP-14) mejoraron tras el tratamiento, pero solo en los que tenían ansiedad leve. Quienes tenían ansiedad moderada o alta no mostraron mejoría. El miedo influye en cómo el paciente valora su calidad de vida, incluso si el tratamiento fue clínicamente exitoso.

**Resumen:** La ansiedad condiciona la percepción del éxito del tratamiento periodontal y debe abordarse explícitamente.

## QIU P ET AL. (2025)

**Tema:** Actividad física y salud periodontal en universitarios

**Contenido:** En un estudio con 120 estudiantes de Shanghái, quienes hacían actividad física intensa tenían menor riesgo de periodontitis, incluso tras ajustar por cepillado y uso de seda dental. La inactividad se asoció con mayor riesgo, pero el sedentarismo no mostró relación directa.

**Resumen:** Fomentar ejercicio físico en jóvenes puede ser una estrategia indirecta para prevenir enfermedad periodontal.

## REYES GARITA P ET AL. (2024)

**Tema:** Comportamiento de higiene oral en pacientes crónicos y su relación con periodontitis y calidad de vida

**Contenido:** Estudio con más de 8500 pacientes crónicos. Los que se cepillaban más y recibían limpiezas profesionales frecuentes tenían menos periodontitis, menos dientes perdidos y mejor calidad de vida. Sin embargo, más de la mitad tenían signos de periodontitis severa, incluso con buena higiene.



**Resumen:** En pacientes crónicos, una buena higiene reduce el daño, pero no elimina el riesgo de periodontitis severa.

## SARIBAŞ E ET AL. (2025)

**Tema:** Ansiedad y dolor tras tratamiento periodontal

**Contenido:** En 226 pacientes, las mujeres reportaron mayor ansiedad y dolor postraspado que los hombres. No hubo relación con nivel educativo ni con número de visitas previas. En mujeres, los niveles de ansiedad (M-DAS) y dolor (VAS) estuvieron significativamente correlacionados.

**Resumen:** La ansiedad influye en la percepción del dolor, especialmente en mujeres, y debe valorarse antes del tratamiento.

## SHUKLA A ET AL. (2025)

**Tema:** Efectos del pranayama sobre salud periodontal y estrés oxidativo

**Contenido:** En adultos de 35–44 años, la práctica regular de pranayama se asoció con menor estrés oxidativo salivar (menos MDA) y mayor capacidad antioxidante (TAC). También presentaron mejor salud periodontal (CPI). La respiración rítmica reduce citoquinas inflamatorias y mejora marcadores celulares.

**Resumen:** El pranayama puede ser una terapia complementaria útil para reducir inflamación y mejorar la salud periodontal a través de mecanismos fisiológicos y antiestrés.

## STANKEVICIENE I ET AL. (2024)

**Tema:** Salud oral y estrés percibido en pacientes con sequedad bucal y síndrome de Sjögren

**Contenido:** Comparados con controles sanos, pacientes con xerostomía, Síndrome de Sicca y Sjögren mostraron más caries, menos dientes y peor salud oral, a pesar de usar más dentífrico fluorado. También presentaban mayor estrés percibido. Sus hábitos de higiene no eran óptimos.

**Resumen:** La sequedad bucal asociada a estrés y enfermedades sistémicas empeora la salud oral incluso con buena intención higiénica.

## THIEMANN L ET AL. (2024)

**Tema:** Autoeficacia en higiene oral a largo plazo y éxito periodontal

**Contenido:** En un seguimiento de 4 años, los pacientes con periodontitis que mejoraron su autoeficacia (especialmente en limpieza interdental) mostraron menos bolsas periodontales y menor superficie inflamada (PISA).

**Resumen:** Aumentar la autoeficacia del paciente en higiene interdental se asocia con mejores resultados clínicos sostenidos.

## TURER OU ET AL. (2023)

**Tema:** Meditación mindfulness como técnica de control del estrés en cirugía implantológica

**Contenido:** En cirugía de implantes, los pacientes que practicaron mindfulness presentaron menos ansiedad (STAI-S), menor frecuencia cardíaca, presión arterial, cortisol y mejor oxigenación. También mostraron mayor relajación cerebral (BIS).

**Resumen:** La meditación guiada antes de cirugía dental reduce eficazmente el estrés psicológico, fisiológico y bioquímico.

## VARGAS VILLAFUERTE KR ET AL. (2024)

**Tema:** Protocolo de revisión sobre el estrés psicológico y el éxito del tratamiento periodontal

**Contenido:** El protocolo busca revisar evidencia científica sobre cómo el estrés afecta a los resultados clínicos del tratamiento periodontal. La revisión sigue metodología PRISMA y PECO, con búsqueda desde 2000.

**Resumen:** Esta revisión sistemática esclarecerá si el estrés reduce la efectividad terapéutica del tratamiento periodontal.

## VILAR DOCEDA M ET AL. (2023)

**Tema:** Intervenciones conductuales para mejorar la higiene oral en pacientes con periodontitis

**Contenido:** Revisión sistemática de 21 estudios con múltiples modelos psicológicos: teoría del comportamiento planificado, entrevista motivacional, autorregulación, etc. Se sugiere que intervenciones estructuradas con metas, planificación y refuerzo pueden reducir placa y sangrado.



**Resumen:** Las intervenciones basadas en modelos cognitivos y motivacionales pueden mejorar la higiene oral y los indicadores periodontales.

## VILLAFUERTE KRV ET AL. (2025)

**Tema:** Estrés psicológico como factor limitante del éxito periodontal

**Contenido:** Revisión de 8 estudios con 445 pacientes. En el 75%, el estrés se asoció con peor respuesta al tratamiento (más PPD y BOP). Se utilizó la escala Ottawa-Newcastle para evaluar calidad.

**Resumen:** El estrés psicológico reduce la eficacia del tratamiento periodontal no quirúrgico al dificultar la resolución inflamatoria.

## WALTHER C ET AL. (2023)

**Tema:** Asociación entre periodontitis y depresión en población mayor

**Contenido:** En más de 6200 adultos alemanes, la periodontitis severa se asoció con mayor puntuación en PHQ-9. También se correlacionó con biomarcadores inflamatorios (IL-6, hsCRP). La asociación fue más fuerte en mayores de edad.

**Resumen:** La periodontitis grave se relaciona con mayor gravedad depresiva, mediada por inflamación sistémica.

## XU S ET AL. (2025)

**Tema:** Estrés, ansiedad y periodontitis en universitarios

**Contenido:** En 240 estudiantes, la ansiedad (no el estrés) se asoció con mayor riesgo de periodontitis de forma dosis-dependiente (OR hasta 46 en ansiedad severa). Se ajustaron múltiples factores de confusión.

**Resumen:** La ansiedad intensa multiplica el riesgo de periodontitis en jóvenes, más allá del nivel de higiene.

## ZHAN C ET AL. (2024)

**Tema:** Eficacia de la entrevista motivacional en periodontitis

**Contenido:** Meta-análisis de 7 estudios (474 pacientes). Aunque algunos mostraron mejoras en placa o sangrado, el efecto global de la entrevista motivacional no fue significativo. Se detectaron riesgos de sesgo metodológico.

**Resumen:** No hay evidencia suficiente para recomendar sistemáticamente la entrevista motivacional como herramienta complementaria.

## ZHAO S ET AL. (2024)

**Tema:** Conocimientos, actitudes y prácticas sobre el manejo de la periodontitis

**Contenido:** En 514 pacientes, el conocimiento sobre clasificación de la enfermedad fue bajo, pero la mayoría conocía su relación con la salud sistémica. Las actitudes y prácticas eran pasivas. El conocimiento se correlacionó con actitudes y conducta.

**Resumen:** Mejorar el conocimiento de los pacientes puede activar cambios en actitud y práctica hacia el control periodontal.


## ZHAO C ET AL. (2024)

**Tema:** Factores psicológicos y sociales que afectan la calidad de vida oral en periodontitis

**Contenido:** En 247 pacientes chinos, la ansiedad dental, la autoeficacia y el estatus socioeconómico se asociaron directa o indirectamente con peor OHRQoL. La autopercepción oral (SROH) medió varias de estas relaciones.

**Resumen:** El bienestar percibido en periodontitis está moldeado por factores psicológicos, sociales y conductuales, no solo clínicos.

04

 [torresclinicadental.com](http://torresclinicadental.com)

04

---

Preguntas y  
Respuestas

---



## Preguntas y respuestas

### 1. ¿EL ESTRÉS PUEDE AFECTAR A NUESTRAS ENCÍAS?

Sí. El estrés crónico debilita el sistema inmune, favorece la inflamación y dificulta la cicatrización. En boca, eso significa más sangrado, más placa y mayor riesgo de periodontitis.

### 2. ¿Y LA ANSIEDAD TAMBIÉN INFLUYE EN LA SALUD BUCAL?

Sí. La ansiedad va más allá del nerviosismo: muchas personas con ansiedad mantienen peores hábitos de higiene, rechinan los dientes o evitan ir al dentista, lo que empeora la salud oral.

### 3. ¿QUÉ PASA CON EL MIEDO AL DENTISTA?

El miedo dental genera evitación: cuanto más miedo, más se retrasa la visita... y eso agrava el problema. Además, se asocia con más inflamación gingival y peor percepción de salud bucal.

### 4. ¿PUEDE EL ESTRÉS EMPEORAR UNA PERIODONTITIS YA TRATADA?

Sí. Incluso tras el tratamiento, el estrés puede dificultar el control de placa o alterar la respuesta inmune, haciendo que reaparezcan los síntomas.

### 5. ¿HAY FORMA DE SABER SI EL ESTRÉS ESTÁ INFLUYENDO EN MI BOCA?

Sí. El cortisol salival, por ejemplo, puede indicar estrés elevado. Y a veces se manifiesta con síntomas: más úlceras, encías inflamadas o sensación de boca seca.

### 6. ¿NUESTRA FORMA DE SER INFLUYE EN CÓMO CUIDAMOS LA BOCA?

Mucho. Personas con más responsabilidad o autocontrol suelen tener mejor higiene y acuden más al dentista. En cambio, quienes son más ansiosos o desorganizados tienden a descuidarse más.

### 7. ¿QUÉ ES ESO DEL LOCUS DE CONTROL Y POR QUÉ IMPORTA EN SALUD ORAL?

El "locus de control" es la idea de si creemos que lo que nos pasa depende de nosotros o de factores externos. Si una persona cree que puede influir en su salud, cuida más sus hábitos y responde mejor al tratamiento.

### 8. ¿QUÉ PAPEL JUEGA LA MOTIVACIÓN EN EL CUIDADO DENTAL?

Es clave. La motivación es lo que transforma la información en acción. Técnicas como la entrevista motivacional ayudan mucho a que los pacientes adopten cambios reales.

### 9. ¿HAY TÉCNICAS PARA AYUDAR A QUIENES SE SIENTEN DESBORDADOS O DESMOTIVADOS?

Sí. Existen intervenciones basadas en modelos psicológicos (como el modelo de creencias en salud o la terapia cognitivo-conductual) que mejoran el compromiso con la higiene oral.

### 10. ¿QUÉ ES LA RESILIENCIA Y CÓMO SE RELACIONA CON LA SALUD BUCAL?

La resiliencia es la capacidad de adaptarse y recuperarse. Pacientes con más resiliencia afrontan mejor tratamientos como implantes o periodoncia avanzada, y mantienen mejor su salud oral a largo plazo.

### 11. ¿TENER PERIODONTITIS PUEDE AFECTAR AL ESTADO DE ÁNIMO?

Sí. Dolor, sangrado, mal aliento o pérdida dental afectan a la autoestima y pueden generar vergüenza, ansiedad social o incluso síntomas depresivos.

### 12. ¿Y PASA AL REVÉS? ¿LA DEPRESIÓN PUEDE INFLUIR EN LA PERIODONTITIS?

También. La depresión suele venir con apatía y menor autocuidado, lo que facilita el avance de enfermedades como la periodontitis.



### 13. ¿CÓMO INFLUYE LA ESTÉTICA DENTAL EN LA AUTOESTIMA?

Mucho, especialmente en jóvenes y en algunos contextos culturales. Sentirse bien con la sonrisa mejora la seguridad personal y el bienestar emocional.

### 14. ¿CÓMO PERCIBEN LOS PACIENTES SU PROPIA SALUD BUCAL CUANDO ESTÁN ESTRESADOS O ANSIOSOS?

Tienden a verla peor de lo que realmente está. El estrés distorsiona la percepción y hace que pequeños síntomas se vivan como más graves o preocupantes.

### 15. ¿LA SALUD MENTAL TAMBIÉN AFECTA LA CALIDAD DE VIDA RELACIONADA CON LA BOCA?

Sí. Hay escalas específicas que miden cómo la salud oral influye en el día a día, y los factores psicológicos como la ansiedad o el estrés son determinantes en esa percepción.

### 16. ¿EL CONOCIMIENTO DEL PACIENTE INFLUYE EN SUS HÁBITOS?

Sí, pero no es suficiente. Saber es importante, pero hace falta motivación, apoyo y repetición para que ese conocimiento se traduzca en hábitos sostenibles.

### 17. ¿EL ENTORNO SOCIAL TIENE ALGÚN EFECTO EN CÓMO CUIDAMOS LA BOCA?

Sí. Tener apoyo familiar o social mejora la adherencia al tratamiento y da más confianza para afrontar cambios. El aislamiento, en cambio, dificulta todo.

### 18. ¿LOS FACTORES SOCIOECONÓMICOS INFLUYEN EN LA SALUD MENTAL... Y BUCAL?

Totalmente. Menores ingresos, menos acceso a salud y más carga emocional se asocian con peor salud oral y más estrés, generando un círculo vicioso.

### 19. ¿QUÉ HÁBITOS AYUDAN A MEJORAR SALUD MENTAL Y BUCAL AL MISMO TIEMPO?

Dormir bien, comer saludable, practicar meditación o yoga, y mantener una buena higiene oral. Son pequeños gestos que tienen efectos cruzados muy positivos.

### 20. ¿DEBERÍAMOS INTEGRAR SALUD MENTAL Y PERIODONTAL EN LAS CLÍNICAS DENTALES?

Sí. Cada vez hay más evidencia de que cuerpo y mente van juntos. Incorporar evaluación emocional o técnicas de autorregulación puede mejorar la eficacia del tratamiento y la experiencia del paciente.

### 21. ¿EXISTEN SEÑALES FÍSICAS EN LA BOCA QUE NOS PUEDAN ALERTAR DE UN PROBLEMA EMOCIONAL?

Sí. El cuerpo habla, y la boca también. Aparecen más úlceras, sensación de quemazón, encías inflamadas o boca seca en personas con altos niveles de estrés o ansiedad. A veces el síntoma bucal es la primera pista de un malestar emocional.

### 22. ¿QUÉ PAPEL JUEGA EL BRUXISMO EN TODO ESTO?

El bruxismo, ese apretar o rechinar los dientes, suele estar muy vinculado al estrés y la ansiedad. Puede dañar los dientes, sobrecargar la musculatura y agravar la periodontitis. Tratar el origen emocional es tan importante como usar férulas.

### 23. ¿CUÁNDO UN DENTISTA DEBERÍA SUGERIR AYUDA PSICOLÓGICA A UN PACIENTE?

Cuando ve que el problema bucal tiene raíces emocionales profundas: miedo extremo, abandono del cuidado, síntomas persistentes pese a tratamiento, o incluso llanto o angustia durante la visita. Derivar no es señal de debilidad, sino de cuidado integral.

### 24. ¿Y AL REVÉS? ¿DEBERÍAN LOS PSICÓLOGOS FIJARSE EN LA BOCA DE SUS PACIENTES?

Sin duda. Hay señales de salud bucal que reflejan desgaste emocional: higiene descuidada, mal aliento, pérdida dental sin causa aparente. Una colaboración entre psicología y odontología mejora la atención al paciente en todos los sentidos.



**TORRES DENTAL INDEPENDENCIA**

 976 23 43 33

 625 39 86 40


 Pº. de la Independencia, 5  
50001 Entresuelo, Zaragoza



**TORRES DENTAL SAN JOSÉ**

 876 28 79 47

 605 33 28 49


 Avenida de San José, 145,  
50007 Zaragoza



**TORRES DENTAL ROMA**

 876 53 70 23

 686 17 29 36

 Plaza de Roma, 8  
50010 Zaragoza