

Research Bulletin

Vol 6, Issue 3 (July-Sep 2019)

Vice Deanship of Postgraduate Studies
and Scientific Research



*Initiative of the Research Unit of College of Dentistry,
Imam Abdulrahman Bin Faisal University*

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Research News | Pg 2

Recent Faculty
Publications | Pg 3



In Press Publications |
Pg 17

Contact info | Pg 19

RESEARCH NEWS

1. Students Research Club

We thank all students and faculty for participating in the scientific research club induction day on 10th September 2019.



2. Visit of University Scientific Council Representative

The University scientific council conducted a lecture on 25th September 2019 regarding services they provide, publishing process, and the new lists of approved journals.



RECENT FACULTY PUBLICATIONS

1. **Almas K, Smith S**, Kutkut A What is the best available micro and macro dental implant topography? Dent Clin N Am. 2019, 63(3):447-60.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Implant surface micro and macro topography plays a key role in early osseointegration. The physicochemical features of the implant surface (ie, chemical composition, hydrophobicity/hydrophilicity and roughness) influence the deposition of extracellular matrix proteins, the precipitation of bone mineral, and the stimulation of cells. Modification of the implant topography provides better primary stability and faster osseointegration, allowing for immediate placement or immediate loading. Randomized clinical trials are warranted to compare the response of osseointegration with various implant micro and macro surface topographies in people with various local or systemic risk factors.

2. **Nazir MA, Al-Ansari A, Farooqi FA**, An investigation of dental students' perceptions about the characteristics of effective instructors and their related factors. Eur J Dent Educ. 2019, 23:286-294.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

BACKGROUND: The characteristics of effective teachers can be used to improve student learning, support their academic achievement outcomes and promote faculty development and career advancement. **OBJECTIVES:** To assess dental students' perceptions about the characteristics of effective instructors and related factors.

MATERIALS AND METHODS: This cross-sectional study analysed data collected from students at a dental college in Saudi Arabia. A pilot-tested questionnaire with satisfactory internal consistency was distributed amongst all students. The questionnaire contained 21 items related to the characteristics of effective instructors on a 5-point Likert-type scale. Student's t test was performed to analyse the association of factors like gender, last year's GPA, academic year, paternal income, education and employment with three highly rated items of the characteristics of effective teachers. **RESULTS:** The response rate was 85.4%. There were 53.6% female and 46.4% male students in the study. The provision of learning resources (mean 4.3 ± 1.06), demonstration of honesty, ethics and integrity (mean 4.28 ± 0.99) and showing respect and caring attitude (mean 4.24 ± 0.94) were three most highly rated characteristics of effective instructors. Using the latest technology, acting as a role model and maintaining class discipline were the least rated traits of good teachers. A significantly higher percentage of female students considered these three items more important than male students ($P < 0.05$). The students with last year GPA > 4 considered providing learning material as an attribute of effective teacher significantly more important than the students with GPA ≤ 4 ($P < 0.001$). In addition, the characteristics of effective instructors (75.1%) were considered more important in providing students with rewarding learning experience than their teaching experience (15.4%) and educational attainment (9.5%). **CONCLUSION:** The most important attributes of effective teachers included providing learning resources, demonstrating honesty/integrity and showing respect/care.

3. Turkistani AK, Gomaa MM, Shafei LA, Alsofi L, Majeed A, **AlShwaimi E**, Shaping ability of HyFlex EDM and ProTaper next rotary instruments in curved root canals: A micro-CT study. J Contemp Dent Pract. 2019, 20(6):680-685.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

AIM: The aim of this study is to evaluate and compare the shaping ability of HyFlex™ EDM (HFEDM) and ProTaper Next (PTN) rotary instruments in curved root canals by using micro-computed tomography (micro-CT) imaging. **MATERIALS AND METHODS:** A total of 22 mandibular molar teeth having separate mesial canals with 20 to 30° curvatures were randomly divided into two groups and instrumented with HFEDM (OneFile) or PTN (X1 and X2). Pre- and post-instrumentation micro-CT scans were obtained. Mesiodistal canal transportation and centering ability were evaluated in four cross-sections (2, 4, 6, and 8 mm from apex). Changes in canal volume and surface area were measured for a 10-mm standardized area of interest. Kolmogorov-Smirnov and Shapiro-Wilk tests were used to assess the normality and homogeneity. Independent and paired t tests and one-way ANOVA were used to analyze data at the $p < 0.05$ level. **RESULTS:** Compared to PTN, HFEDM showed significantly less mesiodistal canal transportation and improved centering ability in cross-section L6 ($p < 0.05$). The instruments showed similar increases in volume and surface area of the canals, with minor insignificant differences. **CONCLUSION:** HFEDM and PTN files were safe to use in curved canals and showed similar shaping ability, while respecting the original anatomies. HFEDM OneFile performed better at the vicinity of the danger zone in terms of mesiodistal canal transportation and centering ability.

4. **Bakhurji E**, Scott T, Sohn W. Factors Associated with Pediatric Dentists' Choice of Amalgam: Choice-Based Conjoint Analysis Approach. *JDR Clin Trans Res*. 2019, 4(3):246-54.

Indexing Status: Scopus: ● **Web of Science:** ● **PubMed:** ●

Abstract

BACKGROUND: The Minamata treaty (2013) enacted a globally binding agreement to phase down amalgam use, which may significantly affect dental care for underserved populations. To comply with the Minamata treaty, strategic approaches need to be implemented to reduce amalgam use while imposing minimal risk on the dental care of the underserved. **OBJECTIVES:** To establish strategic approaches to reduce amalgam use, the aim of this study is to use a marketing research analysis to determine which patient-related factors influence pediatric dentists' choice of amalgam. **METHODS:** A survey containing questions regarding amalgam use, perception about the environmental impact of amalgam waste, and hypothetical clinical scenarios of a child with dental caries with varying levels of caries risk and types of dental insurance was developed and pretested. Emails linked to an electronic survey were sent via Qualtrics to all active American Academy of Pediatric Dentistry members ($n = 5,101$), followed by 3 reminders. Descriptive analysis and choice-based conjoint analysis were performed to investigate trade-offs between selected factors, using SAS version 9.3. **RESULTS:** Of 892 (17.6%) replies, 850 responses were eligible for analysis. Only 385 (45%) respondents indicated using amalgam, and their responses were analyzed in the conjoint model. Respondents' selection of amalgam varied between 8% and 28% across all the clinical scenarios, with most respondents choosing composite or stainless steel crowns. Conjoint analysis revealed that, while both caries risk and type of insurance affected respondents' decision about amalgam use, caries risk was the driving factor in decision-making for using amalgam. **CONCLUSION:** These results underscore the importance of prevention and management of risk factors to successfully phase down amalgam use.

5. Shah AT, Zahid S, Ikram F, Maqbool M, Chaudhry AA, Rahim MI, Schmidt F, Goerke O, **Khan AS**, ur Rehman I. Tri-layered functionally graded membrane for potential application in periodontal regeneration. *Mater Sci Eng C*. 2019, 103: 109812.

Indexing Status: Scopus: ● **Web of Science:** ● **PubMed:** ●

Abstract

A novel tri-layered, functionally-graded chitosan membrane (FGM) with bioactive glass gradient (50%, 25%, and 0% wt.) was developed by lyophilization. A step-wise grading of chitosan, bioactive glass (BG), and Pluronic F127 was introduced into the membrane in which each layer has separate surface functions that play a role of guided tissue regeneration (GTR) membranes. The lower layer was designed to replicate alveolar bone and contains 50%wt. BG, the middle layer contains 25%wt. BG, while the upper layer was non-porous without BG and it did not support cell growth. Scanning Electron Microscopy (SEM) revealed that the lower FGM surface possessed a porous structure with embedded BG particles, while the upper surface was non-porous with interconnected architecture. The contact angle measurement confirmed that the surface with BG was hydrophilic ($\approx 0^\circ$), while the opposite surface was hydrophobic ($91^\circ \pm 3.84^\circ$). Both osteoblast and fibroblast cells have maximum adhesion at contact angle $<80^\circ$. Alamar blue assay revealed the biocompatibility of the MC3T3-E1 mouse pre-osteoblasts cells with these membranes in vitro. The cells attachment and proliferation was seen for lower surface, while no cells adhesion was observed for the upper layer. Additionally, the interaction of the tissue with these tri-layered membranes was also investigated in vivo. Hematoxylin and eosin staining revealed the biocompatible nature of these membranes. Altogether, these results indicated that due to the biocompatible nature of these membranes, they will be a good carrier of in vivo implantation.

6. Qaisar A, Hussain S, Yazdanie N, Khalid H, **Khan AS.** Effect of Lignocaine addition on the properties of Irreversible Hydrocolloid Impression Material. J Ayub Med Coll Abbottabad. 2019, 31(3): 359-363.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

BACKGROUND: Irreversible hydrocolloid impression materials have been a staple in dentistry and useful for the fabrication of dental prostheses. Gagging is most commonly experienced during maxillary impression making, which may affect the clinical management of the patient. Different techniques have been described to alleviate this problem. One of them is mixing lignocaine local anesthetic solution in irreversible hydrocolloid impression material before making the impression. The objective of this study was to evaluate the effect of lignocaine addition in irreversible hydrocolloid impression on the properties of irreversible hydrocolloid impression materials. **METHODS:** Irreversible hydrocolloid was mixed with water (Control group) or water and adrenalin (Lidocaine hydrochloride) (Experimental group). Compressive strength, tear strength and setting time were measured according to ISO1567 and ANSI/ADA specifications 18. The structural analysis of both groups was also evaluated by Fourier Transform Infrared Spectroscopy (FTIR). **RESULTS:** In the experimental group, insignificant decrease was observed in compressive and tear strength of irreversible hydrocolloid ($p>0.05$). There was significant ($p<0.05$) increase in setting time of irreversible hydrocolloid impression material. FTIR analysis indicated no change in chemistry of irreversible hydrocolloid before and after setting. **CONCLUSIONS:** Addition of lignocaine in irreversible hydrocolloid impression material may result in control of gag reflex without affecting its mechanical and chemical properties.

7. Majeed A, **AlShwaimi E, Nazir MA, Almas K.** Dental students' perception of dentine hypersensitivity and awareness about its management. J Clin Diagn Res. 2019, 13(8).

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

Introduction: Dentine hypersensitivity is a common painful oral condition that can interfere with drinking, eating, tooth brushing and even breathing. Successful management depends on the identification and elimination of aetiological factors, careful clinical examination and differential diagnosis. **Aim:** The purpose of the study was to report dental students' understanding of dentine hypersensitivity and knowledge of its aetiology and management. **Materials and Methods:** A total of 218 questionnaires were distributed among dental students who routinely provided treatment to patients at College of Dentistry, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia. The questionnaire consisted of pre-coded and open-ended questions related to the knowledge of students about dentine

hypersensitivity. Descriptive statistics were used to summarise data. Pearson's chi-square test (Fisher-Exact test as appropriate) was performed to assess differences in male and female students' response at significance level of $p<0.05$. **Results:** The response rate was 75.7% as 165 of 218 students returned the questionnaires. According to participants (66%; n=109), one in four of their patients suffered from dentine hypersensitivity complaint. Nearly 57% (n=92) reported that sensitivity was a severe problem in 25% of their patients with discomfort lasting up to 5 weeks. Majority agreed that patients asked questions about dentine hypersensitivity. About 66.6% (n=110) did not know regarding the steps to diagnose dentine hypersensitivity. Treatment options included at-home (18%; n=30) and in-office desensitising agents (8.5%; n=14), education on appropriate tooth brushing techniques and restorative treatment (16.4%; n=27). Almost 47.3% (n=78) believed that patients complied with professional advice on dentine hypersensitivity. About 55.8% (n=92) highlighted the need to provide patients with an educational leaflet. **Conclusion:** Students lacked the knowledge and confidence to manage dentine hypersensitivity in clinics. A comprehensive informational handout should be developed to guide diagnosis, prevention and treatment for both students and patients.

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8. **Taymour N**, Nawasrah A, **El Zavat M**, **Rifaat S**. Evaluation of acupressure effect on reducing the need for dental injection in fixed prosthodontics. *J Dent Oral Disord Ther*. 2019, 10(5):268-270.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

Aim: This study aimed to evaluate the effect of the acupressure in reducing the dental pain that may omit the need for dental injection. **Materials and Methods:** A total of 10 patients who were treated by preparing vital abutments to provide them with fixed prosthesis after the metal try-in stage. Ethical form was approved from the department of substitutive dental science and the ethics committee of research. Consent form also was signed by the participants before proceeding on the procedure. Illustrative videos and photos were provided to the patients to get an idea about the acupressure procedure. Pain scale was determined before and after pressing on the related points. The point was determined according to the tooth being treated using dental ball burnisher, and one piece of pepper was fixed on that point with a tape and started stimulation for at least 30 seconds then tooth preparation was initiated. Statistical data analysis was conducted via SPSS version 23.0 (IBM, USA). **Results:** Using acupressure instead of dental injection during metal try-in stage for dental fixed prosthesis was significantly effective ($P\leq 0.011$). There were more than 60% patients who believed in this new technique and none of them have any knowledge about the acupressure treatment. **Conclusion:** Acupressure could be a way to reduce dental pain, and thus reduce the need for dental injection before metal try-in in Fixed Prosthodontics. **Clinical significance:** Acupressure can achieve a significant and clinically meaningful reduction of anxiety in dental patients.

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9. **AlRumaih HS**. Management of failing dental implants following orofacial trauma: A case report. *Saudi J Med Med Sci*. 2019, 7(3):183.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Absract

Dental implant failure can be caused by several biomechanical and biological factors. Management of failed multiple adjacent dental implants can be challenging, as the amount of bone loss around these implants is often high. This necessitates the need to restore the supporting bone and replace the failed implants with new implants in optimal positions and with a favorable dental prosthetic option. This report describes a case of a 27-year-old female who presented with failed multiple adjacent maxillary dental implants following orofacial trauma and with a significant amount of supporting bone loss. The patient was managed by implants removal, bone grafting and implant-supported fixed hybrid prosthesis, which resulted in a positive outcome, despite several challenges.

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10. Subbarayalu AV, **Al Kuwaiti A**, MK. Performance Of Indian Medical Schools In National Institutional Ranking Framework (Nirf) And Appropriate Strategies For Its Improvement. *International journal of scientific & technology research*. 2019, 8(9): 842-849.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

Indian higher education system is the third largest in the world whereas several initiatives have been taken by the government to improve its ranking position. One such initiative is NIRF and all the medical schools are evaluated based on a certain stipulated performance metrics so as to publicize their academic and research performance to the students and their prospective employers. This study aimed to describe the ranking position of top thirty medical schools in NIRF based on the ranking results established in the year 2019 and to suggest suitable strategies for its improvement. From the findings, it is observed that All India Institute of Medical Sciences (AIIMS), New Delhi stands first followed by Post Graduate Institute of Medical Education and Research, Chandigarh and Christian Medical College (CMC), Vellore, both positioned at second & third place respectively. Among those top 30 medical schools appeared in the ranking table, 13 located in south India and 17 located at the north. With regard to governance, 14 medical schools run by the government and 16 medical schools run by the private management. Most of the medical schools perform reasonably well in three performance metrics such as Teaching, Learning & Resources (TLR) and Graduate Outcome (GO) and Outreach and Inclusivity (OI). However, a considerable improvement is required in metrics such as Research & Professional Practice and Perception (PR). Further, this study suggests appropriate strategies that would aid medical schools in India to enhance performance to improve their ranking position.

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11. **Al Kuwaiti A**, Downing K, Subbarayalu AV. Performance of Saudi Universities in Global Rankings and appropriate strategies for its improvement. Library Philosophy and Practice (e-journal). 2019, 2766.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

Saudi universities are utilizing various university ranking systems to publicize their academic and research performance to the students and their parents. This study aimed to describe the ranking position of top ten Saudi universities across Quacquarelli Symonds (QS) and Times Higher Education (THE) world university rankings based on the ranking results established in 2019. Based on results, the leading position observed among such universities were King Fahd University of Petroleum & Minerals (KFUPM) in QS and King Abdulaziz University (KAU) in THE. This study is not only provided an analysis of rankings of top ten Saudi universities; but also highlighted the key areas such as reputation, teaching quality, research/citations, internationalization, and industry income where, Saudi universities need to concentrate in order to succeed in these rankings systems. Further, this study also suggested appropriate strategies that would aid Saudi universities to enhance their performance to improve their ranking position.

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12. **Al Kuwaiti A**, Al Muhanna FA, Al Amri S. Letter in Reply: Chronic Diseases Management Using Digital Health Technologies. Oman Med J. 2019, 4(5):476.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

No abstract available.

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13. **Mohammed F, Fairozekhan AT, Bhat S, Menezes RG**. Forensic Odontology. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

No abstract available.

14. Aljandan JK, Algarzai RM, Alammar SM, **Ayad NM, Bahgat HA**. Evaluation of Surface Hardness and Surface Roughness of Different Nano Glass Ionomer Restorative Materials. Saudi J Oral Dent Res. 2019, 4(8): 543-554.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

This study aimed to compare the effect of simulated brushing on one Nano resin-coated glass ionomer (GI) (EF; Equia forte fil/Equia forte coat, GC Corp., Tokyo, Japan) and one Nano zirconia-reinforced GI (ZI; Zirconomer Improve, Shofu, Inc., Kyoto, Japan). One hundred and forty specimens were prepared and divided into two groups: EF and ZI. The Vickers Hardness Number (VHN) and surface roughness (Ra) were measured before and after simulated brushing of the specimens with water or with water and Colgate Total 12 (CT12) for 5,000, 10,000, and 20,000 cycles. Regardless of condition, EF and ZI showed statistically significant differences of mean VHN: 146.90 ± 36.66 ; 110.30 ± 13.73 , (p -value < 0.001), and mean Ra: $0.290 \pm 0.089\mu\text{m}$; $0.247 \pm 0.085\mu\text{m}$ (p -value ≤ 0.05), respectively. For both EF and ZI, repeated measures analysis of variance (ANOVA) revealed a statistically significant difference of mean VHN (p -value ≤ 0.05) in all cycles' intervals with CT12, but only at 20,000 cycles with water and in Ra (p -value ≤ 0.05) in all conditions compared to the control group. A post-hoc Tukey's test revealed a statistically significant difference of mean VHN in water vs. CT12 (p -value ≤ 0.001) for both EF and ZI in all conditions. The EF showed higher mean surface hardness and higher mean surface roughness as compared to the ZI. Both the EF and ZI specimens demonstrated resistance to the softening when being subjected to the simulated tooth brushing procedure equivalent to about 1 year of clinical use.

15. **Fouda SM, Gad MM**, El Tantawi M, Virtanen JI, Sipila K, Raustia A. Influence of tooth loss on mandibular morphology: A cone-beam computed tomography study. J Clin Exp Dent. 2019;11(9):e814-819.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Background: Tooth loss adversely affects patients' health and psychosocial wellbeing. In addition, it changes mandibular morphology. **Objective:** To evaluate the effect of tooth loss, age, and gender on mandibular morphology. **Materials and Methods:** Cone-beam computed tomographic (CBCT) scans of 101 patients were examined to measure the gonial angle (GA), ramus height (RH) and condylar height (CH). Patients' age, gender, and dental status were recorded. Repeated measures analysis of variance (ANOVA) was used to assess the impact of gender, age, and tooth loss on the GA, RH and CH. The mean measurements of the GA, RH and CH were compared between dentate/edentulous patients after splitting by gender. **Results:** The GA was larger in edentulous patients compared to dentate ones, in females than in males, and in older than in younger. RH on the right side was significantly longer than on the left side ($P < 0.0001$), and also longer in males and younger patients. CH was shorter in younger than in older patients and in dentate than in edentulous patients. **Conclusions:** Tooth loss is associated with changes in mandibular morphology and its prevention would avoid these irreversible changes.

16. **Gaffar BO**, El Tantawi M, **Al-Ansari AA, AlAgl AS, Farooqi FA, Almas KM**. Knowledge and practices of dentists regarding MERS-CoV. A cross-sectional survey in Saudi Arabia. Saudi Med J. 2019, 40(7):714-20.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

OBJECTIVES: To assess virus knowledge among dentists in Saudi Arabia and to identify factors associated with recommended management practices of patients. **Method:** A structured questionnaire was distributed to dentists in major Saudi cities between September 2016 and December 2017. The questionnaire investigated participants' knowledge about Middle East Respiratory Syndrome Coronavirus (MERS-CoV) transmission, consequences, patient identification and history taking practices. Data was collected using paper-based questionnaires or an online link sent to dentists registered with Saudi Dental Society nationwide. The analysis was carried using Statistical Package for Social Sciences for Windows, version 22.0 (IBM Corp., Armonk, NY, USA) logistic regression, odds ratio and confidence intervals to identify the relationship between variables. **RESULTS:** A total of 423 dentists responded the

paper-based questionnaire. Overall the knowledge was good with gaps in history taking practices. Best management practices of MERS-CoV patients were significantly higher among dentists with better knowledge of virus transmission (odd ratio [OR]=1.16, p less than 0.0001), patients' identification (OR=1.40, p less than 0.0001) and those knowing that corona infection can be fatal (OR= 2.44, p=0.02). **CONCLUSION:** Best management practices depends on correct patient identification. Educational campaigns should target dentists, given the unique nature of dental practice.

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17. **Nazir MA**, Izhar F, Akhtar K, **Almas K**. Dentists' awareness about the link between oral and systemic health. *J Family Community Med*. 2019, 26(3):206.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

BACKGROUND: Oral health is integral to systemic health. There is a growing body of evidence of an association between periodontal and systemic diseases. The aim of the study was to evaluate the awareness of dentists regarding link between oral and systemic health.

MATERIALS AND METHODS: Data was collected using a self-administered pilot-tested questionnaire. Dentists awareness about link between oral and systemic link was assessed on five-point likert scale. Data was entered and analysed using SPSS. **RESULTS:** Of the 588 dentists, 500 completed the questionnaire (response rate 85.03%). About 93% of the participants (mean age 25.82 ± 4.21 years) agreed that oral health was associated with systemic health. Most dentists were aware of a connection between periodontal disease and diabetes (84.4%) and heart disease (70.2%). Similarly, 85.6% believed in the negative impact of oral disease on the quality of life of patients. More female than male dentists were aware of the relationship between periodontal disease and adverse pregnancy outcomes, diabetes, and rheumatoid arthritis ($P < 0.001$). Most dentists (97%) believed that more patients would seek oral care if they were aware of the oral-systemic link. After adjustments, private dentists were 4.65 times more likely than public dentists to believe in improving access to oral care with increased patient awareness of the oral-systemic connection ($P = 0.011$). **CONCLUSIONS:** Most dentists were aware of the oral-systemic link. They believed that patients' access to oral care would improve if they were aware of a connection between oral and systemic health. Therefore, patients should be informed of the oral-systemic link to improve their oral health.

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18. **Nazir MA**. Predictors of Routine Dental Check-up Among Male Adolescents in Saudi Arabia. *Acta stomatolo Croat*. 2019, 53(3):255-63.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Objective: To evaluate the association of socioeconomic factors and self-perceived oral conditions with routine dental check-up among male adolescents. **Methods:** This cross-sectional study was conducted on male children (grade 10-12) from public schools in different cities of the Eastern province of Saudi Arabia. A multistage random sampling was used for the recruitment of study participants. A piloted questionnaire translated into the Arabic language was used for data collection. **Results:** There were 586 students with mean age 16.86 ± 0.87 years. The prevalence of routine dental visit within last year was 18.9%. Half of the entire sample had dental cavities (50.5%) and tooth sensitivity (50%) followed by dental pain (42.2%). Bivariate analyses found that the children with dental cavities (OR 0.4, 95% CI 0.26, 0.61), dental pain (OR 0.63, 95% CI 0.41, 0.97), and malodor (OR 0.41, 95% CI 0.23, 0.71) had significantly lower odds of routine dental visits than those without these conditions. The final model of multivariable logistic regression showed that dental cavities (OR 0.42, 95% CI 0.27, 0.66) and malodor (OR 0.45, 95% CI 0.25, 0.78) were significantly associated with lower likelihood of visiting dental office for a regular dental check-up. No significant influence of socioeconomic factors on routine dental attendance was observed. **Conclusions:** A small proportion of children performed routine dental visits. The children with dental cavities and malodor were less likely to perform routine dental visits. The awareness about the importance of regular dental check-up should be raised to reduce the burden of oral diseases in schoolchildren.

19. **Gaffar BO**, Garebellah A. Book Chapter: Sudan. In: Morenike Oluwatoyin Folayan (Ed). A Global Compendium of Oral Health: Tooth Eruption and Hard Dental Tissue Anomalies. Cambridge Scholars Publishing, 2019.

Abstract

Book chapter, no abstract available.

20. **Farooq I**, Majeed A, **Al Shwaimi E**, **Almas K**. Efficacy of a novel fluoride containing bioactive glass based dentifrice in remineralizing artificially induced demineralization in human enamel. Fluoride. 2019, 52(3): 447-455.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

The aim of the study was to compare the remineralization potential of a novel dentifrice consisting of a fluoride-containing bioactive glass (BiominF®) with that of a dentifrice containing bioactive glass (BG) and sodium monofluorophosphate (Novamin®). Fifteen enamel blocks were divided randomly into three groups: 1: (n = 3; control, no treatment, storage in artificial saliva for 24 hr), 2: (n = 6; Novamin® toothpaste group), and 3: (n = 6; BiominF® toothpaste group). Toothpaste slurries were prepared by mixing 1 g toothpaste with 5 mL artificial saliva (AS). The specimens were exposed to 6 wt% citric acid (pH, 2.2) for 5 min to mimic demineralization, and specimens in groups 2 and 3 were then stored in the toothpaste slurries for 5 min and 24 hr (n = 3 each). Mean enamel volume changes were evaluated by micro-computed tomography, and mean surface loss or gain was investigated using a profilometer. The Wilcoxon rank sum test and one-way analysis of variance with post-hoc testing were used to identify significant differences ($p < 0.05$). BiominF® performed better than Novamin® in terms of remineralization after 5 min and 24 hr, as observed by micro-CT. The surface roughness values of all specimens decreased significantly after exposure to AS and the toothpaste mixtures ($p < 0.05$), with BiominF® specimens showing greater reduction after 5 min. A toothpaste comprised of a fluoride-containing BG showed promising potential to promote remineralization of demineralized human enamel.

21. **Gad MM**, **Rahoma A**, **Abualsaud R**, **Al-Thobity AM**, **Fouda SM**. Effect of Repair Gap Width on the Strength of Denture Repair: An In Vitro Comparative Study. J Prosthodont. 2019, 28: 684-691.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Purpose: To evaluate the effect of repair gap width on the flexural strength and impact strength of a repaired acrylic denture with and without thermal cycling. **Materials and Methods:** A total of 240 heat-polymerized acrylic resin specimens were fabricated in dimensions of $65 \times 10 \times 2.5 \pm 0.2$ mm and $55 \times 10 \times 10 \pm 0.2$ mm for flexural strength and impact strength testing, respectively. All specimens were sectioned into halves then divided into 6 groups according to repair gap width ($n=10$). The repair gap of the control group was 2.5 mm at the base, while the repair gaps of the test groups were prepared as 2.0, 1.5, 1.0, 0.5, and 0 mm at the base. All specimens were prepared with a 45° bevel joint. Each specimen was placed into the mold that retained the original length of the specimen and modified only the repair gap, which was packed with repair resin. After polymerization, specimens were finished and polished, and half of the specimens were thermal cycled for 5000 cycles. Three-point bending test and Charpy impact test were used to determine the flexural strength and impact strength, respectively. ANOVA and Tukey's HSD test were used for statistical analysis, where α was set at 0.05. **Results:** Decreasing repair gap significantly increased the flexural strength in comparison to control group ($p < 0.05$); 0.5-mm repair gap showed the highest flexural strength values. Changing the repair gap significantly increased the impact strength of groups 2.0- and 1.5-mm ($p < 0.05$). Thermal cycling significantly decreased the flexural strength of all tested groups as well as impact strength for groups with wide repair gaps (2.5-, 2.0-, and 1.5-mm) ($p < 0.05$), while other tested groups had nonsignificant effect on impact strength ($p > 0.05$). **Conclusion:** Decreasing repair gap increased the flexural and impact strengths of repaired acrylic resin. A repair gap of 0-, 0.5-, or 1.0-mm with beveled repair surface is recommended to improve repair strength and overcome the drawbacks of increased amounts of autopolymerized repair resin.

22. **Marei HE**, Alshaia A, Alarifi S, **Almasoud N, Abdelhady A**. Effect of Steam Heat Sterilization on the Accuracy of 3D Printed Surgical Guides. *Implant Dent.* 2019; 28(4):372-7.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

INTRODUCTION: Steam heat sterilization could be one of the factors that affects the dimensional accuracy of surgical guides, leading to an error during guided implant surgery. **OBJECTIVE:** The purpose of this study was to investigate the effect of steam heat sterilization on the dimensional changes of surgical guides.

MATERIALS AND METHODS: A total of 27 surgical guides, which were made by either Formlabs printer (Formlabs Inc., Somerville, MA) or Simplant (DENTSPLY Implants NV, Hasselt, Belgium), were scanned using an intraoral scanner before and after sterilization. The dimensional changes at the center of the implant sleeves were analyzed using the computer-aided design interactive software for 65 implant sites before and after steam heat sterilization at 121°C for 20 minutes. **RESULTS:** There was no significant difference between the mean x, y, and z axes of the center of the sleeves when measured before and after sterilization (P values were 0.37, 0.24, and 0.29, respectively). Nonparametric analysis showed no significant difference between the mean deviations of either surgical guide (P = 0.908). **CONCLUSION:** Steam heat sterilization has a nonsignificant effect on the dimensional changes of the tested surgical guides.

23. **Marei HF, Abdel-Hady A, Al-Khalifa K, Al-Mahalawy H**. Influence of surgeon experience on the accuracy of implant placement via a partially computer-guided surgical protocol. *Int J Oral Maxillofac Implants.* 2019, 34(5):1177-1183.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

PURPOSE: There is always a tension between allowing novice trainees to place implants independently and the need to achieve accurate functional and esthetic outcomes. The aim of this study was to measure the influence of surgeon experience on the accuracy of implant placement using a teeth-supported surgical guide via a partially guided surgical protocol. **MATERIALS AND METHODS:**

Twenty partially edentulous patients were randomly allocated to expert and novice surgeon groups. Implant drilling and placement for the two groups were performed through a flapless surgical technique using surgical guides following a partially guided surgical protocol. The study primary independent variable was the surgeon experience, while the outcome variable was the accuracy, which was measured based on the differences in implant angulations preoperatively and postoperatively. Two-way analysis of variance (ANOVA) was applied to find the influence of surgeon experience, implant size, and the interactive effect of surgeon experience and implant size on the angular deviation. **RESULTS:** A total of 40 implants were inserted in 7 men and 13 women. There was no significant difference (P = .453) in the mesiodistal deviation between the expert and novice groups. In a buccolingual direction, the expert group performed more accurate implant placement (3.7 ± 3.35) compared with the novice surgeons (8.5 ± 6.3). **CONCLUSION:** The level of surgeon experience affects the accuracy of implant placement using a teeth-supported surgical guide; therefore, the use of computer-guided surgery via a partially guided protocol does not completely compensate for the level of operator experience. However, such surgical guide might be used in a whole task training of novice surgeons, as it can bridge the gap between simulation training in vitro and freehand surgery in a clinical setting.

24. **AlShwaimi E**. Effect of sterilization on cyclic fatigue resistance of Proflexendo endodontic rotary files. *Saudi J Med Med Sci.* 2019, 7(3):151-155.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

BACKGROUND: Proflexendo file (Nexen, Houston, TX, USA) is a recently developed, novel nickel-titanium rotary file. However, several physical properties of the Proflexendo system remain to be investigated. **OBJECTIVES:** The aim of this study was to determine the effect of sterilization on cyclic resistance of Proflexendo files. **MATERIAL AND METHODS:** A total of 120 unused Proflexendo rotary files (40 each of file sizes 40/0.04, 30/0.04 and 20/0.06) were used in this study. Each set of files was subdivided into four groups of ten files. Group 1 did not undergo any sterilization (control), Group 2 underwent two rounds (2 \times) of sterilization, Group 3 five rounds (5 \times) and Group 4 ten rounds (10 \times). Cyclic fatigue resistance was tested using an artificial canal with a 5-mm radius curve. **RESULTS:** The nonsterilized size 30/0.04 files had the highest cycles to failure, followed by the nonsterilized size 40/0.04 and 20/0.06 files ($P < 0.001$). With increasing rounds of sterilization, cycles to failure reduced for sizes 40 (2 \times , 5 \times and 10 \times) and 30 (2 \times) files compared with nonsterilized sizes 40 ($P < 0.05$) and 30 files ($P < 0.001$), respectively. **CONCLUSION:** Under the conditions of the current study, the results provide preliminary evidence that autoclave sterilization of Proflexendo rotary files reduced their cyclic fatigue resistance, except for size 20 (2 \times and 5 \times) and 30 (10 \times) files, in which resistance increased. Single use of this file is recommended to reduce the risk of separation.

25. Ahmad N, Ahmad FJ, **Bedi S, Sharma S**, Umar S, Ansari MA. A novel Nanoformulation Development of Eugenol and their treatment in inflammation and periodontitis. Saudi Pharma J. 2018, 27(6): 778-790.

Indexing Status: Scopus:  Web of Science:  PubMed: 

Abstract

OBJECTIVE: To prepare a novel nanoemulsion- Carbopol® 934 gel for Eugenol, in order to prevent the periodontitis. **MATERIAL AND METHODS:** Spontaneous emulsification method was used for the preparation of nanoemulsion in which it contain Eugenol (oil phase), Tween-80 (surfactant), and PEG (co-surfactant). To the development of best nanoemulsion, three-factor three-level central composite design was used in which %oil; %S_{mix} and % water were optimized as independent variables. An optimized-nanoemulsion were converted to nanoemulsion-Carbopol® 934 gel. **RESULTS:** 5.5% oil, 35.5% S_{mix} and 59.0% water were optimized as independent and dependent variables. Finally dependent variables optimized as a particle size (nm), PDI and %transmittance were observed 79.92 ± 6.33 nm, 0.229 ± 0.019 , and $98.88 \pm 1.31\%$ respectively. The values of final results for dependent variables like particle size (nm), PDI and % transmittance were evaluated as 79.92 ± 6.33 nm, 0.229 ± 0.019 , and $98.88 \pm 1.31\%$, respectively. TEM and SEM showed a spherical shape of developed nanoemulsion with refractive index (1.63 ± 0.038), zeta potential (-19.16 ± 0.11), pH (7.4 ± 0.06), viscosity (34.28 ± 6 cp), and drug content of $98.8 \pm 0.09\%$. After that a final optimized EUG-NE-Gel was assessed on the basis of their pH measurement, drug content, syringeability, and mucoadhesion on the goat buccal mucosa. Optimized EUG-NE-Gel (Tween-80 and Carbopol® 934 used) showed the results, to improve the periodontal drug delivery of EUG in future. **CONCLUSION:** EUG-NE-Gel showed a significant role in anti-inflammatory activity, analgesic, and anesthetic, antibacterial, and treatment of periodontal disease.

26. Albugami RA, **Smith S**, Hassan MA, **Almas K**. Trends in implant dentistry: Implant systems, complications and barriers in Riyadh, Saudi Arabia. Dent Med Probl. 2019, 56(3):223–230.

Indexing Status: Scopus:  Web of Science:  PubMed: 

Abstract

Background. Patients who are partially dentate or edentulous can receive both conventional and implantsupported fixed prostheses, which leads to improvement in function, esthetics and self-esteem. Currently, implant dentistry is one of the fastest-growing disciplines in dentistry. **Objectives.** The aim of the study was to assess the education and training of dentists practicing implant therapy in the Riyadh region of Saudi Arabia, including their preferred dental implant systems, the clinical complications experienced as well as the barriers to implant therapy they encounter. **Material and Methods.** A self-administered

questionnaire was distributed among dentists in Riyadh performing dental implants in both the state and private sectors. The questionnaire included demographic data, such as nationality, the practitioner's affiliated specialist category and their respective qualifications. Other data included their main sources of education pertaining to implant dentistry, the most commonly used implant systems, common clinical complications, and barriers to implant therapy. A descriptive statistical analysis of the data was carried out. Results. A significant majority of non-Saudi dental practitioners were employed in the private sector ($p = 0.001$), whereas a significant majority of Saudi dental practitioners were employed in the state sector ($p = 0.001$). The largest group of practitioners performing implants were general dentists (48.1%). The 3iT M implant system was the most widely utilized (35.4%). Failed osseointegration (12.6%) and peri-implantitis (12%) were the most common clinical complications. The biggest barrier to placing implants was the cost of implants to patients (59.1%). Conclusion. Fundamental to implant practice is the clinical practitioner and patient selection. The utilization of implant systems should preferably be based on the chemical properties of implant surfaces which promote early osseointegration. Comparative studies investigating the reasons for failed osseointegration and other clinical complications are needed locally and internationally. Further research, together with advanced clinical specialist training, can lead to improvement in the quality of implant therapy for the benefit of patients.

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27. **Alagl AS, Madi M, Bedi S, Al Onaizan F**, Al-Aql ZS. The Effect of Er, Cr: YSGG and Diode Laser Applications on Dental Implant Surfaces Contaminated with *Acinetobacter baumannii* and *Pseudomonas aeruginosa*. *Materials* (Basel). 2019; 12(13):2073.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Treatment of peri-implantitis through several implant surface decontamination techniques have been reported, however, some of them can negatively alter the implant surface or enhance more bacterial resistance. The aim of this in vitro study was to evaluate implant surface decontamination by means of Er,Cr:YSGG and diode lasers. Fifty micro-textured (MTX) dental implants were contaminated with *Acinetobacter baumannii* ($n = 25$) and with *Pseudomonas aeruginosa* ($n = 25$). All implants were then divided into five groups for the decontamination procedure. In group I (GI), decontamination was done with an Er,Cr:YSGG laser (2780 nm), while in group II (GII) decontamination was performed using photodynamic therapy (a 650 nm diode laser). In Group III (GIII) decontamination was performed with photodynamic therapy (an 808 nm diode laser), and in group IV (GIV) decontamination was performed with 0.12% chlorhexidine. Group V (GV) was the control group with no decontamination. After decontamination, colony forming units (CFU) were counted and implants were prepared for SEM analysis. A significant difference ($p < 0.001$) was observed for GI compared to the other groups, and also for GIV compared to both GII and GIII. The Er,Cr:YSGG laser (GI) showed the best results in decontaminating the implant surface. Chlorhexidine (GIV), proved to be better in decontaminating the implant surface than photodynamic therapy GII and diode laser GIII. No significant difference was found between group GII and GIII. The SEM analysis showed no significant change in the implant surface topography. The results of this study suggest that the Er,Cr:YSGG laser can be considered as an effective technique for reducing bacteria contamination on implant surfaces.

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28. **Al-Ansari A**. Which final impression technique and material is best for complete and removable partial dentures? *Evid Based Dent*. 2019; 20(3):70-1.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

Data sources Cochrane Oral Health's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), Medline, Embase, the US National Institutes of Health Trials Registry (ClinicalTrials.gov) and the World Health Organization International Clinical Trials Registry Platform databases **Study selection** Randomised controlled trials (RCTs) comparing different final-impression techniques and materials for treating people with complete dentures

(CD) and removable partial dentures (RPD) were included. Data extraction and synthesis Two reviewers independently extracted data and assessed risk of bias. Results were expressed as risk ratios (RR) for dichotomous outcomes, and as mean differences (MD) or standardised mean differences (SMD) for continuous outcomes, with 95% confidence intervals (CI). Meta-analysis used a random-effects model. Results Nine studies were included, eight involving CD. Six of the CD studies were at high risk of bias, two at low risk. For complete dentures there was low-quality evidence that silicone was a better final-impression material for oral health-related quality of life than alginate. There was also very low-quality evidence of no clear differences between the single-stage impression alginate and the two stage- two step elastomer groups in participant-reported quality of life using OHIP-EDENT. The RCT involving RPD altered-cast technique versus one-piece cast technique found low quality evidence of no difference between groups, for general satisfaction at one-year follow-up. Conclusions There is no clear evidence that one technique or material has a substantial advantage over another for making complete dentures and removable partial dentures. Available evidence for the relative benefits of different denture fabrication techniques and final-impression materials is limited and is of low or very low quality. More high-quality RCTs are required.

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29. AlFawaz YF, **Alonaizan FA**. Efficacy of phototherapy in the adhesive bonding of different dental posts to root dentin: A systematic review. Photodiagnosis Photodyn Ther. 2019; 27:111-116.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

BACKGROUND: The aim of the current systematic review was to evaluate the efficacy of phototherapy in the adhesive bonding of different dental posts to root dentin. **METHODS:** The outline of this systematic review followed the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) guidelines. Searches in both electronic and manual literature were performed in the main databases 'MEDLINE' and 'EMBASE' up to March 2019 using the following terms: (Phototherapy) AND (push out test) AND (bond strength) AND (post) OR (fibre) OR (metal) AND (smear layer). **RESULTS:** Six in-vitro studies were included and processed for data extraction. All studies incorporated the use of fiber posts. The mean shear bond strength for test group ranged from 2.23 to 15.17 MPa while mean shear bond strength for control group ranged from 2.93 to 9.38 MPa. The wavelengths of diode lasers ranged from 660 to 2940 nm (nm). Power was reported in 5 studies ranging from 0.075 W to 3 W. All studies compared shear bond strength of phototherapy in the adhesive bonding of different dental posts to root dentin. In all the included studies, greater bond strength achieved by phototherapy compared to nonirradiated group. **CONCLUSION:** Within the limits, this study shows that the dentin to post bond strength was significantly enhanced by phototherapy.

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30. Akram Z, Al-Aali KA, Alrabiah M, **Alonaizan FA**, Abduljabbar T, AlAhmari F, Javed F, Vohra F. Current weight of evidence of viruses associated with peri-implantitis and peri-implant health: A systematic review and meta-analysis. Rev Med Virol. 2019; 29(3):e2042.

Indexing Status: Scopus: ● Web of Science: ● PubMed: ●

Abstract

The pathological role of human herpesviruses (HHVs) (Epstein-Barr virus [EBV], Human cytomegalovirus [CMV], and Herpes simplex virus [HSV]) in peri-implant health needs clarification quantitatively. To determine the weight of evidence for HHVs in patients with peri-implantitis (PI) and substantiate the significance of HHVs in peri-implant inflammation, electronic databases including EMBASE, MEDLINE, Cochrane Oral Health Group Trials Register, and Cochrane Central Register of Controlled Trials were searched from 1964 up to and including November 2018. Meta-analyses were conducted for prevalence of HHVs in PI and healthy controls. Forest plots were generated that recorded risk difference (RD) of outcomes and 95% confidence intervals (CI). Five clinical studies were considered and included. Four clinical studies reported data on EBV while three clinical studies reported data on CMV. Considering the risk of these viruses in PI, significant heterogeneity for CMV ($\chi^2 = 53.37$, $p < 0.0001$, $I^2 = 96.25\%$) and EBV ($\chi^2 = 14.14$, $p = 0.002$, $I^2 = 78.79\%$) prevalence was noticed between PI and healthy control sites. The overall RD for only EBV

(RD = 0.20, 95% CI, 0.01-0.40, p = 0.03) was statistically significant between both groups. Frequencies of the viruses were increased in patients with PI compared with healthy nondiseased sites. However, the findings of the present study should be interpreted with caution because of significant heterogeneity and small number of included studies.

31. **Alonaizan FA**, Alofi RS, AlFawaz YF, Alsahhaf A, Al-Aali KA, Vohra F, Abduljabbar T. Effect of Photodynamic Therapy, Er, Cr: YSGG, and Nd: YAG Laser on the Push-Out Bond Strength of Fiber Post to Root Dentin. Photodiagnosis Photodyn Ther. 2019; 27:415-418.

Indexing Status: Scopus: ● **Web of Science:** ● **PubMed:** ●

Abstract

Objective: To evaluate the push-out bond strength and modes of failure of fiber post to root dentin by using photodynamic therapy (PDT), Er,Cr:YSGG, Nd:YAG laser, and conventional cleaning and shaping (CCS). **Materials and methods:** Eighty anterior teeth were sectioned in a horizontal manner being 2 mm incisal to the cementoenamel junction, and root canal was prepared for post space. After post space was made, fiber posts were placed inside the root canal system. The fiber posts were subjected to PDT, Er,Cr:YSGG laser, Nd:YAG laser, and conventional cleaning and shaping (CSS) with 20 specimens in each group. Cervical and apical sections were obtained from the specimens. For performing the push-out test, the universal testing machine was used. The formula used for calculating the push-out bond strength was $\sigma = N/mm^2$. **Results:** PDT group (8.16 ± 2.19 MPa) achieved the highest mean push-out bond strength, whereas Er,Cr:YSGG (7.24 ± 1.27 MPa) reported the lowest value in the specimens. Among the experimental groups, the ANOVA test expressed statistical difference ($p = 0.481$). In the cervical segments, the mean push-out bond strength was found to be higher in all of the experimental groups. For the cervical segments, the independent t-test results showed higher mean push-out bond strength values than the apical segments in PDT, Er,Cr:YSGG, Nd:YAG, and CSS groups, respectively ($p < 0.05$). Twenty failures were observed at the interface level between the adhesive and surface of dentin. Seven failures were found at the interface between mixed and the adhesive and post, respectively. **Conclusions:** Push-out bond strength to root canal dentin was not affected by PDT, Er,Cr:YSGG, and Nd:YAG laser compared with CCS. However, PDT produced the smallest number of failure modes and slightly higher push-out bond strength to root dentin. Laser treatment using PDT and Er,Cr:YSGG appeared to be clinically efficient showing acceptable push-out bond strength of fiber post with less number of failures at different regions of the root dentin.

32. Habashneh RA, Qabaha M, Khader Y, Ghassib I, **Atmeh A**. Gingival Health Around Cervical Carious Lesions Restored with Calcium Silicate-based Cement (Biodentine™) Compared with Glass-ionomer Cement: A Randomized Clinical Trial. J Contemp Dent Pract. 2019; 20(6):702-706.

Indexing Status: Scopus: ● **Web of Science:** ● **PubMed:** ●

Abstract

AIM: The study aims to assess the gingival health around cervical lesions restored with calcium silicate- based cement (Biodentine™) compared to treatment with glass-ionomer cement (GIC). **MATERIALS AND METHODS:** A total of 28 healthy subjects with carious lesions on the cervical third of the buccal surfaces of posterior teeth (class V-Black's classification) have participated and were distributed over two equal groups. The participants in each group received one type of the tested cements: Biodentine™ or GIC. The oral hygiene and the gingival health of the restored teeth were evaluated clinically at 1, 3, and 6-month intervals. **RESULTS:** Comparing clinical parameters of gingival and periodontal tissues adjacent to cervical restorations indicated significant differences. Plaque index (PI) and gingival index (GI) were higher in the Biodentine™ group at 1, 3, and 6 months of evaluation with a significant difference ($p < 0.05$), a rise in pocket depth has been noticed at 3 and 6 months ($p < 0.05$). Gingival recession (GR) did not show any difference between groups ($p > 0.05$). Moreover, bleeding on probing (BOP) values were higher for Biodentine™ restorations compared with GIC with a significant difference ($p < 0.05$). **CONCLUSION:** Cervical restorations of Biodentine™ were associated with more plaque accumulation with a higher degree of gingival inflammation in comparison with GIC.

33. El Tantawi M, AlJameel AH, Fita S, AlSahan B, Alsuwaiyan F, El Meligy O. Dentists' intentions to manage drug users: Role of theory of planned behaviour and continuing education. Eur J Dent Educ. 2019; 23(3):364-372.

Indexing Status: Scopus: 

Web of Science: 

PubMed: 

Abstract

OBJECTIVES: To assess dentists' intention to manage drug users (DUs) and to evaluate the role of the theory of planned behavior (TPB) and continuing education (CE) in explaining this intention.

MATERIALS AND METHODS: A cross-sectional study was conducted in 2017, including dentists from three major Saudi cities. A questionnaire assessed personal and professional background and components of TPB: attitude, perceived social norms, perceived control and intention to manage DUs. Respondents expressed their agreement on a scale from 1 (disagree) to 7 (agree). Receiving CE to manage DUs was also assessed. Adjusted linear regression was used to assess the impact of the TPB constructs and receiving CE on dentists' intention. **RESULTS:** Response rate = 72% (255/354), mean (SD) age = 35.2 (11.9). The mean (SD) for positive intention to manage DUs = 5.34 (1.37), negative attitude = 4.03 (1.10), positively perceived norms = 5.78 (1.06) and perception of no control = 4.45 (1.08). Only 9% received CE to manage DUs. Positive intention was associated with perception of positive norms ($B = 0.73$, 95% CI = 0.59, 0.87) and perception of no control ($B = -0.47$, 95% CI = -0.63, -0.32) but not with receiving CE ($P = 0.58$). **CONCLUSION:** In major Saudi cities, dentists' intention to manage DUs was positive and was explained by TPB components: perception of norms and perception of control. Modified and targeted CE is needed to address this problem.

In Press Publications (Local and International)

#	Authors	Title	Publisher & Date
1	Al-Thobity AM, Gad M, ArRejaie A, Alnassar T, Al-Khalifa KS	Impact of Denture Cleansing Solution Immersion on Some Properties of Different Denture Base Materials: An In Vitro Study.	J Prosthodont. 2018; In Press.
2	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Photographic Equipment	Wiley 2018; In Press.
3	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Dental Armamentarium	Wiley 2018; In Press.
4	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Technical Concepts & Settings	Wiley 2018; In Press.
5	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Composition & Standardisation	Wiley 2018; In Press.
6	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Extra-oral & Intra-oral Images	Wiley 2018; In Press.
7	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Portraiture	Wiley 2018; In Press.
8	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Bench Images	Wiley 2018; In Press.
9	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Special Applications	Wiley 2018; In Press.
10	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Processing Images	Wiley 2018; In Press.
11	Ahmed I, Al-Harbi FA	Essentials of Dental Photography: Exporting, Managing, & Using Images	Wiley 2018; In Press.
12	Abdelnaby YL, Hafez AM, Nassar EA.	Influence of prolonged contentious orthodontic force on the shear bond strength of metallic brackets bonded with various adhesive systems.	EDJ 2018; In Press.
13	Gad MM, Al-Thobity AM, Fouoda SM, Na'pa'nkangas R, Raustia A.	Flexural and surface properties of PMMA Denture Base Material modified with of Thymoquinone as antifungal agent	Journal of Prosthodontics 2018; In Press.
14	Qaw MS, Abu Showmi TH, Almaskin DF, AlZaher ZA, Gad MM, Al-Harbi FA, Abualsaud R, Ammar MM	A novel approach to improve repair bond strength of repaired acrylic resin: An in Vitro Study on the Shear Bond Strength	Journal of Prosthodontics 2018; In Press.
15	AlHumaid J.	Scanning Electron Microscope Analysis of Residual Dentine in Primary Teeth Following Chemomechanical Caries Removal.	Saudi Journal of Medicine & Medical Sciences 2019: Accepted for publication.
16	Ali S, Iqbal K, Asmat M, Farooq I, Khan AM, Alam MK.	Dental composite restoration practices amongst general dental practitioners of Karachi, Pakistan.	World Journal of Dentistry 2019: In press.
17	Abuohashish H, Al-Mahalawy H, Zakaria O, Marei H, Abdelhady A, AlKindi M, Al-Jandan B.	Delayed healing of teeth extraction sockets following vascular endothelial growth factor inhibition by bevacizumab.	Journal of Oral and Maxillofacial Surgery, 2019: In Press.
18	Firzok H, Zahid S, Asad S, Manzoor F, Khan AS, Shah AT.	Sol-gel derived fluoridated and non-fluoridated bioactive glass ceramics-based dental adhesives: Compositional effect on re-mineralization around orthodontic brackets.	Journal of Non-Crystalline Solids, 2019: Accepted for publication.

19	Bakhurji E , Hoaglin Cooper L.	School-based fluoride varnish programs: a national survey.	Journal of public health dentistry, 2019: In Press.
20	Bakhurji E.	Limited Evidence Suggests That Mineral Trioxide Aggregate Could Have a Better Success Rate Than Calcium Hydroxide for Partial Pulpotomy of Symptomatic Mature Permanent Molars.	<u>Journal of Evidence Based Dental Practice</u> , 2019: In Press.
21	Al Kuwaiti A , Bicak HA, Wahass S.	Factors predicting job satisfaction among faculty members of a Saudi higher education institution.	Journal of Applied Research in Higher Education, 2019: In Press.
22	Gad MM, Abualsaud R, Al-Thobity AM, Al-Abidi KS, Khan SQ, Abdel-Halim MS, Al-Harbi FA, El Zayat M, Fouda SM.	Prevalence of partial edentulism and RPD design in patients treated at College of Dentistry, Imam Abdulrahman Bin Faisal University, Saudi Arabia.	The Saudi Dental Journal, 2019: In Press.
23	Gad MM, Rahoma A, Abualsaud R, Al-Thobity AM, Akhtar S, Al-Harbi FA.	Impact of different surface treatments and repair material reinforcement on the flexural strength of repaired PMMA denture base material.	Dental materials journal, 2019: Accepted for publication.
24	Gad MM, Fouda SM.	Current Perspectives and the Future of Candida albicans-associated Denture Stomatitis Treatment.	Dental and medical problems, 2019: Accepted for publication.
25	Fouda SM, Gad MM, Ellakany P, Al-Thobity AM, Al-Harbi FA, Virtanen JI, Raustia A.	The effect of nanodiamonds on candida albicans adhesion and surface characteristics of PMMA denture base material - an in vitro study.	Journal of applied oral sciences, 2019: Accepted for publication.
26	Nazir MA, Al-Ansari A, Al-Khalifa K, Gaffar BO.	Determinants of knowledge and practice of forensic dentistry amongst dental practitioners.	European Journal of Dental Education, 2019: In Press.
27	Izhar F, Nazir MA, Majeed A, Almas K.	A Study of Dentists about Their Knowledge and Practice of Dentine Hypersensitivity.	European Journal of Dentistry, 2019: Accepted for publication.
28	Ali S, Farooq I.	A review of the role of amelogenin protein in enamel formation and novel experimental techniques to study its function.	Protein and peptide letters, 2019: In Press.
29	El Gezawi M , Wölflie UC, Hardy R, Fliefel R, Kaisarly D.	Remineralization, Regeneration and Repair of Natural Tooth Structure: Influences on the Future of Restorative Dentistry Practice.	ACS Biomaterials Science & Engineering, 2019: In Press.
30	Ali S, Farooq I, Al-Thobity AM, Al-Khalifa KS, Alhooshani K, Sauro S.	An in-vitro evaluation of fluoride content and enamel remineralization potential of two toothpastes containing different bioactive glasses.	Bio-Medical Materials and Engineering, 2019: In Press.
31	Bakhurji E , Hoaglin Cooper L.	School-based fluoride varnish programs: a national survey.	Journal of public health dentistry, 2019: In Press.
32	Zakaria O, Madi M , Kasugai S.	Introduction of a novel guided bone regeneration memory shape-based device.	Journal of Biomedical Materials Research Part B: Applied Biomaterials, 2019: In Press.
33	Al-Obaida MI, Moukadem R, Allahem Z, AbdulWahed A, AlOnaizan FA , Al-Madi EM.	Comparison of bacterial removal from dentinal tubules with different irrigant agitation techniques: An in vitro study.	The Saudi Dental Journal, 2019: In Press.
34	Khan AS , et al.	Thyroxine-loaded chitosan/carboxymethyl cellulose/hydroxyapatite hydrogels enhance angiogenesis in ex-vivo experiments.	International Journal of Biological Macromolecules, 2019: Accepted for publication.



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