



جامعة الأميرة نورة بنت عبد الرحمن
Princess Nourah Bint Abdulrahman University

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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Dean's Message

I would like to welcome all faculty members, interns, and students to the 5th Annual Research Day at Princess Nourah bint Abdulrahman University (PNU), College of Dentistry. Each year we celebrate this day to ensure continuous reinforcement of the research vision of PNU and our college, that aims at directing scientific research to support the building of knowledge economy in alignment with the KSA vision 2030.

The scientific research in the field of dentistry stimulates our thoughts, encourages reasoning, and inspires our exploration instinct to discover uncharted areas in our respective fields of specialization. Research help us formulate new questions to produce new knowledge to better serve our community.

The College of Dentistry at PNU is proud to commemorate the research day, and for the past four years we continue to recognize research achievements of our dear colleagues, interns, and undergraduate students. This event, has had a positive and significant impact on improving the quality and quantity of research reflected in the increasing the number of ISI indexed publications , that reached to 45 publications this year, out of that 38 researches were published in ISI and Scopus . It is worth mentioning that each year this most awaited day offers exciting awards to winners, highlights new discoveries and promotes good verbal and presentation skills, as well as, networking among researchers, which enhances and strengthens research collaboration among faculty members and students.

Here, I would like to congratulate the achievers of the research awards and encourage all faculty member, interns, and students to actively participate in the research activities of our college as a team to accomplish vision and mission of the college and the PNU.

We deeply appreciate the sincere efforts and dedication of all organizers and participants.

I wish all of you great success in your academic and professional life.

Prof. Hanan A. Balto

Dean



جامعة الأميرة نورة بنت عبد الرحمن
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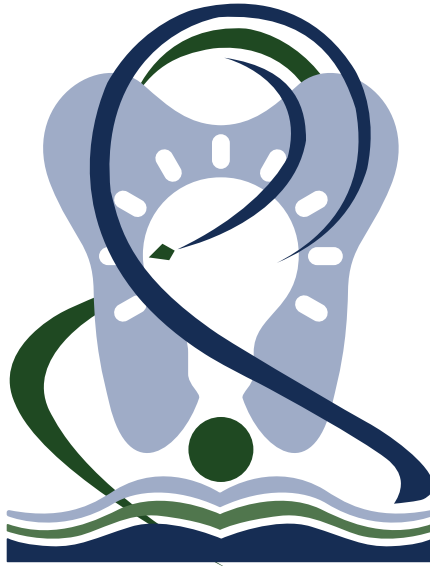
Vice-Dean for Research and Post-Graduate Studies Message

Although effective teaching is a main factor for the best outcome in the learning process, research skill is also a key factor. Our primary aim is to encourage students to search, and guide them through the process to be fully aware of the importance of conducting research. It will prepare them to be role models for others and will elevate their readiness to be good doctors. The 19th of March is the fifth research day, which I have been waiting for since the beginning of the semester. It is the day where all our achievements since the beginning of the semester will be shown and presented in reality.

Research has a vital role in improving students' level of learning, instead of the traditional way. Hence, it is my pride to see our students writing their abstracts and discussing their ideas. Their researches are a milestone in their academic journey and success.

As the Vice Dean for Research and Postgraduate Studies, I am sincerely gratefully and thankful to all the staff members and students who work together to present on this day, and help reaching our main goal of making PNU one of the leading universities world wise in all the academic fields.

Dr.Rahaf Almohareb



**PRINCESS NOURAH BINT
ABDULRAHMAN UNIVERSITY**

**COLLEGE OF DENTISTRY
RESEARCH CENTER**

Research Center Director Message

In our aims of becoming a reference center in dental research, it is our duty to create an environment that unlocks students and faculty research potentials. Through our collaboration we must help them create the necessary balance in their lives, and value their talents and potentials.

I feel humbled, blessed and privileged to have been given this opportunity to support and direct research at our college. I am confident that each and every student, dentist whether a GP or an academic staff at our esteemed dental college, will perform nothing short of miracles.

**The race for excellence is limitless,,
To take risk and fail is not a failure. Real failure is to fear trying,,**

Sincerely,

Dr. Shatha Subhi ALHarthi

A handwritten signature in black ink that reads "Shatha ALHarthi". The signature is written in a cursive style with a large initial 'S' and 'A'.



جامعة الأميرة نورة بنت عبد الرحمن
Princess Nourah Bint Abdulrahman University

5th Research Day Committee Members

Dr. Rahaf Al-Mohareb (Chair)

Dr. Noura Al-Abdullateaf (Member)

Dr. Shatha AlHarthi(Member)

Dr. Eman AL-Sagoub(Member)

Dr.AlBandari AL-Oied(Member)

Dr. Weam Banjar(Member)

Mrs. Taghreed ALOdeab(Member)

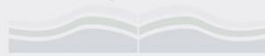
Mrs. Bushra ALAskar (Member)

Mrs.Shooa AlNafea (Member)

Abstracts

Interns

كلية طب الاسنان
College of Dentistry



جامعة الأميرة نورة بنت عبد الرحمن
Princess Nourah Bint Abdulrahman University

Prevalence and risk indicators of malocclusion in primary dentition among preschool children in Riyadh-Saudi Arabia

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^d Professor, pediatric dentistry, preventive dental sciences department, PNU, College of Dentistry

Aim:

To determine prevalence of malocclusion in primary dentition and its associated risk indicators in Saudi preschool children living in Riyadh, Saudi Arabia.

Objectives:

- 1-Assess the prevalence of unfavorable primary molar/canine relationships.
- 2-Assess the prevalence sagittal/ vertical/ transverse abnormalities in the primary dentition.
- 3-Identify risk indicators associated with malocclusion in the primary dentitions.

Materials and Method(s):

A cross sectional study conducted on 3–6 years old preschool children of the capital of Saudi Arabia, Riyadh city. The sample will be selected from kindergarten (KG) using a convenience sampling.

Result(s):

Preliminary data shows 63.52% of the sample with mesial shift, 34.28% flush terminal plane. When canine relationship was measured 80.82% had class I, 11.84% class II and 7.34% class III. 23.06% had increase in overjet and 24.0% had increase in overbite. There was 5% of the sample with open bite and 25.37% had closed dentition. Midline deviation was observed in 9.64%.

Conclusion:

Higher tendency for malocclusion was observed in primary dentition of Saudi children than other population, further studies with randomized sampling is required.

The Influence of Ceramic Thickness And Luting Agent on The Color Variation of Ceramic; *An in-vitro study*

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Objective(s):

This in vitro study was performed to assess the influence of ceramic thickness and type of luting agent on color variation of a ceramic system.

Materials and Method(s):

Thirty ceramic specimens 5x10mm were prepared from Ivoclar Vivadent IPS E.max were fired and glazed according to the manufacturer's instructions. Divided according to thickness into 2 groups of 15 each; G1& G2 of 1& 2mm thick, respectively. Specimens of each thickness were then subdivided into 3 subgroups 5 each. Seated on a dark background of resin composite with two resinous cements namely; Rely X (3M ESPE, USA) and G-CEM LinkAce (GC corp. Japan). Another subgroup without cement, served as a control. Evaluation of the variation of color parameters determined using the spectrophotometer (Spectra) and color differences (ΔE) were measured. Data were subjected to statistical analysis two-way analysis of variance (ANOVA) statistical test using SPSS version 21.0.

Result(s):

Spectra photometer were significantly affected by the ceramic thickness ($P=0.000$). Additionally, the use of the 2 mm thickness ceramic provoked the ΔE values and a steep rise in ΔE values were observed in all 2 mm thickness ceramic groups. The highest mean ΔE was observed in control 2mm group (2.05). Whereas, the lowest ΔE was found in Control 1mm (0.65). The luting agent seems to have no effect on mean color difference ($P=0.115$).

Conclusion(s):

The color difference (ΔE) was significantly affected by different ceramic thickness ($P=0.000$), while the luting agent seems to have no effect on mean color difference; the color changes that determined are clinically acceptable.

Impact of Self-perceived Dental Esthetic on Psycho-Social Well-Being and Dental Self Confidence

A Cross Sectional study among female students in Riyadh City

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^c Professor, Preventive Dental Science Department, College of Dentistry, PN

Objective(s):

To assess the psychosocial impact of dental aesthetics among undergraduate female students in Riyadh city, and to compare it between health and non-health colleges.

Materials and Method(s):

A representative sample was taken from female students aged 18-30 years old from both health and non-health, public and private colleges in Riyadh City, using multi-stage sampling. In each university, among all colleges, random colleges, departments, and classes were selected. The Psychosocial Impact of Dental Esthetic Questionnaire (PIDAQ) was used for data collection, which consists of 23 items divided into four domains, self-confidence, social impact, psychosocial impact and aesthetic concerns. It is a self-rated scale with numerical values ranging from 0 "not at all" to 4 "very strongly". The higher the score, the more severe the psychological impact. The questionnaire was translated to Arabic and tested.

Result(s):

The total number of respondents was 1845 female students, 763 were from health colleges and 1082 were from non-health colleges, with a mean (SD) age of 20.70 (1.68). Overall; the mean score for the PIDAQ was 58.1 (11.41), with no significant difference between health and non-health colleges. For the dental self-consciousness domain, only two items showed significant differences ($p < 0.05$) between the assessed groups which were appearance satisfaction, and nice tooth position. While for

the social impact domain, the mean score of 17.78 (4.93), was statistically lower in the non-health colleges group compared to health collage group.

Conclusion(s):

Overall, female undergraduate students in Riyadh City showed a moderately positive score to the PIDAQ. Dental aesthetics showed a strongly positive impact on “social impact: and “aesthetics attitude” subscales, and a moderately positive impact on the “psychosocial” sub-scale.

General knowledge of elementary school teachers regarding tooth avulsion: A cross sectional study

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Objective(s):

The aim of this study is to assess the general knowledge of elementary school teachers regarding the management of avulsed teeth.

Materials and Method(s):

A 259 questionnaire were distributed among elementary school teachers in Riyadh to assess their knowledge about the management of tooth avulsion. The consent was given to the participants. The survey contains 13 questions. The results were further analyzed using SPSS.

Result(s):

A total of 259 teachers;134 female and 125 males, were consented and completed the questionnaire. Study showed that more than half of the participant do not have the sufficient knowledge regarding the management of avulsed tooth.

Conclusion(s):

More than half the participant doesn't have the sufficient knowledge regarding the management of avulsed tooth. The need for educational programs directed towards school teachers about the man-agement of dental traumatic injuries can minimize the effects of avulsed tooth of the children

Effectiveness of super floss and water flosser; a controlled clinical trial

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^b Assistant professor, Orthodontist, Director of the Academic Affairs and Training Department at East Riyadh Specialist Dental Center

Objective(s):

The aim of this study is to compare between the effectiveness of super floss and water-flosser in plaque removal for patients undergoing orthodontic treatment.

Materials and Method(s):

Thirty-four patients undergoing orthodontic treatment in Eastern Riyadh Specialist Dental Center in Riyadh, Saudi Arabia was randomly selected to participate in the study. A split-mouth technique was used to compare between the effectiveness of super floss (SF) and water flosser (WF) in plaque removal. Patients' oral hygiene was assessed using Rustogi et al Modified Navy Plaque Index (RMNPI). Patients were observed to insure they are following proper instructions suggested.

Result(s):

Both SF and WF were effective in removing plaque from interproximal areas with a statistically significant difference of $p < 0.001$. However, there was no statistically significant difference between the effectiveness of SF and WF in plaque removal ($p > 0.05$).

Conclusion(s):

In conclusion, the use of super floss or water flosser as interproximal aid for plaque removal in patients undergoing orthodontic treatment are equally effective.

Effectiveness of Preoperative Administration of Ibuprofen in Children Undergoing Extraction in Reducing Postoperative Pain: Double Blinded Randomized Controlled Trial (DBRCT)

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Background:

Fear of dental pain is one of the biggest obstacles in treatment of children in pediatric dentistry. Preoperative administration of Ibuprofen is considered as one of the options to overcome postoperative pain, especially after extraction. However, limited evidence exists regarding its effectiveness .

Aim:

Evaluate the effectiveness of preoperative administration of oral Ibuprofen in reducing post extraction pain in primary molars in children.

Materials and methods:

Forty-eight children aging between 4-11 years old were included in this study and divided into two groups. Group A participants were premedicated with ibuprofen thirty minutes prior to the treatment while Group B was Placebo Group.The pain level was evaluated using the Wong-Baker face visual analogue scale prior to extraction of primary molars, three hours and twenty-four hours post extraction. Data was analyzed using McNemar and Wilcoxon tests. Level of anxiety has been assessed in each time point alongside the parent's anxiety level. The Chi-square test was used for categorical variables. A p-value <0.05 was considered statistically significant.

Results:

A total of forty-six patients were eligible to participate in this study. Overall, there was no significant difference in the pain levels between placebo and ibuprofen group at 24 hours ($P=0.101$). However, there was significant difference with children who reported moderate to severe pain level in Ibuprofen group comparing to placebo group($P=0.024$). Pre-medication with ibuprofen significantly reduced pain with children who had received infiltration comparing to those who had inferior alveolar nerve block(IANB) while the placebo group had no significant effect on neither infiltration nor IANB.

Conclusion:

Pre-medication with ibuprofen is recommended to alleviate moderate to severe pain following extraction of primary molars in pediatric patients

Prevalence of Incidental Maxillary Sinus Findings for Patients Referred for Dento-alveolar CBCT By Dentist's Eye

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Objectives:

The aim of the present three-dimensional retrospective study is to measure the prevalence of asymptomatic incidental findings of the maxillary sinuses among dental patients seen at the Princess Nourah Bint Abdulrahman University, Saudi Arabia.

Materials and Methods:

Two hundred Cone Beam Computed Tomography (CBCT) scans were assessed by a trained and calibrated investigators. The patient population comprised individuals who had been referred to CBCT for diagnosis and treatment planning of different dento-facial purposes. The presence of maxillary sinus-related lesions Mucus retention cyst, root tips, floor discontinuation, mucosal thickening, sinus septa (total/partial), foreign bodies and hamartoma were assessed. The data was stratified with reference to age, gender and ethnicity. Data was analyzed using analysis of variance and regression analysis. Level of significance was set at $P < 0.05$.

Results:

CBCT scans of 75 Male Patients (37.8%) and 123 Female Patients (62.2%) which consisted of 104 Saudi Patients (52.5%) and 94 Non Saudi Patients (47.5%) showed different maxillary sinus findings. The highest incidental finding was mucosal thickening which was observed among (28.8%) of patients. Partial obliteration showed the lowest incidence which represents only (4%) of the sample size. Most of the findings were observed in the sagittal view (34.3%) followed by coronal (33.3%) then axial (32.3%) view. There was no statistically significant difference between gender with regards to the occurrence of incidental findings in the study population.

Conclusion(s):

It is recommended that oral healthcare providers should vigilantly assess CBCT images, which may help identifying maxillary sinus diseases that are possibly in a latent phase.

Assess the Effectiveness of “Healthy City Program” on Oral Health Status and Nutritional Habits Among Middle-School Students in Central Region of Saudi Arabia

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Dr. Eman AlSagob ^c, Dr. Mamata Hebbal ^d, Dr. Saeed Almohammadi ^e

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Objective(s):

To evaluate oral health status and nutritional habits among middle-school students involved in “healthy city program” in Al-Diriyah town, who received health education and awareness regarding their diet, compared to other students who were not involved in the educational program in Al-Jubaylah and Al-Uyaynah towns.

Materials and Method(s):

A cross sectional study conducted among 600 medically fit female middle-school students in the central region of Saudi Arabia. Group 1; Healthy city program, was compared to group 2; Al-Jubaylah and Al-Uyaynah towns. A self-designed 11 items questionnaire related to general health status, diet, and oral health behavior were distributed. Height and weight were measured, and an oral clinical examination was conducted in the classroom using WHO gingival and DMFT indices to evaluate periodontal and dentition status.

Result(s):

Overall; the mean(SD) age of the study sample was 13.62(0.9) and mean(SD) BMI was 22.52(4.67). Group 1 showed a mean(SD) DMFT of 4.14(1.9), which is significantly lower than Group 2; mean(SD) DMFT of 5.06(3.4) $P < 0.0001$. The mean total teeth with bleeding on probing was significantly lower in group 1 ($P < 0.0001$). Regarding eating habits, nearly half (49.3%) of the participants in group1 scored average, while (29.3%) good; compared to group2 (46.3%) of the participants scored average, while (24.0%) good; with a border line significant difference between the two groups ($P 0.051$).

Conclusion(s):

The study showed improved oral health status among middle school females within the healthy city program compared to other middle school females. However, nutritional habits were merely superior in the healthy city program students.

Perception of smile esthetics and attractiveness among Saudi females attending PNU dental clinics in Riyadh, Saudi Arabia

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^b Principle investigator, Assistant professor, preventive dental science department, PNU, College of Dentistry

^c Professor, preventive dental science department, PNU, College of Dentistry

Objective(s):

The aim of this study is to evaluate the perception of smile attractiveness and the influence of certain smile esthetic variables by Saudi females attending Princess Nourah bin Abdurrahman University Dental Clinics in Riyadh, Saudi Arabia with comparison to different socio-demographic data.

Materials and Method(s):

A cross-sectional study using digital image editing software (Photoshop CS6) to manipulate three smile esthetic variables, which are buccal corridors, smile arc and maxillary gingival display in an intraoral photographs featured in the survey on tablet application (QuickTapSurvey). Chi square test was applied to test the relationship between the variables among age, educational level and history of orthodontic treatment.

Result(s):

223 Saudi female participants attending PNU dental clinics completed the questionnaire. The age of the participants ranged from 18 to 50 years old. There was significant difference in the perception of the smile esthetic with buccal corridors variable as participants in middle age and who had bachelor degree or higher preferred smile with normal buccal corridors. Normal maxillary gingival display and ideal smile arc were perceived as the most attractive smile among other smiles. However, there was no significant difference of the history of orthodontic treatment on the perception of smile attractiveness among all the variables.

Conclusion(s):

Among different smile esthetic variables, only buccal corridors influenced the perception of smile attractiveness of Saudi female participants with different ages and educational levels. As for the history of orthodontic treatment, it did not have a role in the perception of smile attractiveness with different smile esthetic variables.

Survival of The Bonded Ceramic Veneers: Effect of Thickness and Luting Agent.

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Introduction:

The type of bonding between dental structure and ceramic restorations is one important factor for the longevity of restorations, depending on the type of luting agent and ceramic thickness. Successful luting increases retention, tooth fracture resistance and restoration, and reduces micro-leakage incidence.

The purpose of this study was to examine the impact of load-to-failure test on a ceramic material as affected by the type of luting agent and ceramic thickness. It was also intended to investigate the fracture mode.

Materials and Methods:

Twenty ceramic specimens (5x10 mm, IPS E.max, Ivoclar Vivadent) were prepared and divided according to the ceramic thickness into 2 groups (1 and 2mm). Each group was further subdivided into 2 subgroups; according to the type of luting agent: Subgroup 1; Rely X (3M ESPE, USA) and Subgroup 2; G-CEM LinkAce (GC corp. Japan).

All specimens were thermo-mechanically aged, then subjected to load-to-failure test. The maximum force to produce fracture was recorded.

Optical microscope was used to analyze the failure mode. Statistical analysis was performed using the analysis of variance (ANOVA) test and the post hoc Tukey's test.

Results:

The highest mean compressive strength value was observed in GC 2mm group (30.67 ± 3.73 MPa). Whereas, the lowest mean compressive strength value was observed in RelyX 1mm group (8.57 ± 5.65 MPa). Statistical data suggest that both ceramic thickness ($P=0.000$) and luting cements ($P=0.000$) had a significant effect on the compressive strength of the study groups

The type of failure observed in most of the groups was predominantly mixed failure. Debonding during thermocycling was the most common type of failure in the Rely X groups .

Conclusion:

Within the limitations of this in-vitro study, it can be concluded that ceramic thickness influences the fracture strength of ceramic veneers. Choosing the correct type of luting agent according to thickness of ceramics can increase the survival of such restorations.

Morphological Alterations on Human Radicular Dentine After Exposure to Different Chelating Agent : An Ex Vivo Study

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Aim:

The purpose of this study is to observe the effect of Qmix compared to EDTA in radicular dentine in different contact time.

Materials and Methods:

Ninety single-rooted teeth selected. Canals enlarged using hand instrumentation starting with size #10 up to #20 K-file. In presence of 5.25 % NaOCl, rotary instrumentation to size 40/0.06 (F4). The specimens divided into 3 groups Group 1=10 control 3ml distal water, Group2= 40 total 3ml 17% EDTA+NaOCl subdivided to 20 exposed to 60 and 90 seconds contact time, Group 3=40 3ml Qmix+ NaOCl subdivided to 20 exposed to 60 and 90 seconds contact time. Scanning electron microscopy (SEM) analysis, Apical opening sealed using packed composite. without acid etch nor bonding agent prior to longitudinal splitting into two halves. Specimens were examined at 3000x magnification, each sample had 3 images, coronal, middle and apical part.

Statistical Analysis:

two-way analysis of variance (ANOVA) statistical test using SPSS version 21.0.

Results:

EDTA + NaOCl 90 s found to be more efficient in removing the smear layer compared to EDTA + NaOCl 60 s and Qmix + NaOCl 90 s irrigation regimens. Moreover, the interactive effect of both irrigation regimen and radicular dentine area was not found to be significant.

Conclusion:

irrigation methods in this study found to be equally effective in removing the smear layer in different contact time. However, it was observed that the combination of EDTA+ NaOCl during the 90 s had more erosion effect on the dentinal wall.

Clinical Evaluation of Direct Esthetic Restoration in Cervical Erosion\Abrasion Lesions

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^b Consultant, Restorative Department, PNU, College of Dentistry

Objective:

Compare three different types of direct esthetic restoration: (1) conventional resin composite restoration, (2) flowable resin composite restoration, (3) glass-ionomer restoration following United States Public Health Service (USPHS) criteria.

Materials and Method:

Sample size of 90 teeth of clinical records database on Princesses Norah University, patients aged from 18 to 40 selected randomly and examined clinically, all restorations that were placed by students and interns. This observational study is based on the analysis of patient records which were obtained on the treatment methods of patients subjected to dental trauma at cervical surface. All restorations with minimum observation time of 3 months.

Result:

At the end of 3 months, 90 restorations were evaluated in 52 patients, with a recall rate of 58%.

Statistical analysis was completed using the Pearson Chi-square and Unpaired T-test ($p < 0.05$).

Statistically significant difference between Flowable and the other materials for color match at 3 months. Significant differences were revealed between conventional composite and the other materials for marginal adaptation at 3 months.

Conclusion:

It was concluded that different types of resin materials demonstrated acceptable clinical performance. However, due to the limitation of the presented study, further evaluation is necessary for the long-term clinical performance.

Microbiological Effects of Hyaluronic Acid on Periodontal Disease: An *in-vitro* study

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Objectives:

To evaluate *in Vitro* the antimicrobial efficacy of influence of hyaluronic acid (HA) towards the reduction periodontal inflammation. Specifically, the antimicrobial effect of HA against *Porphyromonas gingivalis* (*P. gingivalis*) against Chlorhexidine gluconate (CHX) 0.12%.

Materials and Methods:

The antibacterial efficacy against *P. Gingivalis* was carried out by disc diffusion method. Microbial growth and identification was performed using DNA sequencing. Treatment wise, bacteria were divided into four groups: (a) Hyaluronic acid gel group (HA), (b) Chlorhexidine (CHX) group, (c) Antibiotics group (Cefuroxime 30 mcg, Amoxicillin 20 mcg and Ciprofloxacin 5 mcg) and (d) Control group in which no intervention was used. The samples were monitored at a timeline Day 1, Day 7, and Day 14. Identification of the anti-microbial activity was performed using microscopic examination.

Results:

CHX showed a significant bactericidal effect compared with HA, which displayed no anti-bacterial efficacy against the *P. gingivalis*.

Conclusion:

Compared with HA, CHX 0.12% is more effective in the eliminating Causative bacteria.

The Shelf Life of Nigella Sativa Mouthwash: an In Vitro Study

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Objective:

To characterize the shelf life of NSM and its color stability on extracted natural teeth.

Materials and Methods:

An In-house Nigella Sativa Mouthwash preparation was developed using the extracts of Nigella Sativa Oil, Cetyl Pyridinium Chloride (CPC) and fillers. CPC is a necessary preservative with antimicrobial effects; therefore, NS oil plus CPC preparation may help in reducing oral inflammation and gingivitis.

Shelf life:

The physiochemical and microbial analysis of the NSM preparation was carried out on the day of preparation, on the 7th day and on the 14th day after sample preparation. The samples prepared were kept under two different temperature conditions – room temperature and refrigerated 4oC temperature. The shelf life of the sample was determined by streaking plate method. Petridishes were kept in the incubator at 37 °C and then checked for appearance of colonies. The pH of the mouthwash was checked using pH Litmus test strip. Sedimentation was evaluated by using the centrifugal machine, and spectrophotometer was used to check density.

Color Stability:

24 extracted natural teeth were randomly immersed in different groups of mouthwashes and each group had 6 teeth. Groups are Saline (control group), NSM, CAM and CHX.

Result(s):

Bacterial growth was observed to be statistically significant when a log-linear model was employed for ageing condition, light condition and the storage temperature. The findings revealed no significant effect either of light condition or of storage temperature. However, ageing condition found to have a significant effect on the blue color level.

The highest pH level was observed in Baseline group under light at 40C, i.e., pH 7. While, all the ageing groups, to some extent, showed the lowest pH level both under light or dark conditions and at either storage temperature, i.e. pH 6. The highest ΔE value was observed in CHX-group whereas the lowest ΔE value was found in NSM-group

Conclusion(s):

Formulation of a mouthwash containing Nigella Sativa plus CPC was stable at the end of one-week interval. Hence it can be used for further in vitro studies to assess its antimicrobial activity.

Publications in the Field of Dentistry in Saudi Arabia Indexed in Scopus Database

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Objective(s):

To provide knowledge on the scientific production in the dental field in Saudi Arabia.

Materials and Method(s):

A search as performed in the Scopus data base. The search was done using the keywords "Saudi* and dent*". The study included all articles indexed from the years 1984 to 2018. Data was analyzed using descriptive analysis.

Result(s):

The literature search revealed 597 abstracts. The highest number of publications were from King Saud University. The uppermost year of publications of was on 2017, whereas no publications were made in the year of 1986.

Conclusion(s):

The obtained data depicted the growth of scientific data production. There is a tremendous increase in publications which indicates a research-directed and evidence-based future.

Undergraduate Students

Does acupuncture relieve TMD pain ?

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Objective(s):

The objective of the study is to determine the effectiveness of acupuncture therapy in relieving temporomandibular joint disorder (TMD) pain

Materials and Method(s):

An electronic search was performed using PubMed and Saudi Digital Library (SDL) for relevant articles from 2011 to 2017 in English, using the following key words: Acupuncture therapy, TMD, TMJ, Myofascial pain and facial pain. 6 eligible articles were identified from which 3 were selected based on the high level of evidence. The articles included were either (1) meta-analysis systematic review (2) systematic review (3) or randomized clinical trial (RCT) (4) the most recent articles was in 2017.

Result(s):

Two systematic reviews and one randomized clinical trial were used to address the objective of this study. All the reviewed articles indicated that using acupuncture, that involves penetrating the skin with needles on specific trigger points in the body, has a positive impact on relieving the signs and symptoms of the disorders, especially those of myogenous origin. Given the lack of long- term studies as well as the participants in these studies were females, further research is required

Conclusion(s):

The evidence available seems to support the effectiveness of acupuncture in providing short-term benefits for TMD signs and symptoms.

For a replanted avulsed permanent tooth, is immediate or delayed root canal therapy (RCT) recommended?

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Objective(s):

This critical appraisal study was conducted to compare the success rate of immediate and delayed RCT for avulsion permanent tooth,

Materials and Method(s):

An electronic search was accomplished to collect publications related to different methods for endodontic management of avulsion tooth using Database of Medline and Saudi Digital Library. The Keywords used: avulsion, avulsed teeth, knock out tooth, trauma, replantation. We extended the range of research to ten years and was done in English. 3 relevant articles were selected.

Result(s):

Andersson in his Guideline reported management of avulsion tooth depending on different factors: maturity of the root, dry time, and PDL condition. For closed apex, immediate RCT was recommended whereas for open apex, considering the revascularization chance, delayed RCT was recommended. The Cochrane review done by Day and Duggal included three RCTs, with variable level of risk of bias, all agreed that immediate extraoral endodontic treatment gives the best results, Petrovic et al. prospective cohort study also showed that immediate RCT is preferred over delayed. However other factors such as maturity of the root and time of replantation and storage media should be taken into consideration as it could affect the survival rates.

Conclusion(s):

Based on available evidence, one may say that timing of RCT on avulsed teeth should be initiated quickly for teeth with closed apex. Further studies with low risk of bias are needed

Laser or Drilling for dental caries removal?

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Objective(s):

the aim of this is study to assess the effectiveness of laser technology compared to conventional rotary instrument dental caries removal

Materials and Method(s):

An electronic search was conducted using PubMed and googles scholar from 2010 to 2019. After filtration process three articles meeting the inclusion criteria were selected; two systematic review and randomized clinical trial.

Result(s):

Jacobsen et al's systematic review (2011) indicated that there are insufficient to low evidence with regard to the effectiveness of laser in caries removal compared to rotary as well as to patient preference to laser treatment. In contrast, a recent systematic review by Tao et al. (2017) indicated that laser is as effective as rotary in caries removal but required more time when compared to the rotary. Also, the pain perception was much less in laser hence comfortable for the patient. Also, Dixit et al.'s clinical trial (2019) indicated that laser tooth preparation is less painful, hence comfortable for the patient. However, one should point out that the cost of laser treatment is more expensive than conventional and still.

Conclusion(s):

Based on the available evidence, one may conclude that the effectiveness of both treatment in caries removal is similar. Furthermore, laser is less painful with a longer treatment time needed. More well-designed long-term RCTs with large-sample are needed to support this conclusion.

TIMING OF IMPLANT PLACEMENT: IMMEDIATE VERSUS DELAYED IMPLANTS

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Objective:

The aim of this critical appraisal is to compare the survival rate between implant inserted in fresh extracted socket versus healed socket.

Methodology:

This study was conducted using articles collected from a search engine PubMed, and online sources (SDL, google scholars). Two systemic reviews and one prospective cohort were selected meeting the inclusion criteria.

Results:

Both systematic reviews indicated that the survival rate of delayed implants was significantly greater than immediate implants. In Mello et al.'s study, the survival rate of delayed implants was 98.38% compared to 95.21% in immediate implants ($p = .001$). Ramos et al.'s suggested that the insertion of implants in fresh sockets affects the failure rates (RR 1.58, 95% CI 1.27-1.95, $P < 0.0001$). However, one should be aware of the methodological limitations of these two reviewed systematic reviews.

While the prospective cohort by Raes et al. showed that bone changes was less in conventional implant (CI) procedure than immediate implant (II), II may give good prognosis similar to CIT if contours augmentation at time of extraction was done.

Conclusion:

Based on the limitations of the studies reviewed, one may conclude that immediate implants may increase the risk of failure compared to delayed one, and that delayed and immediate implants may show similar successful rate when bone grafting is done at time of extraction.

Do clear aligners increase the risk of caries in patients with malocclusion when compared to traditional braces?

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Objective(s):

This critical appraisal study aimed to compare dental health in patients undergoing orthodontic treatment with clear aligners with those undergoing orthodontic treatment with fixed appliances.

Materials and Method(s):

Electronic search using PubMed with the following mesh terms: clear aligners and fixed orthodontics, restricted to human studies and in English within the last 5 years was conducted followed by hand search for relevant studies. Three suitable articles were selected; one retrospective cohort, and two prospective cohort studies.

Result(s):

In Buschang et al. retrospective cohort study showed that patients treated with clear aligners have significantly less white spot lesions (WSL) 1.2% compared to 26% in patients treated with traditional braces (($P < 0.001$). Another prospective cohort study by Sifakakis et al. comparing the salivary levels of cariogenic bacteria among adolescence patients treated with aligners and fixed appliances indicated that there is no significant difference in *S. mutans* counts and *L. acidophilus* among groups (($P > 0.05$), while *S. sanguinis* was significantly lower in patients treated with aligners.. Azeem and Hamid prospective study, with no control indicated low incidence of WSLs in patients with clear aligners. Potential uncontrolled confounding factors such as oral hygiene treatment level of participants, pretreatment complexity, short term of study, and selection bias should be considered as they may affect the results

Conclusion(s):

From the evidence presented, one may recommend clear aligners as a treatment option especially in those patients with high caries risk. When clear aligners are not an option for patients, best practice such as patient education and recall protocol should be done.

Does the success rate of single visit Root canal treatment is similar to multiple visits treatment?

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Objective(s):

The objective of this critical appraisal is to compare the success rate of single visit root canal treatment (RoCT) of periapical abscess to multiple visit treatment.

Materials and Method(s):

Electronic search was conducted using PubMed and Cochrane library with search limit restricted to articles from 2014 to 2018, and to English language. The search yielded six systemic reviews, from which three recent systematic reviews were selected.

Result(s):

Figin's systemic review indicated that the frequency of radiological success and immediate postoperative pain were not statistically different between single and multiple visit RoCT. However, patients undergoing single-visit RoCT reported a higher frequency of painkiller use and swelling. Systemic review by Schwendicke showed similar results- risk of complications and pain were not significantly different in single versus multiple visit treatment. In Dennis's review of Moraira's et al. study , confirms the scientific evidence of no difference in terms of success rate between single- and multiple-visit RoCT in patients with pulpal disease.

It is important to recognize that the level of evidence of the SRs reviewed ranged from low to high risk of bias that may influences the interpretation of the findings.

Conclusion(s):

Based on this evidence, one may conclude that there is no difference in terms of radiographic evaluation and complications such as swelling or sinus tract. However, patients who were treated with single visit suffered of pain more and were more likely to use painkillers.

Is it ethical to design your baby?

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Objective(s):

“Designer babies” referred to a baby genetically engineered in vitro for specially selected traits, which can vary from lowered disease-risk, gender selection or select the traits. There are many issues that might be overseen when relating to designer babies. Nowadays there are many techniques which either produce a baby which is disease free or design a baby by choosing the gender and other features. As a result, designer babies have become an important topic in bioethical debates and the technique that been used has results in a controversial ethical and Islamic religious concerns. The aim is to discuss the ethical consideration of baby designing in respect to the religious perspective

Materials and Method(s):

An English language literature search using MEDLINE database through PubMed search engine and google scholar using the Keywords: baby designer, eugenics, baby engineering, genetic designing was conducted and selection was decided.

Result(s):

There are many ethical concerns regarding designer baby and the use of technologies that remain debated, the moral decisions regarding designer baby technologies is mainly done by assessing potential risk-benefit ratios, and considering the possible sequels. Though, From the Islamic point of view using designer baby is allowed by Islamic fiqh council (IFC) only if several principles are followed

Conclusion(s):

It is still debated on the ethical consideration of the designer baby and further studies needed be done regarding this matter. However, from the Islamic perspective it was accepted as long as the principles are followed.

Prenatal Screening: Is It A Double Edged Sword?

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Objective(s):

This study aimed to examine prenatal screening from a biomedical ethical point of view.

Materials and Method(s):

Ae search was done using PubMed database, google scholar and Saudi digital library. The key words used was (Prenatal, Neonatal, test, Screening, ETHIC*, Bioethics). Inclusion criteria : English language, accessibility to full text article, bioethics perspectives. 908 articles were retrieved, eight articles matching our inclusion criteria were selected.

Result(s):

Prenatal screening raises a number of controversies which can be recapitulated in a framework based on the four ethical principles; Autonomy, beneficence, nonmaleficence and justice. Opposition between all of these principles are frequently encountered. Parents desires must be respected by providing them an informed consent and allowing them to choose the suitable choice whether to continue or terminate the pregnancy. In addition their choice must not violate the principles of beneficence and do no harm. Equity and justice in the access of the test is considered a dilemma too and hence it should be provided for free. Lastly, an international normative framework or a set of guidelines is needed in order to regulate this type of screening and the actions taken based on it.

Conclusion(s):

Prenatal screening raise a number of ethical dilemmas. Therefore, The results of this research support the idea that informed consent must be taken from the patients prior to test, the screening must be limited to a specific disorders and there must be an equality in the access for all the women.

Ethical Appraisal of Incidental finding during research conductions

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Objective(s):

Ethical Appraisal of the management approaches of the incidental findings (IFs) during research conduction.

Materials and Method(s):

Electronic Search on Medline, Cochrane library and google scholar databases was conducted using the following key words: incidental findings, unexpected findings, human subject and ethics. with application of this inclusion criteria: research done on human subject and English language articles only. The search result were 418 studies and after screening the articles ,402 were excluded and a total of 16 studies were included.

Result(s):

Different standards and management approaches of IFs were proposed which are: best medical interest's standard, comprehension standard and rely only on patient preference which was taken from the consent form. However, best medical interests' standards have a specific downside with regard of patient autonomy, privacy and interest, moreover comprehension standard could lead to practice paternalism, and rely only on patient's preference of knowing IFs or not have a lot of limitations and it could lead to a conflict of ethical principles.

Conclusion(s):

Since the high incident of encountering an IFs during research conduction, researches should anticipate such findings and have a plan on how to manage these findings. Furthermore different way of managing incidental findings were recommended, but unfortunately, each of these approaches have several ethical limitations and drawbacks. Therefore, further evidence-based studies are needed, and more work should be done to establish a globally standardized framework that will serve as an international guide for all researches.

Hollywood smile from ethical perspective

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Objective(s):

This critical appraisal topic was conducted to answer the following clinical question “is Hollywood smile violate the ethical principles?”

Materials and Method(s):

A search was done on the Medline database through the Saudi Digital Library (SDL) and also was conducted through Cochrane library and PubMed, Using the key words: ethical cosmetic dentistry, aesthetic, ethical regulations, Hollywood smile, ethical dentistry. Inclusion criteria used were human clinical trial and systematic review, English language. which resulted in 10 articles. Of these, 4 relevant articles were chosen.

Result(s):

patients are seeking cosmetic dental treatment for improving their self esteem. Cosmetic dentistry requires ethical principles that regulate the practice of dentistry. The field of aesthetic dentistry is being a predominantly business-focused interaction between clinician and consumer conflicts and it has changed the dynamics of the social contract. Patient treatment is grounded in the fundamental ethical principles that allows the patient to choose their treatment. While the dentists have the duty to improve the oral health and not to harm.

Conclusion(s):

The studies concluded that aesthetic dentistry should never be concerned only with smile enhancement without awareness about the ethical regulations of cosmetic procedure. this study recommended that the dentist must be conducted to educate the patient of their treatment plan, alternative therapies and prognosis.

Ethical considerations regarding Pre Marital Screening (PMS)

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Objective(s):

This research aims to discuss the ethical considerations regarding the premarital screening , along with assessing the individuals' knowledge, education, and their perception of PMS from an ethical perspective.

Materials and Method(s):

The articles were obtained from Medline database and google scholar. The following keywords were used; "premarital screening, and, (ethical consideration). Our filters were: English and Human. Twelve articles were retrieved, but only five met the inclusion criteria, and therefore used in this review.

Result(s):

Rennie et. al (2008) discussed the ethical framework of compulsory HIV-testing which conflicts with one of the important principles of ethics that is patient autonomy. Another important ethical concern is breaching confidentiality, in which a person with a positive HIV result may feel stigmatized. One more ethical issue is concerned with justice, in which HIV positive individuals are treated differently than others. Another study was done by Alam in 2006 with a purpose of assessing the awareness and attitude of female university students towards Premarital Screening (PMS) in KSA. Students were anxious about the confidentiality of the test result and such abnormal results of the test will create social and psychological problems. The majority of students agreed on the compulsory application of PMS in KSA in both pre-and-post lecture.

Conclusion(s):

It was demonstrated that depending on the participants' educational level, the results varied. lack of awareness in some participants made them refuse the concept of PMS completely. Thus, health and ethical education is necessary to improve individuals' perception. Finally, it is imperative to conduct more research from an ethical viewpoint.

Justice in Stem Cell Treatment and Research (Ethical Appraisal).

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Objective(s):

To find out whether –justice-, one of the principles of ethics, is applied currently on stem cell treatment and research or not ?

Materials and Method(s):

Multiple articles were collected regarding to justice and stem cell treatment and research, with "stem cell therapy", " ethics ", " justice " , " fairness " as key-words. Specific inclusion criteria were used for the selection of the appropriate articles. then an analyzing and reviewing were performed.

Result(s):

Justice considerations are addressed in stem cell research and therapy in scientific and ethical way. Ethical challenges include ensuring broad availability of matches for those in need, determining access for both research and therapy. Thus, large-scale biobanking of stem cell lines holds the potential to greatly increase access to stem cell therapies and reduce costs. As research funding shrinks and competitive pressures grow, it may become difficult to allocate research resources wisely. The fewer resources we have, the more important it is to allocate funds to maximize the likelihood of knowledge development in areas of greatest promise and clinical need.

Conclusion(s): The question of how to justly provide the benefits of stem cell advances remains an unsettled one and will require ongoing deliberation. It remains a moral imperative to ensure that stem cell advances do not create a hierarchy practices based on wealth, geography, or race. As the research advances and as we become more deeply immersed in the therapies that arise through stem cell science, these conversations must continue so that science can remain a public good.

No lesion should be ignored : Multiple Myeloma a case report.

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Background:

Multiple myeloma (MM) is characterized by the neoplastic proliferation of plasma cells producing a monoclonal immunoglobulin and often results in extensive skeletal destruction with osteolytic lesions, osteopenia, and/or pathologic fractures.

Objective(s):

Every lesion should be investigated properly through correlating clinical , radiographic and histopathological findings to reach final diagnosis as early diagnosis of a lesion is important for patient prognosis.

Case Report:

We report a case of 63 years old female who presented with intraoral swelling in the anterior mandible area. She has no significant past medical history. Intraoral examination revealed swelling in the anterior mandibular area covered with normal mucosa. The associated teeth have slight roots resorption. Panoramic radiograph revealed well defined, non corticated, unilocular radiolucent lesion crossing the midline. Differential diagnosis includes, glandular odontogenic cyst, central giant cell tumor, brown tumor of hyperthyroidism, multiple myeloma and metastatic carcinoma. Incisional biopsy was done and sent for histopathological examination. The H&E stained sections revealed sheets of closely packed plasma cells within scanty connective tissue stroma. Some of these cells showed binucleated cells. Immunostaining with CD-138 was done and showed positive membranous staining pattern. Serum electrophoresis was done for the patient , which revealed monoclonal gammopathy showing hypergammaglobulinaemia having M spike. Skull radiograph was also done . By correlating all the above mentioned findings we diagnosed the case as Multiple Myeloma .

Conclusion(s):

A single lesion may be accompanied with more disseminated systemic disease. Every lesion within the oral cavity must be evaluated and diagnosed properly for better prognosis.

Unusual age representation for Pindborg tumour: A case report

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Background:

Calcifying epithelial odontogenic tumor is a rare odontogenic epithelial neoplasm accounting for <1% of all odontogenic tumors.

Objective:

To report a case of Pindborg Tumor in a 13 years old child showing a left side facial asymmetry.

Case Report:

We report a case of 13 years old child who presented with facial asymmetry on the left side of his mandible. Extra orally, there was a diffuse swelling which was firm in consistency and nontender. Lymph nodes were not palpable. There is no past medical history. Intraorally, the swelling was firm, nontender covered with normal mucosa. There is expansion of both buccal and lingual plates with displacement of associated teeth. Panoramic radiograph revealed well defined multi-locular radiolucency in the posterior left mandible. The lesion expanded upward including the ramus and downward displacing the inferior alveolar canal resulting in thinning of the border of the mandible. Scattered patchy radio-opacities were observed. Differential diagnosis includes, Gorlin cyst, Pindborg tumor, and ameloblastic fibro-odontome. Incisional biopsy was done and sent for histopathological examination. H&E stain revealed sheets of polyhedral cells with prominent intercellular bridges in fibrous stroma. The cells exhibited giant nuclei with pleomorphism and hyperchromatism. Eosinophilic hyaline material and calcification (Liesegang rings) can be seen.

Conclusion(s):

Every lesion should be investigated properly through correlating clinical , radiographical and histopathological findings to reach final diagnosis in order to give proper treatment. Any lesion within the oral cavity must be evaluated and diagnosed properly for better prognosis.

Central Mucoepidermoid Carcinoma : A case study of unusual radiographic and histopathologic presentations

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Background: Mucoepidermoid carcinoma (MEC)is the most common malignant salivary gland neoplasm.. On rare occasions , mucoepidermoid carcinoma arise centrally within the jaws.

Objective(s):To report a rare case of intrabony maxillary mucoepidermoid carcinoma in a 30- year old female patient.

Case Report: We report a case of 30 years old female who presented with a slowly growing asymptomatic intraoral swelling in the maxilla covered with intact mucosa and showing a focal erythematous area.

Radiographic Interpretation:Panoramic radiograph revealed a large multilocular mixed lesion occupying the whole left maxilla. CT revealed an aggressive mixed lesion with amorphous radiopacities invaded the nasal cavity, the anterior maxillary wall, the palatine bone, the lateral maxillary wall into the zygomatic bone and the infra-temporal fossa. Multiple cystic area are found. Differential diagnosis of the lesion would include COC, ,Central ossifying fibroma CEOT, osteochondroma and central mucoepidermoid carcinoma.

Histopathologic Diagnosis: The H&E stained sections revealed ductal spaces lined by mucous –secreting cells ,epidermoid cells and intermediate cells. Thick fibrous stroma separates tumor cells. Also necrosis and globules of calcifications can be seen.

Conclusion:This case report highlighted the characteristic imaging features of CMEC, which should be considered as alerts to include it in the differential diagnosis of multilocular mixed jaw tumors.

Minimal intervention Dentistry (New diagnostic aids and ultra conservative management of dental caries)

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Objective(s):

This review aims to discuss the minimal Intervention Dentistry in terms of the ultra conservative management of dental caries and the new available diagnostic methods.

Materials and Method(s):

A computerized literature search was accomplished to collect the most recent and reliable publications related to minimal intervention dentistry. The search was conducted from Medline and google scholar databases and only 6 recent high quality evidence based articles were selected.

Result(s):

Several methods have been useful in limiting caries lesion behavior. Such as Incomplete caries removal and the use of PACT in deep carious lesions. Furthermore, in order to minimize extensive surgical intervention of cavitated lesions and achieving minimal intervention dentistry approach. an early diagnosis and detection of caries should be established, and this could be achieved by the new diagnostic tools which shown high specificity and sensitivity in early diagnosis and detection of caries.

Conclusion(s):

Further evidence based studies are needed in order to support the idea of MID. Considerably more work will be needed to raise the awareness and knowledge among dentists about the importance of ultra conservative management of dental caries. Increasingly, It would be advisable, to encourage researches in the field of minimally invasive dentistry and to facilitate the tools and equipment for early detection of dental caries at sub-clinical stages in order to broaden the idea of disease prevention.

Management of Non-Carious Lesions

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Objective(s):

The aim of this literature review is to identify the various ways of managing the non-carious lesions.

Materials and Method(s):

PubMed, Cochrane library, and Saudi digital library search engines were used to access different data bases. There were some restrictions regarding language and year of publication. We ended up with 6 articles which were related to our clinical need.

Result(s):

The Articles showed multiple ways in managing the non-carious lesions. Some literature reviews showed some preventive measurements. A systematic review and meta-analysis compared between flowable resin composite and regular resin composite in treating NCCLs based on the study follow up there was no significant difference for loss of retention and marginal adaptation in all the follow up period, however marginal adaptation was better observed in flowable resin composite at one year follow up risk ratio = 0.27 [0.10-0.70] and 3 years follow up risk ratio= 0.34 [0.17-0.71].

Conclusion(s):

The management of the non-carious lesion depends greatly on the right diagnosis by detecting the factors that affects the tooth structure. The NCL can be restored with flowable or ,regular composite , GIC. The most suitable one for aesthetic is resin composite , and the one that has a better marginal adaptation is flowable composite.

Interocclusal Records: Mastering Material-technique Combinations

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Objective(s):

To provide a review of most available interocclusal recording materials. It was also intended to highlight recent developments and common techniques for recording that relationship.

Materials and Method(s):

An electronic search was accomplished to collect publications related to interocclusal materials/techniques using Database of PubMed, Saudi Digital Library(SDL) provided by Princess Nourah University. Search included articles that were published 10 years ago. Peer-reviewed articles were identified. A hand search of relevant textbooks was done. keywords: interocclusal record materials, bite registration materials, bite registration techniques and harmony in maxillomandibular occlusion.

Result(s):

All materials investigated, exhibited rapid polymerization during the first time after mixing. Dimensional stability, accuracy and surface hardness of most these materials are influenced by time factor. Polyvinylsiloxanes were the most dimensionally stable and hardest materials.

Conclusion(s):

No single material presently is devoid of undesirable properties and can be accepted as ideal. There are many advantages of intra oral scanning and is highly recommended to be applied by prosthodontists.

Applications and Limitations of Digital Technology in Removable Dental Prosthesis

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Objective(s): explored the role of digital technology in removable dental prosthesis.

Materials and Method(s):

A literature review has conducted and designed to answer the question: What is the role of digital technology in dental removable prosthesis? Electronic surveying was based on data that collected from reliable published articles in "PubMed" And "Saudi digital library". The inclusion criteria were Key words "removable dental prosthesis" and "digital dentistry ", reviewed journals and database from 2007 to 2018 were used. Forty-six articles had been initially found. thirteen articles have been selected according to inclusion criteria. The review article focused on the application, clinical and lab procedures, advantages and limitations.

Result(s):

Computer-aided design and computer-aided manufacturing (CAD-CAM) technology have been applied to solve the previous problem in removable dental prostheses. Many researches compared the treatment outcomes in digital and conventional complete removable dental prosthesis fabrications through the advantages and limitations of digital fabrication.

Conclusion(s):

In recent years, the performance of different CAD/CAM systems has been extensively evaluated in fixed prosthodontics, and new systems are being developed to fabricate removable dentures. However, more developments are needed to facilitate the impression making of soft tissues, and clinical research needs to confirm the use of digital impression techniques in removable prosthodontics. For a removable prosthesis, the nature of oral soft tissue and the mode of an intraoral scanner that stitches narrow areas. It is difficult to scan the distally extended flat and broad edentulous area, and a functional impression is not possible as the technique is image-based

Innovation of Teeth Selection in Complete Denture

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Objective(s):

-To provide a valuable review on the evolution of concepts for teeth selection.

-To discuss recent techniques employed for selecting anterior teeth for complete dentures.

Materials and Method(s):

An electronic search was accomplished to collect publications related to different methods for selecting and arranging teeth in complete denture using Database of PubMed, Google scholar, Saudi Digital Library (SDL) provided by Princess Norah University. This research will review 50 articles performed from 2006 to 2018. Keywords: artificial teeth, complete denture, dental aesthetics, new techniques and harmony in teeth selection.

Result(s):

Several clinical and statistical parameters are usually used for selecting the correct shape, size and shade of the complete denture anterior teeth. The combination of techniques can offer predictability to result as well increasing the patient's satisfaction.

CAD/CAM and RP techniques reduce the chair time, obviate a practitioner's need for technicians during design and provide the patient with an opportunity to participate in esthetic design with the dentist.

Conclusion(s):

The prosthetic technologies and materials used in manufacturing complete denture can help us to gain and reach the patient's satisfaction to many of the esthetical requirements.

Phantom Bite Syndrome (PBS): a mere illusion or a reality?

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Objective:

The objectives of this literature review is to define Phantom Bite Syndrome (PBS) and discuss its effect of the patient satisfaction and its impact on achieving a satisfactory dental treatment

Methodology:

An electronic search was performed using PubMed and Saudi Digital Library (SDL) and google scholars for relevant articles from 2009 to 2018 in English, using the following keywords: Phantom bite syndrome, occlusal dysesthesia. 23 eligible articles were identified from which 10 were selected based on the high level of evidence. The inclusion criteria were; (1) case reports (2) cross-sectional study (3) literature review, the most recent article was in 2018. This literature review summarizes the main results and limitations of the reality of (PBS).

Results:

Diagnosis of PBS is difficult and challenging due to the lack of researches. The cause of phantom bite syndrome is unclear yet efforts were done to define and set a criteria for dealing with PBS patients which will relieve the treating dentist and the patient from difficulties. Psychiatric help is the most appropriate treatment plan.

Conclusion:

This literature review encourages dentists to be more aware about the syndrome as it helps in diagnosis and providing a suitable treatment and shows the need for more study regarding PBS.

Centric relation: a mystery even for dental students

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Aim: assessing the knowledge of female dental students toward the concept of centric occlusal relation.

Materials and methods:

A cross-sectional study was conducted. Pre-clinical year's students, senior dental students and interns were invited to participate in this study. Subjects whom agreed to participate were invited to attend a data collection session, a self-administered electronic-based questionnaire were distributed. Questionnaire consists of 6 questions related to demographic information and 16 questions to assess the level of participants' knowledge. SPSS was used to analyze the data. Descriptive analysis was carried out to compare study findings based on the academic level.

Results:

A total of 75 subjects were participated. The mean age for the study population was 22.94 (\pm 2.07). Majority of participants were Saudis. Most participants from the senior dental students and intern categories had a summer training experience in contrary to preclinical year dental students' category. The highest mean of correct answer was reported by subjects of preclinical year dental students' category; 11.33 (\pm 2.00). However, senior dental students and interns categories were nearly similar; 9.32(\pm 1.95) and 9.23(1.67) respectively. Although most questions were answered correctly. The question that is investigated whether the two records you need for eccentric relation are: lateral and retrusion had received the least number of correct responses

Conclusion: Dental students and fresh graduates expressed average knowledge level. However, further large scale studies is necessary to assess the knowledge level and factors that may play a role in influencing knowledge application and appropriate recording.

Prevalence of Temporomandibular Disorders Among Princess Nourah bint Abdulrahman University Female Students: A survey Study

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Aim:

Evaluate prevalence of temporomandibular disorders (TMDs) among PNU students. Factors that might contribute to TMD in this population had been also addressed.

Materials and Methods:

A questionnaire was designed on Google forms website, comprised of two parts; the first part was formed to collect demographic information, followed by twenty-eight questions pertaining TMJ disorders. Sample size was 377 students, statistical analysis was calculated using SPSS program.

Results: Out of 377 participants, 21% (n=79) of the students had signs and/or symptoms of TMD. One of the most noticed results is that 90% (n=71) of the affected participants had the right side as a dominant side in relation to the signs and symptoms. 44.3% (n=35) of the affected participants had restricted mouth opening as a result of TMD. Chewing was the most mouth action that caused pain. Regarding pain location, the highest prevalence area was the joint itself 59.4% (n=47). Pain scale is higher in daytime more than night about double 63.3% (n=50). A small group of the affected students 3.5% (n=3) were injected by cortisone in TMJ as a treatment.

Conclusion:

This study showed that the prevalence of signs and/or symptoms of temporomandibular disorders reached (21%) among PNU students. Family history, subconscious habits and orthodontic treatment were associating factors with TMD.

Dentists' awareness of new drugs with a potential for dental implications

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Objective(s):

This study aims to assess the awareness, among dental practitioners, of the use and possible complications of the drugs Rivaroxaban and Zoledronate and the dentists' approach in treating the dental patients under these medications.

Materials and Method(s):

A paper-based questionnaire, which includes ten question, designed by the researcher used to obtain information from dental faculty members at PNU and dental practitioners at National guard hospital(King Abdulaziz Medical City), Riyadh, regarding their awareness about two drugs Rivaroxaban (Drug 1) and Zoledronate (Drug 2).

Result(s):

Thirty dental faculty members at PNU, 13 dental practitioners at National guard hospital and 19 interns participated in the study. The study data analysis revealed that among the dental faculty at PNU, 17% (5) were aware of Drug 1, 10% (3) were aware of Drug 2, 13.3% (4) were aware of both drugs. While, among the dental practitioners at National guard hospital it was 23% (3), 23% (3) and 15.4% (2) respectively.

Conclusion(s):

It was evident from the results that many of the dentists are not aware of these drugs which have potential to cause serious, catastrophic consequences like protracted Bleeding (with Drug 1) / MRONJ- Medication-Related Osteonecrosis Of The Jaw (with Drug 2).

Knowledge of oral cancer among undergraduate students of Dentistry of Princess Nourah University

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Introduction:

The associated morbidity and mortality is dependent on the stage when oral cancer is diagnosed. Dental surgeons are the first ones who inspect the patients of oral cancer and the early diagnosis greatly depends on their knowledge.

Objective(s):

To assess awareness and evaluate attitudes regarding oral cancer in students of dentistry of Princess Nourah Bint Abdulrahman University.

Materials and Method(s):

A cross sectional , questionnaire based study was approved by the Institutional Review Board of the College of Dentistry, Princess Nourah University, Riyadh, Saudi-Arabia and was conducted among the undergraduate dental students . A validated close ended questionnaire related to knowledge of oral cancer was delivered as electronic survey to students of all years. Statistical analysis were performed using a Social Sciences software. Group mean differences (95% Confidence interval) were computed and Pearson's chi-square test was used for data analysis. Level of significance was set at P-values less than 0.05.

Result(s):

Response rate for our survey was 56%. The majority of students were aware of oral cancer and associated risk factors, however in first year the number dropped to 59%. Majority of respondents (85%) were aware of signs and symptom of oral cancer in contrast to first year students (35%).Forty percent of the students have inadequate knowledge regarding procedures required for early detection of oral cancer.

Conclusion(s):

Adequate knowledge of oral cancer and risk factors was observed. However inadequate knowledge was observed related to signs and symptoms and procedures required for early detection of oral cancer.

Traumatic Dental Injuries: Assessment of Knowledge and Management Among Dental Professionals in Different Countries

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Objective(s):

To assess the knowledge of traumatic dental injuries in permanent teeth and their management by dental professionals practicing in two different countries; Saudi Arabia and United Kingdom.

Materials and Method(s):

A 2-part questionnaire was constructed and distributed in person or via social media to 400 professionals. Data were collected and analyzed at 0.05 level of significance.

Result(s):

The response rate was 44.5% (n = 178). Overall, 82.3% reported that they treated only a few cases and; 52.1% considered their knowledge to be sufficient however incomplete. 34.0% self-evaluated their knowledge as insufficient.

Conclusion(s):

:In general, dental professionals should know scientific basis for managing traumatic injuries.

Creating superdentin: A Contemporary approach to optimize clinical reliability of resin-adhesive bond

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Objective(s):

To illustrate the methods of creating super dentin and its clinical significance in minimizing recurrent caries.

Materials and Method(s):

The articles used in this paper were selected from Mid-line PubMed and Saudi digital library database using keywords: adhesive, resin adhesive bond, superdentine, hybrid layer and bonding systems with language restriction limited to English. The articles selected published from 2008 up to 2015.

Result(s):

Two adhesive systems were simplified as Acid-etch system and self-etch system. Hybrid layer is created by the incorporation of the polymerized adhesive monomer into the dentin, this layer promotes the marginal seal of the cavity and it has a major role in resisting the acid challenge and recurrent caries. The combination of dentin and hybrid layer gives an Acid based resistance zone which is called “super dentin”.

Conclusion(s):

Superdentin formation mechanism has not completely clear however it has its clinical significance regarding restoration longevity and preventing secondary caries.

Digital Smile Design, A Computer-assisted Esthetic and functional makeover of smile. A case report

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Background:

The Digital Smile Design provides communication between dentists, technicians, and patients. The digital planning presents simple steps to evaluate size, form and tooth position as well as gingival contour, For delivering optimum dental treatments in accordance to patient's needs and expectations.

Objective:

To approve the effectiveness of smile design software in improving and rehabilitating patient's smile using digital workflow, to achieve the desired goals and treatments .

Case Report:

23 years old, female patient, complaining from her unpleasant smile appearance. She has several esthetic derangements including: missed lateral #22, malformed lateral #12, black triangles, discolored teeth. Extra and intra oral pictures were taken to use in designing the new smile. By using (The Planmeca Romexis[®]) the treatment plan was obtained and the patient was involved. Multidisciplinary conservative management will be carried out using the following sequence: Distalization of Tooth # 23 using orthodontic appliance, followed by construction of a single tooth implant or a Maryland bridge to replace missed tooth # 22 and finally lithium disilicate glass ceramic laminate veneers will be constructed from tooth # 14 to tooth # 24.

Conclusion:

Current smile design software can help the clinicians to provide suitable smile designing with evaluation and analysis of facial and dental composition.

Management of an Impacted Mesiodens in an 11-Year-Old Patient - A Case Report

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Background:

Children might exhibit developmental problems related to dentition such as supernumerary teeth. Mesiodens presents between the two central incisors is considered the most common type of supernumeraries and may prevent emergence of adjacent permanent teeth or cause their ectopic eruption. Different studies showed a prevalence of mesiodens that varies between 0.09% and 2.05%. Mesiodens can be detected clinically (erupted) or being impacted and diagnosed radiographically. Furthermore, supernumeraries may result in different oral problems such as malocclusion, poor esthetic and cystic transformation. Hence, early detection and management of mesiodens is important to avoid and minimize pathological complications.

Objective(s):

Management of the case to avoid pathological complications.

Case Report:

An 11-year-old male patient accompanied by his mother to PNU dental clinic with a chief complaint of spacing between upper anterior teeth. Patient is medically fit. Upon intra oral examination, a pronounced diastema and delayed eruption of upper left lateral incisor was observed. Radiographic examination showed an upper impacted mesiodens which results in unerupted upper left lateral incisor. CBCT was requested to assure absence of any pathological complications other than the impacted lateral incisor and to assure the exact location. Following clinical and radiographic examination, pediatric and orthodontic consultation was obtained, and decision was made for surgical removal of mesiodens. Parents were informed about the treatment, and written consent was obtained.

Conclusion(s):

Early detection, early management, multidisciplinary management and long-term follow-up essential for this type of cases.

Bilateral Horizontal Root Fracture of Maxillary Central Incisors: A Radiographic Incidental Finding.

Nada Aldakhil

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Background:

Root fractures; among all dental traumatic injuries, account for 0.5–7%. Maxillary central incisors are more prone to traumatic injuries. Clinical examination includes the evaluation of mobility, tenderness or pain to palpation of the soft tissues and percussion of the teeth .CBCT is an imaging technique that allows a three-dimensional analysis of teeth and bone structure.

Objective(s):

To report a rare case of bilateral central incisors horizontal root fracture in a totally asymptomatic 49-year old female patient with no past or present history of trauma,

Case Report:

We report a case of a 50-year-old female patient who presented At PNU dental clinic for replacement of her missing teeth . She was medically fit. According to the ADA/FDA guidelines, a full mouth X-ray survey was taken in first dental visit. An intra-oral periapical radiographic finding showed a transverse radiolucent line at apical third of root. No periapical changes were noted. Intraoral clinical examination was performed for the maxillary central incisors which revealed tooth mobility of grade 2 , both centrals incisors showed no tenderness on percussion and demonstrated normal response to vitality test. CBCT with small field of view was requested to prove the findings revealed bilateral teeth root fractures

Conclusion(s):

radiographic examination should be accomplished by applying the step-by-step which can maximize the likelihood of detecting of incidental findings.

Nanotechnology for Oral Cancer

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Objective(s):

To assess the vital role of nanotechnology in oral cancer prevention, diagnostic and management.

Materials and Method(s):

Data collected using PubMed and Google Scholar. The search engine terms used “nanotechnology”, “oral cancer”, “nanotechnology in dentistry”, “gene therapy”. The search reviewed published articles between 2010 and 2018.

Result(s):

While conventional methods are failing to curtail oral cancer-related morbidity and mortality, Cancer Nanotechnology is the latest trend with great hope. Nanotechnology by using various Nanomaterials (like quantum dots) and Nanodevices (like Nanorobots) has brought revolution in cancer prevention, detection and treatment. It can detect even a single cancerous cell in vivo and (targeted) deliver the highly toxic drugs to the cancerous cells without harming normal cells. Nanocarriers (nonviral vectors) can act as gene delivery systems in Gene therapy. Nanotechnology helps to develop biological substitutes (like bone, tooth) to restore, maintain or improve tissue function by Tissue-engineering. Nanoscience expected to make surgeries minimally invasive.

Conclusion(s):

Nanotechnology is assumed to be the most efficient form of future treatment and the diagnosis of cancer.

3-D Printing in Dentistry and Oral and Maxillofacial Surgery

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Objective(s):

To review about 3D printing technology's latest advancements, clinical applications in dentistry and oral and maxillofacial surgery and potential for future research.

Materials and Method(s):

Information collected using PubMed and Google Scholar using the keywords:3D printing, medicine, dentistry, maxillofacial surgery. Articles published between 2014 and 2018 were under focus.

Result(s):

3D printing, a process of the production of a three-dimensional object from a digital file, has been hailed as the start of the third industrial revolution. Technological advances such as CAD-CAM technology, CBCT imaging and intraoral scanning are helping to digitalise the dentistry and paved the way for 3D printing in the field of Dentistry and Maxillofacial Surgery. Uses of 3D printing include orthognathic surgery guides and splints, customised craniomaxillofacial implants, production of Dental implants, Drilling and cutting guides, Crown copings and partial denture frameworks, study models for training and patient education, Digital orthodontics..

Conclusion(s):

Regardless of the challenges 3-D printing is expected to play an essential role in the trend towards personalised medicine. With its advances, It would change the way we think, plan and treat our patients.

One-Step Versus Two-Step Impression Techniques; A Literature Review

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Objective:

The aim of this literature review was to compare one-step impression technique versus two-step impression technique regarding their dimensional accuracy.

Methodology:

A Medline search was conducted through PubMed and Saudi Digital Library search engine using the following terms "impression techniques", "conventional techniques", "one-step", "two-step" and "accuracy". The search reviewed between 2008 and 20018. Twenty-nine articles were screened. Nine articles were assessed for eligibility out of which six were included.

Results:

Three articles found that one-step impression technique had better dimensional accuracy than two-step impression technique. While the other articles showed that two-step impression technique had better dimensional accuracy than one-step impression technique.

Conclusion:

Within the limitations of this review, both one-step and two-step impression techniques exhibited acceptable dimensional accuracy. There are still controversies about the accuracy of one-step impression technique versus that of two-step impression technique

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