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O01

EFFECT OF DIFFERENT BEVERAGES ON THE PHYSICAL PROPERTIES OF SONICFILL[™] DENTAL COMPOSITE

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Objectives: To evaluate the effect of several beverages on the physical properties (surface roughness, microhardness, and colour stability) of a new bulk-fill composite resin [SonicFillTM (Kerr Corp., USA)] over a period of time.

Methods: A total of 28 composite discs (10 mm x 2 mm) were prepared and randomly assigned into 4 groups (n=7) according to the beverages they would be immersed in. The beverages chosen were Coca-Cola[®] (F&N Beverages, Malaysia), Nescafe[®] coffee (Nestle, Malaysia), Lipton tea[®] (Unilever Foods, Malaysia), with distilled water as a control. Surface roughness, microhardness and colour stability were evaluated using 3D optical surface texture analyser, Vickers microhardness tester and spectrophotometer respectively. Readings were recorded at the time intervals of 24 hours, 1 week, and 1 month after immersion. The data obtained were analysed using one-way ANOVA, repeated measures ANOVA and multivariate analysis of variance (MANOVA).

Results: For surface roughness, there were significant differences for only two pairs of groups (distilled water and Coca-Cola, p = 0.002; distilled water and coffee, p = 0.024). However, there was no significant difference between the groups within the chosen time (p = 0.311). Regarding the microhardness, statistical analysis showed significant difference between time only for Coca-Cola (p = 0.008), with significant differences between 24 hours and 1 week (p = 0.024) and 24 hours and 1 month (p = 0.022). For the colour evaluation, there was significant difference between the groups within time (p = 0.000).

Conclusion: All the beverages chosen were able to affect the physical properties of the SonicFillTM composite. However, no particular beverage had a higher or lower impact on the surface roughness than the other beverages. Microhardness was affected by distilled water and Coca-Cola, in ascending order. Colour was affected by Coca-Cola, tea, and coffee, in ascending order.

Keywords: beverages, bulk-fill composite, surface roughness, microhardness, colour stability

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O02

COMPARATIVE STUDY OF THE SURFACE CHARACTERISTIC OF FIVE COMMERCIALLY AVAILABLE TITANIUM DENTAL IMPLANTS

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Objective: This study aims to provide insight into the individual surface characteristics and chemical composition of five commercially available titanium dental implants.

Materials and Method: Surface roughness of five commercially available titanium dental implants (Bego, Neobiotech, Novella, Osstem and Straumann) were studied using high magnification stereo-microscope (Alicona), and scanning electron microscopy (SEM), whereas surface composition was studied using X-ray energy dispersive spectroscopy (EDS). One implant from each brand was used and examined in three different sections (upper, middle and lower). Roughness values, Sa, were taken from every section, and the average value was calculated along with standard deviation. Several SEM images were examined to observe the surface morphology of these implants. Surface compositions for each implant were evaluated using EDS.

Results: Most of these brands have a roughness, which fall within the pre-established optimal range of 1-2 μ m.

Conclusion: In this study, it was observed that all different brands of titanium dental implants have different roughness value, surface topography and composition. However, further *in vivo* studies are needed to determine which of these implants would yield the best clinical results.

Keywords: titanium dental implants, surface morphology, surface roughness, surface elements, osseointegration.

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003

POTENTIAL REPURPOSING OF NEBIVOLOL, LACIDIPINE, FINGOLIMOD AND DRONEDARONE FOR THE TREATMENT OF ORAL CANCER

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Objectives: Oral squamous cell carcinoma (OSCC) is a lethal disease and new treatments are urgently required. One promising new strategy is to use existing drugs that have been approved for other indications, so called "drug repurposing." This approach is advantageous because details of pharmacodynamics, pharmacokinetic, bioavailability, toxicity and dosages are already known. The aim of this study is to examine the effect of Nebivolol, Lacidipine, Fingolimod and Dronedarone on the viability of OSCC cells *in* vitro and to determine whether their effects are selective towards malignant cells.

Methods: Two oral carcinoma-derived cell lines (H376 and H400) and one normal oral fibroblast cell line (NHOF6), were used and cell viability assessed using MTT assays. Cells were treated with different concentrations of drugs for 72 hours and IC_{50} values, which indicate the concentration required to reduce cell viability by 50%, calculated.

Results: Dronedarone was the most cytotoxic drug towards OSCC cells, with an IC50 of less than 10 μ M; Fingolimod, Nebivolol and Lacidipine also reduced the viability of OSCC cells but to a slightly lesser extent with IC50s less than 20 μ M. All drugs were less cytotoxic towards NHOF6 cells than OSCC cells. Dronedalone was toxic to NHOF6 at 25 μ M and above, Fingolimod was non-toxic at all concentrations up to 30 μ M, whilst Nebivolol and Lacidipine were toxic at 25 μ M and 50 μ M, respectively.

Conclusion: All drugs tested exhibited some selective cytotoxicity towards OSCC cells and have the potential to be repurposed for the treatment of oral cancer.

Keywords: oral cancer, drug repurposing, Nebivolol, Lacidipine, Fingolimod and Dronedarone

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O04

PREVALENCE AND RISK FACTORS ASSOCIATED WITH MUSCULOSKELETAL PAIN AMONG DENTAL STUDENTS IN UNIVERSITY OF MALAYA

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Objectives: To identify the prevalence of musculoskeletal pain and to determine the risk factors associated with the occurrence of musculoskeletal pain among dental undergraduates in University of Malaya

Methods: Questionnaire sets modified from the Standardised Nordic Musculoskeletal Questionnaire are distributed to all clinical year dental undergraduates of University of Malaya (Year 3 to Year 5). Items in the questionnaire include demographic information, pain prevalence and severity, contributing factors, clinical settings, preventive measures and treatment undertaken to overcome the musculoskeletal pain experienced. The exclusion criterion of this study is pre-existing musculoskeletal diagnosis prior to participants' admission into dentistry course in University of Malaya. Data collected is analyzed using Statistical Package for the Social Sciences (SPSS).

Results: 95.9% of the respondents with mean age of 22.9 years old have experienced musculoskeletal pain with the most commonly affected areas reported being the neck (74.4%) and lower back (58.4%). 29.9% of the respondents have voted restorative dentistry as the discipline in dentistry contributing the most to musculoskeletal pain prevalence. Only 5.1% of the respondents have expressed great satisfaction towards the clinical settings in relation to musculoskeletal pain prevention. Exercise, good postures and finger rest practice during clinical procedures are the top preventive measures adopted by all the respondents regardless of their pain prevalence.

Conclusion: High prevalence of musculoskeletal pain is reported among the dental undergraduates in University of Malaya. Long working hours and posture related factors are the main risk factors associated to musculoskeletal pain reported in this study.

Keywords: Musculoskeletal Disorders, Ergonomics, Dentistry, Occupational Hazards, Prevalence, Risk Factors

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O05

AWARENESS AND ATTITUDE OF UNIVERSITY STUDENTS IN MALAYSIA TOWARDS DENTAL STEM CELLS

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Objectives: To determine the awareness and attitude of Malaysian university students towards dental stem cells (DSCs).

Methods: Questionnaires were randomly hand-distributed to 277 students from various higher learning institutions in Malaysia across science and non-science stream. Respondents were asked to report on their knowledge, attitude, interest to donate and invest to DSCs bank. Data were analyzed with Pearson chi-square test, P < 0.05.

Results: Only 33.2%(n=92)of them aware of DSCs. Their attitude towards DSCs showed 31.8%(n=88) willingness to invest in DSCs bank. 59.9%(n=166) were interested to donate their extracted tooth to DSCs bank. A comparison between science stream students (SSs) 74.4% (n=206) and non-science stream students(NSSs) 25.6% (n=71) was done. SSs showed response in terms of awareness and attitude towards DSCs. 38.8% (n=80) of SSs were aware of DSCs while only 16.9% (n=12) among NSSs. 33.5% (n=69) of SSs were willing to invest in DSCs banks and 66% (n=136) were willing to donate their extracted tooth to the bank. Only 26.8% (n=19) of NSSs were willing to invest and 42.3% (n=30) were willing to donate. There was a statistically significant difference between the field of studies and awareness towards DSCs (P = 0.001). The chi-square test (Pearson chi-square) results ($x^2=1.105$,df=1,p=.293) show that there was no significant difference in willingness to invest in DSCs bank between field of studies but there was significant difference for willingness to donate extracted tooth to DSCs bank (P=0.000).

Conclusion: There is lack of awareness and positive attitude among Malaysian university students regarding DSCs. The science stream students showed more positive awareness and attitude towards DSCs.

Keywords: dental stem cells, attitude, awareness, university students

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O06

DENTAL STUDENTS' PERCEPTION ON COMPETENCY BASED TEST

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Objectives: To explore the perception of dental students from University Malaya on the positive and negative aspects of competency tests and the reasons behind their stance.

Methods: A questionnaire was formulated to explore students' perception in five domains: 1)benefits of competency tests, 2)communication regarding competency tests, 3)preparation of students, 4)time allocated and suitability of deadlines, and 5)supervision of competency tests. The questionnaire was distributed and collected from Year III(54), IV(48) and V(58) students. Data was entered and descriptive analysis was performed using SPSS version 12.0.1.

Results: Majority of students agreed that they had benefitted from competency tests (CT). Most students agreed that communication regarding CT were clear, consistent and any changes were communicated in black and white except, in the case of removable prosthodontics(RP) CT. Students agreed that they felt confident to take CT and had adequate practice before taking them. Majority (59.6%-85.2%) agreed that CT's timing was 'just right' except for the three RP CTs, which received 63.8%-66.7% responses of 'late/very late'. Students agreed that time allocated for the tests were adequate except for Examination and Diagnosis(E&D) in Paediatric Dentistry which had 53.3% of Year IV with "Strongly disagree/disagree" responses. Majority agreed that feedback was given after CTs. Students agreed that assessment of lecturers was consistent except for E&D in Paediatric Dentistry and the RP CTs.

Conclusion: Overall, students gave a positive response towards CTs in relation to the five domains explored. However, a fair amount of negative responses were obtained in certain areas, indicating need for further improvement.

Keywords: Competency based test; dental curriculum; dental education; students' perception; dental clinicians; University of Malaya

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O07

ANTHROPOMETRIC MEASUREMENT OF MANDIBLE USING CONE-BEAM COMPUTED TOMOGRAPHY DATASET

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Objective: Radiographic images of mandible are widely used for human identification. The aim of this study is to assess the reliability of 3D CBCT mandibular images in characterising the age, race and gender of Malaysian population.

Methods: One hundred and fifty two CBCT images of different gender (71 male and 81 female), age group (four age groups ranging from 20- 59 years old) and races (Malays, Chinese and Indians) were collected from the Faculty of Dentistry, University of Malaya. Based on the data record, all images were acquired using 120kVp, 3-7 mA, 20s with a voxel size of 0.3 mm. The bicondylar breadth, the gonial angle, the minimal ramus breadth and the ramus length were measured using Mimics software. The measurements were recorded by one observer. The data were statistically analysed using SPSS 12.0.1 software.

Results: Intraclass correlation coefficients (ICC) showed high intraobserver reliability (ICC = 0.96-0.99) in all mandibular parameters. Unlike age groups, all parameters showed statistically significant difference (p<0.05) when measured between gender. Bicondylar breadth (p=0.00) and minimal ramus breadth (p=0.00) showed significant different when measured between Indians and the other two races (Malay and Chinese).

Conclusion: The 3D CBCT mandibular measurements can be used to determine the characteristic of Malaysian population.

Keywords: Cone- Beam Computed Tomography (CBCT), Gender, Age, Race, Mandible, 3D measurements

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O08

INCIDENCE OF ORO-NASAL FISTULA AFTER PRIMARY CLEFT PALATE REPAIR: 5 YEAR EXPERIENCE OF THE COMBINED CLEFT CLINIC IN FACULTY OF DENTISTRY, UNIVERSITY MALAYA

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Objectives: To determine the incidence of oro-nasal fistula in patients after primary cleft palate repair at the Combined Cleft Clinic at Faculty of Dentistry, University Malaya.

Methods: Retrospective analysis of gathered data of patients who underwent primary cleft palate repair in this centre between the years 2010 to 2015 was performed. The data extracted include patient's gender, ethnicity, age at repair, the type of primary cleft palate repair technique, presence of fistula, location and size of fistula and management of fistula.

Results: Sixty-five patients underwent primary cleft palate repair within the study interval. Twenty-one patients out of 65 patients (32.4%) developed fistula post-operatively, and the most frequent location of fistula was at the junction between the soft and hard palate (33.3%). Eleven of the fistulas (52.4%) was not specified its size in the clinical documents. Out of the total 21 fistulas, two of them were reported to have spontaneous closure while more than half (52.4%) needed intervention for fistula repair. Fistula development was not found to be significantly associated with patient's gender while correlation of fistula development with ethnicity, age of patient at repair, types of cleft and type of primary cleft palate repair technique could not be determined.

Conclusion: The incidence of oro-nasal fistula at our centre is at the higher end of the reported range in previous studies.

Keywords: cleft lip, cleft palate, palatoplasty, palatal fistula, oronasal fistula, complication

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009

BIOFUNCTIONALIZATION OF MODIFIED SURFACES OF DENTAL IMPLANTS

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Objectives: To assess the viability of coating collagen to Hydroxyapatite (HA) coated commercially pure Titanium (cpTi) samples.

Methods: Five samples of cpTi were immersed in a simulated body fluid (Tas-SBF) after stages of gritting, sandblasting and acid etching. One sample was taken out after 3, 5 and 7 days of immersion in Tas-SBF respectively. The 7 days Tas-SBF coated sample was coated with collagen by physical adsorption method. Analysis of the coated surfaces was performed using non-contact profilometer, Scanning Electron Microscope (SEM), Energy-dispersive X-ray Spectroscopy (EDS) and Fourier Transform Infrared Spectroscopy (FTIR) to study about the surface roughness, morphology and elemental analysis of the coated surfaces. Average values were measured and standard deviations were calculated.

Results: Process of sand blasting and acid etching were able to produce desired morphology and surface roughness. The average surface roughness, Sa of sand blasted cpTi surface and acid etched cpTi were $2.17 \pm 0.75 \ \mu\text{m}$ and $2.12 \pm 0.15 \ \mu\text{m}$ respectively. Immersion in Tas-SBF produced a crystalline coating and morphology that were similar to bone-like apatite. Roughness value of cpTi after being immersed in SBF for 7 days was $2.23 \pm 0.31 \ \mu\text{m}$ and the Ca/P ratio was 7.067. Collagen coated samples had the highest Sa value which was $3.91 \pm 0.31 \ \mu\text{m}$ and the Ca/P ratio was 1.190.

Conclusion: This study showed that it is possible to achieve apatite and collagen coating on a modified cpTi surface using physical adsorption method.

Keywords: Titanium, Osteointegration, Acid-etching, SBF coating, Collagen, Hydroxyapatite

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010

A STUDY ON THE MAXILLARY SINUS SEPTA IN CHILDREN AND ADOLESCENTS

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Objectives: To retrospectively determine the prevalence, size, location, and morphology of maxillary sinus septa using CBCT of patients attending the Oral Radiology unit. When teeth are present, the exact location of the maxillary septa is studied in relation to the maxillary teeth.

Methods: Convenience samples of CBCT images from consecutive patients aged 20 and below were used. These images were reconstructed from the CBCT data using proprietary i-CAT image reconstruction software. The obtained images were viewed using the multiplanar reconstruction module. Septa were diagnosed using three orthogonal slice views: axial, coronal, and sagittal. The septa were counted, evaluated, and the height of the septa was measured as distance from the sinus floor taking the more inferior point of the two possible sides of the septum. All measurements were acquired in millimeters using a proprietary software measuring tool and a minimum level of 2.5 mm was set as critical value to identify a real septum in contrast to a bottom lath of the sinus floor after loss of teeth. Patients' data, scan data, and assigned scores were recorded in Microsoft Excel 2007. Statistical analysis were performed with the software SPSS Statistics 12.0 for Windows (SPSS)

Results: The prevalence of septa was found to be 68.3%. The prevalence of septa present in adolescents was significantly higher than in children.

Conclusion: Maxillary sinus septa in all subjects were irregular in 3 dimensions, and had variable (non-consistent) relationship to the maxillary sinus walls.

Keywords: maxillary sinus septa, CBCT, adolescents, children

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011

A COMPARATIVE STUDY BETWEEN XEROGRAPHIC AND COMPUTER-ASSISTED BITE MARK ANALYSES

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Objectives: To compare the suitability and accuracy of xerographic and computer-assisted methods for bite mark investigations.

Methods: Eleven subjects were asked to bite on their forearm and the bite marks were recorded employing a DSLR camera. Alginate impressions of the subjects' dentition were taken and their casts were made using dental stone. The overlays generated by xerographic method were obtained by photocopying the subjects' casts and the incisal edge outlines were then transferred on a transparent sheet. The bite mark images were imported into Adobe Photoshop[®] and printed life-size. The bite mark analyses using xerographically generated overlays were done by comparing an overlay to the corresponding printed bite mark images manually. In computer-assisted method, the subjects' casts were scanned into Adobe Photoshop[®] software. The bite mark analyses using computer-assisted overlay generation were done by matching an overlay and the corresponding bite mark images digitally using Adobe Photoshop[®]. Another comparison method was superimposing the cast images with corresponding bite mark images employing the Adobe Photoshop[®] CS6 and GIFAnimator[©]. A score, with a range of 0-3 was given during analysis to each accuracy-determining criteria and the score increased with better matching.

Results: The Kruskal Wallis H test showed significant difference between the three sets of data (H = 18.761, p < 0.05).

Conclusion: Bite mark analysis using computer-assisted superimposition method was the most accurate, followed by computer-assisted overlay generation and lastly xerographic method. The superior accuracy contributed by digital method is discernible despite the human skin being a poor recording medium of bite marks.

Keywords: Forensic odontology, bite mark, human skin, xerographic method, computer-assisted analysis, Adobe Photoshop[®] CS6, GIF-Animator[©]

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012

THE INCIDENCE OF SIGNS AND SYMPTOMS OF TEMPOROMANDIBULAR DISORDER AFTER THIRD MOLAR SURGERY

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Objectives: (i) to examine the signs and symptoms of temporomandibular disorder (TMD) following third molar surgery (ii) to study the surgical components of third molar surgery that contribute to the development of TMD (iii) to compare incidence of TMD between operative and non-operative group six months after third molar surgery

Methods: Descriptive longitudinal cohort study was conducted by recruiting 22 patients as subjects of an operative group, and 22 as subjects of a non-operative group. The operative group was examined at baseline, one week, one month, three months and six months after surgery. Each patient underwent a series of Diagnostic Criteria of TMD (DC/TMD) examination and history questionnaire.

Results: In the operative group, we found (i) increased incidence of trismus (92%), myofascial pain (69%) and clicking (77%) of the patient group at one week review (ii) two new incidences of signs and symptoms of TMD at final review (iii) no significant relationship between operator qualification to development of TMD (iv) no association between degree of impaction to development of TMD (v) no relationship between duration of procedures to development of TMD (vi) there is a significant difference in signs and symptoms of TMD between operative group and control group (p<0.005).

Conclusion: There is statistically important difference of newly developed TMD between patient and control group 6 months after third molar surgery.

Keywords: Temporomandibular disorder, third molar surgery, Diagnostic Criteria of temporomandibular disorder (DC/TMD), myofascial pain

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013

ALPHA-MANGOSTIN AS A DISINFECTANT OF DENTAL IMPRESSION MATERIALS

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Objective: To investigate the disinfectant effect of α -mangostin on dental impression materials.

Methods: In the experiment, minimum inhibitory concentration (MIC) of α -mangostin and Dentasept was determined using broth microdilution method. To mimic the oral environment, all alginate samples were immersed in 106 cells/mL bacterial mixtures of Candida albicans, Staphylococcus aureus, Salmonella enterica, Pseudomonas aeruginosa and Streptococcus mutans. All coated samples were then immersed in different concentrations of disinfectant to simulate the disinfection procedures of dental impressions in clinical settings. Bioactive compound of α -mangostin at the MIC and 2X MIC were used as tested disinfectant in this study. Samples were also immersed in 10mg/mL (2x MIC) of Dentasept, which act as positive control at similar concentration used in the clinic and in sterile distilled water which act as negative control. Finally, microbial load reduction following disinfection of alginate samples was then calculated.

Results: The results showed that the MIC of α -mangostin was 5mg/mL, similar with that of MIC of Dentasept. In the disinfection procedures of dental impressions, 5mg/mL and 10mg/mL (2x MIC) of α -mangostin were found to reduce the bacterial load on the alginate samples by 97.52% and 98.22% respectively while Dentasept, showed 100% of bacterial count reduction load. This is nonetheless not statistically significant (p > 0.05). Meanwhile, sterile distilled water, which was the negative control, showed a much lower bacterial load reduction of about 89.32% only.

Conclusion: α -mangostin showed high disinfecting potential which suggests that it could be developed as a novel disinfectant agent for dental impressions in future.

Keywords: α-mangostin, *Garcinia mangostana* Linn, antibacterial activity, antifungal activity, dental impressions, novel disinfectant agent.

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014

MOTIVES FOR CHOOSING DENTISTRY AS A CAREER AMONG DENTAL STUDENTS IN MALAYSIA

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Objective: To identify the factors that give influence for dental undergraduate students to choose dentistry as their future profession. Besides that, it was also necessary to determine the student's need and expectation in their undergraduate study.

Methods: This was a cross-sectional study using a systematically designed questionnaire. For this study, the questionnaire was distributed to the students of dental faculty of two public and two private universities based in Kuala Lumpur. The gender difference on motives was studied. The factors analysis was carried out to group the items into factors and to understand the dimensions around which dental students motives are organized.

Results: There were nine motives items which were common for both male and female students but the scores were different. Opportunity of self-employment was the top ranked factor scored by the male students while serving patients and help others to improves oral health was rated as top most motives by female students. Factor analysis revealed four central themes for choosing dentistry as a career. Female dental students manifested more professional attitude in which altruism was the central theme. By contrast, economic solvency was the main theme by the male dental students.

Conclusion: Motives for choosing dentistry among Malaysian dental students were organized around four dimensions which were altruism, economic solvency, safety and flexibility and personal issues and external influences.

Keywords: Motives, career, dental students, dentistry, questionnaire, gender

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015

COMPARISON OF DENTAL DIMENSIONS AND ARCH FORMS BETWEEN NATURAL DENTITION AND REMOVABLE COMPLETE DENTURE PROSTHETIC TEETH AMONG MALAYSIANS

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Objective: To investigate dental arch dimensions and arch forms of complete denture prosthesis made by students at University of Malaya and compare them with dental arch dimensions and forms of normal natural dentition from the same Malaysian community.

Methods: A total of 43 complete dentures (24 maxillary, and 19 mandibular). All samples belong to 26 Malaysian edentulous. The dentures were collected from University of Malaya undergraduate students' patients. Inter-canine width (IC) and inter-molar width (IM) with digital caliper (CD-6" CSX, A Mitutoyo, Japan) and arch form was estimated with arch shape templates (Orthoform; 3M Unitek, Monrovia, CA, USA). U-Mann Whitney Test was used to compare the arch shapes and dimensions of complete dentures with natural dentition of Malaysian.

Results: Complete dentures and natural dentition showed no significant difference in arch dimension (IC & IM) with p-value >0.05. Most of the maxillary arch forms were ovoid, where the mandibular arch forms were tapered. Furthermore, complete denture dimensions showed no significant difference between genders.

Conclusion: Students of undergraduate program in Faculty of Dentistry, University of Malaya have managed to determine and arrange the posterior artificial teeth to simulate close position to the natural dentition of patients using the anatomical biometric guides on the working cast suggested in previous studies and all the further chairside adjustments to determine the neutral zone.

Keywords: Arch Dimension Measurement; Complete denture; Natural Dentition; Arch Form.

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016

ORAL HEALTH LITERACY AMONG CARERS OF SPECIAL NEEDS CHILDREN IN KUALA TERENGGANU

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Objectives: The aim of this pilot study was to assess the oral health literacy among carers of special needs children in Kuala Terengganu.

Methods: This is a descriptive cross-sectional study of carers in four Community-Based Rehabilitation Centre. Data were collected through a structured face-to-face interview of 40 carers. Oral health literacy was measured using text passages and prompts with a total of 57 items to assess comprehension and numerical ability of carers based on domains namely accessing dental care, understand appointment and following medication data management.

Results: Majority of the participants had 'marginal' and 'adequate' OHL level of 32.5% and 52.5% respectively. Only 4 (10%) participants had 'inadequate' level. The 'reading comprehension' and 'numeracy' sections' mean scores were 37.54 (95% CI 35.7-39.4) and 38.17 (95% CI 34.8-41.6). The total OHL mean score was 75.7 (95% CI 71.2-80.2).

Conclusion: Oral health literacy among carers of special needs children in this sample was moderate. Such information is important to develop a more appropriate intervention programmes for carers to match their oral health literacy.

Keywords: Oral health literacy, special needs children, comprehension and numeracy

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017

COMPARING THE EFFECTIVENESS OF DIFFERENT DENTINAL DESENSITIZING AGENTS- IN VITRO STUDY

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Objectives: To evaluate the in vitro effectiveness of desensitizing agents in reducing dentinal permeability.

Methods: Dentine permeability was measured on twenty dentine discs using caries free human molars (n=10). Specimens were prepared accordingly. Minimum and maximum permeability value were quantified for each specimen by using fluid flow device working at 1.422psi (100 cm H₂O) pressure. Two desensitizing agents Resin- modified glass ionomer (Clinpro XT Extended Contact Vanish) and 2.7 wt %Monopotassium- Monohydrogen oxalate (positive control) were undergone different stages of treatment. There permeability values were measured after application of material, then immersion of artificial saliva for 10 minutes and seven days. Subsequently, all the samples were subjected to citric acid (pH 2.5) challenge for 3 minutes and there reading measured.

Results: Both the materials used in the study significantly reduced dentine permeability of acidetched specimens. Overall the data of this study showed that 2.7 wt %Monopotassium-Monohydrogen oxalate showed statistically significant different (p<0.01) in reducing dentine permeability when subjected to all types of treatments compared to Resin- modified glass ionomer (Clinpro XT Extended Contact Vanish). However, immersion of treated specimens in artificial saliva for 7 days resulted in decrease in mean dentine permeability by 2% and 1% for the Varnish xt and positive control. On the other hand, during citric acid challenge, both products showed statistically significant increase (p<0.01) in permeability value.

Conclusions: Based on the results, it can be concluded that 2.7 wt %Monopotassium-Monohydrogen oxalate is more effective compared to Resin- modified glass ionomer (Clinpro XT Extended Contact Vanish) in reducing the dentine permeability. However, higher percentage of permeability reduction, stable permeability value after a week and slight increase in permeability after citric acid challenge indicates that RMGI material has good ability to occlude the tubules and eventually decreasing the dentine hypersensitivity.

Keywords: Monopotassium Monohydrogen Oxalate, Clinpro XT Extended Contact Varnish, Dentine Permeability