5th

*IIUM Kuantan*

THE SEVENTH

# DSSC 2018

## "ENCULTURING RESEARCH INNOVATING IDEAS"

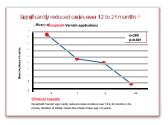# KULLIYYAH OF DENTISTRY

### 26th February 2018

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# MESSAGE FROM
# THE RECTOR

Assalamu'alaikum Warahmatullahi Wabarakatuh

It is a great privilege and honor for me to convey this message for the 7th Dental Student Scientific Conference, organized by the Kulliyyah of Dentistry, International Islamic University Malaysia. I would like to take this opportunity to congratulate committee members who have been working very hard in organizing the event for this year.

The theme "*Enculturing Research, Innovating Ideas*" has brought forward the importance of scientific research as a key component in dental education. Innovation in research involves looking for solutions – either to known, or sometimes to undefined needs. This theme is created to seal the gaps or white spaces in the field where new ideas/theories is to develop. Upon the research findings, one can radically make a difference to our quality of service and to fulfil the customers' expectation.

It is an excellent pace where the Kulliyyah of Dentistry is able to sustain the incorporation of research elements into the undergraduate student curriculum. Certainly, our university will produce dental graduates who are competent with research skills and able to adapt to any changes in the near future. Indeed, this will be the greatest added value to our IIUM dental graduates as future dental professionals.

Thank you.

Prof Dato' Sri Dr Zaleha Kamaruddin
Rector
International Islamic University Malaysia

# MESSAGE FROM
# THE DEAN

Assalamu'alaikum Warahmatullahi Wabarakatuh,

First of all, I would like to express my gratitude to the honourable guests, colleagues and dental students for your interest in participating the 7th Dental Students' Scientific Conference 2018.

Honourable guests and students,

We hope that this conference will provide the students with unique opportunities to develop their professional knowledge and skills as well as networking at the national level.

Excellence in research and training is what is expected from the society in a highly demanding field like dentistry. This conference I hope shall serve as a hub for an enthusiastic discourse and a fruitful interchange of views.

In this spirit, I wish you have a very informative day and discussion that are mutually enriching as well as inspiring for the future. This will be enhanced by the soft launching of KOD Journal during this event which we hope would encourage all of us to share the new findings.

I would also like to congratulate the organising committee of the 7th DSSC for making this event a success. May Allah bless you with His mercy for your dedication and hard work.

Last but not least, my thanks are also due to all students of Kulliyyah of Dentistry IIUM for their contribution to make this event comes true.

Thank you. Wassalam.

ASST PROF DR ISWAN ZURAIDI ZAINOL
Dean
Kulliyyah of Dentistry

# MESSAGE FROM
# THE CHAIRMAN

Assalamualaikum Warahmatullahi Wabarakatuh,

Praise be to the Almighty Allah (swt) for granting us the opportunity to organize the 7th Dental Students' Scientific Conference. It gives me immense pleasure to welcome you to our symposium. This year's theme, '*enculturing research, innovating ideas*', is timely, and was chosen to represent our aim to inculcate the research culture among students and faculties.

To intensify our research output, we are proud to inform you that our Kulliyyah is intending to develop our very own Journal. With the establishment of the Journal, it is expected to generate more ideas and accelerate our research collaborations.

The success of 7th DSSC depends completely on the effort and cooperation from lecturers and students who have written and submitted papers on a variety of interesting topics. Praise is also deserved for the organizing committee members who have invested significant time in preparing and ensuring this Conference a success. I would also not lose this opportunity to express my gratitude to our previous Dean, Assoc Prof Dr Muhannad Ali Kashmoola and current Dean, Asst Prof Dr Iswan Zuraidi for their continuous support and cooperation.

To our invited judges and guests, please take a stroll over our beautiful, state-of-the-art Dentistry building, which had just celebrated our 10th anniversary last year.

On behalf of the organizing committee, I wish all the participants a beneficial, fulfilling and enlightening Conference.

Thank you.  *Wassalam*

ASST PROF DR AHMAD FAISAL ISMAIL
Chairperson
7th Dental Students' Scientific Conference 2018

# EXECUTIVE COMMITTEE

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**Hospitality**

**Opening-closing ceremony**

**Technical & Audio-visual**

# SCIENTIFIC PROGRAMME

| Time | Event |
|------|-------|
| 8.00 - 8.30 | Registration of participants |
| 8.30 - 9.00 | Arrival of Dean, Judges and Guest of Honor |
| 9.00 - 9.10 | Singing Negaraku, IIUM Song and Recital of Doa |
| 9.10 - 9.15 | Welcoming speech by Chairperson |
| 9.15 - 9.20 | Opening speech by Asst. Prof. Dr. Iswan Zuraidi Zainol, Dean Kulliyyah of Dentistry, IIUM |
| 9.20 - 9.30 | Officiating speech by Guest of Honor |
| 9.30 - 9.45 | Officiating ceremony gimmick |
| 9.45 - 10.00 | Video Presentation |
| 10.00 - 10.30 | Break |
| 10.30 - 13.00 | Oral and Poster Presentation |
| 13.00 - 14.00 | Lunch/Poster viewing/Zuhur prayer |
| 14.00 - 16.00 | Oral and Poster Presentation |
| 16.00 - 16.30 | Judges Meeting / Break/ Students' performances |
| 16.30 - 17.00 | Closing Ceremony & Award Presentation |

# HONOURABLE JUDGES

## Oral Category

Associate Professor Dr Haslinda Ramli (Chief Judge)

Associate Professor Dr Mohammad Haniki Nik Mohamed

Assistant Professor Dr Mohd Haikal Muhammad Halil

## Poster Category

Associate Professor Dr Norintan Ab Murat (Chief Judge)

Assistant Professor Dr Mohd Said Nurumal

Assistant Professor Dr Basma Ezzat Mustafa

**ORAL PRESENTATIONS**

| No | Topic | Time |
|----|-------|------|
| 01 | Evaluation of Salivary pH And Calcium in Caries Active and Caries Free Children of Special Need School | 10.30-10.45 am |
| 02 | Oral Condition In Between Assisted Reproductive Technology (Art) Children and Natural Conceived Children | 10.45-11.00 am |
| 03 | Retrospective Study on Age Estimation of The Malay Population Based on Mandibular First Molar Pulpal Morphometric Analysis Using Digital Panoramic Radiograph | 11.00-11.15 am |
| 04 | A Survey of The Understanding on Root Canal Disinfection Among Dental Students in Kulliyyah of Dentistry, IIUM. | 11.15-11.30 am |
| 05 | The Antibacterial Effect of Flax Seed Extracts on Selective Oral Pathogens - Comparative In Vitro Study | 11.30-11.45 am |
| 06 | Apoptosis-Inducing Effects of Aqueous *Myrmecodia Pendans* (Sarang Semut) Extracts in Hsc-3 Human Oral Cancer Cell Lines: An In Vitro Study | 11.45-12.00 pm |
| 07 | The Use of Waterlase (Biolase) In The Treatment of Recurrent Aphthous Ulcer: A Comparative Study | 12.00-12.15 pm |
| 08 | Knowledge, Perception and Practice Of Local Delivery Antibiotics In Management Of Periodontal Diseases | 12.15-12.30 pm |
| 09 | Preliminary Study on *Pax9* Single Nucleotide Polymorphism In Patients With Class II Skeletal Base | 12.30-12.45 pm |
| 10 | The Effectiveness of Pure Stichopus Horrens Extract Toothpaste In Reducing Plaque Induced Gingivitis Post Orthodontic Bond Up : A Triple-Blinded Randomized Controlled Trial | 12.45-01.00 pm |
| 11 | Perceptions Towards Dental Treatments During Ramadhan Among Muslim Adults | 02.00-02.15 pm |
| 12 | The Position of Inferior Alveolar Canal In Relation To The Third Molar In A Selected Malay Population | 02.15-02.30 pm |
| 13 | The Assessment of Aggressive Periodontitis At IIUM Dental Clinic | 02.30-02.45 pm |
| 14 | Antibacterial Activity of Ethanol Extracts of Sargassum Polycystum Against *Streptococcus Mutans* And *Lactobacillus Casei*: In Vitro | 02.45-03.00 pm |
| 15 | Cross Sectional Study on Perception of Facial Appearance of Dentofacial Deformity Among Malaysian Population | 03.00-03.15 pm |
| 16 | Effect of Different Concentration of Bleaching Agents on Micro Hardness of Composite Resin: An In Vitro Study | 03.15-03.30 pm |

**POSTER PRESENTATIONS**

| No | Topic | Time |
|----|-------|------|
| 01 | Oral Health Knowledge, Attitude and Practice of The Caregiver At The Special Needs Boarding School In Kuantan, Pahang | 10.30-10.45 am |
| 02 | Comparison of Bond Strength Between Selected Orthodontic Adhesives versus Anterior Restorative Materials for Bracket Bonding | 10.45-11.00 am |
| 03 | Relationship Between Parental Oral Health Literacy and Children's Oral Health Status | 11.00-11.15 am |
| 04 | Assessment of Diet Intake and Its Association With Caries Experience Among First And Second Year Students Kulliyyah of Dentistry, IIUM Kuantan | 11.15-11.30 am |
| 05 | Retrospective Study on The Prevalence of Recurrent Aphthous Ulceration In Patients Attending Dental Clinic KOD-IIUM | 11.30-11.45 am |
| 06 | In Vitro Wound Healing Effect of Asiaticoside Extracted From Centella Asiatica ('Pegaga') on Human Gingival Fibroblast Cell Line | 11.45-12.00 pm |
| 07 | Time-Series Forecasting Analysis on Dental Treatment Need of First-Visit Patients At IIUM Dental Outpatient Clinic (Periodontal And Conservative Department) For The Year 2017 And 2018 | 12.00-12.15 pm |
| 08 | The Potential Effect of Coconut Water As Natural Healer In Adult Patient With Chronic Periodontitis: A Preliminary Clinical Study | 12.15-12.30 pm |
| 09 | Complete Denture Complaints In Geriatric Patients | 12.30-12.45 pm |
| 10 | A Pilot Study on Expectation and Satisfaction Of Denture Patient In IIUM Dental Clinic. | 12.45-01.00 pm |
| 11 | Comparison of Sugar Acid Neutralizing Effect Among Five Different Toothpastes | 02.00-02.15 pm |
| 12 | The Effect of Low Level Laser Therapy In Treatment of Temporomandibular Disorder (A Pilot Study) | 02.15-02.45 pm |
| 13 | Assessment of Different Self-Care Monitoring Guides to Improve Oral Hygiene | 02.30-02.45 pm |
| 14 | Fluoride Content Determination In Commercial Teas In Malaysia | 02.45-03.00 pm |
| 15 | Preparing A Child for The First Dental Visit: Parent's/Guardian's Knowledge, Attitude and Practice (Mixed Method Study) | 03.00-03.15 pm |
| 16 | The Effectiveness of Two Different At-Home Tooth Whitening Products As Evaluated By Dino-Lite Digital Microscope | 03.15-03.30 pm |
| 17 | Effects of Eurycoma Longifolia Jack (Tongkat Ali) Alcoholic Root Extract Against Oral Pathogens | 03.30-03.45 pm |

# EVALUATION OF SALIVARY PH AND CALCIUM ION IN CARIES ACTIVE AND CARIES FREE CHILDREN OF SPECIAL NEED SCHOOL

Aimi Syahirah Azmi[1], Hazirah Abdul Nasir[1], Theingi Win[2], Nor Asilah Harun[3], Suhana Mamat[4]

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[2] Lecturer, Department of Basic Medical Sciences, Kulliyyah of Dentistry, IIUM

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[4] Lecturer, Department of Biomedical Science, Kulliyyah of Allied Health Sciences, IIUM

**Introduction**: Saliva plays an important role in caries prevention in terms of its buffering capacity and antibacterial action. Salivary pH can affect the bacterial activity on dental hard tissue. It also acts as an ion reservoir that helps in demineralising and re-mineralizing process of enamel. The objective of this study was to evaluate the association of salivary pH and calcium ion in caries active and caries free school children. This study was conducted at Sekolah Menengah Pendidikan Khas Vokasional Kuantan.

**Materials and method**: 131 students with age range from 16 to 19 years old were selected by using convenient sampling. Un-stimulated saliva with minimal amount of 10mL was collected from each subject. Horiba Laqua Twin pH-22 meter was used to measure the pH of saliva. Calcium ion was measured using Horiba Laqua Twin Ca-11 meter. Caries status was divided into caries active group (DMFT≥1) and caries free group (DMFT=0). Independent sample "t" test and ANOVA test were utilized in SPSS statistical analysis. P-value (<0.05) was considered as statistically significant.

**Results**: Significant low pH level was found in caries active children when compared to caries free children (p=0.014). Calcium ion concentration was found significantly high in caries active children when compared with caries free children (p=0.001).

**Conclusions**: This study demonstrated that caries active children have lower pH and higher calcium ion concentration when compared to caries free children. Thus, early detection of acidic saliva may help in prevention of dental caries.

**Keywords**: dental caries, saliva, pH, calcium, special need child

# ORAL CONDITION IN BETWEEN ASSISTED REPRODUCTIVE TECHNOLOGY (ART) CHILDREN AND NATURAL CONCEIVED CHILDREN

Mohd Syazwan Aidid Mohamad Basir[1], Mohd Firdaus Lokhman[1], Norzaiti Mohd Kenali[2], Susi Sukmasari[2], Roszaman Ramli[3]
[1] Students, Kulliyyah of Dentistry, IIUM
[2] Lecturer, Paediatric Dentistry Unit, Kulliyyah of Dentistry, IIUM [3] Lecturer, Kulliyyah of Medicine, IIUM

**Introduction:** ART children were proven to have neurological and musculoskeletal disorder. However, limited number of studies found concerning oral condition of ART children. This research aimed to determine oral condition in between Assisted-Reproductive (ART) children and Natural Conceived (NC) children.

**Materials and method:** This cross-sectional study consisted of 34 subjects, 17 were ART children and 17 were among NC children. Intraoral examination and orthopantomogram (OPG) radiograph were obtained from the subjects. Any abnormalities of tooth development such as number and tooth structure were recorded. Caries experiences of both groups were recorded by using dmft. Descriptive analysis and Mann-Whitney's Test were used.

**Results:** Most of the participants were female (58.8%) and majority were aged of 7 – 8 years old (47.1%). 70.6% of ART group used intra-uterine insemination (IUI) technique while 29.4% used in-vitro fertilization (IVF). There was one hypodontia case found in each group. Caries experience in primary teeth showed a significant difference in between the ART and NC groups with P value of 0.003.

**Conclusion:** Children in ART group experience less dental caries in primary teeth compared with NC children. However, there was a comparable case of tooth developmental defect found in both groups.

**Keyword:** Assisted Reproductive Technology, Dental Caries, Tooth Anomalies

# RETROSPECTIVE STUDY ON AGE ESTIMATION OF THE MALAY POPULATION BASED ON MANDIBULAR FIRST MOLAR PULPAL MORPHOMETRIC ANALYSIS USING DIGITAL PANORAMIC RADIOGRAPH

Nur Aqilah Norudin[1], Siti Aisyah Nordin[1], Pram Kumar A/L Subramaniam[2], Basma Ezzat Mustafa[3], Muhamad Sharifuddin[4]
[1]Students, Kulliyyah of Dentistry, IIUM
[2]Lecturer, Oral Maxillofacial Surgery Unit, Kulliyyah of Dentistry, IIUM [3]Lecturer, Basic Medical Science Unit, Kulliyyah of Dentistry, IIUM [4]Lecturer, Endodontic Unit, Kulliyyah of Dentistry, IIUM

**Introduction:** Current conventional dental radiographic assessment based on crown-root chronological formation is limited in its usefulness for forensic identification as it is unable to predict age beyond 21 years old. This study aimed to assess the accuracy of age estimation via dental pulp analysis of mandibular first molars using panoramic radiographs amongst Malay population attending IIUM dental polyclinic in Kuantan.

**Materials and Method:** The study was conducted on 416 Malay subjects (183 males and 233 females) of known age. The length of tooth-crown and coronal pulp cavity of mandibular molars were measured by two independent assessors. Tooth-Coronal Index (TCI) was computed and later regressed against the subject true age to achieve an equation for age estimation. The estimated age was compared against actual age to analyze the level of agreement.

**Results:** Intraclass correlation between assessors shows good reproducibility. The (mean±SE) actual age of subjects is $30.79 \pm 6.467$ years and $29.46 \pm 5.858$ for male and female respectively. There is no difference in TCI between sexes. However there is significant TCI difference between right and left mandibular molars. A significant relationship between actual age and TCI was seen in combined gender and female left mandibular molar ($p<0.05$). Consequently, significant agreement in correlation between actual age and estimated age of left molar for both genders was also evident.

**Conclusion:** Mandibular first molar radiographic TCI based estimation was found to be significantly related to actual age, thus proving to be a reliable method for age estimation with good age predictive value.

**Keywords:** Age estimation; Tooth pulp; Radiograph

## ORAL 04

# A SURVEY OF THE UNDERSTANDING ON ROOT CANAL DISINFECTION AMONG DENTAL STUDENTS IN KULLIYYAH OF DENTISTRY, IIUM.

Nik Norfathiah Nik Muhammad Nasir[1], Siti Nurbatrisya Mohamad Yusoff[1], Musliana Mustaffa[2], Norfaezah Ahmad[3]
[1]Students, Kulliyyah of Dentistry, IIUM
[2]Lecturer, Endodontic Unit, Kulliyyah of Dentistry, IIUM
[3]Lecturer, Prosthodontic Unit, Kulliyyah of Dentistry, IIUM

**Introduction**: Insufficient evidence in root canal disinfection contributes to differences in clinical practice. Previous surveys have been conducted on general dental practitioners and endodontists but on the undergraduate dental students are lacking. This study aimed to assess the understanding on root canal disinfection among IIUM dental students and to come out with a guideline for root canal disinfection procedure in students' clinics.

**Materials and method**: A set of questionnaire, consisted of multiple aspects related to root canal disinfection such as the selection of root canal irrigant, the concentration of root canal irrigant, the removal of smear layer and the use of adjunct was given to the 91 participants involving fourth and fifth year dental students.

**Results**: The majority of fourth and fifth year dental students had completed 1 and 4 root canal treatment respectively. 89% of them used sodium hypochlorite as root canal irrigant, 67% of them knew the concentration of sodium hypochlorite, 83% of the them removed smear layer and 42% of them used adjunct to root canal disinfection procedure. With regard to the selection of root canal irrigants, the results showed no significance difference between fourth and fifth year dental students but for the concentration of root canal irrigant, the removal of smear layer and the use of adjuncts in their practice, the results showed significance differences between fourth and fifth year dental students.

**Conclusion**: Students who had more experience in root canal treatment had sound knowledge and better understanding on root canal disinfection protocol.

**Keywords:** root canal disinfection, irrigation, smear layer, adjunct

# THE ANTIBACTERIAL EFFECT OF FLAXSEED EXTRACTS ON SELECTIVE ORAL PATHOGENS - COMPARATIVE IN VITRO STUDY

Nur Dalila Zolkifli[1], Wan Nor Syahirah Wan Hassan[1], Basma Ezzat Mustafa[2], Pram Kumar Subramaniam[3], Muhannad Ali Kashmoola[3] [1]Students, Kulliyyah of Dentistry, IIUM

[2]Lecturer, Fundamental Dental and Medical Sciences Department, Kulliyyah of Dentistry, IIUM

[3]Lecturer, Oral Maxillofacial Surgery and Oral Diagnosis Department, Kulliyyah of Dentistry, IIUM

**Introduction**: Flaxseed comes from the flax plant (Linum usitatissimum), which has been cultivated for domestic use since prehistoric times. This study aimed to investigate presence of bacteriostatic or bactericidal effect of flaxseed extract against selected oral pathogen in an in-vitro setting.

**Materials and methods**: This is a laboratory based experimental in vitro study using selected oral pathogens cultured in nutrient agar. Pathogens cultivated in nutrient based broth were inoculated onto nutrient agar plates. Diffusion discs containing streptomycin, DMSO or flaxseed were placed on inoculated agar plates and incubated for 24 hours. Antimicrobial activity around these discs was tested by measuring the zone of inhibition. The result of antimicrobial activity was then compared against streptomycin which acted as positive control and DMSO as negative control. The inhibition test was made in triplicates. Data recorded was analysed statistically using SPSS.

**Results**: There is significant antibacterial effects of flaxseed extract against *Streptococcus mutans, Streptococcus Pyogenes, Pseudomona Aerigenosa* and was comparable in efficacy to that of Streptomycin.

**Conclusion**: This study concludes that flaxseed extract can inhibit selective oral bacterial activity. The implication of this result will be useful in propagating the use of natural based product as therapeutic drug against the chemical synthetic products. This study recommends the use of natural herbal product to have the equal potential while negating the unwanted side effects towards humans' body.

**Keywords**: Flaxseed, Oral Pathogens, Antibacterial.

# APOPTOSIS-INDUCING EFFECTS OF AQUEOUS *MYRMECODIA PENDENS (SARANG SEMUT)* EXTRACTS IN HSC-3 HUMAN ORAL CANCER CELL LINES: AN IN VITRO STUDY

Mohd Syazwan Shah Eddie [1], Nurul Afiqah Abd Aziz [1], Solachuddin J.A Ichwan [2], Widya Lestari [3]

[1]Students, Kulliyyah of Dentistry, IIUM
[2] Lecturer, Basic Medical Science and Oral Biology, Kulliyyah of Dentistry, IIUM
[3]Lecturer, Oral Biology, Kulliyyah of Dentistry, IIUM

**Introduction**: *Myrmecodia pendens (M. pendens)* or also known as Sarang semut is an epiphytic plant which might have potential as a new source of alternative therapeutic agent. Recently, it is reported that *M. pendens* can inhibit the proliferation of HeLa and MCM-B2 (cervical cancer and mammary gland tumor) cell lines. This study was done to investigate the apoptotic effect of *M. pendens* on HSC-3 human oral cancer cell lines.

**Materials and methods:** This is a laboratory-based in vitro study using human OSCC HSC-3 cell line cultured in Dulbecco's Modified Essential Medium (DMEM). The cells were exposed to various concentrations of aqueous *M. pendens* extracts (1.25, 2.5, 5, 10 mg/ml) for 24 and 48 hours. Doxorubicine, a commonly used chemotherapeutic drug was used as a positive control at 0.005 mg/ml. The cell's apoptotic activities were then analysed by MTT assay and flow cytometry.

**Results**: MTT assay results showed that aqueous *M. pendens* crude extract markedly induced cytotoxicity on HSC-3 cell lines in dose dependent manner after 24 h (IC$_{50}$= 5 mg/mL) and 48 h (IC$_{50}$= 3 mg/ml). The apoptotic activity induced by aqueous *M. pendens* was detected in HSC-3 cell lines by flow cytometry within 24 h.

**Conclusion**: The study shows that aqueous *M. pendens* plant extract induces apoptotic effect on HSC-3 oral cancer cell lines and can be a potential candidate for oral cancer treatment.

**Keywords**: Sarang semut, *Myrmecodia pendens*, cytotoxicity, apoptosis, HSC-3 cell lines

# THE USE OF WATERLASE (BIOLASE) IN THE TREATMENT OF RECURRENT APHTHOUS ULCER: A COMPARATIVE STUDY

Muhammad Zulhelmi Baharudin[1], Hafiz Izzuddin Hashim[1], Nazih Shaaban Mustafa[2], Muhannad Ali Kashmoola[2] [1]Student, Kulliyyah of Dentistry, IIUM
[2]Lecturer, Oral Maxillofacial Surgery and Oral Diagnosis Unit, Kulliyyah of Dentistry, IIUM

**Introduction**: Recurrent Aphthous Ulcer (RAU) is a common oral pathology that produces pain which affects the lifestyle of the patient. Despite the simplicity of the pathosis, its aetiology and pathogenesis still remain unclear. A considerable number of treatments are available with the main goal directed towards pain relief. Previous studies on RAU treatment using low level laser therapy (LLLT) show immediate pain relief after application. This study aims to evaluate and compare treatment effectiveness in relieving pain provided by Waterlase (BIOLASE) LLLT and conventional topical corticosteroid using triamcinolone acetonide 0.1% dental paste.

**Materials and methods:** Convenience sampling was used whereby 30 volunteered patients of age between 18-27 years old were divided into two groups. Each group consists of 15 patients with 7 males and 8 females. Group 1 patients were treated by using LLLT while group 2 patients were treated by using triamcinolone acetonide 0.1%. The patients' details, pain intensity and clinical photographs were recorded in a specially prepared case sheet. Mann-Whitney U test was used to compare significance in pain reduction provided by both methods of treatment ($p < 0.05$)

**Results:** Both groups showed significant pain reduction immediately, on day 3 and day 7 after treatment. Higher reduction in pain intensity was observed immediately ($p = 0.001$) and 3 days ($p = 0.002$) after treatment in group 1 patients (LLLT) compared to group 2 patients (triamcinolone acetonide 0.1%).

**Conclusion:** Waterlase (BIOLASE) LLLT is clinically more effective in relieving pain compared to triamcinolone acetonide 0.1%.

**Keywords:** Laser, Ulcer, Aphthous, Stomatitis, Waterlase Biolase

# KNOWLEDGE, PERCEPTION AND PRACTICE OF LOCAL DELIVERY ANTIBIOTICS IN MANAGEMENT OF PERIODONTAL DISEASES

Ameerah Dianah Izaddin[1], Siti Farah Amelia Ahmad Subhi[1], Suhaila Muhammad Ali[2], Munirah Yaacob[2], Yunita Dewi Ardini[3]

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[3] Lecturer, Pediatric Dentistry Unit, Kulliyyah of Dentistry, IIUM

**Introductions:** Local delivery antibiotic (LDA) is adjunctive to mechanical debridement for periodontal disease therapy. However, no work has published on the relationship between knowledge, perception and practice (KPP) with periodontist. The objective of this research is to determine the present status of the periodontists' KPP on the use of LDA in management of periodontal diseases.

**Materials and methods:** This research was a cross-sectional study among universities periodontists in Malaysia. Self-administered online questionnaires were distributed through email. The data was analyzed by using Statistical Package for Social Sciences (SPSS) Version 24. IREC approval was obtained (ID: IREC 674).

**Results:** A total of 17 periodontists participated in this study. Majority of them were from government universities (53%), overseas graduated (71%) and practiced for 10 years or less (53%). 77% of the periodontists were aware on the availability of LDA in Malaysia. All respondents agreed the importance of LDA as adjunctive treatment. However, only 47% of the periodontists practiced LDA in managing periodontal diseases. 57% of respondents claimed the LDA cost is expensive.

**Conclusion:** Periodontists had adequate knowledge and perception of LDA with less practice.

Keywords: knowledge, perception, practice, local delivery antibiotic.

## ORAL 09

# PRELIMINARY STUDY OF *PAX9* SINGLE NUCLEOTIDE POLYMORPHISM IN PATIENTS WITH CLASS II SKELETAL BASE

Muhammadazril Bin Mohd Saad[1], Nur Amin Bin Abd Rahman[1], Noraini Abu Bakar[2], Khairani Idah Mokhtar[3]
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**Introduction:** Disruption during the development of skeletal element of craniofacial part especially the maxilla or mandible may lead to the unfavourable incidence of Class II skeletal base malocclusion. Polymorphism in *PAX9* (rs8004560); a gene responsible for craniofacial and tooth development, is often associated with Class II/Div2 malocclusion. Hence, this preliminary study aimed to detect the presence of *PAX9* SNP (rs8004560) and to determine its genotype and allele distribution in Class II skeletal base malocclusion in the local population.

**Materials and methods:** A case control study was performed on 30 samples; 15 from Class II skeletal base malocclusion and 15 from Class I skeletal base subject as control. Cephalometric measurements were performed prior to saliva samples collection. The DNA was amplified using specific primers for marker rs8004560 and the genotyping was done by sequencing. Chi-square test was used to determine the over-representation of marker allele.

**Results**: Presence of *PAX9* SNP (rs8004560) was detected in local population analysed and the distribution of its genotype and allele could be observed. There were significant differences between allele and genotype frequency within and between the Class II skeletal base malocclusion and control ($p<0.05$). The distribution of genotype frequency for Class I and Class II were consistent with Hardy-Weinberg Equilibrium ($p >0.05$).

**Conclusion:** Presence of genetic association between *PAX9* SNP (rs8004560) with Class II skeletal base malocclusion, contributed by retrognathic mandible was observed. However, larger number of samples is required to determine its relationship with an increased risk for Class II malocclusion in our population.

**Keywords:** *PAX9, Class II skeletal base malocclusion, rs8004560 SNP*

## ORAL 10

# THE EFFECTIVENESS OF PURE STICHOPUS HORRENS (*GAMAT)* EXTRACT TOOTHPASTE IN REDUCING PLAQUE INDUCED GINGIVITIS POST ORTHODONTIC BOND-UP: A TRIPLE-BLINDED RANDOMIZED CONTROLLED TRIAL

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**Introduction:** Gingivitis is one of the commonest problems faced by fixed orthodontic patients as there is close relation between the appliances to gingival sulcus. *Stichopus horrens (SH)* is a sea cucumber from the Indo-Pacific that has medical healing properties which have been traditionally used for years.

**Objective:** To assess the effects of toothpaste containing aqueous *SH* extract on plaque-induced gingivitis in post orthodontic bond-up subjects and to identify the optimal concentration of *SH.*

**Methods:** A single-centred; triple-blinded randomized controlled trial conducted in 40 fixed-orthodontic patients. Subjects were randomly assigned to one of the four groups with toothpaste which has concentration of *SH* extract of 0%, 3%, 6% or 9%. The statistician, the patients and the researchers involved in sample taking were kept blinded from the allocation. Gingival Index (GI) and Bleeding on Probing (BOP) for each group were taken at day 0,7,14 and 30.

**Results:** 9% of *SH*-containing toothpaste (SHCT) showed most substantial result as there were significance difference of GI ($p=0.020$) from Day 7 to 14 and from Day 0 to 14($p=0.020$). There was also significance difference of BOP from Day 0 to 14($p=0.022$) and from Day 0 to 30($p=0.027$).

Significant difference was seen in 3% of *SH*CT group with the decrease of GI ($p=0.004$) from Day 1 to 14.

There were no significant difference noted for 0% and 6% *SHCT*.

**Conclusion:** The 9% *SH*CT is the most effective concentration to reduce both the gingival inflammation (up to day 14) and bleeding on probing (up to day 30).

**Keywords**: *Stichopus-Horrens* Containing Toothpaste, Gingivitis, Orthodontic bond

**ORAL 11**

# PERCEPTIONS TOWARDS DENTAL TREATMENTS DURING RAMADHAN AMONG MUSLIM ADULTS

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**Introduction**: Muslim patients may perceive that dental treatments during Ramadhan will nullify their fast. This may results in reduced dental attendance during fasting month. However, up to this date, there is no study objectively assessing this issue. Therefore, this study aims to assess the perceptions among Muslim adults on common dental treatments during Ramadhan.

**Materials and methods**: A structured questionnaire was used to assess the perception about dental treatments and dental attendance during Ramadhan on 377 Muslim adults in Kuantan. The total cumulative score derived from the perception section was categorized into good and poor knowledge based on the median score, where a score less than median score was categorized as poor and a score equal to or more than median score was categorized as good. We further examined association between knowledge score and sociodemographic data.

**Results**: Majority respondents perceived that dental treatments will not nullify their fast with 50.9% of them categorized as having good knowledge based on median score. There was significant association between perception with education level (p=0.04) and Islamic education level (p<0.001). There was also significant association between their perception and dental attendance in Ramadhan (p=0.04). It also showed that dental attendance during Ramadhan was poor across both groups with poor and good knowledge. However, further test showed that those who have good knowledge were more likely to come during Ramadhan.

**Conclusion**: Most of the Muslims perceived that dental treatments did not nullify their fast however there were some hesitancy for having dental treatments in Ramadhan.

**Keywords**: Perception, Dental treatments, Muslims, Ramadhan

## THE POSITION OF INFERIOR ALVEOLAR CANAL IN RELATION TO THE THIRD MOLAR IN A SELECTED MALAY POPULATION

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**Introduction**: Inferior Alveolar Nerve is an important vital structure in mandible. The close proximity of the inferior alveolar canal (IAC) to mandibular third molar (M3) has become a great concern prior to surgical removal of M3 due to the reported complications with regards to the contents of this canal. We aimed to investigate its position in relation to the M3 roots in different impactions and to assess the complications caused by this relationship in Malay population.
**Materials and methods:** We selected and assessed 205 Orthopantomogram (OPG) and cone beam computed tomography (CBCT) radiographs of Malay patients taken from 2013 to 2017. Statistical analysis was done using Javascript-STAR software.
**Results**: 42.4% M3 were mesioangularly impacted and 73.2% had interruption of IAC white line in OPG. CBCT findings showed the majority of IAC were located buccal to the roots of M3 (55.6%) and type 2 overlap of root tip to IAC (32.2%). IAN injury (0.8%) was reported in a vertically impacted M3 with radiographic signs of darkening of the root and interruption of white line; lingually positioned IAC with type 1 extend of root tip overlap.
**Conclusion:** We conclude that the selected Malay population has mesioangular impaction of M3 with buccally positioned IAC and type 2 extension to its root. There was no significant relationship between radiographic risk predictor signs in OPG with position of IAC in CBCT. Therefore, preoperative CBCT remain as a gold standard assesment prior to M3 removal as OPG alone cannot predict the post-operative complications.

**Keywords**: Inferior alveolar canal, mandibular third molar, CBCT, paraesthesia, Malay

**ORAL 13**

# THE ASSESSMENT OF AGGRESSIVE PERIODONTITIS AT IIUM DENTAL CLINIC

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**Introduction:** Aggressive periodontitis is a less common but rapidly destructive form of periodontitis. Limited studies have been conducted on the prevalence of the disease in Malaysia. Therefore, this study was conducted to assess the prevalence of Aggressive Periodontitis and its correlation with sociodemographic, risk factors, and clinical presentations.

**Materials and methods:** This was a retrospective cross sectional descriptive study comprises of periodontitis patients attending IIUM Dental Clinic that had been diagnosed in the period of year 2014 up to Jun 2017. The data was extracted from patients' case records systematically using data extraction forms which represent all specific objectives. IBM SPSS-26 was used for data analysis.

**Results:** Out of 262 periodontitis cases, eleven (11) were confirmed to have Aggressive Periodontitis, giving a prevalence of four point two percent (4.2%). Seven (7) of them were diagnosed of having Generalized Aggressive Periodontitis with Mean($\pm$SE) age of Aggressive Periodontitis was 33.09 ($\pm$3.09 years). Eight females and eight Malays were diagnosed of having Aggressive Periodontitis and four (4) of them claimed on having familial aggregation. Mean($\pm$SE) of percentage of probing pocket depth that $\geq$6mm and bleeding on probing was 5.1($\pm$2.58) and 56.7($\pm$ 9.75) respectively. The median (interquartile range) for plaque score was 55 (IQR=33). First molars had the highest Clinical Attachment Loss (CAL) which 4.6 mm and highest frequency of tooth loss.

**Conclusion:** The prevalence rate of Aggressive Periodontitis in the screened population was 4.2%. The prevalence was slightly lower than a study in Seremban but much higher than that of reported globally.

**Keywords:** prevalence, aggressive periodontitis, sociodemographic, risk factors.

# ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF SARGASSUM POLYCYSTUM AGAINST STREPTOCOCCUS MUTANS AND LACTOBACILLUS CASEI ; IN VITRO

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**Introduction:** Sargassum Polycystum (brown seaweeds) has been recognized as a potential source of natural antibacterial and antimicrobial compounds. It has been used in many applications and products as they possess interesting biological activities that give benefit to the dental and medical area. The objectives of this study were to determine Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) value of Sargassum Polycystum extract against Streptococcus mutans and Lactobacillus casei. Besides, the objective of this study also was to determine the growth curve of Streptococcus mutans and Lactobacillus casei.

**Materials and method:** The antibacterial activity of ethanol extracts of Sargassum Polycystum against two intraoral cariogenic bacteria were examined using broth dilution method. The bioactivity of the seaweed extract was studied by finding the MIC and MBC value. Besides that, the growths of both bacteria were studied by growth curve analysis.

**Results:** The time taken for the *Streptococcus mutans and Lactobacillus casei* to achieve exponential phase during growth is 4 and 5 hours respectively. MIC values of ethanol extracts of Sargassum polycystum in different concentration against S.mutans and L.casei were unreliable because the presence of fungus (white-precipitate) at all 96-well plates including the positive and negative control. Therefore, MBC analysis was unable to carry out because the MIC values were unreliable.

**Conclusion:** The ethanol extract of *Sargassum polycystum* used in this study show some bacterial inhibition against pathogens used. Therefore, the same study by using different type of solvent are recommended to be carried out in the future.

**Keywords:** Sargassum Polycystum, brown seaweed, Antibacterial activity, Streptococcus Mutans, Lactobacillus Casei, Growth curve

# CROSS SECTIONAL STUDY ON PERCEPTION OF FACIAL APPEARANCE OF DENTOFACIAL DEFORMITY AMONG MALAYSIAN POPULATION

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**Introduction:** Dentofacial deformity is a condition that is associated with abnormal skeletal pattern due to congenital problems, pathologic condition or trauma, which can negatively affect facial appearance and malocclusion. This study is to evaluate the knowledge and perception of facial appearance in dentofacial deformity among public with and without dental backgrounds.

**Materials and methods:** 100 participants were recruited to participate in the questionnaire. The questionnaire consists of facial photographs of 12 cases of dentofacial deformity or malocclusion in varying severity. The perception of facial appearance (FAS), treatment need score (TNS) and knowledge score regarding dentofacial deformity were used to assess their understanding in this study.

**Results:** There were significant differences between dental and non-dental when assessing their knowledge in all the questionnaire items ($p<0.05$). When FAS and TNS were assessed between dental and non-dental, there were no significant differences in the mean of FAS and TNS in all the presented cases (normal, borderline, severe). Pearson correlation between perceived FAS and TNS showed statistically negative correlation for severe and normal cases, whereby a decrease in FAS for severe cases showed an increase in the TNS, and an increase in FAS for normal cases showed a decrease in TNS.

**Conclusion:** The personnel with dental background are more knowledgeable regarding dentofacial deformity when compared to non-dental personnel and have higher level of perception in facial appearance and treatment needs.

**Keywords**: Dentofacial deformity, knowledge, perception, facial attractiveness, treatment need.

# EFFECT OF DIFFERENT CONCENTRATION OF BLEACHING AGENTS ON MICRO HARDNESS OF COMPOSITE RESIN – AN IN VITRO STUDY

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**Introduction:** Tooth bleaching is one of the effective cosmetic dental treatments to date, but there are mixed reports on the effect of bleaching agents on the surface changes of resin composites. This study was designed to evaluate the effects of 20% carbamide peroxide and 40% hydrogen peroxide on the microhardness and surface roughness of nano-hybrid and nano-filled resin composites.

**Materials and methods:** Thirty-four square-shaped specimens (A3 shade) were fabricated of Filtek$^{TM}$ Z250XT and Filtek$^{TM}$ Z350XT (n=17). The samples of each composite were divided into three subgroups of 6. The control subgroups were immersed in distilled water; the test groups were exposed to Opalescence PF 20% (CP) and Opalescence Boost 40% (HP) for 2 weeks. Vickers microhardness testing and nano educator observation were performed after the intervention.

**Results:** Both 20% CP and 40% HP did not significantly affect the surface hardness of Z250XT ($p$=1.00). No significant difference was found between the 2 bleaching agents on the control and bleached Z250XT ($p$>0.05). However, significant difference was recorded on Z350XT ($p$<0.001) after being exposed to both bleaching agents. Both Z250XT and Z350XT showed increase in surface roughness (Ra) value after exposure.

**Conclusion:** Bleaching decreased the microhardness of nano-filled composite and increased the surface roughness of both nano-hybrid and nano-filled composites. Despite the low values of surface changes and low risk of plaque accumulation on the surface, awareness of possible composite breakdown after bleaching therapy is vital.

**Keywords**: Composites, bleaching, microhardness, surface roughness

## POSTER 01



## ORAL HEALTH KNOWLEDGE, ATTITUDE, AND PRACTICE OF THE CAREGIVER AT THE SPECIAL NEEDS BOARDING SCHOOL IN KUANTAN, PAHANG.

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**Introduction**: At the special needs boarding school, caregivers play an important role on daily activities of these children especially in oral health care. This study would like to assess caries status and caregivers' knowledge, attitude and practice towards oral healthcare.

**Materials and methods**: A cross sectional study was conducted among 41 caregivers and 270 special needs students involving hearing, visual and learning disabilities of selected schools. Knowledge, attitude and practice of the caregivers were assessed according to their educational level by using self-administered questionnaires while dental caries status of primary and permanent dentition were assessed by using dmft and DMFT indices. Data were analyzed using SPSS version 16.0.

**Results**: The response rate was 100%. The overall mean knowledge and attitude score were 87.75% and 64.6%, respectively. Meanwhile, the overall mean of "good" practices and "bad" practices score was 74.7% and 25.3%. Mean dmft and DMFT scores by type of disabilities in 5-6 years old children were as follows: hearing (10.00 ± 0.00), learning (10.00 ± 3.45). In 7-12 years old children, mean dmft and DMFT scores were; visual (1.50 ± 1.92), hearing (2.16 ± 2.43), learning (2.30 ± 2.11). Meanwhile in 13-20 years old children, visual (6.00 ± 0.00), hearing (3.33 ± 2.67), learning (3.07 ± 3.60). Overall caries prevalence was 71.9% with dmft and DMFT levels did not vary significantly by type of disabilities (p>0.05).

**Conclusion**: Caregivers with good knowledge and attitude towards oral health does not necessarily produce good practice, and special needs children in Kuantan have high caries prevalence.

**Keywords**: Special needs, children, caregivers, oral health

# COMPARISON OF BOND STRENGTH BETWEEN SELECTED ORTHODONTIC ADHESIVES VERSUS ANTERIOR RESTORATIVE MATERIALS

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**Introduction**: The objectives of this study were to measure and compare the bond strength between selective orthodontics adhesives and anterior restorative materials. **Materials and methods**: 104 extracted bovine incisors were selected and divided into four groups of 26 each, etched with 37% phosphoric acid, primed with Prime & Bond One (Dentsply) and bonded in dry field to enamel surfaces using four different adhesive materials. The materials tested were: Transbond XT(3M), Lightbond(Reliance), Filtek Z350XT(3M) and Neofil (Kerr). These samples then underwent thermal and acidic exposure for two time intervals, at twenty four hours and three months and finally the shear bond strength were measured using Instron Universal Testing machine. The data then analysed using SPSS Compare Mean Paired Sample T-Test.
**Results:** Lightbond (OA) showed the highest mean value of bond strength at both twenty four-hours and three months' time interval which was 13.95 MPa. This followed by Transbond XT (OA) that exhibit lower value at 9.63 MPa. Filtek Z350 (AR) had the highest bond strength among the anterior restorative materials tested at 9.18MPa while the Neofil (AR) has shown significantly lower and consistent mean bond strength in both time intervals among all materials which was 7.88 MPa.
**Conclusion:** Orthodontics adhesives have higher bond strength to bovine enamel compared to anterior restorative materials.

**Keywords:** Orthodontic adhesive, anterior restorative materials, shear bond strength.

**POSTER 03**

## RELATIONSHIP BETWEEN PARENTAL ORAL HEALTH LITERACY AND CHILDREN'S ORAL HEALTH STATUS

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**Introduction**: Oral Health Literacy (OHL) is the degree to which individuals have the capacity to obtain and process basic oral health information and services needed to make appropriate health decisions. Studies to evaluate the influence of OHL and its clinical outcomes however remains scarce. This research is conducted with the aim to assess the parental Oral Health Literacy (OHL) and its association with the oral health status of preschool children in Kuantan area.

**Materials and methods**: Ethical approval is obtained prior to starting the study (IREC 766). A total of 200 sample of parent/child dyads that consented to participate are recruited from kindergartens around Kuantan. Inter- and intra-examiner calibration were performed prior to starting the clinical examination. Parental OHL level are assessed using REALD-99 tools and their demographic information were recorded. Clinical examination was performed by 2 calibrated examiner on the children to assess their oral health status using two parameters; dental caries experience (dmft) and oral hygiene status (visible plaque index).

**Results**: Mean for dmft and VPI are 6.24 and 70.39%, respectively. Negative correlation is obtained between parental OHL and the oral health status of children indicating that when parental OHL level increases, the total dmft and VPI decreases ($p<0.05$). Lower dmft and VPI score were also observed among preschool children of parents in group with high parental OHL ($p<0.05$).

**Conclusion**: There is significant association between parental OHL and children's oral health status of preschool children in Kuantan, with higher parental OHL score associated with good children's oral health.

**Keywords**: oral health literacy, oral health status, preschool children

## ASSESSMENT OF DIET INTAKE AND ITS ASSOCIATION WITH CARIES EXPERIENCE AMONG FIRST AND SECOND YEAR STUDENTS KULLIYYAH OF DENTISTRY, IIUM KUANTAN.

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**Introduction:** Diet plays a major role in the aetiology of caries disease. The correlation between several types of food group and caries had been previously studied. This research aimed to assess the association between the frequency and estimated amount of dietary sugar and dietary food groups intake with caries experience among first and second year IIUM dental students.

**Materials and methods:** A convenience sampling approach was adopted in this cross-sectional study. First and second year IIUM dental students were selected to fill in a 3-days diet diary form. Their DMFT score were recorded. The survey response rate was 83.3%. Statistical Package for Social Science (SPSS) version 18.0 was used for data analysis.

**Results:** The prevalence of having dental caries among the study participants is 54%. Their average DMFT index is 1.68. Majority of them have moderate consumption of sugary food and drinks. The highest mean of DMFT score in association to both frequency($p<0.05$) and estimated amount of sugar ($p<0.05$) intake are found to be in the moderate consumption group. They take inadequate cereals and grains, fruits and vegetables, fish, legumes, milk and milk products. However, they take adequate meat and poultry as recommended by Malaysian Dietary Guideline 2010. All the dietary food groups have insignificant relationship to DMFT score($p>0.05$).

**Conclusion:** The frequency and the estimated amount of dietary sugar intake have significant association to caries experience among first and second year students Kulliyyah of Dentistry, IIUM Kuantan. However, the dietary food groups intake shows no significant difference in relation to DMFT score among the students.

**Keywords**: diet assessment, frequency, estimated amount, caries, DMFT score

## POSTER 05



# RETROSPECTIVE STUDY OF THE PREVALENCE OF RECURRENT APHTHOUS ULCERATION IN PATIENTS ATTENDING DENTAL CLINIC KOD-IIUM

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**Introduction:** The prevalence of Recurrent Aphthous Ulcer (RAU) is varied in different regions of the world**.** There is insufficient survey in prevalence of RAU in Malaysia as the only latest figure available is about 18 years ago. This study aimed to measure the prevalence of RAU in patients attending Dental Clinic KOD-IIUM within 5 academic years and to know the distribution and relation of RAU based on the most common type of RAU, gender, race and age range.

**Materials and methods**: A retrospective cross-sectional study based on the confirmed case of RAU from the students' Oral Medicine logbooks and case sheets from the attended patients' folder to Oral Medicine Dental Clinic KOD-IIUM from academic year 2012/2013 to 2016/2017.

**Results:** 160 patients were diagnosed of RAU.0.42% of prevalence among the total patients was found to have RAU. As compared between the Oral Medicine cases, patients that were diagnosed with RAU shows prevalence of 11.13%. The most common type was minor RAU (96.9%), followed by major (3.1%) and no patient was presented with herpetiform type. Based on gender, females showed more predilection of RAU compared to males with 60.6%. Age range of 20-29 showed the highest percentage of 71.3 % and Malay showed the most common race of RAU compared to Chinese and Indian which was 97.4%.

**Conclusion:** The results indicate there is a relation between the type of RAU, age, gender, race and with the prevalence of RAU. Further studies should include larger sample size with a wider range of populations.

**Keywords:** recurrent aphthous ulcers, Oral Medicine, prevalence, predilection

# IN VITRO WOUND HEALING EFFECT OF ASIATICOSIDE EXTRACTED FROM *CENTELLA ASIATICA* ('PEGAGA') ON HUMAN GINGIVAL FIBROBLAST CELL LINE

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**Introduction:** *Centella asiatica* (Pegaga) is one of the pioneering herbs that act powerfully in traditional remedy such as treating skin problems, including wounds healing. Asiaticoside (A.S) is a marked bioactive constituent in *C. asiatica* as it has been reported to possess wound-healing properties. However, the potential benefits of the compounds for treatment of wound healing in the oral mucosa cells including gingiva have not been explored. Thus, the purpose of this research is to study the wound healing potential of Asiaticoside extract on human gingival fibroblast cells.

**Materials and methods:** Human gingival fibroblast cells were used. The cells were exposed to different concentrations of Asiaticoside solution and then analyzed after certain culture periods (12 and 24 hours). MTT assay was performed to determine the maximum tolerable dose of Asiaticoside extract on the cells. Scratch assay was conducted to compare the wound closure between cells that are treated with Asiaticoside extract with negative control (DMSO solvent).

**Results**: The MTT assay results demonstrated that the maximum tolerable concentration of Asiaticoside extract was 0.5μg/ml. For scratch assay, exposure of the Asiaticoside at 0.125 and 0.25μg/ml significantly accelerate the wound healing compared to negative control ($P<0.05$).

**Conclusion:** Asiaticoside extracted from *Centella asiatica* possesses a certain therapeutic value on human gingival fibroblast cells by promoting more accelerated wound healing.

**Keywords**: *Centella asiatica,* Asiaticoside, wound healing, human gingival fibroblast cells

## POSTER 07



# TIME-SERIES FORECASTING ANALYSIS ON DENTAL TREATMENT NEED OF FIRST-VISIT PATIENTS AT IIUM DENTAL OUTPATIENT CLINIC (PERIODONTAL AND CONSERVATIVE DEPARTMENT) FOR THE YEAR 2017 AND 2018

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**Introduction:** Periodontal and conservative treatment need among first-visit patients at IIUM Dental Outpatient Clinic was high. This study aimed to identify the major periodontal and conservative treatment need, to analyse previous trend and to forecast future need. **Materials & Methods:** Ethical approval (IREC762) was obtained from IIUM-Ethics-Committee. List of first-visit patients who attended this clinic from 1st January 2014 to 31st December 2016 was retrieved to assess for patient's age, gender and residential areas. Patients with incomplete data were excluded. Treatment need was determined by dental-officer-in-charge. Association between age, gender and residential-area with the type of major treatment need was analysed using Chi-square test in SPSS-Version20. Time-series forecasting analysis was conducted using Minitab-Version17.

**Results:** Majority of our samples were females (62.0%), aged 20-34 year-old (54.5%), and from urban areas in Kuantan (42.4%). Major treatment need for periodontal and conservative care was scaling-polishing (65.0%) and filling (74.1%), respectively. Age ($P<0.001$) and residential-area ($P<0.001$) have significant associations with the type of major treatment need. The need for single-treatment of scaling-polishing or filling or the need for both treatments was highest in the age group of 20-34 year-old and had predilection for urban residents of Kuantan. Three-year weekly-trend (2014-2016) for scaling-polishing was plateau and for filling was minutely-declined. This study forecasts that there will be 741 and 855 first-visit patients/year in 2017 and 2018 that requires scaling-polishing and filling, respectively.

**Conclusions:** The need for scaling-polishing and filling in this sample population in 2017 and 2018 will remain high, as seen in the previous three years.

**Key words:** dentistry, forecasting, treatment need, periodontal, conservative

## POSTER 08



# THE POTENTIAL EFFECT OF COCONUT WATER AS NATURAL HEALER IN ADULT PATIENT WITH CHRONIC PERIODONTITIS: A PRELIMINARY CLINICAL STUDY

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**Introduction:** Mechanical and chemical debridement had been practiced as one of the management for chronic periodontitis. Recent interest and advances in the field of alternative medicine has promoted the use of various herbal and natural products for multiple uses in the field of medicine. As for it, coconut water is one of the potential natural sources that have various health benefits.

**Materials and methods:** Randomized control study was chosen as study design in this research project. 12 patients who have moderate to severe chronic periodontitis were selected from patients whom attended Polyclinic Kulliyyah of Dentistry, IIUM Kuantan Campus from November 2016 to January 2018. After stratified random sampling done, the subjects divided into 2 groups; Intervention Group and Control Group. All patients will go for ultrasonic scaling and root planning by using hand instruments. 6 patients in Intervention Group were given fresh coconut water to drink during daytime. The first re-assessment was done after 6 weeks. The control group of another 6 patients didn't received any medicament. Paired sample t-test was used to analyse the pre and post intervention data. The study had obtained ethical approval from IREC (IREC 849)

**Results:** Probing depth (PD) at mid-buccal site and bleeding on probing (BoP) shown significant result (*P<0.05*) in intervention group. There is no significant difference noted in the control group which are for PD, BoP and Plaque Score (PS) variables.

**Conclusion:** Coconut water has potential benefit in reducing the periodontal pockets with chronic periodontitis as an adjunct after mechanical debridement.

**Key words:** chronic periodontitis, coconut water, natural products, mechanical and chemical debridement

# COMPLETE DENTURE COMPLAINTS IN GERIATRIC PATIENTS

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**Introductions**: Geriatric as defined by American Dental Association are patients age 65 years and above. An improved understanding in geriatric is important to help in establishing better health care policy for long term care of the aged population. Complaint on the other hand, in description is a statement of situation that is unsatisfactory or unacceptable. Thus, this research examined a group of 20 geriatric patients to determine the prevalence of complaints and the relationship between different age group and gender with the complaints. A relationship between the satisfaction level and the number complaints was also tested.

**Material and methods**: A retrospective study was conducted by obtaining patients records from the folder vault and appointment was given to the patients. A set of questionnaires comprise of demographic background, details of complaints, and satisfaction levels of the dentures was given to the patients. Intra oral and extra oral examination was similarly done and data collected was further analysed. The statistical test used to investigate the relationship between the groups were chi-square test.

**Results**: The prevalence rate of complaints among the samples varies with poor fit at the highest (70%). No significant dependence was observed for both relationship, firstly; relationship between patient's age and the type of complaints as well as relationship between gender and type of complaints. For the relationship between satisfaction level and the number of complaints there was a significant relationship found on only one criteria; appearance (*P=0.039*).

**Conclusion**: This study suggests that poor fit is the most prevalence complaint presented by the patients and different gender and age groups will not affect the complaints presented. There was no relationship between satisfaction and the number of complaints except for 1 criteria; appearance.

**Key words:** Complete Denture Complaints Geriatric

# A PILOT STUDY ON EXPECTATION AND SATISFACTION OF DENTURE PATIENT IN IIUM DENTAL CLINIC

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**Introduction:** Patient's expectation can profoundly affect the satisfaction towards a new denture construction. Previous studies have stated that, prosthetic treatment failures occur not because of clinical and technical problem but due to unrealistic expectation of the patient who expect the denture to be comparable to the natural dentition functionally and aesthetically. It is a vital to determine the level of patient expectation and educate them so that their expectation could be keeps at a reasonable level. In addition this could ensure high satisfaction of the dental treatment. The objective of the study was to determine the patient expectation and satisfaction before and after denture construction.

**Materials and methods:** This research involves 40 patients who received one or a pair of complete denture at the Kuliyyah of Dentistry, IIUM. The subjects were divided into two groups, a tested and a control group. The tested group were received an informational pamphlet and none for the control group. Patient with partial dentition on both arches and patient with severe gag reflex were excluded from this study. Level of expectation and satisfaction of the patient towards the prosthesis were measured by using self - administered questionnaire.

**Results:** There were no significance difference of expectation and satisfaction shown between tested and control group before treatment. However after a session of denture education by using an informational pamphlet, the level of expectation reduced and the level of satisfaction increase slightly in the tested group.

**Conclusion:** The use of informational pamphlet during denture education does give a positive impact to the outcome of prosthodontics treatment.

**Key words:** expectation, satisfaction, complete denture, informational pamphlet

# COMPARISON OF SUGAR ACID NEUTRALIZING EFFECT AMONG FIVE DIFFERENT TOOTHPASTES

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**Introduction:** Toothpastes contain bicarbonate ions that can buffer and counter the attack of acid, thus leads to remineralization. This study aims to compare the sugar acid neutralizing effect among five different toothpastes.

**Methodology:** A cross-sectional study was conducted among undergraduate students of Kulliyyah of Dentistry, IIUM Kuantan with total samples of 57 after inclusion and exclusion criteria. Subjects were instructed to refrain from overnight oral hygiene procedure. The baseline salivary and plaque pH were recorded. The salivary and plaque pH after rinsing with cokes were measured, and the subjects were instructed to brush using assigned toothpaste based on their toothpaste groups. All the pre-brushing, post-coke and post-brushing measurements were compared between the five groups. Salivary pH was measured using portable pH meter while plaque pH was measured using pH strip method. Data was analysed by using SPSS and Amos® with significance level was set at $p < 0.05$. IREC approval was obtained (ID: IREC 673).

**Results:** There was significant difference in terms of the mean pH after brushing for saliva ($p=0.044 < 0.05$) among the five groups, however there was no statistically significant difference for the plaque reading ($p > 0.05$). The toothpaste showing the highest pH after brushing is TO-1 toothpaste.

**Conclusions:** The five brands of toothpastes possessed sugar acid neutralizing effect to a certain degree based on the saliva reading.

**Key words:** sugar acid neutralizing effect, toothpaste, plaque, saliva, pH

## POSTER 12



# THE EFFECT OF LOW LEVEL LASER THERAPY IN TREATMENT OF TEMPOROMANDIBULAR DISORDER: A PILOT STUDY

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**Introduction**: Temporomandibular disorders (TMDs) is a collective term that embracing a number of clinical problems that involve the masticatory muscles, Temporomandibular Joint (TMJs), and the associated structures. It characterized by facial pain in the area of TMJ and muscle of mastication, restriction and sound during mandibular movement. Recently physical therapy such as Low Level Laser Therapy (LLLT) is used as one of the treatment modalities and it is believed to promote wound healing, tissue repair and induce analgesia.

**Materials and methods**: Convenience sampling was used which consist of 22 volunteered patients, 14 were treated with conventional treatment and 8 were treated with combination of LLLT and conventional therapy. Laser machine used was Waterlase/Biolase © 2007 with irradiation 0.5 W- 30 Hz daily for three consecutive days, then once a week review treatment for two weeks. The space between laser beam and skin is 3 cm, applied as small circles for 2-3 minutes. Pain intensity before and after the treatment was recorded by using numerical rating scale (NRS). Statistical data analysis was conducted using SPSS software. Wilcoxon-sign ranked-test and Mann-Whitney U test were used.

**Results**: Pain intensity was reduced significantly in patients whom treated by combination of LLLT and conventional therapy. (*P<0.05*). Pain intensity after treatment for female were higher (M=1.20, SD=1.10) than for male (M=0.00, SD=0.00). Younger patients have higher pain intensity than older patients.

**Conclusion**: LLLT is effective to be used as adjunct to the current conventional treatment in relieving pain in TMDs.

**Key words**: laser, TMJ dysfunction, TMD management

# ASSESSMENT OF DIFFERENT SELF-CARE MONITORING GUIDES TO IMPROVE ORAL HYGIENE

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**Introduction:** Patients have difficulties to monitor their oral hygiene at home. This study aimed to assess whether take-home disclosing tablets and plaque score charts can assist in monitoring and improving one's oral hygiene.

**Materials and methods:** A Quasi experiment study was conducted among 30 volunteers in Kuantan, Pahang. Subjects were divided into three groups: control (A) (n=10), chart (B) (n=10) and tablet(C) (n=10) groups. During each visit, all subjects were given oral hygiene instructions (OHI). Subjects in group B and C were given plaque score charts and disclosing tablets respectively as oral hygiene monitoring guides at home. Percentages of surfaces with cervical (PS) and more than one third of plaque retention (>1/3 PS) were recorded using adapted O-Leary Plaque Index at baseline, 2- and 4-weeks reviews.

**Results:** All subjects had high PS at baseline (Mean PS 71.6%, SD 10.6%). There was no significant difference in PS for all groups at 2-weeks review. PS and >1/3 PS reduced significantly at 4-weeks review for group A ($P<0.01$, $0.03$) and C ($P<0.01$, $<0.01$). When compared among groups, no significant difference was detected in PS reduction between all groups at 2- and 4-weeks. However, group C had significantly higher >1/3 PS reduction than group B after 4 weeks ($P=0.04$); albeit no significant difference in all groups at 2-weeks review.

**Conclusion:** Disclosing tablets was more effective than plaque score charts in reducing surfaces with more than one third plaque. Therefore, this study gives some evidence that take-home disclosing tablets may assist in monitoring oral hygiene at home.

**Keywords:** disclosing tablet, plaque score, chart, monitoring guide, oral hygiene

## POSTER 14

# FLUORIDE CONTENT DETERMINATION IN COMMERCIAL TEAS IN MALAYSIA

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**Introduction:** Tea is the most consumed beverage in the world after plain water. Tea plants absorb fluoride from soil and store it mostly in the leaf. Thus, tea drink may contain considerable amount of fluoride. However, there is lack of research about this especially for the tea available in Malaysia. The aim of this study is to determine the fluoride content in commercial teas available in Malaysia.

**Material and methods:** Experimental study was conducted on some of the commercial infusion teas available in the supermarket in Peninsular Malaysia. A total of 106 samples of tea have been prepared. The fluoride content in the teas was determined by using spectrophotometry. One-way ANOVA has been used to compare between three groups and independent T-test has been used to compare between two groups.

**Results:** All 106 tea samples were proven to contain fluoride. Fluoride content of each teas are different ranging from as low as 0.01 mg/L to as high as 1.08 mg/L. Using One Way ANOVA, there is significant difference in terms of fluoride content for the three types of tea ($P=0.028 < 0.05$). Among the groups of tea, black tea shows higher fluoride content compared to green tea ($P=0.033 < 0.05$).

**Conclusion:** Fluoride is present in commercial teas in Malaysia. This study can provide beneficial information regarding fluoride content in tea to the consumers especially in Malaysia. Further research can be made to compare the fluoride content in tea in different brewing time and different types of tea packaging.

**Key words**: tea, infusion, fluoride

# PREPARING A CHILD FOR FIRST DENTAL VISIT: PARENT'S/GUARDIAN'S KNOWLEDGE, ATTITUDE AND PRACTICE (MIXED METHOD STUDY)

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**Introduction:** The first dental visit is important to develop good dentist-parent-child relationship in the future. The aim of this research was to assess parent's/guardian's knowledge, attitude and practice (KAP) in preparing a child for first dental visit.

**Materials and methods:** A cross-sectional study was carried out within 6 months on 150 participants who brought their children to the Kulliyyah of Dentistry dental polyclinic, IIUM. Validated closed and open-ended questionnaires consisting of parent's/guardian's K, A and P were distributed. Pearson correlation was used to analyse the associations, followed by induction-deduction analysis on qualitative data.

**Results:** The significance between K, A and P was $P<0.05$ with rho between K and A, K and P, and A and P of +0.213, +0.246, +0.406, respectively. Early exposure was given to the children before their first dental treatment explaining the main purpose of going to the dentist and the impact of good oral hygiene towards quality of life, watching videos and pictures describing dental treatment in child-friendly clinic. Skilled dentists, painless, gradually and enjoyable dental treatment were participant's preferences. As role models for children, parents had taught dental home care, the right attitude of rewarding and not frightening children with dental treatment, as well as supporting school dental programmes.

**Conclusion:** The relationship between K, A and P was significant. However the associations were fair and very low. The participants experienced and believed that the best approach to prepare children for their first dental visit was early exposure to dental treatment using several methods and choosing a child-friendly dental environment.

**Keywords:** preparing child, first dental visit, attitude, knowledge, practice

## THE EFFECTIVENESS OF TWO DIFFERENT AT-HOME TOOTH WHITENING PRODUCTS AS EVALUATED BY DINO-LITE DIGITAL MICROSCOPE

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**Introduction :** At-home tooth whitening products with different oxidizing agents such as hydrogen peroxide and carbamide peroxide may produce different degree of shade change. Thus, this study evaluates the effectiveness of two different at-home tooth whitening products related to the changes in tooth shade and enamel surface appearance.

**Materials and methods:** 21 samples of extracted human teeth were collected. Two at-home tooth whitening products were used; Beyond Core White (6% hydrogen peroxide) and White Smile (16% carbamide peroxide). The samples were divided into seven groups, and were exposed accordingly to the recommended guidelines and exceeded the recommended guideline by 3 times and 5 times for each whitening product for 14 consecutive days. Photos of enamel surface appearance and tooth shades of samples were taken using Dinolite digital microscope and DSLR camera at pre- and post-treatment. Comparison was made using Ivoclar Vivadent shade guide.

**Results:** Six samples that were exposed to Beyond Core White (CW) three times and five times the recommended guidelines showed changes in shade while only two samples treated with White Smile (WC) showed changes after being exposed to five times the recommended guideline. However, no significant surface change in enamel was observed. Samples with mild fluorosis had shown improvement after being exposed to five times the recommended guidelines for both agents.

**Conclusion:** No shade change was observed in all samples that were tested using the recommended guidelines. The whitening efficacy of Beyond Core White was found to be superior to White Smile at three and five times the recommended guidelines.

**Keywords:** tooth whitening, hydrogen peroxide, carbamide peroxide

# EFFECTS OF EURYCOMA LONGIFOLIA JACK (TONGKAT ALI) ALCOHOLIC ROOT EXTRACT AGAINST ORAL PATHOGENS

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**Introduction***: Eurycoma longifolia jack* (E.L) is a herbal medicinal plant of South-East Asian origin, popularly recognized as 'Tongkat Ali'. The plant roots have been scientifically proven to have many biological effects including antibacterial activity however, no previous research to date has studied the effect on oral pathogens including cariogenic bacteria. This study was done to determine the antibacterial and antifungal activities of E.L. root extract against three common oral pathogens.

**Material and methods:** The microorganisms used were *Candida albicans, Streptococcus mutans* and *Lactobacillus casei*: E.L root was extracted using soxhlet method. Disc diffusion assay was conducted using extract concentration of 200mg/ml. Nystatin and Ampicillin were used as positive control for fungal and bacterial tests respectively. Minimum Inhibitory Concentration (MIC) was done to determine the lowest inhibitory concentration of the extract on the microorganisms.

**Results**: E.L extract inhibited the growth of *Candida albicans* and *Streptococcus mutans* at a concentration of 200mg/ml *with a zone of inhibition of* 16.0 ± 3.0 mm and 7.0 ± 1.0mm respectively. There was no antimicrobial effect of the extract on *Lactobacillus casei.* The MIC of E.L extract against both *Candida albicans* and *Streptococcus mutans* was 25mg/ml.

**Conclusions:** The results from this study revealed the potential use of *Eurycoma longifolia jack* as an antimicrobial agent which can be used to produce new oral care products.

**Key words:** *Eurycoma longifolia jack* root extract, *Candida albicans, Streptococcus mutans*, *Lactobacillus casei*

# ACKNOWLEDGMENT

The organizing committee of the 7th Dental Students' Scientific Conference
would like to express our heartfelt appreciation to the
following organization and individuals
for their support and contribution
to this event.

# ACKNOWLEDGEMENT