



UNIVERSITI  
TEKNOLOGI  
MARA



# UiTM DENTAL STUDENTS' SYMPOSIUM

*Integrative Dentistry:  
from Inception to  
Revolutionary Research*



*Faculty of Dentistry, UiTM Sg. Buloh*



*11<sup>th</sup>-12<sup>th</sup> April 2017*

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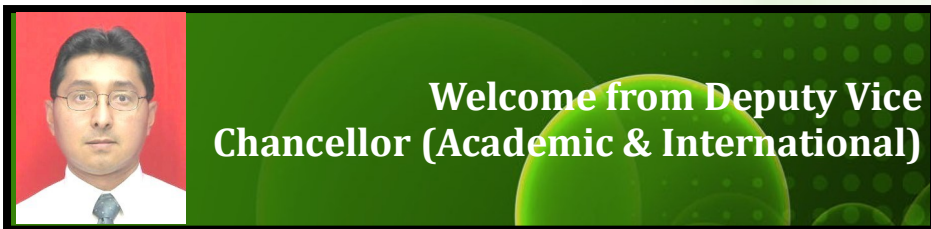


Organised by Faculty of Dentistry, UiTM

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First of all, thank you for inviting me to the opening ceremony of this distinguished event. I would like to congratulate Professor Dr. Mohamed Ibrahim Abu Hassan, for organizing another successful year of dental student symposium, which aims to nurture research culture and potential among the future leaders of the profession. I believe that the students had undergone an enriching learning process of starting, conducting and completing a research, and they are now ready to continue the legacy of research excellence brought upon by the distinguished fellow academics and researchers of this faculty.

Initiatives that has lead to the presentation of research output by students in this symposium supports the core aspirations of the Ministry of Education's Malaysian Education Blueprint 2013, that seek to steer rapid expansion of research output and quality among members of the higher education institution in this country. This effort is also in line with the nation's aspiration to uplift the standard of service provision among healthcare professionals, whose practice should advance on the essence of evidence-based dentistry and best practice.

The hosting of this year's UiTM Dental Student Symposium continues to welcome participation of international delegates, members of the industry and colleagues across the disciplines, they who are here today sharing similar goals and passion for research. UiTM has always been committed in supporting advancement of research activities, via enhanced collaboration amongst academicians, clinicians, industry professionals and external agencies locally and worldwide. It is hoped that the spirit of collegiality could be enhanced, in order to further empower research culture amongst members of this affiliation. May such spirit subsequently lead to an improvement in research activities and output, measured by an increase in publications, citations, patents and generated revenues.

Once again, I acknowledge the commitment of Professor Dr. Mohamed Ibrahim Abu Hassan, and the Organizing committee of the 7th UiTM Dental Students Symposium for delivering the upmost professionalism in preparation for this prestigious event. I would also like to congratulate UiTM dental students for having fulfilled this part of academic requirement with success. May the successful completion of this learning activity leads to many brighter achievements that would continue to uplift the standard of dental research and practice in Malaysia, as well as countries across this region.

Thank you.

**Prof. Sr. Ir. Dr Suhaimi Abdul Talib**  
Deputy Vice Chancellor (Academic and International)



## Message from the Dean

I am delighted for the successful conduct of the 7th Dental Student Scientific Symposium 2017. I would like to congratulate Dr. Eddy Hasrul Hassan, the Organizing chairman of this event, and his committee for bringing together the various activities, including research presentation, as well as poster, debate and video competitions, into the event. I also acknowledge the effort and contribution of academic members of the faculty in selflessly guiding the students through the whole learning process. I believe that students have gained valuable learning experience, while some have found interest and passion to further indulge in research as a chosen career path.

The Dental Student Symposium was first organized in 2011, aimed at equipping dental students with knowledge and skills in the conduct of research, and inculcating research culture among members of the dental fraternity. Now in its 7th edition, the symposium has attracted many participants across the region, since the event opened its doors to international delegates in recent years.

I welcome everyone, especially the international delegates for showing their continuous support for our program. This year's symposium is brought together to share up-to-date findings in various areas of dentistry, from basic health sciences, to dental education as well as oral and maxillofacial surgery. This 3-day program provides the opportunity for participants to share research findings, debate on current healthcare issues, as well as showcase creative ideas through poster and video presentations. Findings of research activities undertaken via this learning initiative have been published in many esteemed international journals, thus contributing towards the advancement of scientific knowledge and evidence-based practice in dentistry. Furthermore, winners and representatives of these competitions have won numerous awards at local and international levels, either in research presentation, or table clinic competition. It is hoped that the event would nurture the younger generation of dental practitioners to continuously contribute towards advancement of knowledge through research activities and other educational initiatives.

Once again, I thank everyone for making this event a success. May the product of this years' student research project be recognized at a higher level, and ultimately contribute towards uplifting the name of UiTM as one of the leading providers of dental education in this region.

Thank you.

**Prof. Dr. Mohamed Ibrahim Abu Hassan**  
Founding Dean



## Message from Chairperson

Assalamualaikum wbt.

Greetings and Selamat Datang!

On behalf of all the members of the Organising Committee, I would like to extend a very warm welcome to all participants especially to our invited international delegates to the 7<sup>th</sup> Dental Students' Symposium (DSS) 2017, Universiti Teknologi MARA, Malaysia.

As dentistry moves into the 21<sup>st</sup> century, we could see a coupling of high tech materials, integration of techniques, and diagnostics with scientifically evident-based research. This holistic approach marks the new era in dentistry hence highlights the theme of this year symposium - "Integrative Dentistry: from Inception to Evolutionary Research".

As organising chairman of this event, I hope to bring together a good programme that stimulates both our clinical knowledge and scientific intellect. This will be through a combination of interesting parallel sessions and engaging Video and Poster Competitions with the theme 'Integrative Dentistry', Oral Scientific Presentation Competition for the undergraduate students' research, e-Poster Presentation Competition for the postgraduate students' research, and the anticipated Debate Competition.

This symposium provides golden opportunity for the dental students to gain valuable experience that will enhance their knowledge in research, enhance their communication skills, and promote interaction with other affiliates who have similar interests. I hope that the breaks between sessions and the friendly atmosphere of our faculty will facilitate peer-to-peer interactions and networking.

Finally, I want to thank the sponsors of the Symposium. Without their generous support, the DSS2017 would not materialise.

Welcome to DSS2017 and enjoy the symposium.

**Dr. Eddy Hasrul Hassan**

Chairman

7<sup>th</sup> Dental Students' Scientific Symposium

Universiti Teknologi MARA

# Programme Tentative

11 April 2017 (Tuesday)

TIME	Venue	
	Al-Biruni	Al-Zahrawi
8.00 – 8.30 am	<b>Registration</b> Level 1	
8.30 – 9.00 am	<b>Opening Ceremony</b>	
9.00 – 10.30 am	Oral Presentation 1 (6 groups)	Oral Presentation 2 (6 groups)
10.30 – 11.00 am	<b>BREAK</b>	
11.00 – 12.30 am	Oral Presentation 3 (6 groups)	Oral Presentation 4 (6 groups)
12.30 – 2.00 pm	<b>BREAK FOR LUNCH</b>	
1.00 – 1.30 pm	Luncheon Talk by Sponsor – Al-Jabar	
2.00 – 3.15 pm	Oral Presentation 5 (5 groups)	Oral Presentation 6 (5 groups)
3.15 – 3.30 pm	<b>BREAK</b>	
3.30 – 5.00 pm	Oral Presentation 7 (6 groups)	Oral Presentation 8 (6 groups)
5.00 pm	<b>END OF DAY 1</b>	

# Programme Tentative

12 April 2017 (Wednesday)

TIME	Venue		
	Al-Biruni	Al-Zahrawi	Al-Azhar
8.00 – 8.15 am	Registration		
8.15 – 10.00 am	Oral Presentation 9 (7 groups)	Oral Presentation 10 (7 groups)	8.15-10.15am E-Poster Presentation (PG) 8 poster
10.00 – 10.30 am	BREAK		
10.30 – 12.00 pm	Debate (Final)	Oral Presentation 11 (6 groups)	10.30-12.30pm E-Poster Presentation (PG) 8 poster
12.00 – 2.00 pm	BREAK FOR LUNCH		
1.00 – 1.30 pm	Luncheon Talk by Sponsor – Al-Jabar		
	Al-Biruni		
2.00 – 3.15 pm	<i>Special Lecture: DNA of the 21<sup>st</sup> Century Higher Education</i> <i>Prof Dato' Dr. Mohamed Amin Embi</i>		
3.30 – 5.00 pm	<b>Closing Ceremony by TNCA</b> Prof. Sr Ir Dr Suhaimi Abdul Talib Deputy Vice Chancellor (Academic & International)  <b>Token of Appreciation to Judges</b>  <b>Award presentation</b>		
5.00 pm	END OF DENTAL STUDENTS SYMPOSIUM 2017		

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Christabel

Amelina

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Syafeq

Alif

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## LIST OF UNDERGRADUATE POSTER PRESENTATIONS: Oral Health Promotion

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2	May the floss be with you	Centre of Periodontology Studies
3	Choose implant overdenture to secure your denture	Centre of Restorative Dentistry Studies
4	Odontalgia apocalypse	Centre of Oral and Maxillofacial Surgery Studies
5	What is Halitosis?	Centre of Oral & Maxillofacial Diagnostic and Medicine Studies
6	Thumb sucking	Centre of Paediatric Dentistry & Orthodontics Studies
7	Guard your mouth, play it wild	Centre of Population Oral Health & Clinical Prevention Studies
8	My traumatic injury	Centre of Comprehensive Care Studies

## LIST OF UNDERGRADUATE VIDEOS (Competition)

No	Title	Discipline
1	Don't Forget Basic Medical Science	Centre of Preclinical Science
2	Prosthodontics—Everything is Possible	Centre of Restorative Dentistry Studies
3	Gingival Recession	Centre of Periodontology Studies
4	Type of Braces	Centre of Paediatric Dentistry & Orthodontics Studies
5	Dental Anxiety Meets BLS	Centre of Oral and Maxillofacial Surgery Studies
6	Revolution of Radiology	Centre of Oral & Maxillofacial Diagnostic and Medicine Studies
7	One Problem, Infinite Solutions	Centre of Comprehensive Care Studies
8	Drop the Cigarette s	Centre of Population Oral Health & Clinical Prevention Studies

# **ABSTRACTS** (Undergraduates)



1	<p style="text-align: center;"><b>Assessing the Readiness of Dental Students in Providing Dental Health Education (DHE) Regarding Sugar: A Pilot Study</b></p>
<p style="text-align: center;">ADNAN S.Y, AZIZAN N.D, MOHD RADZI N.A</p> <p style="text-align: center;">Department of Dental Public Health, Faculty of Dentistry, Universiti Teknologi MARA Email: nawwalradzi@gmail.com; sarayasmin220@gmail.com; diyanaazizan93@gmail.com</p> <p><b>Objectives:</b> The purpose of this research is to assess dental students' readiness in giving information about dietary sugar intake and the effectiveness of the intervention in increasing their knowledge in giving sugar-related advices to patients. <b>Materials and Methods:</b> Clinical students from Year 3 to 5 with total of 176 students of UiTM Faculty of Dentistry participated in this study. The participants answered a set of 10 questions inclusive of the assessment of their basic knowledge and perceived readiness in educating patient regarding sugar prior and after the intervention. The questions were about hidden sugar, daily sugar intake and understanding sugar content on food label. Handheld brochure and 90 seconds' video were developed contained facts and information regarding hidden sugar, daily sugar intake and understanding sugar content in food label. <b>Results:</b> The response rate was=100%, N=176. The students' basic knowledge regarding sugar and their perceived readiness were significantly improved following the intervention. Improvement was evident from the mean scores of pre-interventions of 5.69, (SD = 1.331) to post-intervention of 9.87, (SD= 0.355), p value &lt; 0.05 and 95% CI. There is an increase of 4.18 scores post intervention. <b>Conclusion:</b> This intervention able to generate short-term improvement of the students' knowledge in giving sugar-related advice and some aspects food labelling. The result will benefit the dental curriculum pertaining to recommended sugar intake. This necessitate continuous program that empower the dental students to ensure consistent message of sugar and oral health delivered to patients</p> <p><b>Keywords:</b> sugar, oral health education, hidden sugar</p>	
2	<p style="text-align: center;"><b>Effectiveness of Blended Learning Compared to Learning through Conventional Teaching in Preclinical Fixed Prosthodontics</b></p>
<p style="text-align: center;"><b>RAZALI R<sup>1</sup>, OTHMAN N<sup>1</sup>, GHANI SMA<sup>2</sup>, LIM TW<sup>2</sup>, MUSTAZA TA<sup>2</sup></b></p> <p style="text-align: center;"><sup>1</sup>Bachelor of Dental Surgery Student, Faculty of Dentistry, Universiti Teknologi MARA; <sup>2</sup>Centre for Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA Email: nurhafiza_2013@yahoo.com; ramizarazali@yahoo.com; tehadilla@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objectives of this study is to compare student's performance, in easy and difficult level Fixed Prosthodontics preclinical project, when given by blended learning method and learning by conventional teaching. <b>Materials and methods:</b> 72 second year students (2016) in Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh, were segregated into two groups which were conventional teaching (n=36) and blended learning (n=36). Firstly, the two groups were evaluated for their baseline knowledge in Prosthodontics and also their type of learning preferences. Subsequently, comparison of preclinical performance was made between these two groups on the preclinical projects that were included in this study (one easy project and one difficult project). The data collected was analysed by using independent t-test (significant at p &lt; 0.05). <b>Results:</b> There were no significant difference on baseline Fixed Prosthodontics knowledge among the students between the two groups (p=0.248), and no difference on the two groups learning preferences (p=16.345). For the comparison on learning methods, there was no significant difference between blended learning and conventional teaching for easy (p=0.319) and difficult level projects (p=0.339). <b>Conclusion:</b> The effectiveness of learning by conventional teaching and blended learning is the same. Hence, result from this study can vote for the promotion of blended learning for Fixed Prosthodontics education, which is cost effective, can be widely spread to a larger group of students, easily accessible and more flexible, without losing any benefit from learning by conventional teaching.</p> <p><b>Keywords:</b> Dental education, blended learning, conventional teaching, preclinical prosthodontics</p>	

3	<p align="center"><b>Cytotoxic Effect of Allicin on Nasal Squamous Cell Carcinoma, RPMI 2650</b></p>
<p align="center">ZUBIR B, SAMSUDDIN N.F, AMIN M.I, AHMAD V.N</p> <p align="center">Center of Preclinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: bahijahzubir@yahoo.com; teyaslim@gmail.com; indahma@salam.uitm.edu.my;  vivi_noryati@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objective of this study is to investigate the cytotoxic effect of allicin on nasal squamous cell carcinoma, RPMI 2650. <b>Methods:</b> Human nasal squamous cell carcinoma RPMI 2650 cells were cultured in Eagle's Minimum Essential Medium in standard experimental condition. The cytotoxic effect of allicin on RPMI 2650 cells was determined using growth assay. The final concentration (70µM) of allicin was used for treatment and maximum incubation was set up to 72 hours. The experiment was repeated in triplicates. Trypan blue exclusion test was carried out to measure the cytotoxic effect of allicin on RPMI 2650 cells. Morphological changes of the cells after treatment and incubation were monitored accordingly. All data were analysed using independent t-test with p&lt;0.05 and presented as means SD. <b>Results:</b> The inhibitory effect of allicin on the proliferation of RPMI 2650 cells showed similar inhibitory trends with previous studies using different type of cell lines. The trypan blue exclusion assay shows 63% (p&gt;0.05) of RPMI 2650 cells were inhibited after 72 hours incubation. Morphology of the visualized cells shows distinguish characteristics of viable and death cells upon treatment. Both results from morphological observation and growth assay were in agreement. <b>Conclusions:</b> These findings could be used as a basic rationale for anti-cancer study particularly in nasal cancer management and suggest extending the experiment by looking on the mechanism of inhibition of allicin-treated cells.</p> <p><b>Keywords:</b> cytotoxic, allicin, nasal squamous cell carcinoma, garlic</p>	
4	<p align="center"><b>Cost Analysis of Complete Denture Fabrication in a Teaching Institution</b></p>
<p align="center">NUR AMALINA ZUL<sup>1</sup>, SITI ANISAH MOHTAR<sup>1</sup>, TUTI NINGSEH MOHD. DOM<sup>2</sup>, ROHANA AHMAD<sup>1</sup></p> <p align="center"><sup>1</sup>Center of Studies for Restorative Dentistry, Faculty of Dentistry Universiti Teknologi MARA, Sg Buloh  <sup>2</sup>Department of Dental Public Health, Faculty of Dentistry, University Kebangsaan Malaysia, Kuala Lumpur  Email: drohana@salam.uitm.edu.my</p> <p><b>Objectives:</b> The purpose of this study is to quantify the clinical visits and laboratory procedures involved in constructing a set of complete dentures and to calculate the cost of constructing them as performed by an undergraduate dental student. <b>Methods:</b> Clinical cases were retrieved from the students logbooks of Class 2015. The patients' records were reviewed to identify and quantify all the clinical and laboratory procedures involved in constructing a set of complete dentures. Cost estimation was calculated using activity-based method based on direct medical cost only which include dental equipments, instruments, consumable materials and dental personnel salaries. <b>Results:</b> A total of 83 patients records were reviewed. The average number of visits required to fabricate a set of complete dentures was 10 visits (range from 6-20 visits) with an average cost of RM2131 (S.D:RM538). The higher the number of visits the greater the cost incurred. The procedures that usually require multiple visits are Secondary Impression and Jaw Relation Record. The major contribution of the cost comes from dental equipments (44.42%), followed by laboratory cost (27.95%), dental consumables (17.48%), salary (6.94%), and dental instruments (3.22%). <b>Conclusion:</b> As the number of visits has a significant impact on cost, effort should be made to optimize the time spent at each visit and to ensure each procedure can be completed in one visit.</p> <p><b>Keywords:</b> complete denture, cost analysis, activity-based method</p>	

5	<p align="center"><b>Prevalence of Oral Mucosal Lesions in Patients Attending Oral Medicine Clinic, UiTM Dental Centre</b></p>
<p align="center">NORDIN N.N, ISHAK A.F, HARUN N.H<sup>1</sup></p> <p><sup>1</sup>Centre of Oral and Maxillofacial Diagnostics and Medicine, Faculty of Dentistry Universiti Teknologi MARA Email: nasrilmordin@gmail.com; amirfarisishak15@yahoo.com; drharnani@salam.uitm.edu.my</p> <p><b>Objectives:</b> The purpose of this study was to determine the prevalence of oral mucosal lesions (OMLs) in patients attending Oral Medicine Clinic UiTM Dental Centre; and to identify risk factors for OMLs. <b>Methods:</b> This was a record review; retrospective study entailed the analysis of collected data from a population retrospectively but conducted at a specific point of time. The data obtained was tabulated according to the type of OMLs, age, gender, presence of systemic disease, smoking and alcohol consumption. <b>Results:</b> A total of 250 patients attending Oral Medicine Clinic over a period of seven years from 2010 to 2016 were included in the study, out of which 88 (35.2%) had OMLs. The most prevalent OML was lichen planus (28.4%), followed by recurrent aphthous stomatitis (17.0%), candidiasis (13.6%), mucocele (13.6%) and traumatic ulcer (4.5%). Oral squamous cell papilloma, pyogenic granuloma and lichenoid reaction accounted for 3.4% each. Among the patients with OMLs, 22.7% had diabetes mellitus while 30.7% and 9.1% were tobacco and alcohol consumers respectively. Diabetes mellitus was found to be related with lichen planus, candidiasis and recurrent aphthous stomatitis. A strong association was observed between alcohol consumption and lichen planus. The prevalence of OMLs is found to be higher in the older age group (&gt;40 years) with no gender predilection. <b>Conclusions:</b> Our data provided a baseline reference on the prevalence of OMLs and its relation to epidemiologic aspects and risk factors, which can guide the oral health promotion and provision of total oral health care for the population.</p> <p><b>Keywords:</b> Oral mucosal lesions, UiTM Dental Centre, prevalence</p>	
6	<p align="center"><b>Repeat Analysis for Digital Intraoral Imaging Among the UiTM Undergraduate Dental Students</b></p>
<p align="center">ABDUL RAHMAN N.L., AHMAD ASRI A.A., WAN MOKHTAR I.<sup>2</sup>, MOHD YUSOF M.Y.P.<sup>1</sup></p> <p><sup>1</sup>Centre of Oral and Maxillofacial Diagnostics and Medicine Studies, Faculty of Dentistry Universiti Teknologi MARA <sup>2</sup>Centre of Comprehensive Care Studies, Faculty of Dentistry Universiti Teknologi MARA nurliyanaarahman@yahoo.com; miza.redz@gmail.com; ilham@salam.uitm.edu.my; yusmiadil@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objective of this study is twofold; i) to quantify the overall repeat rate of imaging acquisitions and ii) to assess the prevalence of error types in intraoral bitewing and periapical imaging using digital complementary metal-oxide-semiconductor (CMOS) intraoral sensor. <b>Materials and Methods:</b> A total of 8,030 intraoral images were retrospectively collected from three groups of undergraduate clinical dental students of Faculty of Dentistry UiTM Sungai Buloh Malaysia. The type of examination, stage of the procedure and the reasons for repetition were analysed and recorded. The repeat rate was calculated using equation of total repeated images divided by total number of examinations. Weighted Cohen's Kappa for inter- and intra-observer agreement was used after calibration and prior to image analysis. <b>Results:</b> A total of 3,263 repeated periapical images were from endodontic assessment which included working length estimation (WLE), trial gutta-percha (tGP), obturation and removal of gutta-percha (rGP). In endodontic, the highest repeat rate was from WLE (71.85%) followed by tGP (68.54%), obturation (62.21%) and rGP (55.56%). In bitewing images, the repeat rate is 35.03% and poor angulation was identified as the most common cause of error. Substantial level of intra- and inter-observer agreement was achieved. <b>Conclusion:</b> The repeat rates in this study are relatively high especially in certain clinical procedures and therefore warranting the need for optimizing training in techniques and radiation protection. Repeat analysis should be performed from time to time to enhance quality assurance and hence delivering high-quality health service to patients.</p> <p><b>Keywords:</b> Dental students, repeat rate analysis, intraoral bitewing, periapical radiograph, digital radiograph.</p>	

7	<p style="text-align: center;"><b>Formulation and Evaluation of New Periodontal Gel from Anise</b></p>
<p style="text-align: center;">ABDULLAH N.A, MOHAIDEEN MEERA S, AL-BAYATY F.H, MOHD ZAIN Z.  Centre of Periodontology Studies, Faculty of Dentistry, University Teknologi MARA  Email: fouad@salam.uitm.edu.my; zainimz@yahoo.com ; nuruliepa@gmail.com; miera_shameera@yahoo.com</p> <p><b>Objectives:</b> To formulate and evaluate the antibacterial effect of new periodontal gel from anise seed. <b>Materials and methods:</b> Commercially available anise seed (<i>Pimpinella anisum</i>) were purchased from the local market. Anise seeds were grounded into powder using commercial Grinder. Then, the powder was added in to 70% ethanol and stored in the dark for 48 hours. The extract was filtered through Whatman No.1 filter paper. The ethanol was then let to be evaporated by using rotary evaporator. Aloe vera was mixed with anise extract as a base to form a gel. Microbiological properties of the anise extract was analysed using minimal inhibitory concentration and minimal bactericidal concentration method. The bacteria used was gram positive bacteria and gram negative bacteria. <b>Results:</b> Antimicrobial susceptibility testing (AST) showed inhibition zones for chlorhexidine and anise extract against gram positive (<i>Staphylococcus aureus</i>) but there was no zone of inhibition for gram negative (<i>Escherichia coli</i> and <i>Aggregatibacter actinomycetemcomitans</i>). Minimum inhibitory concentration (MIC) values of anise extract and chlorhexidine against <i>S. aureus</i> were 12.48 mg/ml and 0.388 mg/ml respectively. MIC values of extracted anise and chlorhexidine against <i>E. coli</i> were 12.5 mg/ml and 1.564 mg/ml respectively. MIC values of extracted anise and chlorhexidine against <i>Aggregatibacter actinomycetemcomitans</i> were found to be 25 mg/ml and 6.24 mg/ml respectively. While for the Minimum bactericidal Concentration (MBC), the value for <i>S. aureus</i> against extracted anise and chlorhexidine were found to be 12.5 mg/ml and 0.78 mg/ml. MBC values for <i>E. coli</i> against extracted anise and chlorhexidine were 25 mg/ml and 3.124 mg/ml respectively. MBC values for <i>Aggregatibacter actinomycetemcomitans</i> against extracted anise and chlorhexidine were 50 mg/ml and 12.5 mg/ml respectively. The MIC and MBC value of distilled water which act as a negative control against all the bacteria were found to be 50 mg/ml. <b>Conclusion:</b> Anise were found to have antimicrobial activity against gram positive and gram negative bacteria.</p> <p><b>Keywords:</b> Anise, antimicrobial, gel</p>	
8	<p style="text-align: center;"><b>Breastfed vs Bottledfed: A Retrospective Study on Orofacial Development in Faculty of Dentistry, UiTM</b></p>
<p style="text-align: center;">MOHD FAUZI P.N.A, MOHD FADZIL F.N, , SUKI S.Z, LIAQAT KHAN N.  Centre of Preclinical Science Studies, Faculty of Dentistry University Teknologi MARA  Email: pnatikah.fauzi@gmail.com; fatin_nabihan93@yahoo.com; zalehasuki@salam.uitm.edu.my; norhayati_liaqat@salam.uitm.edu.my</p> <p><b>Objective:</b> To investigate the relationship between the type and duration of feeding of children with their orofacial development. <b>Method:</b> A retrospective study comprised of 19 children aged 2 to 5 years old with deciduous dentition who had attended dental treatment at Pediatrics Dental Clinic, Faculty of Dentistry, UiTM. The study was based on questionnaire and data extraction from patient's folder. Selected occlusal analysis were compared among groups of children with different type and duration of feeding. Chi Square Test of SPSS version 23 was used to measure the outcome variables with independent variables of this study. <b>Results:</b> The prevalence of breastfed children and bottledfed children were 47.5% and 52.6% respectively. The prevalence of duration of breastfeeding at 2 and less months, 3 to 5 months and 6 months and more were 47.1%, 41.2% and 11.8% respectively. A significant increase in overbite was found in bottledfed group compared to breastfed group with prevalence of 42.8% and 5.3% respectively. A significant increase in overbite also showed tendencies towards increasing in the prevalence of bottle-feeding duration. There were significant association between type of feeding and increase overbite at the significant p value (<math>p = 0.02</math>) is <math>&lt; 0.05</math>. <b>Conclusion:</b> Bottle feeding seems to be a risk factor for increased overbite in the primary dentition, and increased breast feeding duration seems to have a protective effect on development of increased overbite.</p> <p><b>Keywords:</b> breastfed, bottledfed, orofacial development, children</p>	

9	<p align="center"><b>‘Attitude And Knowledge Among Medical Students Towards Medical And Dental Collaboration’</b></p>
<p align="center">KUMAR H.A</p> <p align="center">Manipal College of Dental Sciences, Mangalore☒</p> <p><b>Objectives:</b> To assess the attitude and knowledge among medical students towards collaborative practice. <b>Materials and Methods:</b> All medical students of 3rd. year, 4th year and interns of medical college were invited to participate in the questionnaire survey. Questionnaire contained 11 questions to elicit their attitude and knowledge regarding medical-dental collaboration. It was distributed among 3rd and 4<sup>th</sup> years in the lecture halls soon after their lecture and collected back duly filled questionnaire at the same time. Interns were approached in their respective department for the survey. <b>Results:</b> A total of 200 questionnaires were distributed and 185(92.5%) responses were obtained from 3rd and 4<sup>th</sup> years and interns from the medical college. Most students were unaware about possible collaboration but only 57.6% agreed to integral collaboration, whereas 47.8% medical students did not agree to attend compulsory rotation in dentistry. Further analysis showed statistically significant difference of knowledge and attitude among 3rd and 4<sup>th</sup> years and interns towards medical-dental collaboration. Also study showed females had better knowledge and attitude towards the collaboration which is statistically significant. <b>Conclusion:</b> In this study, the medical students showed more or less positive attitude and knowledge with regard to the collaboration of medical and dental practice. But the analysis within the study groups showed significant difference while comparing the attitude and knowledge among themselves, which showed that the enthusiasm about the collaboration decreased over the period of entire MBBS course. Interprofessional continuing education is a useful means of breaking down stereotypes and improving teamwork in clinical practice.</p> <p><b>Keywords:</b> Medical-dental collaboration, attitude, knowledge.</p>	
10	<p align="center"><b>Quantitative Monitoring of Microbial Contamination to Increase Awareness in Cross Infection Control during Dental Practice</b></p>
<p align="center">JAWAHIR N.A , MAHMUD N.H , SAID GULAM KHAN H.B , MOHD SARMIN N.A</p> <p align="center"><sup>1</sup>Faculty of Dentistry Universiti Teknologi MARA</p> <p align="center"><sup>2</sup>Centre of Preclinical Studies, Faculty of Dentistry Universiti Teknologi MARA</p> <p align="center">Email: nhana93@gmail.com; adiba.najwa@yahoo.com; izzahsarmin@salam.uitm.edu.my; hasnah1305@salam.uitm.edu.my</p> <p><b>Objectives:</b> To investigate quantitatively airborne microbial load in dental clinic environment during routine treatment and to evaluate the microbial contamination in dental unit water line system (DUWLs). <b>Materials &amp; methods:</b> Air was sampled by using settled plate method on the different clinical treatment—operative dentistry, periodontology, prosthodontic, paediatric and oral surgery. While, water samples were collected from DUWLs. Both samples were taken from Citrine and Zircon clinics. Following air and water sampling, chocolate blood agar and nutrient agar plates were incubated at 37°C for 48 hours. <b>Result:</b> The difference in the contamination level between different clinical environments and the rooms where there is no treatment done was statistically significant (P&lt;0.05). Overall, operative treatment has the highest bacterial contamination while oral surgery treatment has the lowest bacterial contamination. Results for water microbial contamination of DUWLs between old model DUWLs in Zircon clinic and new models DUWLs in Citrine clinic was not statistically significant (P&gt;0.05). The highest bacterial count is from air-water syringe (4 CFU/ml). <b>Conclusion:</b> Bacterial counts during operative treatment in Citrine clinic was the most highest due to the active usage of high-speed handpieces and scaler. The result from water sampling shown that DUWLs in both Citrine and Zircon clinic pass the recommendation from American Dental Association (ADA) to have maximum of 200 CFU/ml and is of drinking water quality.</p> <p><b>Keywords:</b> Microbial contamination, dental clinic, water, air environment</p>	

11	<b>Bottle-Fed vs Breast-Fed: Speech Development in Children</b>
<p style="text-align: center;">ABD RAHMAN N.I.<sup>1</sup>, ZULKIFLEE S.Z.<sup>2</sup>, AB GHANI F.<sup>3</sup></p> <p><sup>1</sup>Centre of Preclinical Studies (Basic Medical Science), Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh Campus, Jalan Hospital, 47000 Sungai Buloh, Selangor, Malaysia.  <sup>2</sup>Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh Campus, Jalan Hospital, 47000 Sungai Buloh, Selangor, Malaysia  Email: shahirahzawani@mail.com ; noorizzah7525@salam.uitm.edu.my</p> <p><b>OBJECTIVES:</b> This study investigates the relationship between bottle-fed and breast-fed children aged 4 to 5 years old and its effect on their speech development within Sungai Buloh community. <b>METHOD:</b> Data was collected among children aged 4 to 5 years old from three different kindergartens in Sungai Buloh area by randomly distributing questionnaires to their mother. The questionnaires consist of two parts which are social demographic and feeding behavior. The pronunciation of certain words of the child was assessed by using articulation screener. Data obtained was analysed by using SPSS 24.0 .<b>RESULT:</b> The outcomes of the research are: from 10 of the breastfed children, 7 of them are having normal speech development ; from 10 bottlefed children, 5 of them are having normal speech development. <b>CONCLUSION:</b> This study proves that choices of feeding behaviour affect the speech development in children. Breastfeeding is clarified to be a better choice of feeding behaviour in children.</p> <p><b>Keywords :</b> Breast-fed, Bottle-fed, Speech</p>	
12	<b>Pre-Operative Diagnostic Radiograph Interpretation on C-Shaped Canal by General Practitioner</b>
<p style="text-align: center;">ABDULLAH N.S., OTHMAN N.S., KAMARUZAMAN M.<sup>1</sup></p> <p><sup>1</sup>Centre of Restorative Dentistry Studies, Faculty of Dentistry Universiti Teknologi MARA  Email: marlena@salam.uitm.edu.my, shahiraabdullah93@gmail.com, nso.wanaothman@gmail.com</p> <p><b>Objective:</b> The aim of this study is to determine the proportion of general practitioners who can interpret pre-operative diagnostic radiographic features of C-shaped canal on molar tooth. <b>Materials and Methods:</b> Validated questionnaires were distributed electronically on the internet to random selected general practitioner from several states in Malaysia. Information on characteristics of respondent (such as gender, race, undergraduate training, current working sector, and working experience) and endodontic working experience with knowledge on c-shaped canal were collected. Descriptive statistics analyses were done to get the percentage of general practitioners who able to differentiate between C-shaped canal configuration and normal configuration. <b>Results:</b> A total of 308 of general practitioners were participated in this study. The result showed that only 32.5% of general practitioners were able to interpret pre-operative diagnostic features of C-shaped canal configuration on molar tooth. Based on Chi square test there were no significant different between gender, undergraduate training compare to general practitioners that able to differentiate between C-shaped and normal configuration. Same applied to working experience (one-way ANOVA), showed no significance different. <b>Conclusions:</b> In conclusion, only one-third of the general practitioners were able to interpret C-shaped canal configuration on pre-operative diagnostic radiograph. In order to improve the knowledge of general practitioner, undergraduate dental school education has to ensure that future dental care provider receive sufficient education especially in C-shaped canal configuration.</p> <p><b>Keywords:</b> C-shaped canal, general practitioner, pre-operative radiograph.</p>	

13	<p align="center"><b>Minimum Inhibitory Concentration (MIC) And Minimum Bactericidal Concentration (MBC) of <i>C. racemosa</i> Extract Against Oral Infections</b></p>
<p align="center">ZAHARI Z. Z, AZMI N.A, FAEZAH S, MOHD SARMIN N.I</p> <p align="center">Centre of Preclinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: firah_yayah@yahoo.com; edelshein94@gmail.com; drfaezah@gmail.com; izzahsarmin@salam.uitm.edu.my</p> <p><b>Objective:</b> This research was designed to evaluate the antibacterial properties of <i>Caulerpa racemosa</i> (<i>C. racemosa</i>) seaweed against <i>Staphylococcus aureus</i> (<i>S. aureus</i>) and <i>Streptococcus mutans</i> (<i>S. mutans</i>). <b>Materials and methods:</b> Sun-dried <i>C. racemosa</i> was ground to smaller pieces and extracted using 90% methanol. The extraction was subsequently evaporated, dried and kept at -20°C. Fresh seaweed samples were prepared at concentration of 20 mg/mL for each experiment. Minimum inhibitory concentration (MIC) was conducted using 96-well plate by serial dilution method of <i>C. racemosa</i> extract using Müller-Hinton and Brain Heart Infusion broths for <i>S. aureus</i> and <i>S. mutans</i> respectively. A positive control of 50mg/mL amoxicillin and negative controls of each bacterium were pipetted into separate wells accordingly. The plate was then incubated at 37°C for 24 hours. After the incubation period, the optical density of each well was determined using ELISA plate reader and cell viability test was done. The minimum bactericidal concentration (MBC) was then conducted by plating each well onto appropriate agars for <i>S. aureus</i> and <i>S. mutans</i> respectively and incubated for 24 hours. The MBC was determined by the absence of bacterial growth on the cultured plate. The experiment was done in triplicates for each bacterium. <b>Results:</b> The MIC and MBC of <i>C. racemosa</i> against <i>S. aureus</i> were both at concentrations of 2.5 mg/mL while for <i>S. mutans</i>, the MIC was at 10 mg/mL while the MBC was higher than the tested concentration (&gt;10 mg/mL). <b>Conclusion:</b> The <i>C. racemosa</i> extracts demonstrated antibacterial properties against <i>S. aureus</i> and <i>S. mutans</i>.</p> <p><b>Key words:</b> Bactericidal, bacteriostatic, <i>Caulerpa racemosa</i>, oral infection</p>	
14	<p align="center"><b>Validation of Medical Emergencies in Dental Practice Questionnaire (MEDPQ)</b></p>
<p align="center">BADRULHISHAM A.A, ZAIRUDIN M.A, BAHARUDIN I.H<sup>2</sup>, TENGKU JAMALUDDIN T.I.B<sup>1</sup></p> <p align="center"><sup>1</sup>Centre of Oral &amp; Maxillofacial Surgery Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Medical Biostatistician, Faculty of Dentistry, Universiti Teknologi MARA  Email: amiranuarb@gmail.com, aimanzairudin@gmail.com, izyan9129@salam.uitm.edu.my, intanbairura3124@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objective of this study is to construct and validate a questionnaire regarding the assessment of perceived confidence, attitude and knowledge of dental undergraduates in handling medical emergencies in the dental practice. <b>Methods:</b> A cross-sectional study was conducted on 82 dentists and clinical staff practising in dental setting either in university campus-based or hospital-based around Malaysia by convenience sampling. The questionnaire was developed and undergone content validation by the experts from 7 Emergency Physicians, Faculty of Medicine, UiTM and 6 Oral and Maxillofacial Surgeons, Faculty of Dentistry, UiTM and face validation by 10 graduating dental students. Questionnaire consists of 6 parts and there were 38 cognitive questions in the form of Likert scale of 1 to 5. Participation in this research required implied consent. Data were analyzed using SPSS version 23.0. Construct Validation was determined by exploratory factor analysis (EFA) while reliability was determined by Cronbach's alpha. <b>Results:</b> There are 3 questions to be validated. The Question 9 which consists of 11 items yielded a double-factor structure that demonstrated a high factor loading with a range of 0.703 to 0.983 and a good internal consistency (Cronbach's alpha = 0.918). The other two questions, Question 10 and 20, consists of single-factor structure with factor loading ranging from 0.784 to 0.934 and 0.805 to 0.892 respectively. <b>Conclusion:</b> Medical Emergencies in Dental Practice Questionnaire (MEDPQ) is valid and reliable to measure awareness and perceived confidence of dental personnel in handling medical emergencies.</p> <p><b>Keywords:</b> medical emergencies, MEDPQ, dental graduates, curriculum</p>	

15	<p align="center"><b>Accuracy of CBCT in Detection of Second Mesiobuccal Canal in Upper Molars: A Pilot Study</b></p>
<p align="center">ZULKARNAIN L, AHMAD NORDIN N.I, OTHMAN N.I</p> <p align="center">Centre of Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: luqman_993@yahoo.com; noorikhwan6559@gmail.com; ilyani05@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objective of this study is to evaluate the ability of the cone beam computed tomography (CBCT) unit to accurately identify the presence or absence of the second mesiobuccal canal (MBII) in human maxillary first molars. <b>Materials and Methods:</b> The investigation was approved by the Research Ethics Committee of Research Management Institute, Universiti Teknologi MARA. Images were sourced from Radiology Unit of Centre for Oral Radiology Studies, Faculty of Dentistry, Universiti Teknologi MARA. CBCT images of permanent maxillary molars (n=22) were selected as test subjects. The images included were of intact permanent maxillary 1st molars with complete root formation from patients; with or without presence of obturation material. Presence or absence of second mesiobuccal (MBII) canals was analyzed by 2 examiners and the data were recorded. <b>Results:</b> The MBII canals were present in 77% (n=17) of investigated upper 1st molars. All of the previously endodontically treated teeth (n=8) showed presence of MBII canals which were not obturated. Seventy-five percent (n=3) of patients showed 4 canals in both right and left upper 1st molars. <b>Conclusions:</b> The MB roots of maxillary molar teeth have more variation in their canal system than the other 2 roots. CBCT is a good diagnostic tool for detection and mapping of the MB root-canal system with the potential to improve the quality of endodontic treatment.</p> <p><b>Keywords:</b> mesiobuccal canal, cone-beam computed tomography, root canal treatment, pulp canal anatomy.</p>	
16	<p align="center"><b>“Depression: Let’s talk” -Dentists perspective</b></p>
<p><b>Background:</b> Mental health is crucial to the overall wellbeing, functioning and resilience of individuals, societies and countries. Depression has become one of the deadliest diseases in the world, with the number of people suffering from the same increasing by the day. <b>Objective:</b> Objective of this study is to find the link between psychological well being and its relation to oral health care at different age groups. <b>Materials &amp; Methods:</b> We have systematically reviewed for articles with keywords on psychological well being, oral health etc. Electronic databases (Cochrane central register of controlled trials, MEDLINE, PUBMED, ENBASE) were screened for studies from 1994-2012. Cross referencing was done to review further articles. Neither the author nor journals were blinded to reviewers. Gray literature was not screened systematically. Review process was done by 2 reviewers. <b>Results:</b> Referred around 25 articles regarding oral health and its relation to depression, out of which three were longitudinal studies, four were cross sectional studies, two were cohort studies and three were questionnaire based. <b>Conclusion:</b> It could be concluded that depression and oral health have a two-way link. Oral health leading to depression is seen more in the younger age groups while depression leading to oral health problems can be seen in the older age groups.</p> <p><b>Keywords:</b> Psychological well-being, Oral health, Elderly, Smokers,</p>	



17	<p style="text-align: center;"><b>The Effect of Organic Flaxseed Paste on the Colorimetric Parameters of Demineralised Tooth Surface</b></p>
<p style="text-align: center;">ABD RAFFUR M.A, MOHD SHAHARUDDIN I., YOUNIS L.T<sup>1</sup></p> <p style="text-align: center;"><sup>1</sup>Centre of Preclinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA Email: drluay@salam.uitm.edu.my; marleneazliaraffur@gmail.com, izzatishaharuddin@gmail.com</p> <p><b>Objective:</b> The aim of the study was to evaluate the efficacy of flaxseed paste on the surface lightness (L), chroma (C) and hue (h) of extracted teeth. <b>Materials and Methods:</b> Thirty extracted human teeth (incisors and canines) were selected and grouped into control (no treatment), flaxseed (treatment) and fluoride (positive control) groups. Teeth in control group were placed in saline throughout the experiment, whilst the teeth in flaxseed and fluoride groups were immersed in a carbonated drink for two days to induce demineralisation prior to the treatment using fluoride toothpaste and 1gm/ml of freshly prepared flaxseed paste respectively. The values L, C and h were measured at 3 stages (initial, during treatment, after treatment) using a spectrophotometer. Computerized digital imaging analyses were performed using Photoshop CS6 software (Adobe, San Jose, CA, USA). Statistical analyses were performed using repeated measures ANOVA. <b>Results:</b> At the final reading, spectrophotometric analysis showed decrease in L in both positive control and test groups. Fluoride was more effective, but not significant, in reducing the lightness (<math>L=55.69 \pm 5.38</math>, <math>p=0.070</math>) than flaxseed (<math>L=67.60 \pm 5.34</math>, <math>p=0.070</math>). The mean C value was higher in flaxseed group (<math>C=2.75 \pm 2.73</math>, <math>p=0.010</math>) compared to fluoride group (<math>C=2.78 \pm 2.73</math>, <math>p=0.010</math>). In contrast, the mean h value for flaxseed group was much lower (<math>h=121.50 \pm 10.53</math>, <math>p=0.000</math>) when compared to fluoride group (<math>h=260.02 \pm 10.53</math>, <math>p=0.000</math>). <b>Conclusion:</b> Flaxseed paste has shown to be effective in reducing L. Although fluoride toothpaste produced obvious decrease in L, organic flaxseed paste shows promising effect in alleviating surface lightness, hence enhancing tooth surface mineralisation that may be explored further in future research.</p> <p><b>Keywords:</b> Flaxseed, digital imaging analysis, lightness, mineralisation, spectrophotometer</p>	
18	<p style="text-align: center;"><b>The Antifungal Activity of Pteropodine and its Synergistic Effect with Antimicrobial Drugs Against <i>Candida Albicans</i></b></p>
<p style="text-align: center;">AFFANDI N.A.S, ABU OTHMAN N.I, MOHD ZAIN N, Faculty of Dentistry Universiti Teknologi MARA Email: mira_shahida@yahoo.com; nurizni23@yahoo.com.my; nurhayati8370@salam.uitm.edu.my</p> <p><b>Objectives:</b> Oral candidiasis or also known as oral thrush is a fungal infection usually cause by <i>Candida albicans</i>. This study was conducted to determine the antifungal activity of pteropodine extracted from Malaysian <i>Uncaria longiflora</i> var. pteropoda against <i>Candida albicans</i> and to access potential synergy between pteropodine and antimicrobial drugs (fluconazole, chlorhexidine, and nystatin). <b>Materials and Methods:</b> The antifungal activity was evaluated using minimum inhibitory concentration (MIC), minimum fungicidal concentration (MFC) and post-antifungal effect (PAFE). The PAFE was induced following 5 min exposure of <i>C. albicans</i> to 2xMIC of pteropodine and antimicrobial drugs. The synergistic effects of pteropodine in combination with nystatin, chlorhexidine, and fluconazole were evaluated using checkerboard technique. <b>Results:</b> From this study, pteropodine exhibited antifungal activity against <i>Candida albicans</i> with MIC of 300µg/mL and MFC 600µg/mL. Nystatin, fluconazole, and chlorhexidine induced mean PAFE (hours) of 2.0, 1.75, and 0.75, respectively. The brief exposure to pteropodine (2xMIC) was able to suppress the growth of <i>C. albicans</i> giving a PAFE of approximately 1.5 h. A synergistic effect was obtained for the combination of pteropodine and nystatin (FICI ≤0.5), but no interactions were detected for the combination with fluconazole and chlorhexidine. <b>Conclusions:</b> The results of this study suggest that pteropodine represent an untapped source of the compound from the local plant with an anticandida activity that could be a resource in the development of new therapeutic natural products.</p> <p><b>Key words:</b> Antifungal activity, <i>Candida albicans</i>, pteropodine, synergism</p>	

19	<p align="center"><b>Micro-Computed Tomography: To Determine The Accuracy In Working Length Determination Of Straight Canal Tooth</b></p>
<p align="center">MOHD FIKRI N.F.<sup>1</sup>, AZLAN A.N<sup>1</sup>, KAMARUZAMAN M<sup>2</sup>, KAMARUDDIN A.A<sup>3</sup>, NIK MAHMOOD N.Z<sup>3</sup></p> <p align="center"><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA, 47000 Sungai Buloh, Selangor, Malaysia.  <sup>2</sup>Centre for Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA, Selangor, Malaysia.  <sup>3</sup>Centre of Comprehensive Care Studies, Faculty of Dentistry, Universiti Teknologi MARA, Selangor, Malaysia.Email: farhanafikri@gmail.com; alyssaazlan@gmail.com</p> <p><b>Objectives:</b> The aim of this study is to evaluate and compare the accuracy of radiovisiography (RVG) and electronic apex locator (EAL) in working length (WL) determination of single rooted straight canal teeth in comparison with micro-computed tomography (-CT) imaging and to analyse the anatomy of the apical constriction. This study is expected to ascertain which is the most accurate method in calculating the working length and to determine the average range of apical constriction diameter and distance from apical constriction (AC) to apical foramen (AF).  <b>Methodology:</b> The WL of 40 single rooted straight canal teeth were measured using 3 methods; 3-dimensional micro-computed tomography reconstructions, RVG and an EAL, with -CT imaging as the baseline. AC diameter and the distance from the AC to the AF were analysed using -CT imaging. <b>Results:</b> The mean WL for MCT, RVG and EAL are 13.443mm, 13.440mm and 13.280mm respectively. There was a statistically significant difference between the EAL and the -CT methods (p = .031). There was no statistically significant difference between the RVG and the -CT methods (p = 1.000).The average diameter of the AC is 0.380.11 and the average distance from the AC to the AF is 0.60.3. <b>Conclusions:</b> RVG method is more precise in locating the 0.5mm mark from the AF. EAL cannot be used alone, and must be used in conjunction with RVG in WL determination. We suggest that the first bind file (FBF) is size #40. The 0.5mm mark can be used in confidence to determine the working length with high precision.</p> <p><b>Key words:</b> accuracy, micro-computed tomography, straight canal tooth, working length</p>	
20	<p align="center"><b>Attitude and Knowledge of First Year Dental Students toward Smoking Cessation Promotion</b></p>
<p align="center">ROSLI N.A, SAHAT N.F,ASMAON A.F<sup>1</sup></p> <p align="center"><sup>1</sup>Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry Universiti Teknologi MARA  Email: amalamalina2020@gmail.com, nurulfarhana169@gmail.com, aza_fazura5132@salam.uitm.edu.my</p> <p><b>Objectives:</b> The aims of this study are to assess the attitude and knowledge of first year dental students toward smoking cessation promotion as well as to evaluate their opinion regarding smoking cessation promotion. The students' attitude, knowledge and opinion will have significant impact on their acceptability to learn, to undergo training and involve in smoking cessation promotion activities. <b>Methods:</b> A total of eighty first year dental students from Faculty of Dentistry Universiti Teknologi Mara (UiTM) were invited to participate. However, only seventy-two of them participated. Twenty-three items questionnaire was given to the first year dental students focusing on their belief and perception towards supporting smoking cessation, knowledge on scope of dental practice related to tobacco usage, perceived barriers in smoking cessation promotion and future recommendation of students' role in smoking cessation counselling practices. <b>Results:</b> Response rate was ninety percent (72/80). A majority of ninety-eight percent first year dental students agreed that it is important to enquire about patients' general health besides the routine oral care treatment. Ninety percent of the participants are aware that advising patients on quitting smoking are part of dental surgeon's duties. <b>Conclusion:</b> On this basis, it shows that attitude and knowledge of UiTM's first year dental students appear to be positive about the extent to which smoking cessation promotion is effective in helping patients to quit. In addition, these students will be more motivated to incorporate smoking cessation promotion as part of their future clinical practice behaviours. As the mix of dental services delivered in Malaysia shifts toward a greater emphasis on preventive care, it is crucial for undergraduate students to enhance smoking cessation skill and ultimately make them more effective and competent practitioners.</p> <p><b>Keywords:</b> attitude, dental students,, knowledge, Smoking cessation promotion,</p>	

21	<p align="center"><b>Dentist’s Role in Idiopathic Thrombocytopenic Purpura – A review.</b></p>
<p align="center">Chandar S, Pralhad S,</p> <p align="center">Dept. of Periodontology, Manipal College of Dental Sciences, Mangalore.</p> <p>Idiopathic/Immune - mediated Thrombocytopenic Purpura or ITP is a common bleeding disorder characterized by abnormally low counts of mature platelets in the blood. It has been reported that there is an incidence of ITP in 6.4 children and 3.3 adults per every 100000 of the Indian population. As dental practitioners, it is of prime importance to have adequate knowledge in the diagnosis and management of bleeding episodes in patients with ITP. This paper aims to review the available literature and establish an understanding of the oral health management in patients with ITP. To summarize the role of a dentist in patients with diagnosed and undiagnosed ITP, spontaneous gingival bleeding and oral mucosal petechia as a primary manifestation of ITP. As a dentist, one must stay alert in reporting unusual bleeding incidences and advise a complete blood count as a precautionary step prior to proceeding with any invasive procedures. Patients with established ITP and undergoing treatment for the same can undergo noninvasive dental procedures with adequate hemostatic measures if their platelet count is greater than 20,000/ cu mm blood. Several other precautions and adverse effects (pertaining to the treatment of the disorder) must be kept in mind while making a diagnosis and deciding the subsequent treatment plan for the same. These key points will be further discussed in the paper as not enough stress has been made so far on improving the knowledge among dental practitioners in regards to dealing with patients with ITP.</p>	
22	<p align="center"><b>Correlation Between Dental Caries Experience, Salivary Parameters and Level of Cariogenic Bacteria Among Adults’ Patients in UiTM Sungai Buloh</b></p>
<p align="center">NIK KAMRULZAMAN N.N.A, ADNA N, MOHD SARMIN N.I<sup>1</sup>, NASRUDDIN M.F<sup>2</sup>, SAID GULAM KHAN H.B<sup>1</sup></p> <p><sup>1</sup>Centre of Preclinical Science Studies, <sup>2</sup>Centre Comprehensive Care Studies, Faculty of Dentistry Universiti Teknologi MARA</p> <p align="center">Email: athirah_kamrulzaman@yahoo.com, norfarwiahadna@gmail.com, hasnah1305@gmail.com, ddfaiz@salam.uitm.edu.my, nurul.izzahms@gmail.com</p> <p><b>Objectives:</b> The objective of this study is i) to determine the caries experience, and ii) to assess the relationship between caries experience, salivary parameters and cariogenic bacteria among adults’ patients in UiTM Sg Buloh Campus. <b>Methods:</b> DMFT were recorded based on an international standard set by World Health Organisation (WHO). Saliva sample were collected from patients and analysed for the microbial loads. Salivary parameters were determined from stimulated saliva such as salivary pH, flow rate, viscosity and buffering capacity. The hydration status were assessed prior the collection of stimulated saliva. All results were analyzed with SPSS Ver. 24 via Spearman’s Rank Correlation. Results: A total of 56 subjects which comprised of 61% females and 39% males were recruited for this study. The mean DMFT recorded was 6.8. Most of the samples had higher microbial count with 89% of them having more than 105 CFU/mL of Streptococcus mutans colony count. Statistically, there is no significant relation was found between DMFT, salivary parameters and Streptococcus mutans count among adults’ patients (p&gt;0.05). However, there is an excellent correlation between pH and buffering capacity, good correlation between pH and flow rate, and also a good correlation between salivary buffering and flow rate of the patients. <b>Conclusions:</b> In conclusion the poor correlation between DMFT, salivary parameters and level of cariogenic bacteria from adult’s patients may be due to many factors and insufficient number of sample size.</p> <p><b>Keywords:</b> Caries experience, salivary parameters, cariogenic bacteria, adult patients</p>	

**23 Influence of Clinical Experience On The Performance Of Visual Inspection In Detecting Caries Using ICDAS**

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**Objective:** This study aimed to evaluate the influence of clinical experience in caries detection using International Caries Detection and Assessment System (ICDAS). **Method:** A total of 200 examiners with various clinical experience; one group of 50 experienced clinicians and three groups of undergraduate dental students (with two years, one year and no clinical experience respectively) independently examined 45 teeth with different location and stage of caries progression. Participants undergone 90-minutes e-learning program on caries detection using ICDAS, prior to the test. The ICDAS code were recorded and compared to the national benchmark group to assess reproducibility. Intra-examiner and inter-examiner reproducibility (Cohen's kappa) were calculated using SPSS 23 Software. **Result:** The experienced clinicians (group 1) displayed the highest percentage for inter-examiners score compared to undergraduate dental students. 82% of group 1 showed good inter-examiner agreement ( $\geq 0.61$  kappa value) compared to 28%, 26%, 24% for group 2 (two years of clinical experience), group 3 (one year clinical experience) and group 4 (no clinical experience) respectively. Modified Epidemiology ICDAS code showed relatively better percentage (62 to 76%) of good agreement in all groups. **Conclusion:** ICDAS scoring system is a new system that been introduced and to be used in dental caries examination. From the data collected, we found that the experience of the examiners influence the ICDAS score in caries determination.

**Keywords:** ICDAS, caries detection, clinical experience, visual examination

**24 The Evaluation of Risks in Periodontal Patients: A Pilot Study**

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**Objectives:** This study were to identify the parameters to be used in the examination of periodontal patients and to determine the parameters into low, medium and high risk group. **Methods:** This is a pilot study. Eighteen subjects with periodontal disease were selected. Examination was carried out and parameters were recorded. The identified parameters were age, plaque score, bleeding on probing, sites and periodontal pocket depth, tooth loss, alveolar bone loss, history of smoking and diabetes mellitus, subgingival restorations, and furcation involvement. Descriptive analysis was performed to get the frequency, percentage, mean and standard deviation. **Results:** In medium risk group, the mean age of patients was  $40 \pm 14$ , plaque score  $38\% \pm 8.8$ , bleeding score  $13.1\% \pm 3.1$ , periodontal pocket depth of  $\geq 5$  mm  $7 \pm 4$ , tooth loss  $3 \pm 3$  and alveolar bone loss  $0.79 \pm 0.2$ . Meanwhile, in high risk, the mean age of patient was  $52 \pm 8$ , plaque score  $49.6\% \pm 14.6$ , bleeding score  $43.8\% \pm 21.0$ , periodontal pocket depth of  $\geq 5$  mm  $15 \pm 10$ , tooth loss  $5 \pm 6$  and alveolar bone loss  $0.9 \pm 0.3$ . In low risk, 6.3% was non diabetic, in medium 25% and high 68.6%. For smoking, 5.6% was in low risk, 22.2% in medium and 72.2% in high. **Conclusion:** These results showed identified parameters increase with the risks of getting the disease. The parameters will be incorporated in a system calculator and some can be modified or controlled for both clinician and patient to benefit with focused risk based treatment. Future study is suggested to have a bigger sample size to see the trend and the variability of the result.

**Keywords:** Periodontal risks, periodontal disease, parameters

25	<p align="center"><b>Effectiveness Of Oral Health Education Through Traditional And Mobile Application Learning Method At SRIP Saujana Utama In Selangor.</b></p>
<p align="center">MOHD ISHAR N.S<sup>1</sup>, ABDULL HALIM N<sup>1</sup> ASMAON A.F<sup>2</sup> HASAN N<sup>3</sup></p> <p align="center"><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh Campus  <sup>2</sup>Department of Comprehensive Care, Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh Campus  <sup>3</sup>Centre of Preclinical Studies (Basic Medical Science), Faculty of Dentistry, Universiti Teknologi MARA Sg. Buloh  Email: syais11@gmail.com, chuare243@gmail.com,  aza_fazura5132@salam.uitm.edu.my,nurhaslina_hasni@salam.uitm.edu.my,</p> <p><b>Objective:</b> To assess general knowledge of oral health before and after the education and also to compare the effectiveness of mobile application education with traditional (face-to-face) method in oral health education. <b>Methods:</b> Study was conducted among randomly selected 18 standard 3 students of the Sekolah Rendah Islam Integrasi Pintar Saujana Utama in Selangor. The oral health education was delivered through traditional (lecture and demonstration) and mobile application method. Quiz on general knowledge of selected topic related to oral health before and after education were used for data collection. <b>Results:</b> There is significant difference of marks between before (52.0±13.3%) and after (70.2±14.6%) using traditional method intervention with p=0.002 for topic dental science and proper brushing techniques (topic1). However, the same learning method for topic proper diet and common dental problem (topic 2) shows no significant difference (before = 36.4±14.1%; after = 37.8±17.3%). For mobile application method, marks before (topic 1 = 58.7±9.4%; topic 2 = 35.1±12.0%) and after (Topic 1 = 63.1±10.2%; topic 2 = 36.0±12.5%) the intervention for both topic shows no significant difference. <b>Conclusion:</b> As conclusion, the learning preferences in educating oral health among young learner remains through traditional method. Future work is needed to re-asses the viability of mobile application to different age of learner in making oral health education broader in this millennia.</p> <p><b>Keywords:</b> oral health education, traditional learning method, mobile application</p>	
26	<p align="center"><b>Hospital Acquired Infections : A Dental Perspective</b></p>
<p align="center">Keerthi Mariam, Joseph Kailath, Swati Pralhad ,</p> <p align="center">Department of Periodontology , Manipal College Of Dental Sciences, Mangalore</p> <p>Hospital-acquired infection, also known as a HAI or in medical literature as a nosocomial infection, is an infection whose development is favored by a hospital environment, such as one acquired by a patient during a hospital visit or one developing among hospital staff. Such infections include fungal and bacterial infections and are aggravated by the reduced resistance of individual patients. Bacteria from the oral biofilms may be aspirated into the respiratory tract to influence the initiation and progression of systemic infectious conditions such as pneumonia. Poor oral health among patients in the hospital has been identified as a source of increasing bacterial virulence of oropharyngeal secretions and subsequent development of nosocomial pneumonias. When oral cleansing and care are insufficient, progressive accumulation of dental plaque and resultant formation of biofilms can lead to degradation of overall gingival tissue health and lead to periodontal diseases. The inclusion of monitoring and decontamination of the oral cavity of hospitalized patients by qualified professionals in the protocol for the prevention of HAI is an important ally in the attempts to reduce pulmonary colonization by oral pathogens.</p>	

27	<p align="center"><b>Evaluation of Problem Based Learning In The Undergraduate Dental Curriculum: Students and Facilitators Perspective</b></p>
<p align="center">ABDUL AZIZ M.A.S, MUSTAFA M.H, NGAH N.A, MD SABRI B.A</p> <p align="center">Faculty of Dentistry, Universiti Teknologi MARA</p> <p align="center"><b>Email :</b> afnasdentaluitm@gmail.com; haziqmhm7@gmail.com ; budiaslinie@salam.uitm.edu.my ; nurul_aida@salam.uitm.edu.my</p> <p><b>Objectives:</b> To evaluate student’s perception towards Problem Based Learning (PBL) based on five scales; good teaching, appropriate assessment, clear goals and standards, generic skills, appropriate workload, emphasis on independence and overall satisfaction scales. This study also aims to evaluate the facilitator’s perception on their preparedness to handle PBL and compile suggestions for improvement. <b>Methods:</b> UiTM undergraduate dental students were asked to complete the validated Course Experience Questionnaire (CEQ), which was designed as a performance indicator of teaching effectiveness in higher education institutions. Facilitators were asked to complete a questionnaire, which included a self-evaluation of effectiveness as a PBL facilitator based on a list of statements using a six-point Likert scale and report suggestions for improvement. <b>Results:</b> A total of 311 undergraduate students, which comprised of 85.5% females and 14.5% males were recruited for this study. Overall mean score by scale was lowest for the appropriateness of workload scale at 2.76 (SD ±0.68) and highest for good teaching scale 3.55(SD ±0.58). Self evaluation of the facilitation effectiveness showed an average rating of 7.6 out of 10 suggesting strong confidence in facilitation skills. Suggestions for improvement included having the pre PBL meetings earlier to allow time for facilitators to prepare prior to PBL sessions, content expert involvement and more PBL facilitation training amongst others. <b>Conclusions:</b> In general students are satisfied with the PBL process and content but feel burdened with the amount of work involved. Facilitators are confident in their facilitation skills but are open to further improvements.</p>	
28	<p align="center"><b>Application Of Prescale Film For The Occlusal Force Of Dental Patients</b></p>
<p align="center">TASRI N.I, YUSOF S.F, <sup>1</sup>SHOJI Y</p> <p align="center"><sup>1</sup>Centre Of Oral &amp; Maxillofacial Diagnostics &amp; Medicine Studies, Faculty of Dentistry Universiti Teknologi MARA</p> <p align="center"><b>Email:</b> shoji@salam.uitm.edu.my , zatitasri@gmail.com ; ty_5758@yahoo.com.my ;</p> <p><b>Objectives:</b> This study was designed to test the Prescale film for the purpose of measuring the occlusal forces of dental patients. We hypothesized that dental patients would have lower occlusal forces as compared to the healthy subjects. <b>Methods:</b> Two groups of participants, first group comprised of 18 healthy subjects ( 9 males, 9 females) who met the exclusion criteria ( major systemic diseases that affect jaw functions, developmental anomalies, temporomandibular disorders, history of jaw injury, trauma, neoplastic diseases, periodontal pathologies and patients undergoing orthodontic treatment) while another group involved 18 patients with dental pain origin (9 males, 9 females), recruited from the UiTM Dental Centre, Universiti Teknologi MARA and the Oral Health Centre, International Medical University respectively. Their maximum occlusal forces were recorded using Prescale (Fujifilm Corp., Kuala Lumpur, Malaysia) and measured using a precalibrated scanning device (Dental Prescale/Occluzer, GC Corp., Tokyo, Japan). <b>Results:</b> The mean occlusal force of dental patients was 690.8N which was lower than the occlusal force of healthy subjects (798.3N). However, the p-value showed no significant difference between the occlusal forces of both groups. <b>Conclusions:</b> Although mean occlusal force was lower for the patients with dental pain origin, it was not significant.</p> <p><b>Keywords:</b> Dental pain, Occlusal force, Prescale film</p>	

29	<p align="center"><b>Assessment of Intraoperative Blood Loss During Minor Oral Surgery</b></p>
<p align="center">FADZLI N.A.F<sup>1</sup>,AZIS A.F<sup>1</sup>,KHAIRUDDIN N.A.A<sup>1</sup>, ZAKARIAH M.F<sup>2</sup>,BERAHIM N<sup>3</sup></p> <p align="center"><sup>1</sup>Bachelor of Dental Surgery Student, Faculty of Dentistry  <sup>2</sup>Anaesthesiology Department, Faculty of Medicine, University Teknologi MARA  <sup>3</sup>Centre of Oral Maxillofacial Surgery, Faculty of Dentistry, University Teknologi MARA  Email: nazerberahim@salam.uitm.edu.my,anys_anisah@yahoo.com</p> <p><b>Objectives:</b> To assess intraoperative blood loss during minor oral surgery in relation to duration of procedure and patients' vital signs. <b>Materials and Methods:</b> 16 patients within age 18 to 50 which fulfilled the research's criteria underwent surgical removal of impacted mandibular third molar performed by the same oral surgeon. Vital signs (blood pressure, pulse rate and oxygen saturation rate) are recorded pre and postoperatively. Intraoperative blood loss is calculated by subtraction of saline irrigation from the collected contents of aspirator jar. <b>Results:</b> The simple linear regression test revealed a significant linear relationship between intraoperative blood loss and procedural duration (<math>p &lt; 0.032</math>). There is no significant linear relationship between intraoperative blood loss and vital signs (<math>p &gt; 0.085</math>). <b>Conclusions:</b> There is a significant relationship between intraoperative blood loss and procedural duration; while not significant in relation to vital signs.</p> <p><b>Keywords:</b> blood loss, duration, impacted third molar, minor oral surgery, vital signs</p>	
30	<p align="center"><b>Clinical audits of Stainless Steel Crown done by UiTM Undergraduate Students</b></p>
<p align="center">N.I. ABD HALIM<sup>1</sup>, M.A.S. MUJI<sup>1</sup>, R. ABDUL HALIM<sup>2</sup>, S.H. HAMZAH<sup>2</sup></p> <p align="center"><sup>1</sup>Bachelor of Dental Surgery Student, Faculty of Dentistry Universiti Teknologi MARA  <sup>2</sup>Centre of Paediatric Dentistry and Orthodontics Studies, Faculty of Dentistry Universiti Teknologi MARA  Email : dr_rohaida@salam.uitm.edu.my, amirulsyafiq17@gmail.com;</p> <p><b>Objectives:</b> To assess the stainless steel crown on primary molars done by the undergraduate dental students at the Paediatric Dentistry Clinic, Universiti Teknologi MARA (UiTM). <b>Materials and Methods:</b> 165 paediatric patients aged 3-to-12 years old with at least one primary molar restored with stainless steel crown were identified from Paediatric Dentistry from 2007 to 2015 database. Their records were retrieved and reviewed, and further divided into two groups; (i) conventional technique and, (ii) Hall's technique. <b>Results:</b> 131 SSC were placed using conventional technique and 13 SSC were placed using Hall's technique. 21 records were incomplete or missing. The most commonly used size are D5, D6 and E4 with frequency of 18, 18, 19 respectively. 114 of SSC were cemented using glass ionomer luting cement and 30 of SSC were cemented using zinc polycarboxylate cement. The mean age of patient receiving SSC restoration is 7 years old. It is reported that most of the crown were still intact and in place based on the last follow up period. <b>Conclusions:</b> This current study found that the conventional technique is preferred over Hall's technique, but Hall's technique is slowly gaining its popularity. GIC was found to be the cement of choice in cementing the crowns.</p> <p><b>Keywords:</b> Carious teeth; Hall's technique; Primary molar; Stainless steel crown;</p>	

**31 Efficacy of Nigella Saliva on Eradication of *Candida albicans* on Acrylic Denture Base**

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**Objective:** The objective of this study is to identify the eradication effect of Nigella sativa on removal of C.albicans from denture base polymer. **Materials and Methods:** Thirty5 sterilized heat cured acrylic denture polymers were divided into three groups. Group A was the negative control group where the acrylic resin plate will be immerse in distilled water. Group B was the untreated group (positive control), was coated with Candida albicans for 24 hours. Group C was the treatment group which had the same procedure as group B, followed by immersion with Nigella sativa seeds extract for 1 hour. **Results:** The One-way ANOVA test has revealed that there were eradication effect of Nigella sativa showed in Group C, where there was a significant difference in CFU values when compared with positive control group (Group B), with mean of CFU values  $p < 0.01$ . The mean of colony forming unit when exposed to Nigella sativa in Group C was significantly reduced compared to Group B. While the mean number of colony forming in group B was significantly increased when compare to negative control group (Group A), with mean of CFU values  $p < 0.01$ . However, the results shows there were no significant different between the Group A and Group C, with  $p > 0.01$ . Further analysis using post-hoc Dunnet T3 test also shows the same results, by comparing the mean growth scores of each group. **Conclusions:** Nigella sativa has eradication effect in removing Candida albicans on acrylic denture base.

**Key words:** acrylic denture base, Candida albicans, Nigella sativa,

**32 Patient's Discomfort Associated with Fixed Orthodontic Appliances**

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**Objectives:** To determine the prevalence of discomfort and the factors causing discomfort during fixed orthodontic treatment. **Materials and methods:** 200 patients of fixed orthodontic patients in UiTM clinics who were willing to participate and able to give consent in the research were selected. The participants were randomly selected for this research in the odd number sequence from the population size of 740 individuals. Data was collected by means of Oral Impact on Daily Performance questionnaire to assess discomfort intensity and bio-psychosocial variables. Statistical analysis used was descriptive statistic and chi-square. **Results:** The prevalence of discomfort in patients with fixed orthodontic appliances was 92% (mean: 0.92, standard deviation: 0.27) which covers 184 of the samples. Eating food (68%), speaking clearly (37%), cleaning teeth (64%), sleeping (21%), and smiling and laughing showing teeth without embarrassment (21%) remained independently associated with a greater prevalence of discomfort ( $P \leq 0.05$ ). **Conclusions:** Patient who is wearing fixed orthodontics appliances has a high prevalence of discomfort. The factors associated with the discomfort included eating food, speaking clearly, cleaning teeth, sleeping, and smiling and laughing showing teeth without embarrassment.

**Keywords:** Appliances, Discomfort, Fixed Orthodontic, Oral Impact on Daily Performance



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Tooth loss is a very common problem occurring in all age groups. No longer has considered exotic or experimental, Implant dentistry now considered mainstream dentistry in all parts of the world. In fact, not giving implants while replacing missing tooth/teeth may sometimes be considered substandard. The history of implants spans not only decades, but millennia. Although research related to implant designs, techniques, and biomaterials has increased exponentially in the past few years, still a lot of efforts are needed in this field with respect to better biomaterials, surface modification, and functionalization of surfaces to improve the long term effects of dental implants. This paper provides a brief insight into dental implants along with its brief history and evolution including the pioneers in implant dentistry. It focuses on the current trends being used in implants, the biomaterials that have been modified during the course of its evolution, the implant designs including surface characteristics being incorporated into implants to improve its longevity. Finally, it describes briefly the evolving trends and future prospects of dental implants including techniques like Resonance Frequency Analysis, CAD/CAM, nanotechnology based implants to name a few, and advent of materials like Functionally graded heterogeneous composites.

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**Objectives:** The aims of this study are 1) to determine whether smartphone cameras were comparable to the digital cameras in terms of tooth shading selection and 2) to compare the conventional method of tooth shade selection with a digital method of taking tooth shade selection. **Methods:** A total sample of Year 4 students (n=45) of Faculty of Dentistry, UiTM were selected for this study. All participants were required to answer a questionnaire consisting of images of the 3D-Vita Classic shade tabs captured by Nikon DSLR-D750, iPhone 6 (8MP) and Xiaomi Mi4i (12MP) and original visual shade guides. Participants were required to match the images of a tooth shown on the monitor screen with the shade guide provided. Several questions will also include a tooth with a known shade guide and participants were required to match the shade via visual approach to the shade guide given. All results were analysed via SPSS Ver. 24 through repeated measure ANOVA. **Results:** The mean comparison of images from the shade tab investigated were summarised as: Visual Approach (2.0222) > Xiaomi Mi4i (1.1333) > Nikon DSLR (1.0889) > iPhone 6 (0.6000). There were all significantly different (p<0.05) from each other except for the mean result produced between Nikon DSLR versus Xiaomi Mi4i (p>0.05). **Conclusion:** The images produced by Nikon DSLR, Xiaomi Mi4i and iPhone 6 were less accurate when compared to the conventional visual approach of tooth shade selection. However, images produced by Xiaomi Mi4i were comparable to the images produced by the Nikon DSLR.

**Keywords:** shade matching, smartphones, Tooth shade,

35	<p align="center"><b>Aesthetic Preference of Facial Profile on Multiracial Samples of West Peninsular Malaysian Population</b></p>
<p align="center">ADNAN N.S, NORZIHAN W.H.A, , ABDUL GHANI S.H<sup>1</sup>, NORMAN N.H<sup>2</sup></p> <p align="center"><sup>1</sup>Centre of Studies For Orthodontics, Faculty of Dentistry Universiti Malaya  <sup>2</sup>Centre of Studies For Paediatric Dentistry &amp; Orthodontics, Faculty of Dentistry Universiti Teknologi MARA  <b>Email:</b> norainanorman@gmail.com; wardahannan15@gmail.com; suhailadental@gmail.com</p> <p><b>Objectives:</b> To determine laypersons aesthetic preference towards facial profiles using photos and silhouettes of multiracial samples in Malaysia. <b>Materials and Methods:</b> 4 male and 4 female patients from Orthodontic Department, UiTM with different ethnic backgrounds; Malay, Chinese, Indian and Pan Asian were selected and their facial profiles photos were modified using Dolphin image-manipulation in which the lip position is altered from -6mm, -3mm, 0mm, +3mm and +6mm; giving rise to 5 modified photos and 5 corresponding silhouettes. A total of 80 images were arranged accordingly scored by 378 respondents; 211 Malays, 104 Chinese, 49 Indians and 14 other races. They were made to select the most, least attractive and unacceptable facial profiles. <b>Results:</b> The most attractive facial profile photo scored by Malays was a male Pan Asian straight profile with 18.9%, and Chinese scored the male Pan Asian mild retrusive facial profile with 14.4%. Indians (26.5%) and other scorers (50%) preferred the female Pan Asian straight profile. The least attractive facial profile scored by all was the male Pan Asian with severe bimaxillary profile. Meanwhile for silhouettes, the most attractive profile scored by all was the female Indian mild retrusive profile and they perceived bimaxillary facial profile as the least attractive. <b>Conclusions:</b> Majority showed same inclination towards Pan Asian straight to mild retrusive profile. Similarly all four races showed same preference towards least attractive profile being the severe bimaxillary profile. Compared to silhouettes, photos appear to be more accurate in representing their aesthetic preference.</p> <p><b>Keywords:</b> facial profile, aesthetic preferences, silhouette, photos</p>	
36	<p align="center"><b>Bottle-Fed Versus Breastfed: Bite Force Measurement and Masticatory Muscle Strength</b></p>
<p align="center">Hamdan N.H, Anuar N.I, Ali Khan N.L, Suki S.Z, Abd Rahman N.I</p> <p align="center">Centre of Preclinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Sungai Buloh, Selangor, Malaysia.  Email:norhaziqah.hamdan@yahoo.com;ida_pieces93@yahoo.com;norhayati_liaqat@salam.uitm.edu.my;zalehasuki@salam.uitm.edu.my;noorizzah7525@salam.uitm.edu.my</p> <p><b>Objectives:</b> This study aims to investigate the differences between bottle-fed and breastfed children in term of bite force measurement and masticatory muscle strength in Sg. Buloh community. <b>Materials and Methods:</b> This is a cohort retrospective study involving 20 preschool children aged 5 years old. Questionnaire was randomly distributed. Selected children were divided into two groups; bottle-fed and breastfed based on the total score calculation obtained from the questionnaire assessment. Evaluation on bite force measurement and masticatory muscle strength was conducted following published method with some modification. Data analyzed using SPSS 24.0. <b>Results:</b> 5 and 6 out of 10 were female children in bottle-fed and breastfed groups, respectively were recruited for this study. For bite force measurement, the mean bite force percentage was 59.5% (±22.11) in maximally bottle-fed group and 55.83% (± 28.39) in maximally breastfed group. Evaluation through satisfactory level for bite force measurement (≥70% depth of bite: Satisfactory; &lt;69% depth of bite: Unsatisfactory), shows almost similar pattern of bite force among the children in both groups. On the other hand, for the masticatory muscle strength, the mean total score for masticatory muscle function was 9.97 (±1.42) and 10.27 (±1.65) in maximally bottle-fed and maximally breastfed groups, respectively. However, both findings were insignificant. Visual observation on the masticatory function parameters revealed that 3 out of 10 children in breastfeeding group were uncertain in hard foodstuff. <b>Conclusions:</b> Bite force measurement and masticatory muscle strength in children varies depending on several factors and may not be associated with previous bottle-feeding or breastfeeding history.</p> <p><b>Keywords:</b> Bite force measurement, Breastfed, Bottle-fed, Masticatory muscle strength, Preschool children</p>	

37	<p align="center"><b>Management of Medical Emergencies Amongst Malaysian Dentists: A Psychometric Analysis</b></p>
<p align="center">HAZALI M<sup>1</sup>, NISSANTO N<sup>1</sup>, MD SABRI B.A.<sup>2</sup>, NGAH N.A.<sup>3</sup>,  <sup>1</sup>Bachelor of Dental Surgery Student, Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>3</sup>Centre of Oral and Maxillofacial Surgery Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: munirahazali@gmail.com; nurul_aida@salam.uitm.edu.my</p> <p><b>Objectives:</b> The purpose of this study is to assess prevalence of awareness and preparedness in management of medical emergencies in the dental clinic amongst government and private dentists in Malaysia. <b>Methods:</b> A cross-sectional study was carried out using a validated questionnaire adapted from Varma LS et al (2015) and Al-Sebaei MO et al (2015) amongst government and private dentist practicing in Klang Valley. The questionnaire consisted of; demographic details, preparedness of dentists to manage medical emergencies, the availability of equipment to aid in medical emergencies, and Basic Life Support (BLS) training experience. Statistical analysis was done using SPSS 24 software. <b>Results:</b> A total of 113 questionnaires were obtained in this study which comprised of 67.3% from government, and 32.7% from private dental officers. Prevalence of awareness and preparedness amongst dental officers was 11.5%. Statistically significant difference was found between dentists' age, gender, incomes per months, sectors of practicing, distance of their clinics from accident and emergency department and awareness in management of medical emergencies. <b>Conclusions:</b> Our study found that there is significant lack of awareness among dental officers in Malaysia. Hence, we propose the need of comprehensive guidelines or standard operation procedure (SOP) in Malaysia with regards to management of medical emergencies. Compulsory implementation of BLS training for final year dental students as well as a need to mandate government and private dental officers in Malaysia to take BLS course on regular basis in order to prevent tragic consequences and minimizing morbidity and mortality in dental clinic.</p> <p><b>Keywords:</b> basic life support, dentists' preparedness, medical emergencies in dental practice, medical emergencies management</p>	
38	<p align="center"><b>An Evaluation of Decision Aid in Shared Decision Making Process regarding Fixed Prosthodontic Treatment Options</b></p>
<p align="center">ADZIM SNS<sup>1</sup>, AKBAR MF<sup>1</sup>, AB GHANI SM<sup>2</sup>, MUSTAZA TA<sup>2</sup>, LIM TW<sup>2</sup>  <sup>1</sup>Bachelor of Dental Surgery Student, Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Centre for Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: shazwani.adzim@yahoo.com; maizatinftrah@yahoo.com; limtongwah@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objectives of this study were to develop a novel Decision Aid (DA) – mobile app for chairside use to assist clinicians and patients in the shared decision making (SDM) process and to compare the patients' dental knowledge, satisfaction and anxiety level by using DA and standard care (SC). <b>Materials and methods:</b> The DA was developed by mobile app designer and researchers. The final DA provided an evidence-based prognoses, benefits, risks and costs for various treatment options based on review by a group of prosthodontists. Thirty-four (34) participants were selected to participate in this study. All subjects were randomly assigned into two groups which were SC (n=17) and DA (n=17). A patient questionnaire regarding knowledge, satisfaction and anxiety was answered by the subjects after the treatment options discussion in the student clinic. <b>Results:</b> There were only 26 questionnaires completed and useable for the study. Subjects in the DA group (n=13) demonstrated a statistically significant increase in knowledge (chi-square test; p&lt;0.05) compared to the SC group (n=13). However, there was no significant difference between two groups with regards to their anxiety and satisfaction level (Mann-Whitney U-test; p&gt;0.05). <b>Conclusions:</b> This study reported the use of novel mobile app as a DA may play an important role to facilitate SDM process in clinical dentistry. The result has reported a significant improvement in patient knowledge of prosthodontic treatment options.</p> <p><b>Keywords:</b> decision aid, treatment options, mobile app</p>	

39	<p align="center"><b>Awareness and Opinion of Dentist Towards the Shortened Dental Arch Concept in Faculty of Dentistry, Universiti Teknologi MARA</b></p>
<p align="center">SALLEH M. F., AHMAD A.Q., AHMAD M.S.<sup>1</sup>, ISHAK H.<sup>2</sup>, ABDUL HAMID N. F.<sup>2</sup></p> <p align="center"><sup>1</sup>Centre of Comprehensive Care, Faculty of Dentistry Universiti Teknologi MARA  <sup>2</sup>Centre of Restorative Studies, Faculty of Dentistry Universiti Teknologi MARA  <b>Email:</b> aussalleh94@gmail.com; amirulahmad94@gmail.com; drsuryalis@salam.uitm.edu.my; hayati66@salam.uitm.edu.my; faharina@salam.uitm.edu.my;</p> <p><b>Objectives :</b> The Shortened Dental Arch Concept (SDAC), proposed as a strategy to prevent prosthodontics over-treatment, is defined as a specific type of dentition with an intact anterior region and a reduction in the occluding pairs of posterior teeth (Käyser, 1981). While this concept has been accepted worldwide, little is known about such a situation in Malaysia. This study was undertaken to determine the attitudes, awareness and opinion of dentists working at the Faculty of Dentistry, Universiti Teknologi MARA Malaysia (UiTM) towards the SDAC. <b>Methods :</b> All dentists (n=71) working at the Faculty of Dentistry, UiTM were invited to participate in a paper-based questionnaire survey to assess their attitudes, awareness and opinion towards the SDAC. <b>Results:</b> The response rate was 59% (n=42). Overall, 85.7% of respondents were aware of the Kayser's SDAC. A majority of them (61.1%) learnt about it through undergraduate studies. Only some respondents reported patients' dissatisfaction in chewing (29.4%), appearance (8.8%) and comfort (6.3%) following application of the concept. Mostly disagreed that missing molar teeth should be replaced in all patients (52.4%), and supported the application of SDA concept in clinical practice (88.1%), although they would choose to replace missing molars for older patients in order to provide posterior support (90.5%), prevent anterior wear (52.4) and improve masticatory function (83.3%). <b>Conclusion:</b> Respondents' awareness and support for the SDAC suggested its acceptance as a possible strategy in patient care.</p> <p><b>Keywords:</b> Dentist awareness, Shortened Dental Arch, Oral function</p>	
40	<p align="center"><b>The Clinical Status of First Permanent Molar in Children aged of 7 to 10 years old in Sekolah Rendah Agama Sg Buloh</b></p>
<p align="center">MISNI M.K1, NIK IBRAHIM N.N.A.F<sup>1</sup>, ABU BAKAR N.A.<sup>2</sup>, BAKRI N.N<sup>3</sup></p> <p align="center"><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Centre of Paediatric Dentistry and Orthodontics Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>3</sup>Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry Universiti Teknologi MARA  <b>Email:</b> khairiemisni16@gmail.com; nikanuradilafilza@yahoo.com; norashikin8234@salam.uitm.edu.my</p> <p><b>Objectives:</b> The aims of this study are to determine the caries status and prevalence of developmental enamel defect (DDE) of first permanent molar in children aged of 7-10 in Sekolah Rendah Agama Sungai Buloh. <b>Materials and Method:</b> A total of 212 students of Sekolah Rendah Agama Sungai Buloh age between 7 to 10 years old were randomly selected in this study. A full intraoral examination were conducted and recorded using ICDAS classification and modified DDE index primarily on the first permanent molar. Clinical photographs were taken using Digital single lens reflex (DSLR) if there is presence of enamel defects to confirm the diagnosis. Statistical analysis done using SPSS 24. <b>Results:</b> The caries prevalence of first permanent molar in children aged 7 to 10 years old was 8.99% and the caries prevalence for each age group were 4.2%, 6.5%, 15.9%, 11.1% respectively. The prevalence of DDE of the first permanent molar was 32.2% and the prevalence for each age group were 31.8%, 8.7%, 25.0%, 31.5% respectively and 25.9% of them are affected by caries. <b>Conclusions:</b> A high prevalence of DDE in first permanent molar predisposes the tooth to high caries risk. Early detection and intervention is crucial in maintaining the integrity of the tooth structures.</p> <p><b>Keywords:</b> developmental enamel defect, first permanent molar, DDE index</p>	

41	<p align="center"><b>Relationship between Students Sleepiness Scale and Exam Result In UiTM Dental Students a Pilot Study</b></p>
<p align="center">MOHAMMAD M.S.F.<sup>1</sup>, NASRUDDIN M.F.<sup>2</sup>, HIDAYAT M.F.H.<sup>3</sup>, KAMARUDDIN N.A.<sup>4</sup>, MUSTAFA F.L.<sup>4</sup>,  <sup>1</sup>Centre of Oral &amp; Maxillofacial Surgery Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Centre of Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>3</sup>Centre of Periodontology Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>4</sup>Faculty of Dentistry, Universiti Teknologi MARA  Email : nuraziilahk@gmail.com ; f.liyana94@gmail.com ; drshawal81@gmail.com ; drfaiz@salam.uitm.edu.my ; faizalhafez@salam.uitm.edu.my</p> <p>Excessive daytime sleepiness (EDS) has been associated with a busy lifestyle. It is commonly observed that many dental students were napping during afternoon lecture. We believed that there is a possibility that the students may have EDS due to packed schedules during the day. Therefore, the aims of our study are, firstly, to determine the relationship between daytime sleepiness problem and academic performance. Secondly, to compare Epworth Sleepiness Scale between the first week of semester (ESS1) and the last week of the semester (ESS2) of the 4th &amp; 5th year UiTM dental students. Lastly, to determine the effect of sleeping pattern to their exam results. The ESS and sleeping pattern questionnaire was applied to 107 dental students, at the early semester (September 2016) and during study week (at the end of January 2017). In order to measure the students' academic achievement we analysed the marks obtained by a student in Paediatrics and Periodontics semester exam by double blinded method with our supervisor. For year 4 and year 5 students, there was no significant difference between ESS1 and ESS2 with significant difference of 0.55. Other than that, sleep durations for them during early semester and study week was 6 hours per day. In conclusion, semester exam does not affect a student daytime sleepiness and their sleeping pattern.</p> <p><b>Keywords :</b> Epworth Sleepiness Scale, daytime sleepiness, dental students, academic performance</p>	
42	<p align="center"><b>To Save Or Extract a Tooth: The Socioeconomic And Demographic Factors Associated With Treatment Preferences.</b></p>
<p align="center">JEFRI Z.<sup>1</sup>, JAMALUDIN F.<sup>1</sup>, ISHAK H.<sup>2</sup>, ABDUL HAMID N. F.<sup>2</sup>, AHMAD M.S.<sup>3</sup></p> <p align="center"><sup>1</sup>Faculty of Dentistry Universiti Teknologi MARA  <sup>2</sup>Centre for Restorative Studies, Faculty of Dentistry Universiti Teknologi MARA  <sup>3</sup>Centre for Comprehensive Care, Faculty of Dentistry, University Teknologi MARA  Email: hayati66@salam.uitm.edu.my, faharina@salam.uitm.edu.my, drsuryalis@salam.uitm.edu.my, zairisafuan@yahoo.com, farizal.bds@gmail.com</p> <p><b>Objectives:</b> To evaluate the socioeconomic and demographic factors associated with patient's treatment preferences and to assess their willingness to pay for dental treatment at the Faculty of Dentistry, Universiti Teknologi MARA. <b>Methods:</b> Patients who had undergone prosthodontic treatment with the former final year dental students (n=50) were invited to participate in the study (one patient per student). The patients were taken through a series of questions which included a scenario that involved in making a decision on their preferred choice of dental treatment. Quantitative data was analysed using SPSS (Chi-square regression analysis, p &lt;0.05). <b>Results:</b> The response rate was 76% (n=38). Overall, 52.6% selected root canal treatment, whereas 47.4% opted for extraction. All patients from 18-29 age group chose to save their tooth, while all patients aged 60 years and above chose extraction (p=0.005). In terms of gender, income, education level and occupation, there was no significant relationship observed in the choice of preferred dental treatment. The preferred treatment for a missing tooth was leaving a gap (21.1%), as well as construction of removable partial denture (21.1%) and fixed bridge (5.3%). Most patients noted that they were willing to pay for treatment undertaken by dental students (86.6%), compared to that provided by general dental practitioners (7.9%) and specialists (5.3%). <b>Conclusion:</b> The choice of treatment among different age groups differs significantly. Nevertheless, most patients, regardless of socioeconomic background, demonstrated willingness to pay for dental treatment and agreed with minimal fee imposed for procedures performed by dental students.</p> <p><b>Keywords:</b> dentistry, socioeconomic, willingness to pay</p>	

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### Comparison of Breath Carbon Monoxide Level In E-Cigarette Users, Conventional Cigarette Users, Both Users And Non-Smokers.

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#### Abstract

Carbon monoxide play a major role in cigarette smoke-induced cardiovascular diseases. **Objectives:** The aim of this study was to assess and compare the breath carbon monoxide levels of E-cigarettes users, conventional cigarettes users, both users and non-smoker. The hypothesis of this study is that E-cigarette does not produce carbon monoxide. **Materials and methods:** In this cross sectional study, a total of 60 participants among patients attending the Faculty of Dentistry, University Technology MARA (UiTM) were eligible with 15 samples for each category studied. Participants were given a set of structured questionnaires and their breath of carbon monoxide level were measured by using piCO+ Smokerlyzer® with their consent. **Results:** A total of 50 samples were recruited in this study. The category of smokers were conventional smoker, E-cigarettes user, both users and non-smoker. The mean reading breath carbon monoxide level are 12.87, 5.60, 14.90 and 1.00 respectively. This shows individuals who smoke conventional cigarettes and E-cigarettes shows the highest carbon monoxide level. **Conclusions:** There is correlation between the use of E-cigarette and the increment of breath of carbon monoxide level. The higher level of breath carbon monoxide shows high level of carbon monoxide content in conventional cigarettes and E-cigarette.

**Keywords:** E-cigarettes, conventional cigarettes, non-smokers, carbon monoxide

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### Edutainment Flashcards In Undergraduate Teaching And Its Effectiveness

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**Objectives:** There is no comprehensively utilized gold standard with respect to ethics teaching in the health sciences. Adding entertainment with education, making it edutainment, includes flashcards which are pieces of set of paper that have written information or pictures which are convenient, handy and useful. This presentation evaluates use of educative flashcards designed for undergraduate students to learn Bioethics and its application. **Materials and methods:** An experimental double blinded study was conducted to use educative flashcards on Bioethics and its application, designed for clinical undergraduate students. Participants were divided into 3 groups, Group 1 regular teaching, Group 2 only flashcards were given and Group 3 both regular teaching and flashcards were given. After a week, semi-constructed pretested questionnaire was used to evaluate their knowledge. Data was collected, coded and statistically analyzed. **Results:** Among the participants, 43.3%, 13.3% and 30% of them were from Group 1, 2 and 3 respectively thought professionalism was same as bioethics ( $p < 0.05$ ,  $X^2 = 6.599$ ). 86.7%, 96.7% and 100% of them from Group 1, 2 and 3 respectively, knew it was important to highlight the cost involved before taking consent for any procedure ( $p > 0.05$  and  $X^2 = 5.506$ ). Only, 53.3%, 53.3% and 86.7% of them from Group 1, 2 and 3 respectively knew that there is an Ethical Committee in this institution. **Conclusion:** Edutainment flash cards and combination of regular teaching & Edutainment Flash cards was effective in understanding the Bioethics compared to only regular teaching, where majority of the answers were not right.

**Keywords:** Bioethics, Edutainment cards, Regular Teaching Method

45	<p align="center"><b>Comparison of Antiplaque, Antigingivitis and Anti-<i>Streptococcus mutans</i> Effectiveness of Probiotic and Chlorhexidine Mouth Rinses – A Randomised, Controlled Trial.</b></p>
<p align="center"><b>Shah S.S</b></p> <p align="center">Manipal College of Dental Sciences, Mangalore</p> <p><b>MATERIALS AND METHODOLOGY:</b> The sample was divided into 3 different groups of subjects in a randomised order. Groups A and B received freshly prepared probiotic and chlorhexidine intervention respectively whereas group C was the control group which received no intervention. Plaque index, gingival index and Streptococcal colony counts were assessed once every week for 4 weeks. <b>RESULTS:</b> The results demonstrated that the probiotic and chlorhexidine groups had significantly decreased plaque indices as compared with the control group at the end of the intervention period. Greater improvement was seen in the gingival indices compared to plaque indices with probiotic group showing better results than chlorhexidine group. The study reinforced that at the end of intervention period, there was significant reduction in the <i>Streptococcus mutans</i> count in the probiotic and chlorhexidine groups as compared with the control group. It was also observed that there was no statistically significant difference in the <i>Streptococcus mutans</i> count in the probiotic and chlorhexidine groups at the end of intervention period. <b>CONCLUSION:</b> The comparison of probiotics to chlorhexidine has proven that probiotics are as effective as chlorhexidine as an adjunctive chemical plaque control agent. Further long- term studies are recommended to determine its efficacy for prevention of demineralization and development of caries during orthodontic treatment.</p> <p><b>KEYWORDS:</b> comparison, antiplaque, antigingivitis, anti-streptococcus mutans, probiotic, chlorhexidine, mouth rinses.</p>	
46	<p align="center"><b>A Retrospective Study of Periodontal Referral Pattern in Periodontal Specialist Clinic in Faculty of Dentistry, UiTM.</b></p>
<p align="center">NOOR KAMARUZAMAN N.A1, MOHD JEFFRI N.S1 , NOOR E.1.</p> <p align="center">1Centre of Periodontology Study, Faculty of Dentistry, MARA University of Technology. Email: aziekamaruzaman@gmail.com;</p> <p><b>Introduction:</b> Referral of periodontal patients requires development of complex set of decisions making. Evidence shows periodontal diseases has been a significant risk factor for numerous systemic condition. It is critical that dentists comprehensively manage patients with periodontal disease. <b>Objective:</b> To study the patterns of periodontal referrals to the periodontal specialist clinic in Faculty of Dentistry, UiTM particularly in year of 2011 and 2016. <b>Materials &amp; methods:</b> A retrospective statistical analysis was conducted on a total of 162 patients. The following information was obtained from the record: gender, age, diagnosis and treatment needed and source of referral. From data available, pattern of referral was observed and descriptive data was analysed using frequency distribution by SPSS. <b>Results:</b> Data of a total of 162 patients were collected from database available. Descriptive analysis shows that the number of patient referred increased in year 2016 by 62% as compared to year 2011. In addition, the trend for treatment needed also changes. <b>Conclusions:</b> The data obtained from this study will be beneficial in the future for the formulation of referral protocol for case referral to periodontal specialist clinic. The characteristics obtained from patient referred in 2011 and 2016 showing that there are lacking in information regarding the case that was referred. The formulation of referral protocol will aid the general practitioners to refer periodontal cases for comprehensive management.</p> <p><b>Keywords:</b> Periodontal referrals, Referral protocols, periodontal specialist clinic.</p>	

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### In vitro- Investigation of Antimicrobial Effect of Biosurfactant on Orthodontic Appliance

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**Objective:** This in-vitro study focusing on the studying of the effectiveness of biosurfactant as antibacterial and antibio-film formation agent on the orthodontic bracket. **Materials and methods:** Thirty bovine incisors teeth were selected and bonded with orthodontic brackets of central incisor (3M Unitek Gemini), divided into experimental, positive and negative control groups (biosurfactant, chlorhexidine, and distilled water). Groups were immersed in 270µL tryptic soy broth media and 30µL of the standardized *Streptococcus mutans* cells in a 12-well tissue culture plate and allowed to adhere on bracket's surface. A 150µL of biosurfactants, 0.12% chlorhexidine and distilled water were dissolved in all groups and incubated for 24 hours at 37°C. Then, 100µL of *Streptococcus mutans* cells suspension was used to perform 105-1010 dilution which then spotted on tryptic soy agar plates that are performed in duplicate and incubated for 24 hours at 37°C. The antimicrobial activity assessed through CFU counts. SEM under different magnification used to assess the bacterial morphology and statistical analysis performed. **Results:** One-way ANOVA showed that biosurfactant is statistically significant at the concentration of 1010 (P=0.003). Significantly fewer CFU counts of *Streptococcus mutans* were observed in the biosurfactant group (concentration 1010). Post Hoc Test showed the antimicrobial effect of biosurfactant and chlorhexidine are similar (P>0.05). SEM observation showed obvious morphological changes on *Streptococcus mutans* with biosurfactant. **Conclusions:** Biosurfactant has a high antibacterial effect on *Streptococcus mutans*, giving credence as an alternative antibacterial agent with least side effects compare to chlorhexidine.

**Keywords:** Biosurfactant; antibacterial agent; orthodontic brackets; *streptococcus mutans*; chlorhexidine

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### The Prevalence of Minimal Invasive Dentistry (MID) Approaches in Clinical Practices by UiTM Dental Students.

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**Objective:** Development in dental materials mainly in adhesion has changed dental treatment to Minimally Invasive Dentistry (MID) approach. MID highly utilized adhesive procedure and preserved sound tooth structure. It has not only gained its popularity in direct restorations but also in indirect prosthodontics treatment. This study was conducted to assess the prevalence of MID-approach treatment provided in UiTM. **Methodology:** 108 undergraduate clinical logbooks from cohorts 2009/2014, 2010/2015 and 2011/2016 were collected. The number of direct restorations; amalgam restorations (AR) and composite restorations (CR), single-tooth replacement prostheses; conventional bridges (CB) and resin-bonded-bridges (RBB) and cuspal protection; crowns (C) and onlays (O) were recorded. Descriptive and statistical analyses (ANOVA) were done on the prevalence of each treatment provided by all cohorts. **Results:** Among the 3 cohorts, a pattern of decrease in AR and increase of CR were observed with the highest AR (40.6%) done by the earlier cohort 2010/2015 and highest CR (50.7%) by the latest cohort 2011/2016. For single-tooth replacement prostheses, CB was 32.4% and RBB 67.6% with a drastic increase of RBB 105 unit was provided by cohort 2011/2015 compare to only 38 and 26 unit from the earlier cohorts. For cuspal coverage, crowns (91.4%) were still the main treatment compared to onlays (8.6%). The increase CR and RBB and the decrease AR pattern were statistically significant when compared among the 3 cohorts. **Conclusion:** The MID-approach treatments (CR and RBB) were well implemented in the clinical practices by UiTM students in line with the current approach of restorative dentistry worldwide.

**Keywords:** Minimally Invasive Dentistry, Conservative Approach, Undergraduate Dental Treatment.



49	<b>Botulinum Toxin-A, In Unravelling Gummy Smile: A Clinical Study</b>
<p style="text-align: center;">THARAKAN A.G, ROOPA S, GOUTHAM REDDY</p> <p style="text-align: center;">Department of Orthodontics Coorg Institute of Dental Sciences, India</p> <p><b>Objective:</b> Gummy smile is a problem in dynamic relationship of the lips to the upper incisors. The various treatment modalities that have been used for its correction are invasive and time consuming. Botulinum toxin -A injections are used as an alternative treatment modality in recent times. This presentation aims to assess the effectiveness of botulinum toxin type A in the correction of gummy smile. <b>Materials and Methods:</b> Ten patients in the age group of 18-30 years with no systemic medical history having a gingival display of more than 3 mm were selected. Ethical clearance was obtained from the Institutional Review Board. Pre photographs were taken &amp; Botulinum toxin A of 2.5 units under sterile condition at four sites, two on each side of the face was administered. Post photographs were taken at the end of 14th, 30th, 60th &amp; 90th day of injection. Adobe Photoshop measurements were taken. The measurements were subjected to statistical analysis using paired samples t-tests and repeated measures ANOVA. <b>Results:</b> Average pre injection gingival display was 4.7+/-1.05mm. At 2 weeks post injection mean gingival display had declined to 0.9+/-0.7 mm, which was highly significant statistically. <b>Conclusion:</b> It can be inferred that botulinum toxin A was quick and effective in unraveling gummy smile.</p> <p><b>Key words:</b> Botulinum toxin type A, gingival display, gummy smile</p>	
50	<b>Primary Stability of Self-Tapping Dual Etched Implants</b>
<p style="text-align: center;">NOR HISHAM D.Y., DARDIRI N. A, HEAH K.G<sup>1</sup>, KASSIM Z.H<sup>2</sup></p> <p style="text-align: center;"><sup>1</sup>Centre for Preclinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA  <sup>2</sup>Center for Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: dyna2893@gmail.com; aziladardiri@yahoo.com; zethy@salam.uitm.edu.my; gootheah@salam.uitm.edu.my</p> <p><b>Objectives:</b> The aims of this study were to enumerate the primary implant stability quotient (ISQ) value of self-tapping dual etched implants and to explore the influence of parameters such as implant length, implant diameter, age, gender, implant location and osteotomy preparation on the ISQ value. <b>Materials and Methods:</b> Retrospective data from clinical worksheets given to participants during two implant courses held between the period of 2013 to 2014 were evaluated. A total of 61 implants were considered based on the inclusion criteria. The effects of parameters such as implant diameter, implant length, age, gender, implant location and osteotomy protocol on ISQ values were analysed. <b>Results:</b> Mean ISQ value for all implants was 67.21 (SD: 9.13). Age of patients (P=0.009) and location of implants (P=0.035) had a significant linear relationship with the ISQ values. An increase in 1 year of patient's age results in 0.21 decreases in ISQ value (95% CI: -0.38, -0.06). However placing an implant in the posterior maxilla may negatively affect the ISQ with a likely decrease in primary stability by 7.42 ISQ value (95% CI: 0.51, 13.23). <b>Conclusions:</b> The results suggest that the mean ISQ achieved by the participants were comparable with the range reported for this particular type of implants. The patient's age and location of implants were elucidated as the determinant factors of primary implant stability.</p> <p><b>Key words:</b> dental implants, osseointegration, primary stability, osteotomy protocol.</p>	

51	<p style="text-align: center;"><b>The Incidence of Error in Detecting Different Scores Using ICDAS</b></p>
<p style="text-align: center;">MD YASIN S.F, ISMAIL N.A, YUSOF N<sup>1</sup></p> <p style="text-align: center;"><sup>1</sup>Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry Universiti Teknologi MARA Email: sitifatimah_00@yahoo.com; adilah.ismail@yahoo.com; dr_norashikin@salam.uitm.edu.my</p> <p><b>Objectives:</b> The aim of this study was to assess the errors in detecting caries using International Caries Detection and Assessment System (ICDAS) code and to identify which score has more errors. <b>Materials and methods:</b> In this retrospective study, data from the calibration exercise involving 38 students and lecturers of Faculty of Dentistry UiTM were used. A total of 45 teeth with their respective benchmark codes were being used for scoring. From the calibration exercise, we retrieved and analysed the data against the benchmark standard to determine which ICDAS code was frequently scored wrong and also to evaluate the performance between lecturers and students. <b>Results:</b> Our findings showed the highest percentage of errors was code ICDAS 4 with 70.6 % error. The study also demonstrated a significant association of ICDAS 4 to have more errors, p=0. Among the wrong codes given, 76% was code ICDAS 3. Overall performance by lecturers and students were evaluated where 69.58% of lecturers 70.24% of students scored wrong. Hence, there is no significant difference in overall performance between lecturers and students. <b>Conclusions:</b> It demonstrated that ICDAS 4 has been associated with more errors as compared to the other ICDAS codes. It could be because of the participants themselves did not air dried the tooth properly and hence did not notice the presence of shadow which signify ICDAS 4. Therefore, proper identification and examination should be performed during dental charting to avoid errors in giving scores.</p> <p><b>Keywords:</b> ICDAS, caries detection, scoring errors</p>	
52	<p style="text-align: center;"><b>Dental Student Perception of Effective Clinical Training</b></p>
<p style="text-align: center;">ABDUL HADI S.N.A. , HAMIDON N.A. , I Yuri Noviaranny I. 1 MOHAMED ABDULLAH N. <sup>1</sup></p> <p style="text-align: center;"><sup>1</sup>Centre of Paediatric Dentistry &amp; Orthodontics Studies, Faculty of Dentistry Universiti Teknologi MARA Email: amaleenas@yahoo.com; nur_as94@yahoo.com; nagham@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objectives of study were to assess perceptions of dental students on their relations with the clinical teachers and their applications of educational modalities in dental clinical teaching. <b>Methods:</b> This study was conducted using a set of validated structure questionnaire that distributed randomly. The total respondents are 132 clinical students (Year 3, 4 and 5) from Dental Faculty of UiTM Sungai Buloh. This questionnaire consisted of three themes; Student/teacher relationship, educational theory applied to dental clinical practice and skill important for clinical training. It comprised of close-ended questions that utilized a five-point Likert attitude scale providing responses range based on quantitative data. Data was analysed using Statistical Package for the Social Sciences (SPSS) software and descriptive analysis been used. <b>Results:</b> Students agreed that empathic guidance from the clinical supervisor and clinical demonstrations of procedures assisted them to prepare for independent clinical practice. The result for student-teacher relationship came out with the highest mean of 4.45. Meanwhile, the theme of application of educational theory with the mean of 4.61, students acknowledged that preclinical instruction is essential for student preparation for independent practice of clinical dentistry. For the last theme, decision making (mean=4.47) is the most important skill to them in dental clinical practice. <b>Conclusions:</b> Overall, the findings show in order to achieve the effective clinical training, students believed that it is important to have good student-teacher relationship, application of educational theory in dental clinical teaching and skills.</p> <p><b>Keywords:</b> dental education, clinical training, clinical supervision</p>	

53	<b>Histological Observation of Oral Mucosa of Experimental <i>Sprague-Dawley</i> Rats Following Application of Tooth Whitening Agent</b>
<p style="text-align: center;">DZULKIPLI N.S<sup>1</sup>, ASIN F<sup>1</sup>, ALI N1, TOGEMAN J<sup>2</sup>, ABD AZIZ N.A.W<sup>1</sup></p> <p style="text-align: center;"><sup>1</sup>Centre of PreClinical Science Studies, Faculty of Dentistry Universiti Teknologi MARA <sup>2</sup>Department of Anatomy, Faculty of Medicine Universiti Teknologi MARA</p> <p style="text-align: center;"><b>Email:</b> syahiladzu137@gmail.com , fasihahasin2012@gmail.com , syima1911@gmail.com , ya.lariez_01@salam.uitm.edu.my , noorazlizawani@salam.uitm.edu.my</p> <p><b>Objectives:</b> The present study investigated histological changes of oral mucosa of rats following application of tooth whitening agent. Direct exposure of hydrogen peroxide (H2O2) to oral cavity of rats was hypothesized to cause histopathological alteration of the mucosal layer. <b>Materials and methods:</b> 18 male <i>Sprague-Dawley</i> rats weighing 150-200g were randomly divided into three groups. A control group (G1) was not exposed to H2O2, while experimental groups were treated with 3% H2O2 (G2) and 6% H2O2 (G3) respectively for 14 days. At the end of the study, the buccal mucosa of rats were harvested and subjected to light microscopy following hematoxylin and eosin (H&amp;E) staining. <b>Results:</b> Results showed no significant histological changes (p&gt;0.05) in G2 rats and G3 rats as compared to G1 rats, despite slight differences in terms of behaviour of the rats between experimental and control groups. In addition, no significant morphological difference (p&gt;0.05) was observed between both experimental groups. <b>Conclusions:</b> In conclusion, H2O2 at the concentration used in the experiment did not produce cytotoxicity effect, thus provides evidence of its safety usage in dental whitening procedure.</p> <p><b>Keywords:</b> Hydrogen peroxide, whitening agents, oral mucosa, rats.</p>	
54	<b>'LUMINA'- A Novel Technology In Microscopy For The Colorblind.</b>
<p style="text-align: center;">JACOB S.A, SUDHEENDRA U.S Oral Pathology and Microbiology Dept, Coorg Institute Of Dental Sciences</p> <p><b>Objective:</b> Color blindness is a variable trait that affects the individuals' ability to discriminate different colors. The morbidity can range from slight color vision deficiency to a complete lack of color perception affecting daily life. Ability of differentiating colors in histopathology is one such area of concern. With this background in mind, this paper explores a simple and novel microscopic technique utilizing a mobile android application. <b>Materials and Methods:</b> The android based mobile application 'Lumina' was created based on the principle of Jefferson's color transformation. The application includes multiple options for lighting, image resolution and colorblind simulation and correction. A commercially available mobile holder for microscopy was used to approximate the mobile phone on the focal plane of the eyepiece. The resultant image was then visible on the screen of the application. <b>Results:</b> This application offers correction for Protonopia and Deuteronopia and helps the colorblind individuals to distinguish the colors of the histopathological stains. The application is helpful in real time image viewing and storage of images. This technique is useful for academic and diagnostic purposes. <b>Conclusion:</b> the indigenously created 'LUMINA' application offers a practical, efficient and a cost effective solution to colorblind individuals to discriminate colors in histopathology. Its future application transcends the borders of histopathology and can indeed assist dental personnel in various clinical aspects of dentistry.</p> <p><b>Keywords:</b> Android application, Color blindness, Lumina, Microscopy</p>	

55	<b>Evaluation Of The Efficacy Of Garlic Gel As An Adjunct To Scaling And Root Planing In Chronic Periodontitis Patients: A Clinical And Microbiological</b>
<p style="text-align: center;">QUADROS G.S, RADHIKA B, REDDY S.A</p> <p style="text-align: center;">Department of Periodontics Coorg Institute of Dental Sciences, India</p> <p><b>Objective:</b> Scaling and Root planing (SRP) have been used as the “gold standard” for periodontal therapy but total elimination of the bacteria may not be possible. To overcome this limitation antiseptics and antibiotics are widely being used. However frequent use of available therapeutic agents has led to the evolution of resistant strains. In this study we have evaluated and compared the clinical and microbiological effects of SRP alone and garlic gel as an adjunct. <b>Materials and methods:</b> In this split mouthshort term pilot study, a total of 10 patients with chronic periodontitis were selected from the Department of Periodontics and Implantology, Coorg Institute of Dental sciences, Virajpet, Karnataka, India.. Ethical clearance for this randomized controlled clinical study was obtained from the Institutional Review Board. The study was explained to the patients and written consent was taken. Clinical parameters used were Gingival Index, Plaque index and Probing pocket depth. The microbial count were done using culture methods. <b>Results:</b> Statistical analysis showed highly significant reduction in microbial count when garlic gel was used as an adjunct to SRP. <b>Conclusion:</b> The results of our study indicated thatGarlic is a promising therapeutic agent when used as an adjunct in periodontal therapy and further studies with greater sample size and duration are required to prove the same.</p> <p><b>Key words:</b> anaerobic microbiota, chronic periodontitis, garlic extract.</p>	
56	<b>Clinical Efficiency Of Initial Archwires For Tooth Alignment Using Fixed Appliances</b>
<p style="text-align: center;">MAJIDAH R<sup>1</sup>, NURSHAHIRAH MS<sup>2</sup>, MARYATI MD<sup>3</sup></p> <p style="text-align: center;"><sup>1</sup>Centre of Peadiatric Dentistry and Orthodontics Studies, Faculty of Dentistry Universiti Teknologi MARA; Email: majidah_ramly@yahoo.com; shahirahmohds@gmail.com; maryatidasor@salam.uitm.edu.my</p> <p><b>Objective:</b> This objective of this study is to clinically investigate the effectiveness of two different types of initial orthodontic archwire; nickel titanium (NiTi) for tooth alignment using fixed appliance. <b>Methods:</b> Eighteen patients (13 females ; 5 males) who have fulfilled the inclusion and exclusion criteria were randomly assigned to two groups; 1) superelastic NiTi and 2) heat activated NiTi. They were followed up for four months during orthodontic review sessions. Alginate impressions were taken at each follow up visit. Study models were fabricated. Vernier calliper with 0.1 mm of accuracy, Munchner Modell was used to measure crowding or spacing and displacement at T1 (pretreatment), T2 – T5 (ongoing treatment) in each visit. The intensity of pain experienced by patients in each review visit were assessed through interview by using Visual Analogue Scale (VAS). Finally, data was analysed using repeated measure ANOVA, SPSS version 24. <b>Result:</b> There was no statistically significant difference in crowding or spacing (p=0.567) and intensity of pain (p=0.270) between superelastic NiTi and heat activated NiTi wires. There was statistical significant difference in contact point displacement between two groups (p=0.006) during the initial alignment stage. <b>Conclusion:</b> Superelastic NiTi and heat-activated NiTi archwires showed same clinical efficiency during initial tooth alignment and same intensity of pain experienced by patients using fixed appliance.</p> <p><b>Keywords:</b> Orthodontics archwire ; Superelastic NiTi wire ; Heat activated NiTi wire ; Tooth alignment</p>	

57	<b>Risk Management: Awareness and Assessment of Managing Risk in Dental Laboratory</b>
<p style="text-align: center;">N.S. MOHD SHAH,N.S. MUHD NASIR,RD.A. KHIROTDINN,</p> <p style="text-align: center;">Centre of PreClinical Sciences, Faculty of Dentistry Universiti Teknologi MARA Email:aidiftrina@gmail.com noorshahqiah@yahoo.com; nursalihahnasir@gmail.com;</p> <p><b>Objective:</b> The objective of this study is to identify the awareness of risk management among dental students and technicians and to access the level of risk control in Dental Laboratory Prosthetic 1. <b>Materials and Methods:</b> 256 dental students from year 2 until year 5 and 7 dental technicians were selected to answer the questionnaire. Physical and chemical hazards were identified and assessed to identify the risk of these hazards in dental laboratory Prosthetic 1. Risk Matrix from Occupational Safety and Health Act (OSHA) was used to identify the risk rating of each hazard based on the exposure rating and hazard rating. <b>Results:</b> The results showed that the level of awareness among dental students and technicians using Prosthetic Laboratory 1 is at an awareness stage. Based on this study the laboratory is equipped with chemical register, comply with personnel protective equipment (PPE) requirement, the management provide worker with Chemical Safety Data Sheet (CSDS), there is appropriate engineering control for the hazards and the management kept report appropriately according to the requirement. <b>Conclusions:</b> There is awareness of risk management among dental students and technicians involved in the dental laboratory and appropriate control of risk were enforced by the management.</p> <p><b>Key words:</b> awareness , assess , dental laboratory, exposure, Hazard, risk management , risk</p>	
58	<b>Questionnaire Validation of Perception Towards ICDAS II And DMFT Caries Scoring System Among Dental Academicians In Malaysia</b>
<p style="text-align: center;">HASHIM N.H<sup>1</sup>, FADIL N<sup>1</sup>, VENKITESWARAN A<sup>2</sup>, NIK MAHMOOD N.Z<sup>3</sup>, BAHARUDDIN I.H<sup>1</sup></p> <p style="text-align: center;"><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA <sup>2</sup>Centre Of Studies for Paediatric Dentistry &amp; Orthodontics, Faculty of Dentistry, Universiti Teknologi MARA <sup>3</sup>Centre of Studies for Comprehensive Care, Faculty of Dentistry, Universiti Teknologi MARA Email: nurudduha.fadil@gmail.com , annapurny@salam.uitm.edu.my , drnikzarina@salam.uitm.edu.my , izyan9192@salam.uitm.edu.my</p> <p><b>Objective:</b> The objective of this study is to validate the questionnaire titled ‘Perception of dental academicians towards ICDAS II and DMFT caries scoring systems’. <b>Material and methods:</b> It is a cross sectional and validation study. After obtaining ethics approval, the questionnaire which consisted of 30 items was constructed. Content validity was carried out by 3 experts and face validity was carried out by 5 academicians. Finalized questionnaire was obtained and the validation was carried out on 70 academicians from 5 local universities in Malaysia. Data collection was done using online survey (surveymonkey.com) and Exploratory Factor Analysis (EFA) and Cronbach’s Alpha were used to analyze the results. <b>Results:</b> Out of 30 items analyzed using EFA, 15 items were related to ICDAS II and 15 items were related to DMFT scoring. Principal axis factoring extraction with promax rotation was applied. Kaiser-Meyer-Olkin (KMO) was 0.787 for ICDAS II and 0.671 for DMFT, Bartlett’s test of sphericity were significant for both scoring system (P-value &lt; 0.001). Sixteen items were removed due to low communalities and factor loadings. Cross loading factors were extracted and 14 items were kept. <b>Conclusions:</b> From the validation study of 30 items, 14 items were accepted and validated. The 2 domains identified from this validation study were disease status and clinician’s perception.</p> <p><b>Keywords:</b> ICDAS,DMFT</p>	

59	<p align="center"><b>Perceptions Of Behaviour Management For Paediatric Patients Among Uitm Dental Students</b></p>
<p align="center">MOHD ALI N<sup>1</sup>, HUSIN I.N<sup>1</sup>, HAMZAH S.H<sup>1</sup>, ABDUL HALIM R<sup>1</sup></p> <p align="center"><sup>1</sup>Centre of Paediatric Dentistry and Orthodontics Studies, Faculty of Dentistry, Universiti Teknologi MARA  Email: hanna.ali19@yahoo.com.my; intannadia_94@yahoo.com; sithahjar1998@salam.uitm.edu.my; dr_rohaida@salam.uitm.edu.my</p> <p><b>Objective:</b> To assess the knowledge and preferable method of behaviour management among UiTM Dental students (between pre-clinical and clinical years). Dental education may have a significant impact on undergraduate dental students' perceptions of behaviour management in paediatric dentistry. <b>Materials and methods:</b> 336 students from year 1, 2, 3, 4 and year 5 of Faculty of Dentistry, UiTM were invited to participate in the study. Questionnaires on practising behaviour guidance techniques were distributed to the participants. Data were analysed using Statistical Package for the Social Sciences (SPSS) software version 21. <b>Results:</b> The pre-clinical scores were statistically significantly higher for the child not being allowed to speak during the treatment and parent present in clinic. On the other hand, the clinical acceptability scores were statistically significantly higher than the pre-clinical scores for voice control, papoose board, providing an exact explanation, promising a toy, treatment without anaesthesia, child allowed to stop the treatment and modelling. <b>Conclusion:</b> Didactic and clinical educational components may have different influences on the students' perceptions</p> <p><b>Keywords:</b> Behaviour management, paediatric dentistry, dental education</p>	
60	<p align="center"><b>Review on the Safety of E-cigarettes as Tobacco Cessation Tools.</b></p>
<p align="center">ZAKARIA S., MD YAMIN N.N., BAKRI N.N.1</p> <p align="center">1Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry Universiti Teknologi MARA  Email: 2013627418@isiswa.uitm.edu.my; nadzirahyamin@yahoo.com; nazahiahb@salam.uitm.edu.my</p> <p><b>Objective:</b> The aim of this study is to review the safety of e-cigarettes as tobacco cessation tool and to compare the effectiveness of e-cigarettes with and without nicotine. <b>Methods:</b> Studies were identified by systemic database searches from PubMed until December, 2016. The keywords used were 'electronic cigarettes' or 'e-cigarettes', and 'smoking cessation' or 'quit smoking' and 'safety'. We included all English-language full text articles and published in recent 10 years. Other means of nicotine replacement therapy (NRT) or other types of intervention were excluded from this study. <b>Result:</b> Literature searches with keywords identified 408 references. Articles more than 10 years or without full text were excluded (n=92). 316 articles were screened on basis of title and/or abstract, the total of 83 articles used other cessation products and 136 articles unrelated to smoking cessation were excluded (n=219). Full text (n=97) were retrieved and assessed for eligibility. Only 23 studies were eligible; 5 studies were randomized controlled trials, 16 were observational studies, 2 from case control studies. Meta-analysis could not be done due to the heterogeneity of outcome measure used in the studies. Cough, throat irritation and vertigo are among adverse effects reported by e-cigarettes users. E-cigarettes users were having less carbon monoxide level compared to conventional cigarettes. <b>Conclusion:</b> There were incidents reported after e-cigarette usage, however the safety as smoking cessation tools cannot be concluded based on this review.</p> <p><b>Keywords:</b> Electronic cigarettes, e-cigarettes, smoking cessation, quit smoking, safety</p>	

61	<p align="center"><b>Knowledge About Vitamin D Among The Parents Attending Paediatric Clinic, Faculty of Dentistry, UiTM</b></p>
<p align="center">MOHD ZEN S.A.N, AZMI N.H, HUSSEIN A.S</p> <p align="center">Centre of Paediatric Dentistry and Orthodontics Studies, Faculty of Dentistry, Universiti Teknologi MARA Email: amnizen93@gmail.com; waniey9352@gmail.com; alaa@salam.uitm.edu.my</p> <p><b>Objectives:</b> To assess the level of knowledge about vitamin D among the parents attending the Paediatric Dental Clinic at Faculty of Dentistry, UiTM regarding its sources, health benefits, sunlight exposure and the sources of their own information. <b>Methods:</b> A questionnaire was distributed to the parents who brought their children to the Paediatric Dental Clinic at UiTM and asked to answer questions about the demographic variables and knowledge of vitamin D for their children. Descriptive statistics and bivariate analysis were performed. A 5% level of statistical significance was applied for the analyses. <b>Results:</b> A response rate of 95.5 % (344/360) was obtained. Most respondents heard of vitamin D and knew that sun exposure is the prime source of vitamin D (70.6%, 86.3% respectively). Inconsistencies among the respondents were found concerning the vitamin D sources, health benefits and risk factors of its inadequacy or deficiency in children. Newspaper (41.6%), internet (40.7%), and books (36.3%) were the most common sources where they obtained the information about vitamin D. The majority of the respondents (91.5%) indicated that they want to have more information about the importance of vitamin for their children; however, only (63.1%) were very willing to get it. <b>Conclusions:</b> Basic knowledge of the parents about the benefits of vitamin D for their children was limited. Thus, essential information about it should be improved in terms of sources, health effects and risk factors of its inadequacy or deficiency through the development of appropriate education program for the public.</p> <p><b>Key words:</b> Knowledge, Parents, Vitamin D</p>	
62	<p align="center"><b>The Antimicrobial Properties of Malaysian Propolis as Intracanal Medicament in Endodontics</b></p>
<p align="center">ROSLI N.<sup>1</sup>, CHE ELLIAZIZ N.A.<sup>1</sup>, ISMAIL I.H.<sup>1</sup>, AL-BAYATY F.H.<sup>2</sup></p> <p><sup>1</sup>Centre of Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh, Selangor, <sup>2</sup>Centre of Periodontology Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh, Selangor, Malaysia Email: nazrinrosli94@yahoo.com; nuradilahcheelliaziz94@gmail.com; ikmal_hisham@salam.uitm.edu.my</p> <p><b>Objectives:</b> To determine the antimicrobial properties of Malaysian propolis (MP) against <i>Enterococcus faecalis</i> being the most prevalent microorganism detected in post-treatment endodontic disease, and to compare the antibacterial effect of MP with calcium hydroxide (Ca(OH)<sub>2</sub>) as intra-canal medicament in root canal treatment. <b>Methods:</b> Raw propolis produced by <i>Trigona itama</i> bee was purchased from Humaira Honey Sdn Bhd, Perak. The propolis was extracted using 70% ethanol and sonication of the mixture was done for 30 minutes under 27°C at moderate rate. The mixture filtered by Whitman paper and evaporated using a rotary evaporator. Antimicrobial susceptibility testing (AST) was done on five different samples namely, MP, Ca(OH)<sub>2</sub>, 2% chlorhexidine (CHX), 70% ethanol, and sterile normal saline. The presence of inhibition zone showed by MP, Ca(OH)<sub>2</sub>, and CHX indicated the antimicrobial properties of these samples. Antimicrobial concentration of the samples were determined by minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) methods. The MIC and MBC for MP and CHX were done using micro-dilution method on 96-well, while for Ca(OH)<sub>2</sub> were performed by using serial dilution method. <b>Result:</b> The mean MIC from three trials that were carried out on the samples were CHX (&lt;0.008%) &lt; MP (0.65%) &lt; Ca(OH)<sub>2</sub> (12.5%). While the MBC values for three trials were found to be CHX (&lt;0.011%) &lt; MP (1.3%) &lt; Ca(OH)<sub>2</sub> (25%). <b>Conclusion:</b> MP was found to be antibacterial and effective against <i>E. faecalis</i> and is comparable to Ca(OH)<sub>2</sub> which is commonly used as intra-canal medicament. Further research is needed to test MP's clinical efficacy.</p> <p><b>Keywords:</b> Propolis, Calcium hydroxide (Ca(OH)<sub>2</sub>), antibacterial, intra-canal medicament, <i>Enterococcus faecalis</i>.</p>	

# ABSTRACTS

(Postgraduates)



1	<p style="text-align: center;"><b>MicroRNA Expression in Oral Cancer Cell Line</b></p>
<p style="text-align: center;"><u>RAWAIDAH N.M.S</u><sup>1</sup>, GABRIELLE R.A.F<sup>2</sup>, KHOR G.H<sup>3</sup></p> <p style="text-align: center;"><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA Sungai Buloh Campus</p> <p style="text-align: center;"><sup>2</sup>Nutritional Science and Natural Product Unit, I-PPerForM, and Faculty of Medicine, Universiti Teknologi MARA Sungai Buloh Campus</p> <p style="text-align: center;"><sup>3</sup>Oral and Maxillofacial Cancer Research Group and Centre of Preclinical Science Studies, and Faculty of Dentistry, Universiti Teknologi MARA Sungai Buloh Campus</p> <p style="text-align: center;">Email: nurrawaidah123@gmail.com; gabriele@salam.uitm.edu.my; gootheah@salam.uitm.edu.my</p> <p>Cancer is listed as the major public health issue with considerable individual and socioeconomic impacts worldwide. Oral cancer is the sixth most common malignancy worldwide, where oral cancer cases diagnosed every year have reached more than 500 000. It has been associated with a poor prognosis with less than 50% of 5-year survival rate. Moreover, despite recent advances in various treatment modalities, the survival rates of cancer patients had shown not markedly improved. Recent findings strongly supported miRNAs role in cell regulations including cell proliferation, apoptosis, development, differentiation and metabolism. However, dysregulation of miRNAs was shown to be involved in many type of cancers. <b>Objective:</b> This study aims to analyze the expression level of miR-129-2 and miR-155 in oral cancer cell lines before and after 5-aza-2'-deoxycytidine (5-aza-dc) treatment. <b>Methods:</b> Oral cancer cell line will be cultivated under specific conditions. It will be treated with 5-aza-dc then followed by analysis of gene expression level of miR-129-2 and miR-155 using real-time PCR. Expected <b>Result:</b> After treatment with 5 aza-dc, the expression level of miR-129-2 is expected to be up-regulated, while the expression of miR-155 is to be down-regulated. <b>Conclusion:</b> The findings of this study will provide a crucial information for the potential applications of miRNAs in the diagnosis and drug therapy of oral cancer in the future.</p> <p><b>Keyword:</b> Oral cancer, 5-aza-2'-deoxycytidine, MicroRNA, Gene expression</p>	
2	<p style="text-align: center;"><b>Influence of Exposure Time To Coffee On Color Stability Of Selected Composite Resin Veneers</b></p>
<p style="text-align: center;">THIYAB AMAR M<sup>1</sup> / N MAHMOOD NIK ZARINA<sup>2</sup> / A HASSAN MOHAMED IBRAHIM<sup>3</sup></p> <p style="text-align: center;"><sup>1</sup> Primary Care Center, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, 47000 Selangor, Malaysia.</p> <p style="text-align: center;"><sup>2</sup> Centre of Comprehensive Care Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, 47000 Selangor, Malaysia.</p> <p style="text-align: center;"><sup>3</sup> Center of Studies for Restorative Dentistry, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, 47000 Selangor, Malaysia.</p> <p style="text-align: center;">Email addresses: amar6652@salam.uitm.edu.my, dnrnikzarina@salam.uitm.edu.my, mibrahim@salam.uitm.edu.my</p> <p><b>Objectives:</b> The aim of the study is to evaluate the effect of the time and instant coffee solution on the color stability of three types of composite resin based veneer systems. <b>Materials and Methods:</b> 24 composite resin veneer samples were selected and divided into three groups: two groups of prefabricated veneers (Edelweiss, Ultradent Inc™ (EDL) and Compoener, Coltène/Whaledent AGTM (CMP)) and one group of laboratory made (Nexco, Ivoclar Vivadent (NEX)) veneer system were tested (n=8). Specimens were prepared and stored in staining solution (instant coffee) and assessed color changes with Minolta spectrophotometer every three days for a period of 27 days, after which color differences (<math>\Delta E^*</math>) were calculated. Data collection and analysis was done using one-way ANOVA and Student's t-test (<math>\alpha=0.05</math>). <b>Results:</b> One-way ANOVA revealed a significant difference in color stability between the two veneer systems. NEX group veneer system exhibited the highest color stability (<math>\Delta E^*= 0.73 \pm 0.5</math>) as compared to prefabricated veneer groups (EDL <math>10.07 \pm 5.15</math>, CMP <math>7.41 \pm 4.64</math>) with p value &lt;0.05. <b>Conclusion:</b> The color stability (<math>\Delta E^*</math>) of the laboratory made veneer system is significantly higher than the prefabricated veneer systems and more clinically accepted.</p> <p><b>Keywords:</b> Laboratory made veneer, prefabricated veneer, Color stability</p>	

3

### FRACTIONATION AND IDENTIFICATION OF SOME PURE COMPOUNDS FROM *Coleus blumei* LEAVES EXTRACT

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**Objective:** *Coleus blumei* is an annual plant from the Lamiaceae family with many traditional medical benefits lending itself for further exploration of its therapeutic potential in dentistry. The present study was carried out to isolate and identify some pure chemical compounds present in the extract of *Coleus blumei* leaves. The identification of the active compounds of *Coleus blumei* has never been done before and their anticipated presence lends interest for further investigation of antibacterial activities against oral pathogens. **Methods:** Particle free crude extract of *Coleus Blumei* leaves in ethanol solution was first prepared. Phytochemical screening was done for the determination of secondary metabolites such as. The extract was then subjected to further analysis using High Performance Liquid Chromatography (HPLC), followed by Vacuum liquid chromatography (VLC) and Medium-pressure liquid chromatography (MPLC) for fractionation of compounds. The crude extract of *Coleus blumei* were also screened for its antibacterial properties against two oral pathogens, *Staphylococcus aureus* and *Streptococcus mitis* respectively. Results: The phytochemicals screening results showed that the extract contains flavonoid, tannin, terpenoid and saponin. The extract does not contain alkaloid. The chromatogram analysis identified the presence of several compounds in the crude extract. The fractionations of compounds have helped in obtaining pure compounds that will be further isolated and identified. The antibacterial screening of the crude extract also revealed that the extract was effective against both tested oral bacteria, *Staphylococcus aureus* and *Streptococcus mitis* respectively. Conclusion: *Coleus blumei* leaves revealed the presence of flavonoid, tannin, terpenoid and saponin. Future investigations will be carried out to identify these compounds followed by cytotoxicity and antibacterial tests.

Keywords: *Coleus blumei*, phytochemical screenings, High Performance Liquid Chromatography (HPLC), Vacuum liquid chromatography (VLC), Medium-pressure liquid chromatography (MPLC), *Staphylococcus aureus* and *Streptococcus mitis*

4

### Cytotoxic and apoptotic effect of Dillapiole on human oral squamous cell carcinoma, SCC090 cell

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**Objective:** To evaluate the cytotoxic effect of dillapiole against human oral squamous cell carcinoma (OSCC) cell line with comparison on human normal oral fibroblasts (NOF) and investigate the cell death mechanism by measuring and validating the expression of mRNA profiles associated with apoptosis genes such as FAS, FADD, Caspase-3, Caspase-8, Caspase-9, BAX and BCL-2 genes. **Methods:** Human OSCC SCC090 and human NOF will be cultured in complete Eagle's Minimum Essential Medium and RPMI media, respectively as monolayer to approximately 80% of confluence in 5% CO<sub>2</sub>, at 37°C. Cells within range 2 x 10<sup>4</sup> will be treated separately with different concentrations of dillapiole for 48 and 72 hours. The cytotoxicity effect of dillapiole on the cell proliferation will be determine using WST-1 cell proliferation kit. Cellular DNA Fragmentation ELISA will be performed to determine the pathway of cell death mechanism either apoptosis or necrosis. Expression of genes and proteins will be measured by using real time PCR and western blot assay, respectively. Data analysis will be done by using Statistical Package for Social Sciences (SPSS) version 20.0. Each experiment will be carried out in triplicates and repeated three times. The differences between the groups were evaluated using the one-way or two-way ANOVA tests. The results are expressed as mean + SD. The statistically significance is set at p<0.05. **Expected results:** Dillapiole is expected to cause cytotoxic and apoptotic effects on human OSCC SCC090 cell line. **Conclusion:** Dillapiole from *Peperomia pellucida* plant, has the potential as a candidate for natural chemotherapeutic agent in oral cancer management.

**Keyword:** oral cancer, Dillapiole, scc090, natural product, apoptosis

5	<p style="text-align: center;"><b>Oral Health-related Quality of Life (OHRQoL) of Patients Undergoing Micro-osteoperforations (MOPs) to Accelerate Orthodontic Space Closure</b></p>
<p style="text-align: center;"><u>SYED BAKHTIAR S.B.A.<sup>1</sup></u>, NORMAN N.H.<sup>1</sup>, ABDUL GHANI S.H.<sup>1</sup>, MD SABRI B.A.<sup>2</sup></p> <p><sup>1</sup>Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry Universiti Teknologi MARA;  <sup>2</sup>Centre of Population Oral Health and Clinical Prevention Studies, Faculty of Dentistry Universiti Teknologi MARA;  Email: syedbazialwi@gmail.com; norainanorman@gmail.com; drsarahaliza@gmail.com; budisabri@gmail.com.</p> <p><b>Objectives:</b> To assess oral health-related quality of life (OHRQoL) of orthodontic patients who had undergone micro-osteoperforations (MOPs) to accelerate orthodontic space closure. <b>Methods:</b> 27 orthodontic patients with fixed appliance who are undergoing orthodontic space closure with Niti coil springs were given the validated short version of the Oral Health Impact Profile (Malaysia) Questionnaire (S-Ohip) which was available in both Bahasa Melayu and English, containing 14 items. 17 patients underwent MOPs (MOP group) while 10 patients did not (control). Additive scores (ADD) and simple count scores (SC) were computed. ADD scores were calculated by summing the response codes for the 14 items and SC scores were calculated by a count of the number of items reported as occurring 'quite often' and 'very often'. <b>Results:</b> A total of 24 patients responded to the questionnaire, with a response rate of 88.9%, and they comprised of 79.2% females and 20.8% males. There is no significant difference in the mean ADD (p = 0.078) and mean SC (p = 0.603) across both groups. <b>Conclusions:</b> The reported quality of life of orthodontic patients who had MOPs were comparable to those who did not have MOPs.</p> <p><b>Keywords:</b> accelerated orthodontics, micro-osteoperforation, oral health-related quality of life, S-OHIP</p>	
6	<p style="text-align: center;"><b>A Clinical Assessment of Debonding Characteristics between Metal and Ceramic Brackets</b></p>
<p style="text-align: center;"><u>USOFF MF<sup>1</sup></u>, AL-BAYATY FH<sup>2</sup>, DASOR M<sup>1</sup></p> <p><sup>1</sup>Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry, University Teknologi MARA, Malaysia;  <sup>2</sup>Centre of Periodontology Studies, Faculty of Dentistry, University Teknologi MARA, Malaysia;  Email: drfariq@gmail.com, fouad@salam.uitm.edu.my, maryatidasor@salam.uitm.edu.my</p> <p><b>Objectives:</b> The objectives of this cross-sectional study were 1) to compare the Adhesive Remnant Index (ARI) score between metal and ceramic brackets and 2) to compare the mean percentage of the adhesive remnant on the bracket base. <b>Methods:</b> The data were obtained from the patients who required for debonding of fixed orthodontic appliances. The patients were allocated into three groups; 1) conventional metal brackets, 2) self-ligating metal brackets, and 3) self-ligating ceramic bracket. All brackets were mechanically debonded using selected pliers. After debonding, dental disclosing solution was applied on the adhesive remnant, and ARI score was recorded clinically and using the photograph. All debonded bracket were evaluated under a stereomicroscope, and the percentage of the adhesive remnant on the bracket base were calculated using image analysis. The data was analysed using SPSS version 20.0 and the level of statistical significance set at p &lt; 0.05. <b>Results:</b> A total of 192 brackets which comprised 64 brackets in each group were evaluated for this study. There was statistically significant difference (p&lt;0.05) between three types of brackets in the ARI assessment on the tooth surface. The result was consistent with the image analysis of the mean percentage of adhesive remnant on the bracket base. The result showed a statistically significant different between self-ligating metal brackets and other types of brackets. <b>Conclusion:</b> There were variation of debonding characteristic among three types of brackets. Self-ligating metal brackets showed more adhesive remnant compared to other types of brackets clinically.</p> <p><b>Keywords:</b> Adhesive Remnant Index, ceramic bracket, debonding, metal bracket</p>	

7	<p align="center"><b>A comparative premaxilla bone remodelling study between conventional complete dentures and conventional maxillary denture opposing 2-implant retained overdenture</b></p>
<p align="center"><u>ALSROUJI M. S.<sup>1</sup></u> AHMAD R.<sup>2</sup></p> <p align="center">Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, Jalan Hospital 47000 Sungai Buloh, Selangor MALAYSIA. Email: alsrouji11@yahoo.com, drrohana@salam.uitm.edu.my</p> <p><b>Objective:</b> To clinically compare premaxilla bone remodeling between two modalities of treatment, 1. Conventional complete dentures, 2. Conventional maxillary Complete Denture (CD) opposing mandibular 2-implant retained overdenture (2-IRO), and to perform this comparison virtually by conducting a FEA study regarding this topic. <b>Materials &amp; Methods:</b> Two groups of edentulous patients underwent this study. The first group included 4 patients provided by conventional complete dentures. The second group included 18 patients rehabilitated by maxillary complete denture and mandibular 2- IRO. Cone Beam Computed Tomography (CBCT) were taken for these patients at two time of point, P1 pre-treatment and P2 one-year post-treatment. The images converted using Mimics research software. 3-D models of the maxilla were calculated pre and post treatment for each patient. These models underwent superimposition. The premaxillae models were sectioned at the same region for both pre &amp; post model and bone volume change quantified. <b>Results:</b> The mean reduction of premaxilla in the first group was 2.60% (SD = 1.71%, range = - 4.89 % to - 0.92%, median = - 2.30%). While this mean in the second group was 7.25% (SD = 3.16%, range = -13.25 to - 1.50, median = - 7, 15 %). <b>Conclusion:</b> The bone resorption in premaxilla in the first group was about 2.5 times more than the resorption in the second group. Similar results found in the FEA where the stress and strain in test group was the double. Hence precautions should be considered in this modality of treatment to control this resorption.</p> <p><b>Key words:</b> Mandibular implant overdenture. Maxillary bone resorption. FEA,</p>	
8	<p align="center"><b>Alveolar Cortical Bone Density in Different Skeletal Relationship</b></p>
<p align="center"><u>N.M AL-JAF<sup>1</sup></u>, R.M Abdul Wahab<sup>2</sup>, M.I Abu-Hassan<sup>3</sup></p> <p><sup>1</sup>Centre of Studies for Paediatric Dentistry &amp; Orthodontics, Faculty of Dentistry, Universiti Teknologi MARA; <sup>2</sup>Department of orthodontics, Faculty of Dentistry, Universiti Kebangsaan Malaysia; <sup>3</sup>Center Of Restorative Dentistry Studies, Faculty of Dentistry, Universiti Teknologi MARA Email: naghamsalam@uitm.edu.my; mibrahim@salam.uitm.edu.my; rohaya_megat@ukm.edu.my</p> <p><b>Objectives:</b> To evaluate buccal cortical density of maxillary and mandibular alveolar bone in subjects with class I, class II and class III skeletal relationship using Cone-beam computed tomography (CBCT). <b>Methods:</b> Cone-beam computed tomography (CBCT) images of 98 adult subjects with skeletal class I, II or III relationship were assigned. Buccal cortical density was measured in the maxillary and mandibular alveolar processes from first premolar to second molar at 6mm from the cemento-enamel junction (CEJ). <b>Results:</b> In the maxilla, the highest density was observed between first and second molar in class I and class II subjects and between first and second premolar in class III subjects. In the mandible, the highest density was observed between first and second molar for all skeletal classes. In all skeletal patterns, mandibular measurements were higher than their respective maxillary measurements. Alveolar bone density increase posteriorly except for the maxillary density in Class III subjects. Posterior increase in density is only significant in the mandible (P &lt; 0.05). Bone density mean values for most areas were higher in male subjects, but no significant gender difference could be detected. <b>Conclusions:</b> Skeletal relationship could influence buccal alveolar bone density. The mandible shows no difference between skeletal classes in bone density pattern. However, in the maxilla, Class III subjects have less bone density posteriorly. Clinicians need to consider cortical density pattern when planning orthodontic miniscrew placement.</p> <p><b>Keywords:</b> Bone density; Skeletal relation; CBCT</p>	

9	<p align="center"><b>A Longitudinal Study Of Incisor Movement And Its Correlation With Hard Tissue In UiTM Bimaxillary Protrusion Cases</b></p>
<p align="center"><u>ABDUL Mukti N.H<sup>1</sup></u>, NOVIARANNY I<sup>2</sup>, VENKITESWARAN A<sup>3</sup>, ABDUL GHANI S.H<sup>4</sup></p> <p><sup>1</sup>DClinDent Candidate, <sup>2</sup>Senior Orthodontist, <sup>3</sup>Senior Paediatric Specialist, <sup>4</sup>Senior Orthodontist, Centre of Studies of Paediatric Dentistry and Orthodontics, Faculty of Dentistry, Universiti Teknologi MARA, Malaysia Email: nailihayati@gmail.com; yurinov_indah@yahoo.co.id</p> <p><b>Introduction:</b> Bimaxillary protrusion is commonly seen in Asian and other population. The Malay population facial profile is very diversified because of the admixtures with the other races and the one common facial type that is frequently treated by orthodontists is bimaxillary protrusion. <b>Objectives:</b> To determine the amount of angular incisor changes pre and post-treatment with reinforced anchorage transpalatal arch (TPA) and to correlate between incisor angulation differences and the effects on the underlying hard tissues through angular and linear measurements. <b>Methodology:</b> Thirteen subjects that required upper first premolar extraction followed by fixed appliance MBT prescription with TPA were recruited. Pre-treatment and near end lateral cephalometric radiographs (post-treatment) were taken. Data was analyzed by Wilcoxon Signed-Rank test. <b>Results:</b> Statistically no significant difference of skeletal variables pre and post-treatment. For the dento-alveolar variables, a statistically significant decrease in the UIMx (P&lt;0.001) and improvement of IIA following retraction of upper incisors. Discussion: Even though the UIMx not retracted into upright position, however it reduced patient convexity and improved patient's profile. <b>Conclusion:</b> The retraction of incisors gives significant changes on hard tissue profile in bimaxillary protrusion case in UiTM Malay patient.</p> <p><b>Key words:</b> anchorage, bimaxillary protrusion, tissue changes</p>	
10	<p align="center"><b>Prediction of orthodontic relapse by salivary protein analysis</b></p>
<p align="center"><u>N.H.A KECHIK<sup>1</sup></u>, A.N.A ABD RAHMAN<sup>1</sup>, R AHMAD<sup>2</sup>, SAEID REZA DOUSTJALALI<sup>3</sup></p> <p><sup>1</sup>Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry Universiti Teknologi MARA <sup>2</sup>Centre of Restorative Dentistry Studies, Faculty of Dentistry Universiti Teknologi MARA <sup>3</sup> Faculty of Medicine, SEGI University, Kota Damansara, Selangor, Malaysia Email: sue_hida@yahoo.com, draidana@yahoo.co.uk, drrohana@salam.uitm.edu.my, saeidrezad@gmail.com</p> <p><b>Objective:</b> To detect the protein expression in the saliva of post-treatment orthodontic patients. <b>Methods:</b> 18 post orthodontic patients for 6 months aged between 18-35 year-old will be recruited. Upper and lower study models will be taken for group classification. The amount of incisor irregularity will be measured by using Little's irregularity index. 9 saliva samples will be collected from non-relapse group and another 9 samples from relapse group before debond (T0) and 6 months post treatment (T1). 5 ml of collected saliva will be centrifuged at 40C, 10 000 rpm for 10 minutes. The pellet will be discarded and supernatant will be collected and immediately stored at -800C. The saliva samples will be subjected to Liquid Chromatography Mass Spectrometry (LCMS) analysis and differentially expressed proteins will be detected for both groups. The differential expression of proteins will be detected by comparing the date between saliva of patients with non-relapse and relapse groups. <b>Expected results:</b> More protein will be expressed in the saliva of relapse group post orthodontic patients compared with non- relapse group. <b>Conclusion:</b> More specific protein will be detected in relapse group post- orthodontic patients possibly due to increased bone remodeling activity.</p> <p><b>Keywords:</b> Relapse, pellet, supernatant, Liquid Chromatography Mass Spectrometry (LCMS)</p>	

11	<p align="center"><b>A comparison of three methods of orthodontic anchorage: A prospective study</b></p>
<p align="center"><u>NOR NF<sup>1</sup></u>, DASOR M<sup>1</sup>, SINNI AH SD<sup>1</sup></p> <p align="center">1Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry Universiti Teknologi MARA Email: noreenfitrisha@yahoo.com; maryatidasor@salam.uitm.edu.my; saraswathy6153@salam.uitm.edu.my</p> <p><b>Objective:</b> To compare the effectiveness of a transpalatal arch (TPA), modified transpalatal arch–Nance button and micro-implant anchorage (MIA) used in orthodontic treatment of patients who require moderate anchorage. <b>Methods:</b> Thirty-six orthodontic patients aged between 18 and 30 years old with moderate anchorage demand, who have been provided with a TPA, modified transpalatal arch–Nance button and MIA will be recruited. Upper and lower pre-treatment study models (T0) will be taken, followed by insertion of the respective anchorage regime. Subsequently, the extractions of maxillary first premolar bilaterally will be carried out, prior to the provision of upper and lower fixed appliances. Maxillary canines will be retracted until they are in Class I position bilaterally on an upper and lower 0.019”x0.025” stainless steel archwire. At this point, an impression for upper study models will be taken (T1). The amount of maxillary first permanent molar mesial movement will be measured using Viewbox software version 4.0. The software is used to compare the distance between the teeth to the palatal rugae by using the T0 and T1 study models. In addition, all patients will be given a questionnaire to assess their comfort level at pre - and post-intervention. <b>Expected results:</b> There is no significant difference in the molar movement in millimeter between TPA, modified transpalatal arch–Nance button and MIA. The comfort level on placement of the three anchorage methods are similar and does not affect their lifestyle. <b>Conclusions:</b> There is no significant difference in the effectiveness between the three methods for a moderate anchorage demanding orthodontic case.</p> <p><b>Keyword:</b> Anchorage, transpalatal arch, modified transpalatal arch–Nance button and micro-implant anchorage.</p>	
12	<p align="center"><b>Pattern of Root Resorption in Curved Root Teeth In Orthodontic treatment 3D Imaging</b></p>
<p align="center"><u>N.BO HARI<sup>1</sup></u>, N.A.K<sup>2</sup>, R.AHMAD<sup>3</sup>,</p> <p align="center"><sup>1</sup>Postgraduate Student, Centre of Pediatric and Orthodontics Studies, Faculty of Dentistry University Technology MARA. <sup>2</sup>Centre of Pediatric and Orthodontics Studies, Faculty of Dentistry University Technology MARA. <sup>3</sup> Associate Professor, Centre of Studies in Restorative Dentistry, Faculty of Dentistry, University Technology MARA, Malaysia Email: nuriejaq@gmail.com; drohana@salam.uitm.edu.my</p> <p><b>Introduction:</b> Root resorption occurs in approximately ninety percent of orthodontically treated teeth. It is a three dimensional (3D) phenomenon and abnormal root such as curved root is one of the risk factor of more root resorption compare to normal root during orthodontic treatment. It can be better analyzed by exploiting 3D imaging which allows virtual simulations and treatment planning process. <b>The methodology</b> is based on integrating Cone Beam Computed Tomography (CBCT) by creating 3D imaging using Standard Tessellation Language (STL) to show pattern distribution of root resorption in curved root teeth compared to normal root during orthodontics treatment. Patient wearing fixed appliance, MBT bracket prescription with a sequence of round arch wire 0.012”, 0.014”, 0.016” and 0.018”x0.025” nickel titanium in level and alignment. Then working arch wire 0.018”x 0.025, 0.019x0.025” stainless steel. Two time exposure of CBCT, T1 &amp; T2 for 3D modelling and superimposition. <b>Result:</b> Root resorption and deposition can be seen more in curved edge compare to normal root. <b>Conclusion:</b> The 3D imaging represent the distribution in colour mapping of root resorption in orthodontics treatment that can aid for better explanation to the patient during discussing the treatment plan.</p> <p><b>Keywords:</b> Root resorption, curve root, CBCT</p>	

13	<p style="text-align: center;"><b>PREVALENCE OF SKELETAL AND DENTAL CLASS I BIMAXILLARY PROTRUSION FROM ASSESSMENT OF PHOTOGRAPHS: A PILOT STUDY</b></p>
<p style="text-align: center;"><u>OTHMAN R. M.</u><sup>1</sup>, HAFIZAN N. N.<sup>2</sup>, ABDUL G. S H.<sup>2</sup>, KOAY N. A.A<sup>2</sup></p> <p style="text-align: center;"><sup>1</sup> Postgraduate student, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh  <sup>2</sup> Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh</p> <p style="text-align: center;">Email: qoy_83@yahoo.com; airinkoay@hotmail.com; norainanorman@gmail.com; drsarahaniza@gmail.com</p> <p><b>Objective:</b> To determine the prevalence of skeletal and dental Class I bimaxillary Sungai Buloh. All photographs were taken using Canon digital SLR camera EOS 70D (Canon Inc., Tokyo, Japan). Each patient’s photographs which include profile and incisors inclination photographs were arranged in designated folder and assessed by four assessors at one settings. Statistical analyses were performed using SPSS Version 23.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp) and Stata 13 (StataCorp.2013. Stata Statistical Software: Release 13. College Station, Texas, USA) <b>Results:</b> Results showed a moderate inter-reliability agreement between 4 assessors for skeletal and a fair agreement for dental assessment with the score of 0.4231 and 0.3585 respectively. Out of 259 photographs, 50 to 103 photographs were considered having skeletal class I bimaxillary protrusion while dental class I bimaxillary protrusion ranging from 59 to 119 photographs. <b>Conclusion:</b> Assessment by 4 assessors gave a prevalence ranging from 26.6–43.1 % for skeletal class I bimaxillary protrusion and 25.2-50.6% for dental class I bimaxillary protrusion . Assessment from photographs showed a moderate inter-reliability agreement for skeletal component and a fair agreement for dental component.</p> <p><b>Keywords:</b> bimaxillary protrusion, incisor inclination</p>	
14	<p style="text-align: center;"><b>Preliminary Analysis of Soft Tissue Features of Bimaxillary Protrusion</b></p>
<p style="text-align: center;"><u>SITI MAISARAH A.R.</u><sup>1</sup>, HAFIZAN N. N.<sup>2</sup>, ABDUL G. S H.</p> <p style="text-align: center;"><sup>1</sup> Postgraduate studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, Sungai Buloh, Selangor, Malaysia  <sup>2</sup> Orthodontist, Centre of Paediatric and Orthodontic studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh</p> <p style="text-align: center;">Email: sarahrazin@gmail.com, norainanorman@gmail.com drsarahaniza@gmail.com</p> <p><b>Objectives:</b> The objective of this preliminary study is to analyze some of the soft tissue features of bimaxillary protrusion on a sample of Orthodontic patients attending UiTM Orthodontic clinic using lateral cephalometric radiographs. <b>Methods:</b> A cross-sectional study involving analysis of 36 lateral cephalometric radiographs of Malaysian subjects from all races with bimaxillary protrusion which have been identified and analyzed. The radiographs were traced to assess the soft tissue values. All radiographs were hand traced and measured in random with tracing repeated in at least 1 week interval to assess systematic and random error. Intraclass correlation coefficient (ICC) was used to assess operator’s calibration. Six angular measurements and four linear measurements were measured at this stage; nasolabial (NLA), inferior labial (ILA), upper and lower lip protrusion angles (ULPA, LLPA); and upper lower lip to B line (ULB, LLB) and E line (ULE, LLE). <b>Results:</b> Intra-rater reliability were made for all 36 radiographs and the index of reliability showed excellent correlation (ICC: 0.8-0.9). Among angular measurements, NLA ranging from very acute (64°) to obtuse (124°) with mean 92.4° (SD 14.7), similar with ILA, 135.4° (SD 25.2). On lip protrusion, acute angles seen with ULPA, 27.1° (6.9); LLPA, 18.9° (5.1) and interlip, 106.8° (17.3). Meanwhile, all linear measurements have increased values with mean ULB, 7.2 (3.4); LLB, 6.9 (1.8); ULE, 1.2 (1.6) and LLE, 3.7 (1.8). <b>Conclusions:</b> Most bimaxillary protrusion patients presented with acute angular measurements due to proclined upper and lower teeth and thick lips as proven in the linear measurements.</p> <p><b>Keywords:</b> lateral cephalometric, bimaxillary protrusion, angular measurements, linear measurements, B line, E line</p>	

15	<p align="center"><b>Effects of <i>Ganoderma lucidum</i> Extract on Ribonucleotide Reductase Gene Expression in Oral Cancer Cell Line</b></p>
<p align="center">SYAIRAH N.S<sup>1</sup>, GABRIELE R.A.F<sup>2</sup>, KHOR G.H<sup>3</sup></p> <p><sup>1</sup>Faculty of Dentistry, Universiti Teknologi MARA Selangor Branch, Sungai Buloh Campus  <sup>2</sup>Nutritional Science and Natural Product Unit, I-PPerForM and Faculty of Medicine, Universiti Teknologi MARA Selangor Branch, Sungai Buloh Campus  <sup>3</sup>Oral and Maxillofacial Cancer Research Group and Faculty of Dentistry, Universiti Teknologi MARA Selangor Branch, Sungai Buloh Campus  Email: syairah093@gmail.com; gabriele@salam.uitm.edu.my; gootheah@salam.uitm.edu.my</p> <p><b>Introduction:</b> Oral cancer is the sixth most common cancer worldwide. Despite recent advancement in treatment modalities, five-year survival rate of oral cancer patients still remains less than 50%. An increased in ribonucleotide reductase (RNR) expression in mammalian cell are associated with cancer development. <i>Ganoderma lucidum</i> (G. lucidum) has long been used in Chinese conventional medicine for the prevention and treatment of various human diseases. There are many mechanisms by which G. lucidum extracts exhibit anti-cancer activities, including direct inhibition of cell proliferation. <b>Objectives:</b> To determine the effects of G. lucidum extract on RNR expression in oral cancer cell line. <b>Methods:</b> Both gingival fibroblast cell line and oral cancer cell line will be cultured and maintained under specific culture condition. The cell lines will be treated with G. lucidum extract and tested on their cell viability. In addition, gene expression of RNR in oral cancer cell line will also be determined using real-time PCR. <b>Expected Result:</b> It is expected that RNR expression will be decreased in oral cancer cell after treatment with G. lucidum extract. <b>Conclusion:</b> The findings from this study may provide information that can be useful for the development and advancement of oral cancer therapies.</p> <p><b>Keywords:</b> Oral Cancer; Ribonucleotide Reductase; <i>Ganoderma lucidum</i>; Gene Expression.</p>	
16	<p align="center"><b>Stainless Steel versus Titanium Alloy Micro-implants in Upper Labial Retraction</b></p>
<p align="center">MOHAMMAD ZUBIR Z<sup>1</sup>, MASOOD M<sup>2</sup>, ABDUL RAHMAN ANA<sup>3</sup></p> <p><sup>1</sup>Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry, University Teknologi MARA, Malaysia;  <sup>2</sup>Dentistry and Oral Health, La Trobe University, Melbourne VIC 3086, Australia;  <sup>3</sup>Centre of Paediatric Dentistry and Orthodontic Studies, Faculty of Dentistry, University Teknologi MARA, Malaysia;  Email: zubaidah0607@gmail.com; aida_nurashikin@salam.uitm.edu.my</p> <p><b>Introduction:</b> The application of temporary anchorage devices such as micro-implants or miniscrews and mini-plates are gradually accepted in orthodontic treatment as a method to reinforce anchorage. <b>Objectives:</b> To measure and compare rate of upper labial retraction between stainless steel micro-implants and titanium alloy micro-implants. <b>Methods:</b> Twenty-seven (12 male: 15 female) (mean age 23.7 years SD + 5.25) participants were recruited from the postgraduate clinic, Faculty of dentistry, UITM and randomized into two groups (TiA and SS). Thirteen patients in TiA group and fourteen patients in SS group. Premolars extraction were done in both groups. Following aligning and leveling, the chosen micro-implant of 1.6 mm in diameter and 8 mm in length were placed mesial to first molar in the maxilla. 150 gm retraction force were applied by using NiTi closed coil spring. Study casts were collected at before retraction (T0), at month 1 (T1) and month 3 (T2). <b>Results:</b> Total mean retraction was 3.02 mm in TiA group and 3.00 mm SS group. There was no statistically significant difference rate of retraction between both group. <b>Conclusions:</b> Both type of micro-implants were found to be equally as effective for upper labial segment retractions.</p>	



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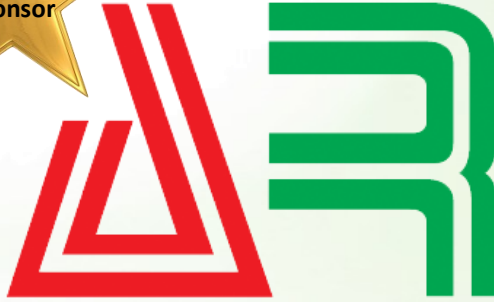
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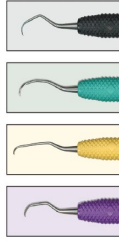
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