A COMpendium
Of ABSTRACTS
2014

Research Projects and Publications
of Oral Health Personnel in the
Ministry of Health Malaysia

Oral Health Division
Ministry of Health Malaysia
August 2015
FOREWORD
BY THE PRINCIPAL DIRECTOR, ORAL HEALTH
MINISTRY OF HEALTH MALAYSIA

It is my pleasure to write this foreword for the 16th publication of the Compendium of Abstracts of the Oral Health Programme. This publication presents abstracts of research undertaken by the oral health personnel in the Ministry of Health Malaysia, which were reported to the Oral Health Division in 2014.

Efforts have been continuously undertaken by our oral health personnel to conduct clinical and public health research in the country, despite the many challenges in healthcare delivery. All these efforts are valued because policy decisions must be based on credible evidence. Hence, there is a need to continue to strengthen the research culture in the services. Continuous support from all levels of management is fundamental to nurture the research ecosystem in the Oral Health Programme.

This compilation showcases 70 research abstracts, of which 60 papers have been presented at various forums and 9 articles have been published in local/international journals.

I would like to express my sincere appreciation to all researchers whose works are featured in this Compendium. All these accomplishments would not have been possible without the strong commitment from each and everyone involved. To all others who have contributed to put this Compendium together, thank you for your tireless efforts.

DATUK DR. KHAIRIYAH BINTI ABDUL MUTTALIB
EDITORS’ NOTE

This Compendium of Abstracts 2014 is a compilation of research abstracts that were reported to the Oral Health Division, Ministry of Health in year 2014. These were research outputs gathered from health systems research projects, oral and poster presentations at both local and international scientific meetings, dissertations, scientific papers published and other research works of oral health personnel.

As in the past, the Oral Health Division reserves the right and discretion to edit and modify these abstracts for grammar, length and clarity and to standardize formats in compliance to the requirements of this publication.

Research of public health interest conducted by specialists is included under the respective clinical specialty research categories.

Research work or presentations which are not reported to the Oral Health Division in 2014 have been excluded from this publication.

The Editors
Compendium of Abstracts 2014
Oral Health Division
Ministry of Health Malaysia
August 2015
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PROGRAMME EVALUATION
1. ORAL HEALTHCARE DELIVERY: THE DENTAL TEAM IN THE MINISTRY OF HEALTH

Noor Aliyah J, Yaw SL, Savithri V

Malaysia’s healthcare system which gives emphasis to universal access, affordable and high quality care has significantly transformed the health status of the nation. In line with its stewardship role for health, the Ministry of Health (MOH) plans and organizes medical, health and oral health services. Oral healthcare is delivered through both the public and private sectors. A comprehensive range of oral healthcare services across health promotion, disease prevention, curative and rehabilitative care is delivered by the public and private sectors through a network of community clinics, rural health clinics, major and minor specialist hospitals that provide specialist oral healthcare, state hospitals and national referral centres. Mobile dental clinics and teams increase and widen the spread of oral healthcare delivery. The backbone of the oral healthcare programme in the MOH is a committed team of healthcare providers comprising of dental officers and dental auxiliaries – i.e: dental nurses (DNs), dental technologists (DTs) and dental surgery assistants (DSAs). DNs provide treatment to children aged 17 years and below. They also play a significant role in oral health promotion, such as oral health talks, exhibitions and campaigns. DNs who have undergone post-basic training in various disciplines work in specialists’ clinics. DTs are responsible for the designing and processing of prosthetic, orthodontic and maxillo-facial appliances in the dental laboratory. In addition, they are also involved in the maintenance of dental equipment. Assisting the dental officer or dental nurse in patient care are the DSAs who are also responsible for the infection control in the dental surgery as well as patient and data management. Working harmoniously as a dedicated team in the MOH, they have successfully contributed to significant improvements in the oral health of the nation.

Oral presentation at 10th Allied Health Scientific Conference Malaysia 2014 on 9-10 September 2014 in Kuala Lumpur

Dr. Noor Aliyah Ismail
Dr. Yew Siew Lian
Dr. Savithri Vengadasalam
All of Oral Health Division
Ministry of Health Malaysia
Putrajaya
2. NEED FOR EXTRACTION OF PERMANENT TEETH AMONG PRIMARY SCHOOL-CHILDREN IN BACHOK

Wan Salina WS

Introduction: Prevalence of dental caries among schoolchildren in Kelantan was among the highest in Malaysia. Previous studies showed that dental caries was found to be the most important reason for tooth extractions. Loss of tooth has a profound effect on general health, quality of life and can lead to poor dietary habits. Objective: The purpose of this study was to assess the need for extraction of permanent teeth among primary schoolchildren in the District of Bachok in year 2012. Methods: This cross-sectional study was carried out by looking through the dental treatment records (LP8-1) of all primary schoolchildren examined in year 2012. Need for treatment was determined by the examiners. Results: Out of 16,199 schoolchildren examined, 1.7% (n=279) was found to have one or more teeth indicated for extraction. The percentage of male was slightly higher at 51.3%. A total of 349 posterior teeth need to be extracted, of which 47 teeth were from year one students. About 55.0% of teeth which needed to be extracted were from year one girls. Of these, 69.3% were lower teeth. Conclusion: These findings were similar with previous studies where more extractions were needed among girls and among lower teeth. The high need for extraction among year one children showed the need for effective preventive measures at a younger age.

Dr. Wan Salina Wan Sulaiman
Bachok Dental Clinic
Kelantan
3. REDUCING PERCENTAGE OF NON-ATTENDANCE IN KLINIK PERGIGIAN SERI MANJUNG

Dewi Mayang SK, Chien YL, Umil Khaire, Norliza S

Failure to attend appointments can be detrimental for patients and healthcare systems. Patients with treatable morbidity may not receive beneficial healthcare and healthcare resources will be used sub-optimally. A preliminary study showed the trend of non-attendance at Klinik Pergigian (KP) Seri Manjung was increasing and the highest (35.5%) in September 2010. Modification of existing appointment system and improvisation of patient-dental personnel communication were implemented for the period of February 2011 to April 2011. This study successfully reduced the non attendance rate from 35.5% to 17.5% in 3 months’ time.

Published in the 10th publication of the Perak Technical Report 2013

Dr. Dewi Mayang Sari Kamarozaman
Dr. Chien Ying Li
Ms. Umil Khaireh Zulkiflee
Ms. Norliza Sadikin
All of Seri Manjung Dental Clinic
Perak
4. COMPLIANCE OF OHCIS TO SECURITY

Theng CG

Oral Health Clinical Information System (OHCIS) is an electronic patient management system for government oral health service delivery. OHCIS, as a technology enabler towards accessible, integrated and high-quality oral healthcare system for the people. Beyond doubt, the security of the system is of paramount importance. This paper discusses compliance of OHCIS to security from two aspects i.e business and ICT security. Business security includes the user access control policy, audit trail and data security while ICT security covers the infrastructure and software aspects. The people factor is the critical factor to ensure security and thus change management can never be over-emphasized. The weaknesses and limitations in the present OHCIS system should be taken into consideration when developing the upcoming unified TPC-OHCIS system.

Oral presentation at the 4th Teleprimary Care Users Conference on 8-10 September 2014, in Subang Jaya, Selangor

Dr. Chu Geok Theng
Oral Health Division
Ministry of Health
Putrajaya
5. COST OF SCALING AND PROPHYLAXIS IN GOVERNMENT DENTAL CLINICS

Morni AR, Khairiyah AM, Ishak AR, Raja Latifah RJA, Natifah CS, Mazlina MD, Rauzi I, Misah MR

Objective: To quantify costs of scaling and prophylaxis (S&P) undertaken by dental officers in government dental clinics in urban and rural areas in Selangor. Methods: This study was a multicenter study involving two urban and two rural government dental clinics in Selangor. Clinical Pathways (cpath) for scaling and prophylaxis as well as Examination and Diagnosis (E&D) were formulated by clinician. Prospective quota sampling was used with a minimum of 40 S&P cases per clinic (rural/urban) with data collection ensued in 2009. Previous methodology for cost analysis was used. Capital and recurrent costs (macro-cost) and cost of procedures (micro-cost) were captured. Results: Mean micro-cost per S&P were RM 18.60 (sd 7.89) which is higher in urban clinics (RM 19.96; sd 6.93) as compared to rural (RM 17.34; sd 8.54). When macro-costs were added, mean S&P costs rose to RM 55.82 (sd 11.49) with costs being higher in rural areas (RM 58.00; sd 8.54) compared to urban (RM 53.44; sd 6.93). With F&D added, total mean S&P were RM 61.76 (sd 7.48). There was no appreciable difference in the mean total cost by location. The mean total cost of S&P was slightly higher in the rural clinic (RM 62.62; sd 8.54) as compared to the urban clinics (RM 60.83; sd 6.93). Conclusion: This study gave estimates of mean costs of S&P and quantified the proportion of micro-cost, macro-costs and E&D in the cost analysis for S&P. Macro-cost component contribute the majority of total mean cost of S&P procedure (60.3%), followed by micro-cost component (30.1%) and E&D (9.6%).

Poster presentation at the 35th Asia Pacific Dental Congress, on 10-12 May 2013 in Kuala Lumpur [win a merit award]

Poster presentation at the 6th National Oral Health Research Conference 2014, on 10-12 November 2014, in Kuala Lumpur (Showcase category)

Dr. Morni Ab. Rani
Dr. Mazlina Mat Desa
Dr. Raudzi Ismail
Dr. Misah Mohd. Ramli
All of Oral Health Division
Selangor State Health Department

Professor Dato' Dr. Ishak Abdul Razak
Professor Dr. Raja Latifah Raja Jailuludin
Formerly both are lecturer at the Faculty of Dentistry
University of Malaya

Dr. Khairiyah Abdul Mustalib
Dr. Natifah Che Saileh
Both of Oral Health Division
Ministry of Health
Putrajaya
6. CIVIL SERVANTS VALUATION OF PRIMARY CARIES PREVENTION PACKAGE: A CASE STUDY

Nurul AIH, Asma M

Introduction: Oral health needs among adults in Malaysia remain high. Among the oral diseases, caries prevalence is high (90.3% in 2000) and the caries severity increased with age. The complexities of treatment incur substantial cost. This paper attempts to measure the monetary value that people relate to primary caries prevention program in Malaysia. Objectives: To determine the willingness to pay (WTP) value for primary caries prevention package and describe the factors influencing people's preferences. Methods: A cross-sectional survey was conducted among civil servants working in six divisions under the Melaka State Health Department. The survey was conducted in the following manner: a) Face-to-face interview for hypothetical question using the Stated Preference technique (Contingent valuation method) to measure willingness to pay (WTP) b) Self-administered questionnaire to capture staff's details. All data were analyzed using Statistical Package for the Social Science (SPSS) version 16.0. The test of significance was Mann-Whitney and Kruskal-Wallis. Results: A total of 188 civil servants participated. WTP for primary prevention was 40MYR (13USD). This amount was just a little more than one-third of the total floor price (105MYR) proposed by Malaysian Dental Association (MDA); which covered the price of consultation [25MYR (8USD)] and fluoride therapy [80MYR (26USD) and above]. Higher WTP value was observed among female, Professional & Managerial group, those with no dependent family members, those with degree & higher qualifications, those in higher income group, those who are able to own proxy assets, those who owned a medical insurance with dental benefits, those frequently did routine dental check-up and those preferred private dental facilities. Conclusions: The civil servants in this study valued caries prevention however they are not ready to pay the actual consumption cost.

Keywords: Willingness-to-pay, contingent valuation method, caries, preventive package


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7. PROVIDER COST OF DENTAL RESTORATIONS IN GOVERNMENT DENTAL CLINIC IN KELANTAN

Mohd Zaid A, Azizah Y, Normastura AR, Saperi S, Amrizal MN

Introduction: Dental caries is the most significant component of oral disease burden and restoration is the only intervention to treat it. Most people perceived that to have dental restoration in Malaysian government clinic is cheap as fee per restoration in the Fee Act 1951 is only RM 2.00 regardless of materials used or extensiveness of the cavity. With the need for prudent expenditure, oral healthcare planners are obliged to seek evidences based on economic evaluation. Objectives: To determine the cost incurred and actual cost for dental restorations among adult patients in government primary oral healthcare clinics in Kelantan. Methods: A cross-sectional study was carried out in January to July 2013. Using simple random sampling of dental clinics which fulfilled pre-determined inclusion and exclusion criteria, 284 amalgam and composite restorations were recorded. The Direct-Activity-Based Costing (ABC) was calculated on each of dental restorations. Statistical data analyses used were the Mann-Whitney U and Kruskal-Wallis test via SPSS version 20.0. Results: Cost was significantly higher in composite resin restoration compared to amalgam at median RM 57.25 (IQR 22.17), and median RM 53.37 (IQR 16.79) respectively (p<0.001). The cost for Class II amalgam restoration was significantly different than other types of amalgam restorations (p=0.001). As for resin composite, there was no significant difference between complexities of restorations (p=0.1). Conclusion: The cost in the provision of dental restoration in government dental clinic is higher as compared with the charges set in Fee Act 1951. In providing dental restoration, higher cost is needed for resin composite as compared to amalgam restoration. Findings provide an added value in the evidences on the costing of primary oral health services in Malaysia.

Keywords: Dental caries, dental restorations, direct-activity-based costing

Paper presented at the 7th National Public Health Conference, held on 11-13 Nov 2013 at Concorde Hotel Shah Alam [Won 1st prize]

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Children Dental Centre & Malaysia Dental Training College  
Penang

Dr. Saperi Sulung  
Dr. Amrizal Muhd Nur  
Both of Universiti Kebangsaan Malaysia Medical Centre

Professor Dr. Azizah Yusoff  
Associate Professor Dr. Normastura Abd Rahman  
Both of School of Dental Sciences  
Universiti Sains Malaysia  
Kelantan

*Postgraduate student from Ministry of Health
Introduction: Patient non-attendance has always been a concern for orthodontists. Orthodontic patients who are undergoing active treatment need regular follow up appointments to ensure the success of their orthodontic treatment. Objectives: To investigate the percentage of patients who failed to attend (FTA) their appointments in Orthodontic Unit, Jalan Masjid Dental Clinic (OUJMDC) and also to find out the percentage of appointments failed by patients in OUJMDC. Methods: All the patients with appointments from 2 January 2012 to 31 May 2012 in OUJMDC were included in this retrospective study. During these 5 months, their appointment-keeping behaviour was evaluated. The names of the patients were identified from the appointment book. All their appointments were recorded as attended, changed or failed to attend (FTA). Results: A total of 549 patients were identified. Approximately 73.22% of the patients kept to their appointments, while 26.78% of the patients had changed or failed to attend (FTA) their appointments at least once. There was one patient who had failed or changed his/her appointments up to five times within 5 months. Out of the 1,585 appointments which had been given from 1 January 2012 to 31 May 2012, 10.54% of the appointments had been changed or FTA by the orthodontic patients in OUJMDC. Conclusion: Majority of the orthodontic patients in OUJMDC kept to their appointments.

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

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ORAL SURGERY, ORAL PATHOLOGY AND ORAL MEDICINE
9. ORAL LESION STATUS AND NEED FOR REFERRAL AMONG MALAYSIAN ADULTS

Wan Salina WS, Yaw SL, Khairiyah AM, Natifah CS, Jamalludin AR

Introduction: Examination of oral lesions and assessment of need for referral was part of the National Oral Health Survey of Adults in Malaysia 2010 (NOHSA 2010). Objective: To obtain information on prevalence of oral lesions and the need for referral among Malaysian adults population. Methods: A two-stage stratified random sampling targeted 14,444 adults aged 15 years and above in households. Assessment of oral lesions was done based on the presence of soft and/or bony lesions/abnormalities. Pain or discomfort associated with the lesion(s) was recorded and the need for referral was normatively assessed by the examiners. Data was analysed using SPSS version 17 with sampling weights for households at state and strata (urban/rural) based on 2010 census. Results: Overall prevalence of oral lesions obtained from this survey was 51.1% (95% CI: 49.4 - 52.8). About 30% [29.5% (95% CI: 28.0 - 31.0)] of the adults had soft lesion and 33.4% (95% CI: 31.8 - 35.0) had bony lesion. Only 3.0% (95% CI: 2.4 - 3.7) of the adults with lesion(s) experienced pain related to their lesion(s) and 5.3% (95% CI: 4.5 - 6.2) of adults with lesions needed referral for further care. Conclusion: The prevalence of oral lesions found from this survey was higher compared to previous survey. Although a very small percentage (3.0%) had complained of having associated pain, yet about 5.3% needed referral. The screening program for the early detection of oral pre-cancer and cancer program initiated by the Oral Health Division in the Ministry of Health Malaysia needs to be continued and strengthened. Efforts needed to promote mouth self-examination and professional screening through current or new media like the internet communication.

Keywords: Oral lesion, pain, referral

Oral presentation at the National Oral Health Research Conference 2014, on 10-12 November 2014 at Swiss Garden Hotel and Residences, Kuala Lumpur

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10. ORAL HEALTH STATUS AND TREATMENT NEEDS OF STUDENTS IN INSTITUTE OF TEACHER EDUCATION, PENGKALAN CHEPA, KELANTAN

Kamariah S, Badariah TC, Wan Salina WS, Asmani AR

Introduction: The oral health condition of individuals have been reported in literature to be influenced by various sociodemographic factors, including age, level of education and living conditions. Objectives: To determine the oral health status and treatment needs of trainee teachers at a training institute. Methods: This oral health screening program was conducted among all students in 5th semester of “Kursus Diploma Perguruan Malaysia” in Institute of Teacher Education, Pengkalan Chepa, Kelantan. It was part of the oral health workshop organized by the institution and in cooperation with Oral Health Division, Kelantan State Health Department. Oral examination was carried out on all consenting subjects using standard World Health Organisation oral health indices to assess dental caries, while the assessment of oral hygiene was based on the Guidelines of Oral Healthcare for Schoolchildren in Malaysia. Data was recorded on the Dental Treatment Cards (LP 8-1, Pin 1/97) and then transferred to SPSS version 18.5 for analysis.

Results: One-hundred and thirty-two subjects aged 23–25 years (mean 12.28 ± 6.82 years), comprising 27.3% males and 72.7% females participated in the study. Over 50.0% had parents of monthly income of less than RM 2,000 a month. Twenty-nine students (22.0%) were caries free, with a mean DMFT score of 3.43 ± 3.64 with no significant difference across gender (p=0.506). A total of fifty-six students (42.4%) had good oral hygiene (A), 52 (39.5%) students’ oral hygiene were fair (C) and the remaining 24 (18.2%) students’ had poor oral hygiene (E). Up to 57.6% of the students required oral prophylaxis, 39.4% required restorations and 12.1% required extractions. Conclusion: The subjects in this study had a high prevalence of dental caries and a high need for restorative care and extraction. They should be exposed to more oral health seminar to increase their awareness and practices for better oral health.

Keywords: Oral health status, oral hygiene, treatment needs, oral health seminar

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11. A COHORT STUDY OF CARIES PATTERN AMONG SECONDARY SCHOOLCHILDREN UNDER INCREMENTAL DENTAL CARE IN PERAK

Bibi Saerah NAK, Wardati AM, Law CH, Rihanizan MY, Inderjit Kaur MS

Introduction: Marked improvement in the oral health status of Malaysians especially among the school going population can be attributed to the success of the school dental service. Objectives: To determine the caries pattern among secondary schoolchildren (secondary one to five), the pattern of yearly increment over five years period and to assess whether the incremental dental care visits for secondary schoolchildren could be done once in every two years. Methods: This was a retrospective cohort study from the year of 2006-2010 involving 1,442 schoolchildren in Perak. Schools and schoolchildren were selected using systematic random sampling. Data from charting in the LP 8 card of each child starting from the year of 2006 to 2010 was coded accordingly and then transferred into SPSS for analysis. Results: About 49.0% of the schoolchildren were males and 56.0% Malays. Dental caries prevalence increased from 34.1% (2006) to 45.8% (2010) and mean DMFX (T) from 0.89 (2006) to 1.54 (2010) among urban schoolchildren. The pattern of yearly increment over five-year period showed a reduction in caries prevalence and experience among both rural and urban schoolchildren. Conclusion: An improvement in dental caries prevalence and experience was seen among rural and urban secondary schoolchildren. Therefore, the frequency of visits to secondary schools needs to be relooked. Instead of yearly visits, a two-yearly visit is recommended. This can give the nurses ample time to provide quality dental treatment and education for the younger age group (preschool and toddlers).

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12. DENTITION STATUS OF MALAYSIAN ADULTS: FOUR DECADES ON

Asmani AR, Yaw SL, Khairiyah AM, Natifah CS, Jamalludin AR, Nasruddin J

Objective: One of the objectives of the fourth National Oral Health Survey of Adults (NOHSA 2010) was to determine the dentition status of adults in the country in 2010. Methods: A two-stage stratified random sampling targeting 14,444 adults aged 15 years and above. Oral examination in households was undertaken by calibrated examiners. Complex sample data analysis was done using SPSS version 17. Sampling weights at state and urban/rural strata were calculated based on 2010 census. The findings were compared with similar surveys of Malaysian adults in 1974, 1990 and 2000. Results: Over the last four decades, the proportion of edentulous adults had decreased from 11.8% in 1974 to 7.3% in 2010. The mean number of teeth present had increased slightly from 21.6 (1974) to 22.9 (2010). Among dentate adults, those with 20 or more teeth were 80.0% in 2000 and 80.6% in 2010. There was a slight decrease in the mean tooth mortality (teeth missing or needing extraction) from 10.3 teeth in 1974 to 9.5 in 2010. Conclusion: Over the last four decades, although the proportion of dentate had slightly increased, there was only a slight increase in the mean number of teeth present and the mean tooth mortality had reduced by less than 1 tooth. Between 2000 and 2010, the proportion of dentate adults with 20 or more teeth per dentate adult remained almost the same.

Keywords: Dentition, Malaysian adults, four decades

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13. THE QUALITY OF LIFE OF CLEFT LIP AND/OR PALATE CHILDREN AGED LESS THAN 5-YEAR-OLDS: PARENTS’ PERCEPTION

Khairol Nisa A, Doss JG

Introduction: Cleft lip and/or palate (CLP) are among the most common congenital malformations that involve a person’s face. It remains undisputed that CLP present a variety of difficulties for those affected. Objectives: To assess parents’ perceived impacts of CLP on their child’s Quality of Life (QOL) and to assess these impacts by family’s socio-demographic characteristics, socio-economic status and child’s clinical details. Methods: A cross-sectional study was carried out using ‘face-to-face’ interviews with the PedsQL™ Questionnaire module. A convenient sample of 131 parents having CLP children (aged from after birth to less than 5-year-olds) was recruited from Cleft Lip and Palate Association of Malaysia (CLAPAM) and monthly combined cleft lip/ palate clinics at two university teaching hospitals. Kruskal Wallis and Mann-Whitney U statistical tests were used to assess associations. Significance level was set at $\alpha = 0.05$. Results: QOL for children aged 1 to 12 and 13 to 24-month-olds was highest in cognitive, psychosocial and physical functioning dimensions and lowest in emotional functioning and physical symptoms. Overall QOL was significantly highest among the older children (25 to 59-month-olds) and those of post-treatment status. Children of lower income families (<USD 980) had better psychosocial health. Infants up to 12-month-olds having only cleft lip had significantly higher QOL and those with Muslim mothers had significantly higher psychosocial health scores. Conclusion: Parents perceived that their children’s ‘Psychosocial Health’ was more affected than ‘Physical Health’ in all age categories except for the 1 to 12-month-olds category. Overall, the child’s age and treatment status plus household income influenced the child’s QOL while mothers’ religion and type of cleft influenced the QOL of their child’s first year of life.

Keywords: Cleft lip, cleft palate, quality of life, parent’s perception, PedsQL™


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14. ADOLESCENTS’ OPINION ON SCHOOL-BASED ORAL HEALTH EDUCATION

Nurul Syakirin AS, Marhazlinda J, Roslan S

Introduction: Health education is one of the important components of school-based oral health promotion programme. Adolescent perspectives on the school-based oral health education (OHE) may support public health professionals in order to develop more effective interventions of OHE. Objectives: This qualitative study used focus groups to gather adolescents’ opinions on school-based oral health education approach in terms of acceptance and its perceived benefits. Methods: Thirty-two adolescents aged seventeen years old from one urban and one rural school in Selangor, Malaysia participated in four focus groups discussions. Each session was audio-recorded. The data were transcribed and coded into themes using QSR NVivo 9 according to the basic principles of Grounded Theory approach. Results: Participants described that their acceptance of school-based oral health education depended on exquisiteness, satisfaction, quality and value of the programme. Content, delivery, speakers and language were the factors that contributed to the exquisiteness of school-based OHE. The venue, duration, attitude of dental support staff and support from teachers were the factors that affected their satisfaction. Quality of school-based OHE was reflected in the conduct, audio-visual aids and surrounding. Their perceived values of oral health initiated the acceptance of the programme. Awareness, knowledge and self-confidence were the perceived benefits gained from the school-based OHE. Conclusion: This qualitative study gives the insight of acceptance of school-based OHE among adolescents. Though school-based oral health educations were perceived to be beneficial to the adolescents, understanding their acceptance may provide essential information for enhancing school-based OHE programmes.

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15. ORAL HYGIENE STATUS AND PROBLEMS ENCOUNTERED BY THE MOTHERS DURING TOOTH BRUSHING AMONG DOWN SYNDROME CHILDREN IN KOTA BHARU, KELANTAN

Zaihan Q, Normastura AR, Azizah Y, Mohd Khairi MD

Introduction: Dental plaque is the major contributing factor for oral health problems in Down Syndrome (DS) individuals due to their limited capability to maintain oral hygiene. Mothers play an important role in ensuring the general health and oral care of their DS children. Objectives: To determine the matured plaque among the samples and also the possible problems faced by the mother during toothbrushing session. Methods: This was a comparative cross-sectional study on sample of 85 DS children attending special classes, community-based & rehabilitative centre (CBRC) and DS centre and 86 normal children from the respective schools in Kota Bharu. Their mothers were also involved in this study. The plaque was collected at the interproximal site of the molar using the disposable plaque collector and examined using the GC plaque and pH check kit. A validated questionnaire from De Jongh was used to assess the problems. Results: There were almost equal numbers of males in DS group (48.2%) and in non-DS group (47.7%). Mean age was 9.3 years (SD 2.05) in DS and 9.8 years (SD 1.34) in non-DS group. Most of the DS (91.8%) and non-DS (95.3%) using ordinary children toothbrush (p=0.339). The mature plaque was not significantly different between DS and non-DS children (p=0.279). Most of the DS mothers (71.0%) encountered problems while brushing their DS children’s teeth. The highest reported problems were children turning their head away (73.3%) and followed by closing of the mouth (50.0%). Conclusion: Matured plaque was high in both DS and non-DS children regardless of the disability in DS children and also the type of toothbrush used. DS mothers encountered most problems especially children turning their head away during performing the oral hygiene routine to their children.

Keywords: Down syndrome, matured plaque, oral hygiene, mothers

Poster presentation at 71st Malaysia-International Dental Exhibition and Conference, on 30 May 2014 – 1 June 2014, in Kuala Lumpur

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16. PROFILE OF PATIENTS IN THE DENTURE WAITING-LISTS IN JOHOR BAHRU DISTRICT

Loh KH, Teoh CA, Shim CN, Abdullah SA

Introduction: The population of Johor Bahru (JB) district has been increasing on a linear trend in the last decade and with that, patient attendances in government dental clinics. One challenge is the capacity to meet the high demand for dentures. Objectives: 1) To study demographic profile of patients on Denture Waiting-Lists (DWL) in JB district. 2) To identify reasons for replacement of dentures. 3) To obtain information on the effectiveness of School Dental Service (SDS). 4) To gauge the awareness of patients on the existence of subsidies for denture provided in government dental clinics and their readiness to pay more. Methods: This study included all patients in the DWL in two primary care dental clinics in JB. A structured questionnaire was used in telephone interviews. Data entry and analysis was done using SPSS. Results: A total of 208 (48.9%) out of 425 patients participated in the questionnaire. Most were females (57.7%) and majority Chinese (78.4%). The largest age group was the 55 to 64-year-olds (37.0%). The main reason for requesting for new dentures was loose dentures (25.0%). Differences in proportion of edentulous/dentate patients among beneficiaries and non-beneficiaries of the SDS were significant (p<0.05). About 76.0% of patients were not aware of existing denture subsidies, but 52.4% were willing to pay more. Conclusion: This study provided a useful insight into patients’ profile in the DWL in JB district. Recommendations were made to help in managing DWL and to ensure the quality of dentures provided.

Keywords: Dentures, waiting-list, profile, subsidies

Poster presentation at 9th Johor Scientific Meeting, 22-25 September 2013, in Johor

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17. THE SIGNIFICANT INDEX OF CARIES AMONG 12-YEAR-OLD SCHOOLCHILDREN IN MALAYSIA

Rozihan H, Khairiyah AM, Yaw SL, Natfah CS

Objectives: To determine the Significant Caries (SiC) Index of 12-year-old schoolchildren in Malaysia and to identify risk groups for caries among this age group. Method: NOHSS 2007 was a cross-sectional survey involving a two-stage systematic probability sampling proportionate to population by location. Schools under the Ministry of Education forming the sampling frame. A total of 11, 292 12-year-old schoolchildren weighted to represent 99.9% of the estimated enrolment of 12-year-olds in 2007 were examined. Data mining was carried out to determine the SiC Index, which is the mean DMFT of a third of the 12-year-olds with the highest caries severity. Further analysis of this group by socio-demographic variables was done. Results: Caries prevalence of 12-year-olds in 2007 was 41.5% (95% CI: 39.9-43.0) and the mean DMFT was 1.12 (95% CI: 1.06-1.18). The SiC Index was 3.10 (SE=0.05, 95% CI: 3.00-3.19). There were no significant differences in proportion by gender and by location, among the third with the highest mean DMFT. Among the ethnic groups, Malays constituted the highest proportion (55.4%, 95% CI: 51.22-59.57). The SiC Index was inversely associated with parental education level and reported monthly income, with significantly higher SiC Index as education and income level decreased. Conclusion: The Significant Caries (SiC) Index of 12-year-old schoolchildren in Malaysia was 3.10 and risk groups for caries has been identified. This data will provide input for future high risk strategies in oral healthcare for schoolchildren in Malaysia.

Oral presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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18. CARIES TREATMENT NEED OF MALAYSIAN ADULTS: SCENARIO AFTER TEN YEARS

Bibi Saerah NAK, Khairiyah AM, Yaw SL, Habibah Y, Jamalludin AR

Objective: To assess the dental caries treatment need amongst dentate adults in Malaysia. Methods: A nationwide cross-sectional survey using a two-stage stratified random sampling targeted 14,444 adults aged 15 years and above in households was done in 2010 (NOHSA 2010). Clinical examination on caries status was conducted by calibrated examiners, using a clinical format adapted from WHO (1997) and normative caries treatment need was assessed. Assessment of treatment need included need for both preventive caries arresting-care and caries treatment needs. Complex sample analysis with sampling weights at state and urban/rural strata was based on 2010 census. Comparison was done with NOHSA 2000 findings. Results: A higher proportion (37.9%) of adults required extraction compared to 2000 (35.8%). Thirty-eight percent needed restorative care compared to 43.0% in 2000. About 2.2% required pulp care and 0.7% complex conservative care, compared to 1.1% and 0.8% respectively in 2000. Conclusion: The overall caries treatment need was still high in 2010 with extraction remaining as the highest treatment need even after 10 years. The need for restorative care has decreased. Preventive oral health seeking behavior after leaving school needs to be further emphasized in oral health messages.

Poster presentation at the IADR-SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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19. USE OF TOOTHPASTE AMONG MALAYSIAN ADULTS

Wan Salina WS, Khairiyah AM, Yaw SI, Natifah CS, Jamalludin AR

Objective: To determine the prevalence of fluoridated toothpaste use among dentate adults in Malaysia. Methods: A two-stage stratified random sampling targeted 14,444 adults aged 15 years and above in households was carried out in 2010 (National Oral Health Survey of Adults 2010) with sampling weights at state and strata (urban/rural) based on 2010 census. Face-to-face interviews were conducted by trained interviewers. Data was analyzed by using SPSS v. 17. Results: Majority of dentate adults [98.9% (95% CI: 98.6-99.1)] used toothpaste. Among these, 93.7% (95% CI: 92.8-94.4) used fluoridated toothpaste, 5.1% (95% CI: 4.4-5.9) used non-fluoridated toothpaste and 0.1% (95% CI: 0.1-0.3) did not know whether their toothpaste contain fluoride. Among adults using fluoridated toothpaste, 53.8% (95% CI: 51.9-55.7) perceived they were using fluoridated toothpaste, 3.5% (95% CI: 3.0-4.1) perceived they were using non-fluoridated toothpaste and 42.7% (95% CI: 40.8-44.6) did not know whether the toothpaste they used contained fluoride. Among those using non-fluoridated toothpaste, 20.5% (95% CI: 16.4-25.2) perceived that their toothpaste was fluoridated and 33.5% (95% CI: 28.5-39.0) knew that their toothpaste was non-fluoridated while, 46.0% (95% CI: 40.7-51.5) did not know whether their toothpaste contain fluoride. Conclusion: Majority of dentate adults in Malaysia used fluoridated toothpaste. There is still a need to promote awareness on use of fluoridated toothpaste.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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20. ORAL HEALTH STATUS AMONG TRAINEE SCHOOLTEACHERS IN KUALA LUMPUR

Sharol Lai S. Kanagalingam VM

Objective: To determine oral hygiene, caries status, denture status, and treatment needs among trainee schoolteachers in Teacher Education Institutes (TEI) in Kuala Lumpur. Method: A sample of 4,660 Semester 5 trainee teachers, cohorts 2006 to 2011, from four TEI located in Kuala Lumpur. The data collected and reported was part of a routine exercise carried out in conjunction with the Trainee Teachers Dental Health Program. Simple Oral Hygiene Index and DMF Index were used for measuring oral hygiene and caries, respectively. In addition, need for dentures and last visit to the dentist were also included in the data collection form. Data was analyzed using SPSS version 14. Result: All 4,306 (92.4%) of the trainee teachers agreed to be examined. Of these, about 45.5% had either fair or poor oral hygiene, 37% needed prophylaxis and scaling. Dental caries was observed in 80.3% of the sample examined and the mean DMFT was 3.2 ± 2.1. About 4.2% of the trainees had dentures, 0.1% wore ill-fitting dentures, and 6% needed partial dentures. Majority of them (44.7%) had visited their dentist more than three years ago. Conclusion: There is a significant need to enhance the importance of oral healthcare among the trainee teachers.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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21. DEVELOPMENT AND VALIDATION OF QUESTIONNAIRE ‘DENTURE KNOWLEDGE, ATTITUDE AND PRACTICE IN MUKAH DIVISION, SARAWAK’

Seow J D, Voon KKR, Yuliana A, Lim SK, Siti Zaharoh O, Mohamad Termizi B

Background: In Mukah Division, many patients insisted on extraction of their remaining dentition, and to be replaced by removable complete dentures, despite being informed about the advantages of keeping sound natural dentition and the feasibility of removable partial dentures. A questionnaire was used for this cross-sectional study to assess the denture knowledge, attitude and practice in Mukah Division, Sarawak. However, there is no known validated questionnaire available for use. Objective: To develop and validate a questionnaire to assess denture knowledge, attitude and practice (KAP). Methods: A questionnaire with 22 items was developed with the help of dental public health experts. Purposive sampling was used for pre-test and pilot study. 10 responsive and cooperative subjects were selected for pre-test. 2 groups of 30 subjects, wearing and not wearing dentures respectively, with a wide variation in denture KAP were selected from various dental clinics in different Divisions of Sarawak for the pilot study. The reliability of the questionnaire was evaluated by its internal consistency with Cronbach’s Alpha, and the construct validity by factor analysis. The reliability and validity tests were performed separately for denture wearers and non-denture wearers. Results: Reliability analysis indicated a high consistency of the questions where Cronbach’s Alpha values were between 0.79 and 0.90. In the factor analysis for denture wearers, 3 components were identified which indicated Knowledge, Attitude and Practice sections whereas for non-denture wearers, 2 components were defined which indicated Knowledge and Attitude sections. Hence, the final version of the questionnaire for denture wearers had 3 sections with 14 items and 2 sections with 1 item for non-denture wearers.

Poster presentation at the IADR-SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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BEHAVIOURAL ASPECTS IN RELATION TO ORAL HEALTH
22. STUDY TO ACCESS THE KNOWLEDGE AND IMPACT OF PSYCHOSOCIAL HAZARDS AMONG DENTAL TECHNOLOGISTS IN PENANG GOVERNMENT HOSPITALS AND CLINICS

Arumugam K, Ong AL, Abdul Razak O

Dental Technologists (DT) work in the dental laboratory and they face different hazards such as physical hazards, ergonomics hazards, biological hazards, chemical hazards and psychosocial hazards. Thirty-six DTs from the Penang State Government Hospitals and clinics were selected for a six-month cross-sectional study. Data analysis was carried out using Microsoft Excel. Results of the study showed that 96% of DTs have basic knowledge about psychosocial hazards and its effect while 54% DTs have been affected by psychosocial hazards. Of the total, 61% responded that high workload was the major contributor to stress. Monitoring and smart distribution of task can reduce stress among DTs. Advice from counselor can increase their knowledge on how to deal with dangers of psychosocial hazards. The Occupational Hazard Safety Team in each department can organize courses or workshops about stress management for DTs. Participation in sports and religious activities with family can create stress free mind. A good working relationship between friends can reduce stress in the work environment. The management, supervisors and DTs themselves can contribute to handling of psychosocial problems among DTs. To curb the effects of psychosocial problems among Penang DTs, it is recommended that more knowledge on stress management be disseminated among the workforce.

Poster presentation at 10th Allied Health Scientific Conference Malaysia 2014 on 9-10 September 2014, in Kuala Lumpur [One of the top 5 winner]

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23. KNOWLEDGE, ATTITUDE AND PRACTICE OF SMOKING AMONG SMOKERS AND NON SMOKERS AT CHILDREN’S DENTAL CENTRE AND DENTAL TRAINING COLLEGE MALAYSIA (CDC & DTCM)

Nurfarhana Farah A, Nazliah AA, Ahmad Termizi Z

Introduction: Smoking is a major public health problem worldwide. It brings forth negative impact not only on individual’s health but also to people surrounding them. Students and health personnel are the catalyst for change towards healthy lifestyle practices. Objective: To determine the prevalence of tobacco smoking among students and personnel, and to study their knowledge, attitude and smoking practices. Methodology: A quantitative study of cross-sectional design was conducted in Children’s Dental Centre & Dental Training College Malaysia from May 2012 until April 2013. A validated self-administered questionnaire was randomly distributed. Altogether 482 respondents were involved and response rate was 89.4% (431). Data analysis was performed using descriptive statistic, Pearson chi-squared test and t-test using SPSS version 15.0 with statistical significance of p<0.05. Result: Prevalence of smoking was only 7.6%, with 5.1% among students and 2.6% among personnel. Amongst students and personnel who smoked, majority smoked daily. A higher proportion of personnel had quit smoking as compared to students. Non-smokers had better knowledge compared to current smokers and ex-smokers. Majority of respondents (current smokers, ex-smokers and non-smokers) demonstrated similar attitude towards tobacco use and tobacco control. The differences between ex-smokers and current smokers on smoking practices were highly significant. Conclusion: At the time of study, smoking among personnel and students in this institution was not considered a major problem. In general, non-smokers were more knowledgeable and with better attitude. Both current smokers and ex-smokers shared similar smoking practices. Continuing professional education, development of a module on tobacco use and control and ensuring its implementation are recommended if personnel and students are to be agents of change.

Keywords: Smoking prevalence, KAP, institution

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24. ORAL HEALTH KNOWLEDGE, PERCEPTION AND BEHAVIOUR AMONG PARENTS OF TODDLERS ATTENDING MATERNAL AND CHILD HEALTH CLINIC (MCHC) IN PERLIS

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Introduction: Oral health is a component of general health and is an important factor in the normal development of a child. Parents are the primary role model for the toddlers, their health beliefs and attitude towards oral health care act as significant predictor of their children's oral health. **Objective:** To assess the oral health knowledge, attitude and behavior among parents of toddlers attending the Maternal and Child Health Clinics (MCHC) in Perlis. **Methods:** A cross-sectional study was done among 190 parents of toddlers attending the MCHC in Perlis. Data was collected using a self-administered questionnaire. Analysis was done using SPSS version 10.0. **Results:** Majority of parents had moderate to good oral health knowledge (90.0%). Most (97.4%) agreed that frequent sugary food for toddlers could cause dental caries but only 52.1% of parents knew that frequent bottle feeding could cause tooth decay. Only 40.0% of parents knew that bacteria causing tooth decay can be transmitted from mother/carer to infant via saliva from sharing of utensils or food. About one-third thought otherwise and 26.3% of them were ignorant of this. More than half (54.2%) of the parents chewed or tasted the food or drink before feeding it to their children. Nearly a-quarter (23.7%) of parents felt that their child should not be weaned from the bottle to drink from a cup at one year. More than one-third (34.7%) of parents were either disagreed or unsure that decayed deciduous teeth can be filled apart from extraction. Even though the majority of the parents agreed that regular dental visit for their children is required, more than half (51.6%) of them failed to do so and only 28.4% visited a dentist within last year. **Conclusion:** Good oral health knowledge of the parents was not seen to be translated into some of their practices with regards to the oral health of their children. Dental personnel in delivering oral health messages for parents with toddlers should therefore emphasize on aspects found lacking in this study.

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25. ORAL HEALTH KNOWLEDGE, ATTITUDE AND PRACTICE AMONG MEDICAL DOCTORS IN THE SIBU HOSPITAL

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Introduction: Good oral health relies on correct knowledge, attitude and practice (KAP) of oral health care. Equipping health professionals with basic oral health knowledge is imperative to reorient oral health care services in the pursuit of oral health promotion. Objectives: Our study aimed to assess oral health knowledge, attitude and practice (KAP) among medical doctors working in Sibu Hospital and to explore the effects of socio-demographic profile on oral health knowledge. Methods: We adopted a pre-tested questionnaire to collect data from all the medical doctors working in Sibu Hospital during the survey period. Data inputs of completely filled forms were recorded and analysed using Statistical Package for the Social Sciences (SPSS) software 18.0 (Chica-go,IL,USA). Results: Data were recorded and analysed for 120 medical doctors working in the Sibu Hospital. Overall knowledge score of 7.63 ± 1.87 was recorded with no significant difference between genders. Generally, medical doctors with working experience more than two years scored better oral health knowledge than those less than two years (p<0.05). While toothbrush and toothpaste remained the most commonly used oral hygiene aids. However, only 38.3% of them flossed their teeth. About 94.2% had positive attitude towards the importance of regular dental visit but only 15.8% practiced it. ‘No time’ was the most common reason for not having a dental visit. Conclusions: Oral health education should be conducted among non-dental health personnel as a routine practice to enable a comprehensive grasp of basic oral healthcare knowledge so that they can promote good oral healthcare better.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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CLIENT SATISFACTION
AND OTHER AREAS
Introduction: Oral Health Clinical Information System (OHCIS) is a patient-centric integrated software solution for electronic oral health service delivery. It has been implemented in 11 clinics in Selangor and Johor since 2009. Objectives: (1) To evaluate extent of use of OHCIS, (2) To gauge perception of administrators, providers (users) and patients using OHCIS and their overall satisfaction level, (3) To evaluate the impact of OHCIS on costs and (4) To evaluate the impact of OHCIS on waiting time. Methods: The study involved all clinics in Selangor and Johor using OHCIS. Three (3) sets of questionnaires were designed for the patients, users and administrators. Results: All the eleven (11) clinics are implementing OHCIS. Cronbach’s Alpha was 0.78 for the administrator and patient questionnaires ranged from 0.75 to 0.87. The total number of respondents was 337. Majority of respondents were satisfied with OHCIS, the highest being the users (93.7%), followed by the administrators (93.3%) and patients (84.9%). Up to 95% of respondents recommended that OHCIS be expanded to other clinics. The average waiting time for registration has improved by 55.0% from 2008 to 2013, despite an increase of almost 120% in patient attendances in the same period. Cost-savings on treatment cards was estimated at 26.0%. Conclusion: This study has shown that the implementation of OHCIS is very effective. However, findings of its limitations need to be addressed for its full potential to be realized.

Oral presentation at the 4th Teleprimary Care Users Conference 2014, 8-10 September 2014, at Subang Jaya, Selangor

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27. CLINICAL PRACTICE GUIDELINES – A LACK OF AWARENESS, COMPLIANCE OR RELEVANCE?

Balasundram S, Tork HX

Objective: To determine the level of awareness, compliance and the perception of relevance among dental officers towards clinical practice guidelines (CPGs). Methods: Self-administered questionnaires were distributed to dental officers who had served more than one year in the Ministry of Health in Johor. The questionnaire contained questions related to two clinical practice guidelines (CPG) in Malaysia namely (1) Antibiotic Prophylaxis against Wound Infection for Oral Surgical Procedure (2003) and (2) Management of Unerupted and Impacted Third Molar Teeth (2005). Result: A total of sixty dental practitioners were involved in this study. A total of 56 subjects (93.3%) were aware of CPGs in general while 41 subjects (68.3%) and 45 subjects (75.0%) were aware of the presence of the guidelines (1) and (2), respectively. About 8.3% of subjects had 76%-100% of awareness on all CPGs, whereas for CPG (1) and (2), only 6.6% and 18.3% of subjects achieved 76%-100% awareness respectively. A total of 58.3% of subjects were compliant to CPGs, 38.7% of them only partially and 5.0% revealed non-compliance. Only 5.0% of subjects complied 76%-100% with CPG (1), while 21.6% complied for CPG (2). Moreover, 90.0% and 100% of subjects respectively, agree that CPGs (1) and (2) were very relevant to their clinical practice. Conclusion: Most clinicians are aware and agree that CPGs are a relevant and vital part of evidence-based practice. However, practitioners themselves must become familiar with both the guidelines and the rationale behind them.

Poster presentation at the Malaysian Association of Oral and Maxillofacial Surgeons (MAOMS) Scientific Meeting on 31 March 2013

Poster presentation at the Malaysian Dental Association (MDA) Congress on 25-28 October 2013

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Selection of Opportunities for Improvement: In delivering quality healthcare, it is imperative to maintain privacy and confidentiality of patients' records. Key Measure for Improvement: Value of > 90% was chosen as an acceptable standard, as an expression of confidence in the department's ability to keep the records as confidential. Process of Gathering Information: Using a convenient sampling, questionnaires were distributed to parents and guardians of patients while waiting in the waiting area during a selected period of time. Collected data were analysed using Microsoft Excel 2010. Analysis and Interpretation: The study conducted in 2013 was based on information gathered from 201 completed forms. Generally, most patients have clear understanding on the meaning of personal information and agreed that personal information should not be discussed among staffs and other patients. However, knowledge on confidentiality was slightly lacking with 14.4% thought that confidentiality meant holding back information from the clerking dental officer. About 31.3% and 25.4% of parents felt that confidentiality implied that some information does not need to be recorded in the treatment card and accessed by auxiliary staff. Regarding the process of collecting personal information 96.0% of sample claimed they felt comfortable doing so by the current practice. Only 89.0% of sample believed that patients' health information was kept confidential by the department. Strategy for Change: A copy of the department's Client Charter was distributed to all new patients. The charter mentioned patients and parents' rights as well as explained the issue of privacy and confidentiality. Effects of Change: The audit in 2014 showed improvement in some values. The understanding by parents regarding the meaning of personal information was improved where 93.0% of parents believed that personal information was kept confidential. Lesson Learnt: It is interesting that although awareness has increased regarding personal data but the concept of confidentiality was not clear. Parents understanding, expectations and attitudes which differ to those by medical staff can cause problems in delivering good health service.

Oral presentation at the 25th QA/QI Convention Kuala Lumpur Hospital on 5-7 Nov 2014, at the Main Auditorium Hospital Kuala Lumpur

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Dr. Raja Zarina Raja Shahardin
Dr. Noraini @ Nun Nahar Yunus
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ORAL SURGERY, ORAL PATHOLOGY AND ORAL MEDICINE
29. BISPHOSPHONATE-RELATED OSTEONECROSIS OF JAW (BRONJ) – A CASE REPORT

Norma Aj, Noor Azwani MN

Introduction: Bisphosphonate-Related Osteonecrosis of Jaw (BRONJ) is defined by the presence of exposed bone in the mouth which fails to heal after appropriate intervention over a period of six or eight weeks in patient taking Bisphosphonate for treatment of malignancies such as breast cancer or multiple myeloma and for treatment of benign disease such as Paget disease. It is commonly associated with history of tooth extraction and the overall prevalence is about 5.0% in patient received Bisphosphonate. The increasing number of cases of BRONJ described in literature, suggesting that there are increasing number patient taking Bisphosphonate. BRONJ is far more frequently induced by IV Bisphosphonates than by oral Bisphosphonates. Case Description: We are presenting our patient with history of IV Bisphosphonate (Zometa) for treatment of metastatic breast cancer (1998) and bone metastasis (2010). She developed numbness and tingling sensation on lower left mandible following extraction of tooth 37 the past 3 months. Patient was initially treated with empirical antibiotic therapy more than a month followed by few series of pus drainage under local anaesthesia. Further management plan was surgical exploration and curettage of 37 socket followed by removal of impacted 38 under GA on 12 July 2013. Discussion: The mechanism of by which Bisphosphonate cause BRONJ is still not understood. Two main risk factors associated with the development of BRONJ: Type (potency), duration and route of Bisphosphonate administration and trauma to the jaws. Patients receiving IV Bisphosphonates and having dento-alveolar surgery are seven times more likely to develop BRONJ than those who do not undergone surgery. Conclusion: Ideally, patient should be fully dentally fit and preventive dental intervention should be done before patient commence Bisphosphonate Therapy.

Poster Presentation at 21st FDI/MDA Scientific Convention and Trade Exhibition on 18-19 January 2014, PWTC Convention Centre, Kuala Lumpur

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30. LINGUALLY DISPLACED THIRD MOLAR ROOT – A CASE REPORT

Norma AJ, Fadzira M, Foo QC, Teh LA

Introduction: Displacement of third molar root into the lingual space during surgical removal is a rare but complex complication. Retrieval of the root is often difficult due to poor visualization and limited access. Systemic review by Brauer and Dent shows an incidence of lower than 1% for iatrogenic displacement of root fragment of third molar during extraction. The risk of displacement is aggravated by thin lingual plate and linguually positioned third molar. Excessive uncontrolled forces, improper manipulation due to lack of experience and poor clinical and radiological assessment further increased the risk. Blind probing thereafter will further displace the fragment into deeper spaces. Difficulty of retrieval is determined by the level of displacement and size of the root fragment. Retrieval under GA and/or extraoral approach is indicated for difficult cases. Case Description: This case report aims to discuss an iatrogenic displacement of 48 root into the lingual space during a minor oral surgery procedure on a 24 year-old lady. OPG indicates a displacement into the lower border of the angle of mandible. The root was retrieved by Senior Consultant of Oral Surgery using manual manipulation and artery forcep under LA. A temporary lingual nerve paraesthesia was reported postoperatively. Discussion and Conclusion: 3D imaging, good preoperative evaluation and competent instrumentation and techniques may reduce the incidence of iatrogenic displacement of tooth during surgical removal.

Poster Presentation at 21st FDI/MDA Scientific Convention And Trade Exhibition on 18-19 January 2014, PWTC Convention Centre, Kuala Lumpur

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31. TEN-YEAR REVIEW OF SALIVARY GLAND TUMOURS AT TWO REFERRAL CENTRES IN MALAYSIA

Nurshaline K, Wan Mahadzir WM, Nor Nazaliza B

Objective: To determine the pattern of occurrence of salivary gland tumours in two referral centres; Sarawak General Hospital and Kuala Lumpur Hospital over a period of ten years. Methods: A cross-sectional retrospective study. Medical records of patients who presented with tumours of the salivary glands in the two major referral centres over a period of ten years from 2000 to 2009 were reviewed. Results: Overall, frequency of malignant tumours was higher (66.7%). Females were noted to be more frequently affected and 15/36 cases (41.7%) presented with malignant tumours. Racial variation was noted with Indians (5.6%) reporting low prevalence of salivary gland tumours as compared to Malays, Chinese and ‘Bumiputera Sarawak’. ‘Bumiputera Sarawak’ were also more likely to present with malignant rather than benign salivary gland tumours with 8/10 tumours encountered being malignant. Pleomorphic adenoma (30.6%) which account for the majority of the benign tumours was the most common diagnosis documented. The most frequent malignancy encountered was mucoepidermoid carcinoma (27.8%) followed by adenoid cystic carcinoma (16.6%) and adenocarcinoma not otherwise specified (13.9%). Other less frequent malignancies were polymorphous low-grade adenocarcinoma, salivary duct carcinoma and carcinoma ex pleomorphic adenoma. Majority of the tumours encountered occurred on the maxilla/palate (21/36 cases). Surgery was found to be the primary mode of treatment provided followed by combination of surgery and radiotherapy. Conclusion: Females showed higher frequency of salivary gland tumours with preponderance for malignant tumours. There is racial variation with Indians presenting with low prevalence unlike the pattern observed with squamous cell carcinoma. Pleomorphic adenoma and mucoepidermoid carcinoma are the most common benign and malignant salivary gland tumours respectively. Main treatment option provided is surgery for both benign and malignant tumours. The authors proposed a larger scale study including other centres and standardized histopathological reporting to be carried out in order to obtain a true relative frequency of the distribution.

Presentation at the 9th Asian Congress on Oral & Maxillofacial Surgery (ACOMS) on 25-28 November 2010, in Kuala Lumpur

Poster presentation at the 6th National Oral Health Research Conference 2014, on 10-12 November 2014, in Kuala Lumpur (Showcase category)

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32. ORAL CANCER AWARENESS AMONG ADULT OUTPATIENTS ATTENDING GOVERNMENT DENTAL CLINICS IN FEDERAL TERRITORY OF KUALA LUMPUR AND PUTRAJAYA

Geoffrey L

Introduction: The occurrence of oral cancer is particularly high among men, the eighth most common cancer worldwide. Incidence rates for oral cancer vary in men from 1 to 10 cases per 100,000 in many countries. The vast majority of malignant neoplasms in the mouth are squamous cell carcinomas and for these cancers, tobacco and alcohol are regarded as the major risk factors. The disease is largely preventable and early diagnosis greatly increases a patient’s chances of survival as the mouth is very accessible. Objectives: To compare awareness of oral cancer and its risk factors by socio demographic factors, to compare awareness on mouth self-examination as a means to detect oral cancer early by socio-demographic factors and to determine sources of information about oral cancer. Methods: This is a cross-sectional study on adults who attended fourteen government dental clinics in Federal Territory of Kuala Lumpur and Putrajaya from 15 – 19 November 2010. A 16 item questionnaire was the survey instrument and a total of 1,864 subjects responded. Results: About 75.0% of the adults reported having heard of oral cancer. Awareness was highest among Malays (81.5%), younger individuals (78.7%) and those with higher education (85.2%). Majority of respondents (88.6%) cited that smoking was a risk factor whilst only 43.2% and 49.0% thought that alcohol consumption and betel quid chewing was risk factor respectively. Majority of respondents (87.9%) agreed that early detection can improve treatment outcomes but only 36.7% heard of mouth self-examination as means for the early detection of oral cancer. More than two-third (67.9%) cited newspapers as a source of information about oral cancer followed by government hospitals or clinics (62.3%) and radio or television (55.3%). Conclusions: Most are aware about oral cancer and of the link between smoking and mouth cancer. However, awareness is lacking about alcohol and betel quid. Awareness about mouth self-examination is also low and most have never been shown how to do it. There is a need to increase awareness about alcohol and tobacco as risk factors for oral cancer in all clinics, hospitals, schools etc. Promoting mouth self-examination at all dental clinics, schools, health camps and train individuals how to do it is highly recommended.

Keywords: Oral cancer, awareness, risk factors

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33. NON-INVASIVE DETECTION OF ORAL CANCERS USING MLPA

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Objectives: Despite the recent advances in cancer biology and loco regional therapy, the incidence and mortality rates of oral cancer have shown little improvement. The lack of specific clinical identifying features leads to the difficulty in differentiating Oral Potentially Malignant Disorders (OPMDs) from benign proliferative condition which may explain the delay in diagnosing oral cancer. In this preliminary study, a non-invasive brush method was used to detect oral cancer specific genes using Multiplex Ligation-dependent Probe Amplification (MLPA). Methods: MLPA was used to detect genetic alterations of 107 genes in 10 OPMD lesions using a non-invasive brush method. Gingiva flaps from 10 healthy individuals were used as controls. The frozen tissue samples of 5 patients with dysplasia were also analysed. Results: Genetic alterations from the DNA obtained from the brush technique were successfully detected using MLPA. The most frequently altered gene in the OPMD brush samples was the KLF3 (60%). The OPMD brush samples showed 12.2% genetic alterations while the dysplasia samples showed an 8.7% genetic alteration which is higher than the normal samples at 3%. Conclusion: The non-invasive brush technique has the potential to be used with MLPA to screen for oral cancers.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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34. MICRONUTRIENTS: MEASUREMENTS FROM VALIDATED DATA AND ASSOCIATION WITH ORAL CANCER


Objective: To examine the association between micronutrient (retinol, α-tocopherol and β-carotene) intake as measured by food frequency questionnaire and corresponding measurement in blood serum, and to determine the association between micronutrient and risk of oral cancer in the Malaysian population.

Methods: This is a case control study involving multi-centre/hospital based patients. This study included 120 oral cancer cases and 120 controls matched for age, gender and ethnicity. Serum samples, socio-demographic and dietary data were obtained from the Malaysian Oral Cancer Database and Tissue Bank System (MOCDTBS). Two measurement tools were used to measure micronutrient intake. The first measurement is taken from blood serum, while the second is taken using data gathered from a specific food frequency (FFQ). Micronutrients from serum were extracted with hexane and examined using high performance liquid chromatography (HPLC) while data from the FFQ was converted to daily nutrient intake by the NutrieMart software. The correlation between the two methods used was analysed using Pearson correlation coefficient and the association of micronutrients with oral cancer risk was examined using multiple logistic regressions. Results: This study found that the two methods applied were not correlated. Meanwhile, logistic regression analysis showed that retinol (OR = 0.501, 95% CI: 0.254–0.992, p < 0.05) and α-tocopherol (OR = 0.184, 95% CI: 0.091–0.370, p < 0.05) was significantly related to lower risk of oral cancer, whereas, no relationship was observed between serum level of β-carotene and oral cancer risk. Conclusion: This study concluded that biochemical assessment and dietary assessment using FFQ serves different purposes and cannot be used interchangeably. This study also found that high level of serum retinol and α-tocopherol provides protection against oral cancer.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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35. HIGH THROUGHPUT SCREENING OF BIOMARKERS FOR ORAL SQUAMOUS CELL CARCINOMA

Khor GH, Froemming GRA, Rosnah MZ, Abraham MT, Thong KL

Objectives: High throughput screening of methylation profiling of oral squamous cell carcinoma (OSCC) screened by DNA methylation microarray, followed by validation of methylation statuses of significant candidate genes using methylation specified polymerase chain reaction (MSPCR). Finally, OSCC prognostic values were also conducted on demographic and clinicopathological data with promoter hypermethylated genes of OSCC. Methods: Normal oral mucosa and OSCC tissues were analysed using methylation microarray. The selected differential hypermethylated genes from microarray profiling were further verified for their methylation status. Lastly, relations of demographic and clinicopathological characteristics and these signature genes were conducted for prognostic purposes of OSCC. Results: A total of 91 promoter hypermethylated and 85 hypomethylated genes have been screened using methylation microarray. High frequencies of promoter hypermethylation of clinical samples were found in genes of PIK3R3, TP73, MEF2D, RRM2 and CELSR3 by MSPCR analysis. In addition, significant associations were found between TP73 hypermethylation with patients’ tumour site (p=0.006), and CELSR3 and TP73 hypermethylation with patients’ invasive stages (p=0.008 and 0.025). Conclusions: High throughput screening using DNA methylation profiling revealed potential diagnostic and prognostic biomarkers for OSCC in this study. The results also provide a new insight into the molecular basis of promoter hypermethylation in OSCC.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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36. INTERACTION BETWEEN GENETIC POLYMORPHISMS AND RISK OF ORAL CANCER


Objective: Oral cancer is a serious health problem in developing countries. Smoking, alcohol drinking and betel quid chewing are well known risk habit. However, genetic predisposition of an individual has been suggested as an important factor especially among the individuals without risk habits. This study aims to examine the prevalence of gene polymorphisms and determine the interaction between genetic polymorphisms and the risk of oral cancer. Method: Malaysian Oral Cancer Database and Tissue Bank System (MOCDTBS) were established in 2005. This system provides a standard approach on socio-demographic data and specimen collection from healthy individuals and patients who were diagnosed with oral malignant or pre-malignant lesions. Five genes, namely GSTT1, GSTM1, CYP1A1, ALDH2 and MDM2 were selected and results from studies of genetics polymorphisms were compiled. The interaction of gene polymorphisms and OSCC was evaluated. This study was approved by the Medical Ethics Committee, Faculty of Dentistry, University of Malaya. Result: 102 healthy controls and 164 OSCC patients were selected in this study. The Odds Ratio (OR) of GSTM1 null genotype was 0.93 (95% CI: 0.60-1.53) compared to OR of GSTT1 null genotype which was 0.96 (95% CI: 0.58-1.59). The OR of CYP1A1 ile/val or val/val polymorphism was 0.79 (95% CI: 0.48-1.30). Furthermore, the prevalence of ALDH2 AG/GG allele polymorphisms and MDM2 TG/GG allele polymorphisms among OSCC cases was 7.3% and 78.1% respectively. A significant association between ALDH2 polymorphisms and OSCC was found in tobacco smokers (OR=19.45, 95% CI: 1.02-370.16). Conclusion: The interaction between gen polymorphisms and OSCC presented in this study provide evidence to support that the genetic profile of an individual may contribute to increased risk of OSCC.

Oral presentation at the IADR/SEA 28th Annual Scientific Meeting/SEADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak
37. EFFECTIVENESS OF TEA BAG AS HAEMOSTATIC PAD AFTER DENTAL EXTRACTION

Wong LS, Kueh TS, Tay KK

Introduction: Patients undergoing dental extraction are routinely given plain gauze to bite on to assist in haemostasis. However, prolong bleeding after dental extraction is still common. Tea is a common beverage and contains tannin, believed to have haemostatic effect. **Objective:** To evaluate the efficacy of a common household tea bag (Black Tea) as post extraction haemostasis pad. **Methods:** Over a four month period, 165 fit and healthy patients, who required simple anterior and posterior extraction, were enrolled into this prospective study. The patients were randomly allocated into gauze and tea bag groups. All extractions were done by a single operator in the morning and the patient received either plain gauze or wet tea bag as haemostasis pad to bite on over the tooth socket. The haemostatic pad was then removed at intervals and extraction socket observed at 1, 2, 5, 8, 11, 14, and 20 min. The post-extraction bleeding time (BT) was recorded. **Results:** Of 165 patients, the mean age was 36.55 ± 11.9. In the anterior group, we had thirty-one plain gauzes and thirty tea bags. In posterior group we had fifty-five plain gauzes and forty-nine tea bags. The time taken to complete dental extraction in all four groups was not statistically significant. The mean time (± SD) for post-extraction bleeding for anterior teeth was 3.03 minutes (± 2.20) for gauze group and 2.10 minutes (± 1.24) for tea bag group (p < 0.05). The mean time (± SD) post-extraction bleeding for posterior teeth was 5.22 minutes (± 4.04) for gauze group and 3.22 minutes (± 2.47) for tea bag group (p < 0.01). **Conclusion:** The finding shows that tea bag (Black Tea) is a more effective post-extraction haemostatic pad when compared to plain gauze.

Oral presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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All of Dental Specialist Clinic  
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38. PROGNOSTIC INDICATORS OF SQUAMOUS CELL CARCINOMAS: ANY ETHNIC DIFFERENCE?


Objectives: To identify prognostic indicators of oral squamous cell carcinomas (OSCC) and to compare ethnic differences in patients’ prognosis. Methods: Data on sociodemographic and clinical characteristics from selected OSCC patients were extracted from the Malaysian Oral Cancer Database and Tissue Bank System (MOCDBTS). Kaplan-Meier analysis was used to estimate overall survival, differences among groups were compared using log rank test. Cox regression models were used to identify factors associated with patient survival. Results: A total of 227 respondents were selected for this study. About half of them (49.8%) were Indians. Most common risk habit for Malays was smoking (31.7%), combination of smoking and drinking for Chinese (39.5%), betel quid chewing among Indians (61.1%) and all three habits for indigenous people (25.7%). The most common sub-site among Indians was buccal mucosa (42.4%), while tongue and floor of mouth were the most prevalent for other ethnic. Overall 5-year survival is 40.9%, while it is 45.7%, 44.0%, 41.3% and 27.7% for Malays, Chinese, Indians and Indigenous respectively (p < 0.005). Tumor size, nodal status and stage at presentation are significant prognostic indicators (p < 0.005). Positive nodes and advanced stages increased the probability for mortality for all ethnic (p < 0.005), whereas larger tumor size is predictive of poorer survival only among Chinese (HRR=3.81, 95% CI: 1.19-12.20) and Indians (HRR=2.01, 95% CI: 1.12-3.60). Conclusion: Tumor size, nodal status and stage of presentation are significant predictors of survival. Slight differences can be seen in characteristics and prognostic indicators of OSCC between different ethnic groups.

Oral presentation at the IADR-SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

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Kuala Lumpur

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39. CORRELATION OF CTHRC1 TO CLINICOPATHOLOGICAL PARAMETERS AND IMPACT ON PROGNOSIS OF OSCC


Objectives: To determine mRNA and protein expression levels of CTHRC1 in oral squamous cell carcinoma (OSCC) compared to normal oral mucosa (NOM) tissues and also to determine the clinical and prognostic significance of this gene in OSCC. Method: CTHRC1 mRNA expression level in OSCC was determined using quantitative PCR (q-PCR) and compared with levels in NOM. Protein expression of CTHRC1 in OSCC and NOM tissues were examined by immunohistochemistry. The correlation between CTHRC1 expression levels and clinicopathological parameters was evaluated by univariate and multivariate logistic regression analyses. The association between CTHRC1 expression and overall survival was explored using Kaplan-Meier analysis and log rank test. Multivariate Cox Regression was used to determine the prognostic role of CTHRC1. Results: Over-expression of CTHRC1 was found in 88.4% of OSCC samples with an average of 12.3-fold increases at the mRNA level. Immunohistochemistry analysis showed a higher expression of CTHRC1 protein in OSCC tissues at 68.7%, compared to 33.3% in NOM. Over-expression of CTHRC1 was significantly associated with positive lymph node metastasis in OSCC (p < 0.05), and this association remained significant even after adjustment with confounding factors (p < 0.05). Kaplan-Meier survival analysis demonstrated that OSCC patients with over-expression of CTHRC1 protein had poorer prognosis (p < 0.05). Multivariate Cox Regression model revealed that over-expression of CTHRC1 is an independent prognostic factor in OSCC (p < 0.05). Conclusion: The current study has shown that CTHRC1 expression was significantly over-expressed in OSCC compared to normal samples. Over-expression of CTHRC1 protein expression could have lymph node metastasis dependent and independent roles that lead to poorer survival among patients who over-express this protein in their tumours.

Oral presentation at the IADR-SEA 28th Annual Scientific Meeting/SEAADN 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

Mr. Lee Chia Ee
Mr. Vincent-Chong Wee King
Dr. Anand Ramanathan
Dr. Thomas George Kallarakkal
Ms. Lee Peng Karen-Ng
Ms. Wan Maria Nabilah Wan Ab. Ghani
Prof. Dato’ Dr. Zainal Ariff Ab. Rahman
Dr. Siti Mazliah Ismail
Prof. Dr. Rosnah Mhd. Zain
All of Faculty of Dentistry
University of Malaya, Kuala Lumpur

Prof. Dr. Cheong Sok Ching
Oral Cancer Research Team (CARIF)
Subang Jaya, Selangor

Dato’ Dr. Wan Mahadzir Wan Mustafa
Dr. Mannil Thomas Abraham
Dr. Tay Keng Kiong
All of Oral Health Division
Ministry of Health
40. MUTATION – NOT THE CAUSE OF CRNN DOWN-REGULATION IN OSCC


Objectives: Chromosome 1q21.3 harbors the epidermal differentiation complex (EDC), a gene cluster that plays a critical role in late epithelial differentiation. Down-regulation of EDC genes is reported in the progression of normal esophageal epithelium to Barret’s esophagus and esophageal adenocarcinoma. Cornulin (CRNN) gene on this cluster is over-expressed when squamous epithelial cells are placed under environmental pressures. CRNN gene expression is confined to squamous cells, especially in esophageal squamous epithelial cells. This gene was found to be down regulated among oral squamous cell carcinoma (OSCC) cases.

Methods: Specific primers were designed for covering the coding regions, un-translated region (5’- and 3’-UTR) and splicing sites of this gene. Then, sixty-two OSCC cases consisting of 41 Indians, 3 Indigenous, 12 Malays and 6 Chinese who had history of habitual risk factors were included for mutation screening using direct sequencing. Results: In direct sequencing of CRNN gene, five known (c.-13-37A>G in intron 1, c.138+73_138+74 insA in intron 2, p.Thr355= in exon 3, p.Gly480Ser in exon 3, c.*8C>T in 3’UTR) and two novel variants (c.*158G>C in 3’UTR and p.Glu205Asp in exon 3) were found. In silico analysis showed that these variations could not be damaging. Conclusion: To the best of our knowledge mutation screening of CRNN gene in the current research could be the first documented report among OSCCs. The finding of this study illustrates that CRNN down regulation could not be the result of mutation in this gene.

Oral presentation at the IADR-SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014, in Kuching, Sarawak

Mr. Chang Hong Yun
Dr. Iman Salahshourifar
Mr. Vincent-Chong Vui King
Ms. Hoel Lang Ser
Dr. Anand Ramanathan
Dr. Thomas George Kallarakkal
Ms. Lee Peng Kean-Ng
Ms. Wan Maria Nebilah Wan Abdul Ghani
Professor Dato' Dr. Zainal Ariff Abdul Rahman
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Klang, Selangor

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Department of Oral Surgery
Sarawak General Hospital
Kuching, Sarawak

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PAEDIATRIC DENTISTRY
41. TRAUMATIC DISPLACEMENT OF TOOTH INTO NOSE DETECTED TWO YEARS LATER

Sockalingam G

Objectives: Traumatic injuries to teeth are very common in children. Cases have been reported of teeth being displaced into the lips, nasal cavity, the maxillary antrum, the gut and the lungs. The most serious displacement is if the tooth is aspirated into the lungs. Case report: A 12 year-old Malay girl was referred by the school dental service for evaluation and management of missing tooth 21. General examination revealed that the girl was of normal built and had no medical history of relevance. She however claimed to have occasional foul smelling discharge from left nostril. She had not seek medical attention for this condition. She gave a history of a bicycle fall trauma 2 years earlier and was treated for soft tissue laceration wound on face at a medical clinic. She had been referred to dental clinic but she failed to attend. Extra-oral examination revealed symmetrical face. Temporal-mandibular joint functions were within normal range. There was a well healed scar on her nose. Intra-oral examination revealed clinically missing tooth 21. There was partial closure of space due to drifting of adjacent teeth. Tooth 22 was noted to be rotated 180 degrees with palatal surface facing labial. OPG examination revealed tooth 21 within nasal cavity. CBCT revealed tooth in horizontal position anterior-posteriorly with crown being anterior and root lodged between inferior nasal concha and floor of nose. Treatment: Patient was taken to operation theatre and under oral intubation displaced tooth was removed with aid using ENT scope. Patient then was referred for orthodontic alignment to recreate space for prosthetic replacement. Palatal surface of 22 was build-up with composite to resemble labial surface. Post-operative recovery was uneventful. Conclusion: This case is unique in that the displaced tooth within the nose was undetected for 2 years. We are unable to explain how the tooth entered the nose and why the patient was unaware of its presence. It is important for all healthcare personnel involved in emergency management of traumatic injuries in the maxillofacial region to carry out thorough examination of teeth. Any missing teeth should be accounted for. If this is not possible it is recommended to take plain radiographs ie. OPG and a chest radiograph to rule out displacement of teeth into adjacent anatomical spaces.

Poster presentation at the 18th World Congress on Dental Traumatology, 19-21 June 2014, at Istanbul, Turkey [Won first prize]

Poster presentation at the 6th National Oral Health Research Conference 2014, on 10-12 November 2014, in Kuala Lumpur (Showcase category)

Dr. Ganasingam V. Sockalingam
Department of Paediatric Dentistry
Sultanah Aminah Hospital, Johor Bahru
42. MELIODOSIS PRESENTING AS OSTEOMYELITIS OF THE MANDIBLE

Sarimah MM, Laila AJ

An infectious disease caused by *Burkholderia pseudomallei* is called melioidosis. *Burkholderia pseudomallei* are saprophytes, can cause infection of various sites of patients with predisposing factors, most commonly diabetes. A healthy teenage girl was diagnosed with melioidosis following isolation of this microorganism from culture and biopsy of the mandible. Clinically, the disease manifested as a chronic left facial swelling, unusual osteomyelitis of the left coronoid process, and enlargement of the left submandibular lymph node without any systemic illnesses or disturbance of daily activities. The girl was also diagnosed as having chronic periodontitis. This infection is regarded endemic in Southeast Asia and Northern Australia. None of the literature reports melioidosis causing osteomyelitis of the mandible in a young healthy patient with chronic periodontitis. Awareness of the common occurrence of the infection and its manifestation is vital for proper diagnosis and management.

**Keywords:** Melioidosis, teenage, periodontitis, osteomyelitis, mandible

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Poster presentation at the National Oral Health Research Conference 2014 on 10-12 November 2014, Kuala Lumpur

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Dr. Laila Abd Jalil
Both of Paediatric Dentistry Department
Tuanku Jaafar Hospital
Seremban, Negeri Sembilan
43. DENTAL STATUS & DIETARY HABITS AMONG CHILDREN WITH CONGENITAL HEART DISEASE

Leong KJ, Oming M

Introduction: Dietary habits play an important role in caries development. Often, preoccupied with the medical condition leads to neglect in oral healthcare. As such their general health is put at further risk if they suffer from dental disease. Objective: To compare the dental status and dietary habits among children with congenital heart disease (CHD) with medically fit and healthy (MFH) children who were referred to Department of Paediatric Dentistry, Sabah Women and Children Hospital. Methods: Children with CHD referred for dental clearance formed the cardiac group while MFH children referred for behaviour management formed the control group. Data collection was conducted over a period of 2 months and only children aged 2 to 12 years were recruited. All children had dental examination and questionnaires were completed by the parents. Oral hygiene was scored using the Simplified Oral Hygiene Index. Inter-examiner agreement was also analyzed using weighted kappa for both oral hygiene level and carious lesions. Results: A total of 13 CHD children and 17 MFH children were recruited. There was no significant difference in the mean age of both groups (P=0.464). There was a significant difference in the oral hygiene score for these 2 groups (P<0.05) with 76.92% of CHD children who had an unsatisfactory level. The mean dfx for CHD children (14.08) was significantly higher than MFH children (P=0.022). There was no significant difference in the mean DMFX between these 2 groups. There was no significant difference in the number of children with snacking in-between main meals per day and frequency of cariogenic food intake per week in these 2 groups (P=0.141, P=0.465). Conclusion: Majority of children with CHD had unsatisfactory level of oral hygiene. This would explain the higher mean dfx score in this group of patient. There was no significant difference in dietary habits in both CHD and MFH children.

Poster presentation at the National Oral Health Research Conference 2014, held on 10-12 November 2014, Kuala Lumpur

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44. TRAUMA CASES REFERRED TO THE PAEDIATRIC DENTAL DEPARTMENT OF HOSPITAL TENGKU AMPUAN RAHIMAH (HTAR) KLANG: A RETROSPECTIVE STUDY

Vijayakumar T, Naidu BS, Norliza I

Objectives: (1) To determine the prevalence of trauma cases referred to the Department of Paediatric Dentistry HTAR, Klang, (2) To determine other factors involved such as age, sex, causes of injury and type of injury sustained, presence of trauma to teeth, and (3) presence of any concomitant injury. Method: A retrospective study was conducted based on the records of patients referred to the Department of Paediatric Dentistry HTAR. The sample consisted of records of 259 children below the age of 16. There were 176 males and 83 females. Results: The most common cause of injury was injuries sustained by fall (53.0%). The most common type of injury sustained was soft tissue injury (80.0%) and the prevalence of trauma to teeth was 45.0%. A majority of the cases seen sustained no concomitant injuries (97.7%). Conclusion: Identifying the etiological factors makes it possible to establish preventive measures and avoiding future injuries. There is a need for professional training on the management of dental trauma as dentists may be involved in the initial assessment of these patients. Thus, appropriate referral for definitive treatment can be done immediately.

Poster presentation at the 20th FDI/MDA Scientific Convention and Trade Exhibition on 12-13 January 2013, in Petaling Jaya, Selangor

Dr. Thaarani Vijayakumar
Dr. Bevani Srinu Naidu
Batch of Paediatric Dentistry Department
Kajang Hospital, Selangor

Dr. Norliza Ibrahim
Paediatric Dentistry Department
Tengku Ampuan Rahimah Hospital
Selangor
NRR Ahmad Nizar, Chinna K., Peariasamy K.

Objectives: (1) To evaluate the accuracy of Demirjian method in estimating the chronological age of male and female children. (2) To test new method using all teeth including third molar if the Demirjian method was found not to be accurate. Thus establishing a new dental age curve using the new method proposed.

Methods: A total of 768 young individuals aged 5-16 year-old were selected, of which 384 males and 384 were females. The stages of development of each tooth in every individual were determined from panoramic radiographs (OPGs) using Demirjian’s scoring system. Data were analysed statistically for mean value, standard deviation, and the relationship between the recorded characteristics.

Results: It shows that Demirjian method was less accurate for Malay children. Further analysis will be done using non-linear regression model (logistic model, SPSS Statistics 17.0) to construct the new dental age curves for Malaysian boys and girls by including all the teeth (including third molars).

Poster presentation at the 20th FDI/MDA Scientific Convention and Trade Exhibition on 12-13 January 2013, in Petaling Jaya, Selangor

Dr. NRR Ahmad Nizar
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Dr. Kalaiarasu Peariasamy
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Selangor
46. PSEUDOTUMOUR OF THE MANDIBLE COMPLICATED BY AN ODONTOGENIC CYST IN A YOUNG HAEMOPHILIA: A CHILD WITH FACTOR INHIBITOR

Noraini Nun Nahar Y

Background: Pseudotumour is a complication in patients with bleeding diathesis resulting from recurrent haemorrhage in tissues. Pseudotumours have been reported in the oral regions and pertinent management is necessary to prevent serious complications such as distortion and even erosion of the adjacent bone. This paper presents a case report of pseudotumour affecting the anterior region of the mandible complicated by an odontogenic cyst in a young child afflicted with haemophilia A with inhibitor. Clinical management: The 2-year-old patient presented with history of recurrent trauma, and lingual displacement of tooth 81 and a bucco-lingual expansion of the lower anterior segment was observed during a follow-up visit. The submental region was grossly swollen, hard to palpation and had slowly increased in size. CT revealed mandibular destruction; almost the entire body was replaced by an expansile lytic lesion suggestive of intraosseous haemophilic pseudotumour. A biopsy reaffirmed the haemophilic pseudotumour and surgical evacuation of the lesion under the necessary factor cover was subsequently performed soon after. HPE of the tissue removed, however, showed an epithelial lining suggestive of an odontogenic cyst. He had a prolonged hospital stay and healing of the lesion was quite eventful due to his inhibitor status and active nature. A 6-month post-operative CT showed marked improvement with almost normal appearance of the mandible. A year later he presented with a more extensive swelling extending to the right body of the mandible which was then enucleated, followed by eventful healing. The patient was placed on a 2-monthly review as a preventive measure. Conclusion: Thorough understanding of pseudotumours among health providers and patients is important since it can affect quality of life and if insufficiently managed may give rise to serious complications.

Oral presentation at the World Federation of Haemophilia 2014 World Congress, on 11-15 May 2014, Melbourne Convention Centre, Australia

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47. ORAL AND MAXILLOFACIAL BIOPSIED LESIONS IN PAEDIATRIC PATIENTS

Jamaiah MS, Noraini Nun Nehr Y, Nurulnazra MA

Introduction: Worldwide, paediatric patients may present with various oral and maxillofacial lesions, with clinical signs and symptoms sometimes differing from those in adult. However, there are limited data and information on type of oral and maxillofacial pathology cases frequently seen in Malaysian paediatric population. Objectives: To identify the number and type of paediatric oral and maxillofacial biopsied lesions at the Department of Paediatric Dentistry, Kuala Lumpur Hospital and to compare the epidemiological data with those of previous studies in other centres. Methodology: The study was done retrospectively by retrieving records from year 2000 until 2013 at the Department of Paediatric Dentistry, Kuala Lumpur Hospital, which is the national referral centre for children under 16 years-old. The data obtained from the records includes the age, gender, race, site of lesion and the diagnosis from the pathology report. Data collected were entered and analyzed using Microsoft Office Excel 2003. Descriptive statistics were used. Results: Out of 431 biopsy records over 13-year period (2000-2013), 410 records were retrieved. Majority of the cases occurred in 6-11 year-old (57.6%), followed by 12-16 year-old (27.3%) and 0-5 year-old group (15.1%), with female predilection (58.3%). Cystic lesion comprise the largest number of specimens (260/410; 63.4%), followed by neoplasm (64/410; 15.6%), inflammatory (49/410; 11.9%) and others (37/410; 9%). Out of 260 lesions diagnosed as cyst, 215 (82.7%) were mucous extravasation cysts. Conclusion: Majority of the lesions detected were benign, which required minimal intervention. Even though the malignant lesions are rare in the paediatric population, early detection and diagnosis is very important. Recognition of the clinicopathological features should alarm the clinician that the growth and anatomy of the maxillofacial structures may have been altered by the pathology or even the treatment received.

Oral presentation at the IADR-SEA 29th Annual Scientific Meeting on 11-24 August 2014 in Kuching, Sarawak

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48. COMPLETENESS OF THE CLINICAL RECORDS AT THE DEPARTMENT OF
PAEDIATRIC DENTISTRY

Subramaniam CD, Suriini S, Noraini Nun Nahar Y

Selection of Opportunities for Improvement: Clinical records contain many vital information. Clear, comprehensive and updated record is imperative to provide good care, to assist in audits and researches, for identification purposes and not forgetting for legal matters. Circumstances such as a very busy clinic and new staffs cause likelihood of some information not being documented. Key Measure for Improvement: Clinical records were assessed to determine whether vital information is properly recorded. Several vital parameters were objectively assessed whether they are present or absent. A standard of more than 90% was considered acceptable. Process of Gathering Information: Dental clinical records of patients on sociodemography, consent, dental charting, medical history, treatment plan and legibility were randomly selected. Data were collected using a special form. Data from departments’ yearly audits from 2007 till 2013 were compiled and analysed using Microsoft Excel 2010. Analysis and Interpretation: Satisfactory result was achieved for parameters such as sociodemography, consent, dental charting, medical history, treatment plan and legibility. The results for dental history and diagnosis were slightly lower. Strategy for Change: Excellent result of 100% presence was recorded for sociodemography and dental charting. Dental auxiliaries working at the counter has been reminded regularly to make sure all the sociodemographic data has been completed when registering new patients and dental charting to be recorded yearly as soon as patient is being examined. The rest of the parameters were noted to be managed by officers especially newly graduated officers doing attachment. They are not familiar with the system used in the department. Effects of Change: Throughout the years, much improvement was seen in most parameters. Measures such as refresher courses to staff as well as briefing of new officers on proper documentation were regularly done. Monitoring and random checking by persons in charge has helped to emphasize awareness. Lesson Learnt: Clinical records in the Department of Paediatric Dentistry are generally well documented although some important parameters are slightly lacking. Basically, staff should be aware of the implication of improper record and understand their responsibility. Reminders and counter checking will result in achieving excellent result.

Poster presentation at the 25th QA/QI Convention Kuala Lumpur Hospital on 5-7 Nov 2014, in Kuala Lumpur

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Dr. Suriini Sukeri
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ORTHODONTICS
Pengenalan: Aplians Boleh Tanggal merupakan sejenis alat ortodontik yang digunakan untuk merawat malokusi yang tidak rumit. Aplians pesakit yang patah dan hilang boleh menyebabkan gigi yang sedang dirawat bergerak semula ke tempat asal dan memanjangkan tempoh rawatan ortodontik. **Objektif:** Untuk mengenalpasti jenis-jenis Aplians Boleh Tanggal dan kekerapan Aplians Boleh Tanggal patah dan hilang dalam kalangan pesakit ortodontik di Klinik Pergigian Pasir Puteh dari tahan 2004 hingga 2005. **Metodologi:** Kajian retrospektif ini melibatkan 282 kes Aplians Boleh Tanggal yang digunakan oleh pesakit di Klinik Pergigian Pasir Puteh dari bulan Januari 2004 hingga Oktober 2005. Pengumpulan data dan maklumat pesakit diperolehi melalui Kad Rawatan Ortodontik (LP 7), Kad Makmal (LP 6) dan Borang PG 208 (PIN 2/92). **Hasil Kajian:** Aplians Boleh Tanggal yang paling kerap digunakan oleh pesakit adalah daripada jenis ‘Hawley Retainer’ iaitu 52.0%. Kekerapan Aplians Boleh Tanggal untuk patah dan hilang dari tahun 2004 hingga 2005 adalah sebanyak 1.8%. Aplians pesakit yang patah (60.0%) adalah lebih tinggi berbanding dengan aplians yang hilang. Dari segi jantina, kaum lelaki (3.6%) menunjukkan peratusan Aplians Boleh Tanggal patah dan hilang yang lebih tinggi berbanding dengan pesakit wanita. Bagi perbandingan penggunaan di antara Aplians Boleh Tanggal dengan Aplians Tetap dalam kalangan pesakit ortodontik pula, hasil kajian menunjukkan penggunaan Aplians Tetap (50.7%) yang lebih tinggi jika dibandingkan dengan penggunaan Aplians Boleh Tanggal. **Kesimpulan:** Aplians Boleh Tanggal jenis ‘Hawley Retainer’ paling kerap digunakan oleh pesakit di unit ortodontik Klinik Pergigian Pasir Puteh. Peratus kes Aplians Boleh Tanggal yang patah dan hilang adalah rendah (1.8%). Tunjuk ajar dan nasihat tentang cara penggunaan serta penjagaan aplians yang betul kepada pesakit adalah disarankan untuk mendapatkan hasil yang memuaskan.

*Poster presentation at the 1st Kelantan Allied Health Conference 2014 on 19-21 August 2014, at University Science Malaysia, Kelantan*

Ms. Rosilza Rashid  
Dr. Rafeah Ayat Khan  
Dr. Jessina Sharis Othman  
All of Pasir Puteh Dental Clinic  
Pasir Puteh, Kelantan
PENGgunaan Apilans FungsI dalam Rawatan Ortodontik

Saliahah Z, Amran D, Badariah TC, Rafeah AK, Ruslan DS


Kata kunci: Apilans fungsi, rawatan ortodontik

Poster presentation at the 1st Kelantan Allied Health Conference 2014 on 19-21 August 2014, at University Science Malaysia, Kelantan

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Mr. Amran Deris
Dr. Rafeah Ayat Khan
All of Orthodontic Specialist Clinic
Meranti Health Clinic
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Dr. Ruslan Dato' Sulaiman
Sg. Chua Orthodontic Specialist Clinic
Kajang, Selangor

Dr. Badariah Tamba Chek
Pasir Mas District Dental Office
Kelantan
51. INFORMED CONSENT: WHAT'S THE STANDARD

Tan CL

Informed consent is an accepted part of clinical practice. It is also a legal requirement. What is the legal standard required in Informed Consent? There are multiple versions; for example, American, British, Australian and also Malaysia. There is however, no absolute standard. Based on legal cases and other ethical principles, a few recommendations for clinical practice can be elucidated.

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

Dr. Christopher Lawrence Tan
Orthodontic Unit
Jalan Gembut Dental Clinic
Kuantan, Pahang
Objective: To investigate the prevalence, pattern and treatment modalities of hypodontia in permanent dentition among orthodontic patients in Johor. Methods: Clinical and radiographic records of 1,718 patients (mean age, 15.3 years; range 9-30) treated in Muar, Kluang and Johor Bahru Orthodontic Specialist Clinics from 2010-2011 were explored. The prevalence of hypodontia was studied and its occurrence was analysed based on gender, ethnic group, number of teeth and specific teeth involved as well as its distribution in both arches and sides. Data were analysed using SPSS. Results: The prevalence of hypodontia was 7.8% and more in female (8.4%) compared to male (6.7%). The most common missing teeth were maxillary lateral incisors (24.5%) followed by mandibular lateral incisors (24.1%). Mandibular teeth were more commonly involved (73.1%) than maxillary teeth (50%), and bilateral (65.7%) more than unilateral cases (34.3%). Space closure was the most common treatment performed. Conclusion: The findings of this study provided clinicians a panoramic appreciation of the pattern and treatment of hypodontia in Johor. This would assist clinicians in early detection of hypodontia, thus maximizing the potential and alternatives of treatment through multidisciplinary approach.

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

Dr. Ummu Aiman Yusoff
Dr. Chua Hui Jie
Dr. Tiu Szu Hui
All of Orthodontic Specialist Clinic
Muer, Johor
Objective: To compare shear bond strengths of five different adhesive techniques (composite, sandblasting, mechanical undercut, cyanoacrylate and Panavia®) for attaching orthodontic metal brackets onto acrylic pontics. Methods: Two hundred identical prefabricated upper left lateral incisor acrylic teeth were embedded in acrylic resin blocks and divided into five groups-control (Grêngloo™ two-way colour change composite), composite following sandblasting, composite held with a mechanical undercut, cyanoacrylate and Panavia®. For each group, the initial bond strength was tested using the Instron Universal Testing Machine. The fatigue bond strength was tested by subjecting the bracket to 5000 repetitive load-low cycles at 50% of the mean shear bond strength using the Dartec Machine at 2 Hertz. A two way Analysis of Variance (ANOVA) was used to determine any significant differences in the initial and fatigue bond strengths of the five different adhesive techniques, and to determine the effect of fatigue on the shear bond strengths. Results: Cyanoacrylate exhibited the highest mean bond strength (19.82 MPa). This is followed by the mechanical undercut group (17.69 MPa) and the sandblasted group (17.18 MPa). The mean fatigue bond strength of cyanoacrylate was highest (18.13 MPa), followed by the sandblasted group (17.04 MPa) and the mechanical undercut group (17.02 MPa). There was no statistically significant difference when considering the effect of fatigue (p=0.238) as well as the interaction between the adhesive technique and the effect of fatigue on the bond strength (p=0.440). Conclusion: The initial and fatigue bond strengths of the cyanoacrylate, sandblasted and mechanical undercut groups were significantly higher than the control and Panavia® groups.

Keywords: Acrylic teeth, bond strength, orthodontic bracket

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

Dr. Soon Hooi Imm
Orthodontic Unit
Jitra Dental Clinic
Jitra, Kedah

Dr. Daljit Gill
Dr. Steve P. Jones
University College London (UCL)
Eastman Dental Institute
London
54. BOND STRENGTHS OF COMPOSITE RESINS USED FOR THE ATTACHMENT OF BONDED RETAINERS

Sinniah SD

Objectives: To compare the mean shear bond strengths and mean tensile bond strengths of three flowable composite resins with a control non-flowable composite resin and to assess the bond reliability and survival of the composites. Methods: Hydroxyapatite discs were used as the bonding substrate. The flowable composite resins tested were Transbond™ Supreme LV, StarFlow™, and TetricEvoFlow®, while the control non-flowable resin was Transbond™ LR. The composite resins were made into cylinders using rubber moulds prior to bonding the cylinders onto the surfaces of the hydroxyapatite discs. Twenty cylinders of each resin were tested for shear load testing. For the tensile load testing, there was only sufficient resin to produce 15 cylinders of Transbond™ LR, StarFlow™ and TetricEvoFlow® each, and 10 cylinders of Transbond™ Supreme LV. One-way and two-way analyses of variance (ANOVA), T-tests with a Bonferroni post-hoc correction, Kaplan-Meier analysis and Cox regression were used for statistical analysis. Results: The highest shear bond strength was StarFlow™ (mean: 14.09 MPa), and this was significantly higher than the control resin TransbondTM LR (Mean: 9.48 MPa) and Transbond™ Supreme LV (Mean: 8.20 MPa). The mean shear bond strength of TetricEvoFlow® was significantly higher than Transbond™ Supreme LV but not significantly higher than Transbond™ LR. The highest tensile bond strength was displayed by TetricEvoFlow® (Mean: 2.14 MPa), and this was significantly higher than the control resin Transbond™ LR (Mean: 1.15 MPa) and Transbond™ Supreme LV (Mean: 0.61 MPa). For shear loading, StarFlow™ had the highest 50th percentile survival estimate at 15.10 MPa, followed by TetricEvoFlow® (50th percentile estimate: 13.00 MPa) and Transbond™ Supreme LV (50th percentile estimate: 7.50 MPa). Conclusion: There were significant differences between the mean shear and tensile bond strengths of the materials under testing, with the mean shear bond strengths for all the resins significantly higher than the mean tensile bond strengths. Under shear loading, StarFlow™ and TetricEvoFlow® survived better than Transbond™ LR, while Transbond™ Supreme LV performed equally well. Under tensile loading, TetricEvoFlow® survived better than TransbondTM LR, while StarFlow™ performed equally well. Transbond™ Supreme LV showed inferior survival compared to Transbond™ LR.

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

Dr. Saraswathy Devi Sinniah
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Batu Pahat, Johor

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55. AN ASSESSMENT OF THE EFFECTIVENESS OF MECHANICAL AND CHEMICAL CLEANING OF ESSIEX ORTHODONTIC RETAINER

Chang CS, Ready D, Noor I

Objective: To determine the effectiveness of mechanical and chemical cleaning on the removal of microorganisms from Essix orthodontic retainers. Methods: In vitro laboratory study was undertaken at Department of Orthodontics and Microbiology, Eastman Dental Institute London. Study 1: 120 Essix retainers were divided into four cleaning groups. The effectiveness of each cleaning method to remove a single species biofilm of Streptococcus mutans from the retainer was assessed. Study 2: 140 Essix retainers were divided into four study groups (brushing with fluoride toothpaste, chlorhexidine gel, immersion in chlorhexidine solution only and a control) to investigate the chemical and mechanical cleaning of the multispecies biofilm of Streptococcus sanguis, Actinomyces naeslundii, Methicillin Resistant Staphylococcus aureus and Candida albicans. Results: In Study 1, brushing with toothpaste resulted in 99% reduction of Streptococcus mutans. In Study 2, all three cleaning methods recorded similar statistically significant reductions in colony forming units per millilitre compared to control. There were no statistically significant differences between any of the cleaning groups for any of the microorganisms except MRSA-16. For MRSA-16, chlorhexidine mouthwash and gel were significantly more potent in eliminating the microorganism than the fluoride toothpaste. Conclusions: All three cleaning methods effectively removed 99% of microorganisms from the Essix retainers. Brushing with fluoride toothpaste can therefore be confirmed as an effective method for cleaning retainers in most circumstances. The use of chlorhexidine gel or mouthwash is recommended for patients who are immunosuppressed.

Oral presentation at the 9th Asia Pacific Orthodontic Congress (APOC) on 17-20 October 2014, in Kuching, Sarawak

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56. INTERCEPTIVE ORTHODONTIC TREATMENT NEED IN SCHOOLCHILDREN AS IDENTIFIED BY DENTAL NURSES

Noorhanizar M.

Introduction: There has been an increasing uptake in orthodontic treatment with a greater awareness and demand for improved dental and facial aesthetic. Some of the malocclusion can be intercepted early to prevent serious complex malocclusion. Dental nurses play an important role in meeting the need and demand for interceptive orthodontic as they are the first liners who screen the schoolchildren.

Objectives: To determine the prevalence of interceptive orthodontic treatment need in schoolchildren in Perlis and to identify malocclusion features requiring interceptive orthodontic treatment among schoolchildren by the dental nurses.

Methods: A cross-sectional study was conducted. Sample of 553 government primary schoolchildren, aged between 9 to 12-year-olds (280 boys, 273 girls) were randomly selected. Consent was obtained before the study started. The need for treatment was guided using a series of photos with the selected malocclusion features which need interceptive orthodontic treatment. The study was conducted by 20 calibrated dental nurses.

Results: More than half (52.8%) of the schoolchildren screened required interceptive orthodontic treatment. A higher prevalence (56.2%) was found in the younger children (p<0.005). A higher treatment need was seen in boys (56.1%) compared to girls (p<0.001). For occlusal features screened in the samples, a higher prevalence was found for overjet (43.3%). This was followed by anterior crossbite (23.1%), deep bite (22.8%), hypodontia (7.1%), anterior open bite (2.2%) and supernumeraries (1.5%).

Conclusion: Based on the high treatment need in this study, there is a need for ongoing training of dental nurses in identifying schoolchildren requiring interceptive orthodontic treatment for early referral to prevent more complex malocclusion from developing.

Keywords: interceptive orthodontic treatment need, dental nurses

Poster presentation at the National Oral Health Research Conference 2014 on 10-12 November 2014, in Kuala Lumpur

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PERIODONTOLOGY
57. KAWALAN PLAK DI KALANGAN PESAKIT ORTODONTIK DI KLINIK PERGIGIAN PAKAR ORTODONTIK, KOTA BHARU

Nurzahira J, Norhani AP, Asmani AR

Pengenalan: Rawatan ortodontik boleh menyebabkan penyakit periodontium seperti keradangan gingiva, pembentukan poket gingiva dan kehilangan tulang alveolus. Pesakit yang sedang menjalani rawatan ortodontik mudah dipengaruhi oleh kehadiran plak disebabkan oleh komponen aplians iaitu bracket, wires, dan elemen lain yang mana menyukarkian penjagaan gigi. Objektif: Kajian ini bertujuan untuk menilai kawalan plak dan status kesihatan periodontium di kalangan pesakit yang menerima rawatan ortodontik di Klinik Pakar Ortodontik, Kota Bharu, Kelantan. Metodologi: Kajian dijalankan secara hirisan lintang pada September hingga Oktober 2012 di kalangan 80 orang pesakit yang memakai aplians ortodontik sama ada aplians tetap ataupun aplians boleh tanggal. Pemeriksaan klinikal telah dilaksanakan untuk mendapatkan skor plak dan data telah dimasukkan kedalam Borang Kaji Selidik. Keputusan: Kebanyakkan pesakit berumur 18 hingga 24 tahun (61.3%), 28.8% berumur 13 – 17 tahun, 7.5% berumur lebih dari 25 tahun dan hanya 2.5% berumur 10 hingga 12 tahun. Majoriti pesakit adalah perempuan (62.5%) dengan aplians tetap (95.0%). Kebanyakkan pesakit memberus gigi sebanyak 3 kali atau lebih (60.0%) sehari. Seramai 76.3% menggunakan berus interdental, 67.5% menggunakan ubat cumuran dan 35% menggunakan floss. Hanya 6.3% pesakit mempunyai skor plak yang baik. Komponen ortodontik yang menjadi tempat pengumpulan plak paling tinggi adalah ‘band’ (95.0%), ‘bracket’ (88.8%) dan ‘cement’ (72.5%). Majoriti pesakit mengalami keradangan gingiva dengan tanda-tanda gusi berdarah (58.8%), 25% mengalami gusi berdarah, 11.3% gusi merah dan 10% mengaku mengalami masalah mulut berbau. Kesimpulan: Tahap pengumpulan plak pada aplians ortodontik adalah tinggi dan kebersihan mulut adalah tidak memuaskan dengan kehadiran keradangan gingiva yang tinggi di kalangan pesakit ortodontik.

Kata Kunci: Kawalan plak, pesakit ortodontik

Poster presentation at the 1st Kelantan Allied Health Conference 2014 on 19-21 August 2014, at University Science Malaysia, Kubang Kerian, Kelantan

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58. PERIODONTAL DISEASE AWARENESS AMONG ADULT DENTAL PATIENTS IN KUCHING, SARAWAK

Eng HL, Leong ML.

Objective: To provide baseline data on the knowledge and awareness regarding periodontal disease and its association with education levels among dental adult patients in Kuching, Sarawak. Methods: In this cross-sectional survey, self-administered questionnaires were distributed to 200 adult dental patients who were chosen randomly from attendees of 4 main dental clinics in Kuching. The questions were developed from literature reviews of articles. The questionnaire addressed personal and socio demographic variables, periodontal health awareness and knowledge of adults attending dental clinics. The questionnaire was translated to Bahasa Malaysia and was pretested during the pilot study on a random sample of 50 adult dental patients. Data were analyzed by Fisher’s Exact Test, with the level of significance set at \( P < 0.01 \). Result: An overall response rate of 100% was obtained. Approximately 88.5% had mid to high level of education, but only 13.6% knew how to define gingivitis and periodontitis. Group of lower education level exhibited low level of awareness of periodontal disease. The differences were statistically significant across various educational levels (\( P < 0.01 \)). Approximately 80.5% of the respondents knew that plaque causes gingivitis and periodontitis. However, majority of them did not fully understand the role of plaque in the aetiology of gingival disease. About 72% knew the negative effect of smoking, while only 47% knew there was a possible relationship between diabetes and adverse periodontal disease outcomes. The overwhelming majority of subjects (73.5%) were irregular attenders. Conclusion: The results of this cross-sectional study found that knowledge and awareness concerning periodontal disease among adult dental patients is still poor in Kuching. When the educational level of the study group decreased, the awareness and knowledge of periodontal disease also decreased. Therefore, more dental health education and promotion is needed to improve periodontal health.

Poster presentation at the IADR–SEA 28th Annual Scientific Meeting/SEAADE 25th Annual Scientific on 11-14 August 2014 in Kuching, Sarawak

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59. STATUS KESIHATAN PERIODONTIUM DI KALANGAN PESAKIT DIABETIS DI KOTA BHARU

Wan Nazerah W, Salha MD, Norhari A, Wan Salina W

Pengenalan: Penyakit periodontium (penyakit gusi) merupakan komplikasi yang keenam bagi penyakit diabetis. Kajian mendapati 85% dari pesakit diabetis yang tidak terkawal mungkin menghadapi masalah periodontium. Objektif: Kajian ini dijalankan bagi mengenalpasti tahap kesihatan periodontium pesakit diabetis, tahap penjagaan kesihatan mulut mereka serta menilai respon mereka terhadap rawatan periodontik. Methodologi: Kajian ini dilakukan secara 'cross-sectional' melibatkan 82 orang pesakit dari Klinik Kesihatan Bandar Kota Bharu yang dipilih secara rawak dari bulan September hingga Oktober 2012. Data diperolehi melalui pemeriksaan klinikal dan borang kaji selidik dan dianalisa dengan menggunakan SPSS version 17.0. Hasil: Hasil kajian menunjukkan lebih separuh (53.6%) dari pesakit diabetis menghadapi masalah periodontium dengan kod BPE lebih dari 3. Hampir 80% pesakit mengalami resesi dan keradangan gusi. Dari segi amalan penjagaan kesihatan mulut, semua pesakit menjaga kebersihan mulut dengan memberus gigi. Sebanyak 36.6% turut menggunakan ubat kemuran dan 11% menggunakan flos gigi. Didapati 60% pesakit memberus gigi dua kali sehari. Sebahagian besar pesakit (85.4%) pesakit menyatakan minat untuk mendapatkan rawatan pergian dan 82.9% bersedia untuk mengikuti aturan rawatan yang berkaitan. Kesimpulan: Pendidikan kesihatan pergian perlu ditingkatkan dikalangan pesakit diabetis bagi meningkatkan kesedaran tentang penjagaan kesihatan mulut dan mendapatkan rawatan awal.

Poster presentation at the 1st Kelantan Allied Health Conference 2014 on 19-21 August 2014, at University Science Malaysia, Kelantan

Ms. Wan Nazerah Wan Ismail
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Gingivitis can lead to irreversible and destructive gum disease or periodontitis. Furthermore, the absence of gingivitis is a good predictor of the stability of periodontal health. It has been thoroughly documented that the long term success of treatment and prevention of periodontal diseases is dependent on satisfactory oral hygiene practices. Since 1980s, triclosan or 2, 4, 4'-trichloro-2'-hydroxydiphenyl ether, an antimicrobial agent has been incorporated into many toothpaste formulations in an attempt to enhance the effects of mechanical plaque control. In view of the prevalence of gingivitis, the uncertainty of the effects of triclosan-containing toothpastes and their widespread use, there is clearly a need for a systematic review of the effects of these agents on gingival health. Relevant randomized clinical trials were identified in 2004 by searching available electronic databases. Out of 187 studies, 31 randomized controlled trials were included in this review. Evidence from the meta-analysis indicates that triclosan-containing toothpaste in combination with copolymer may have a greater effect on gingivitis when compared to placebo [-0.26 (-0.35, -0.17) p<0.00001] at six months. However, the clinical significance is not known. The review also revealed many flaws in the design of the clinical trials. Reviewers and readers are advised to be aware of the problem associated with publication bias and should moderate the strength of their conclusions accordingly.

Poster presentation at the Asia Pacific Society of Periodontology (APSP) Scientific Congress 2007 in Beijing, China

Poster presentation at the National Oral Health Research Conference 2014, in Kuala Lumpur (Showcase category)

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61. IMPLANT REPLACEMENT WITH SIMULTANEOUS GUIDED BONE REGENERATION WITH EQUINE ORIGIN GRAFT MATERIALS FOR MANAGEMENT OF MISSING CENTRAL INCISOR: A CASE REPORT

Raman R, Yap HF

Background: The provision of dental implants is one of the treatment options for replacement of missing teeth. Placement of implants in cases of incisors lost due to endodontic failure is not straightforward as sufficient bone volume may not be available due to loss of the buccal plate. Bone augmentation may be required and this can be provided by xenograft materials. Most xenograft materials used are either bovine or porcine derived and very few studies have reported the use of equine bone substitutes. In the Asian region, religious believes has a strong influence in patients acceptance of graft materials used. This case reports the use of equine derived graft materials guided bone regeneration in implant replacement of a missing central incisor. Objective: To provide a long term fixed and aesthetically pleasing replacement of maxillary central incisor lost due to endodontic failure in a 60 year old female patient. Methods: Patient presented with an abscess at tooth 21 due to endodontic failure. Tooth 21 was extracted and loss of buccal plate was noted during the procedure. Implants (Strauman®Bone Level NC 3.3mm, SLActive® 10mm, Ti) was placed at 21 site seven weeks post extraction with simultaneous guided bone regeneration using and equine derived bone graft (Osteobiol mp 3® by Tecnomoss). Grafted site was stabilized using a resorbable equine origin collagen membrane (Osteobiol®Evolution). Three months later second stage surgery was performed to place gingival forming healing abutments. Cemented full ceramic crown was later placed. Results: The patient did not report any complications both post surgery and after the prosthetic phase. A functional and satisfactory aesthetic outcome was achieved post treatment. At 6 months review no problems were reported. The patient was very happy with the results. Conclusion: Simultaneous guided bone regeneration during implant placement with equine derived graft materials was successfully used in the management of this case of lost central incisor due to endodontic failure.

Poster presentation at the International Team for Implantology (ITI) World Symposium, on 24-26 April 2014 in Geneva

Poster presentation at the 6th National Oral Health Research Conference, on 10-12 November 2014 in Kuala Lumpur (Showcase category)

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62. GRANULOMA FORMATION AND LOSS OF TOOTH VITALITY FOLLOWING THE USE OF BONE WAX IN THIRD MOLAR SURGERY: A CASE REPORT

Raman R, Yap HF

Granuloma formation and loss of tooth vitality following the use of bone wax in third molar surgery in a 16-year-old male patient were reported. Endodontic and surgical treatments were carried out on the patient. As foreign body granulomatous reaction to bone wax is not uncommon in the literature review, alternative haemostatic agents should be taken into consideration to avoid any potential complications and untoward effects of using bone wax for haemorrhage control in surgical procedures.

Keywords: Bone wax, complications, granuloma

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63. GINGIVITIS AMONG ANTENATAL MOTHERS IN PULAU PANGKOR

Dewi Mayang SK, Ramadoss A, Tan SL

Introduction: Gingivitis is a common oral disease found in antenatal mothers. Untreated gingivitis will lead to periodontitis and furthermore increases the risk for preterm birth and low birth weight babies. Objective: This study aims to assess the prevalence of gingivitis among antenatal mothers at the Pulau Pangkor Maternal and Child Health Clinic. Methods: A total of 20 antenatal mothers were invited to participate in this study. Clinical examination was done by a single examiner to evaluate their gingival status. The intensity of the gingival bleeding was measured using the Bleeding Papillary Index (Saxer and Muhlermann, 1975). Mothers with score of 3 or 4 were considered having gingivitis. Results: As a result, gingivitis was found to be 100% in the population of this study.

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64. ORAL HEALTH SEEKING BEHAVIOUR AMONG MALAYSIOANS WITH TYPE II DIABETES


Objective: To examine the oral health seeking behavior of diabetic patients in Malaysia in order to improve their oral health condition. Methods: A cross-sectional study on Type II diabetes patients was conducted at selected public sector health clinics across four states, using self-administered questionnaires. Descriptive data analysis was performed using SPSS version 19. Results: Of the 4,017 respondents, only 35.5% (95% CI:34.10-37.10) acknowledge the association of diabetes and oral health. Less than half [48.4% (95% CI: 46.90-50.00)] had dental check-up since their diagnosis of diabetes. Of these, only 35.3% (95% CI: 33.10-37.40) had their last dental visit within the past one year. This accounted for only 16.7% of all respondents. Among those who had dental check-up, majority of them [95.4% (95% CI: 94.30-96.30)] were self-motivated while the remaining [4.6% (95% CI: 3.70-5.70)] were referred by healthcare staff. About 79.2% (95% CI: 77.90-80.40) claimed that dental check-up is important for diabetes patients. However, only 59.9% (95% CI: 58.30-61.40) wanted to be referred for dental care. Three main reasons for not wanting a referral were perceived lack of necessity for a dental check-up, the absence of dental problems and the perception that dental problems were not serious. Conclusion: Despite majority of diabetes patients claiming the importance of dental check-up (79.2%), the demand for dental referral (59.9%) and actual oral healthcare utilization (48.4%) were low. Referral of diabetes patients for oral healthcare by healthcare workers was very low. There is a need to increase the oral health awareness of diabetes patients and to improve their utilization of oral healthcare. Healthcare workers need to routinely refer diabetes patients for dental check-up.

Keywords: Diabetes patients, oral health-seeking behavior, dental check-up, diabetes mellitus

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65. PERIODONTAL COMPLAINTS AMONGST NEWLY REFERRED PATIENTS

Subramaniam U

Objective: To ascertain chief complaints amongst patients referred to a Periodontal Specialist Clinic. Methods: This study was conducted in a Periodontal Clinic in the district of Seremban. It was undertaken for eight months whereby new patients were given questionnaires regarding the reasons they attended the Periodontal Clinic. Data was analyzed with descriptive statistics using SPSS version 12. Results: A sample of 100 subjects completed questionnaires with 54 females and 46 males. The subjects ranged from 10 to 79 years in age. Majority of participants were in the 50-59 years age group. The most common complaint was sensitivity (26.0%). Conclusion: Periodontal disease may be regarded with disdain due to its non life-threatening nature. Until and unless it affects mastication or aesthetics due to tooth loss, patients may continue to exhibit a nonchalant attitude towards this disease. It is the responsibility of the dental team and patients to identify periodontal complaints and avail themselves of periodontal treatment before it progresses with irreversible consequences.

Poster presentation at the 20th FDI/MDA Scientific Convention and Trade Exhibition on 12-13 January 2013, in Petaling Jaya, Selangor

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66. ORAL HEALTH PERCEPTION AND PERIODONTAL STATUS AMONG MALAYSIAN ADULTS

Jegarajan N, Khairiyah AM, Salleh Z, Yaw SL

Objective: To determine the association between perceived oral health and normative periodontal status among Malaysian adults. Methods: This study mined data from the National Oral Health Epidemiological Survey of Adults, Malaysia 2010 (NOHSA 2010) which utilised a two-stage stratified sampling design. From the total sample of 9,065 dentate adults aged 15 years and above examined under NOHSA 2010, data of 1,149 subjects were selected. These were subjects without caries, oral lesions or prosthetic needs. The subjects' perceived rating of their oral health as excellent, good, fair or poor was collated. This data was collapsed into ‘good’ (excellent/good) or ‘poor’ (fair/poor) oral health perception for analysis. This was compared with their periodontal condition as assessed by calibrated examiners using the Community Periodontal Index. Analysis by selected demographic variables was done using SPSS. Results: A total of 63.0% (724 of 1,149 subjects) perceived their oral health as good and among these, 91.0% (659 subjects) had some form of periodontal condition. There was a significant association between subjects’ oral health perception and normative periodontal condition (p<0.05). Among those with periodontal conditions, there was no significant association by gender, location, education level or age group. Conclusion: A high proportion of the subjects perceived their oral health as good even though they had some form of periodontal condition. This shows a gap between oral health perception and normative periodontal status among a large number of subjects. There must be more patient education on the signs and symptoms of periodontal disease.

Keywords: Malaysian adults, NOHSA 2010, oral health perception, periodontal status

Paper presented at the FDI World Dental Congress 2014, on 11 -14 September 2014 in New Delhi, India

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67. TWO-YEAR SURVIVAL RATES OF IMPLANT-SUPPORTED SINGLE CROWN (ISC)

Sharifah Maznah WM, Ahmad Shariffuddin MA

Objective: To determine survival of implant after two years of function. Methods: This is a single-center, retrospective, investigator-driven, non-randomized study. This study is limited to ISC. We reviewed 18 periodontal records of patients who received dental implant placement and functionally restored (ISC) between January 2009 and December 2011. Data collected was patient’s age, gender, race, implant dimension (diameter and length) and anatomic location of implants. Data on implants survival were evaluated up to 2 years after implant placement and function. The implant status, survival and complication as well as implant success were also evaluated. Results: From the year 2009 to 2011, 18 patients (11 women, 7 men) ranging in age 26 to 67 years old (49.8 mean age) presented with implant placement performed by a periodontists. The 18 patients received 29 dental implants. 27 ISC were survived after two years of function and 2 implants failed to osseointegrate within first year of placement. 12 of the Implants were Inserted Into the maxilla and 17 implants into the mandible. The cumulative survival rate after two year was 93.1%. Follow-up was at least 24 months after loading. Out of all the implants, 2 failed (6.9%) which occur before the prosthetic loading and involve upper posterior implant. Prosthetic complications occurred in 2 cases (6.9%), related with loosening of the crown. Conclusion: Within the limits of this study, implant is considered feasible, convincing, and successful surgical treatment modality. In the present study, the results indicated that ISC demonstrate an encouraging success and high survival rate. ISC is a viable option for single missing tooth and with appropriate implant maintenance, the sustainability of high survival of ISC can be anticipated.

Keywords: Dental implant survival rate, success rate, implant-supported single crown

Poster presentation at the 22nd MDA Scientific Convention and Trade Exhibition on 23 – 25 May 2015 [Won 3rd Prize]

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Introduction: A 2-year old deceased boy was referred for forensic odontology examination and investigation by the forensic pathologist in-charge of the case in regards to an alleged bitemark injury over the upper right arm on June 2010. Subsequent examination and analysis confirmed that the injury which consisted of two sets of similar-looking bruises was indeed two overlapping adult human bitemark. Method: Bitemark analysis and comparison was done with the alleged suspect, who was the boyfriend of the mother using Adobe Photoshop® overlay method. Result: The computer generated overlay using Adobe Photoshop® showed no inconsistent discrepancies between the alleged biter’s teeth and the bitemark on the deceased toddler. The empty space within the bitemark injuries coincide well to the infra-occluded lower left central incisor of the suspect. The mandibular inter-canine distance of both bitemark injury and the suspect were also comparable. Therefore, it was concluded that the bitemark injuries on the deceased toddler was almost certainly done by the suspect. Conclusion: This case was brought to court in November 2011 and the forensic odontologist was called to testify on the bitemark evidence. The suspect was later convicted of child abuse charges leading to death by the judge in March 2012 after considering the presence of bitemark injuries found on the body and also multiple bruises on the head. This case served as the turning point of bitemark evidence being admissible in the Malaysia court of law in which the evidence was handled by a trained forensic odontologist right from the start when the deceased was first brought in by the police to the mortuary.

Presentation at the International Organisation for Forensic Odontostomatology(IOFOS) 2013, on 29-31 August, 2013 in University of Firenze, Italy

Poster presentation at the National Oral Health Research Conference, on 10-12 November 2014 in Kuala Lumpur
(Showcase category)

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SPECIAL NEEDS DENTISTRY
69. LOOK INTO THE MOUTH

Yap E, Norjehan Y, Farah Zahiah A

Introduction: Although edentulism is not uncommon in the elderly population, studies have shown an increasing number of people retaining their dentition into old age. However, oral health among this group is often neglected, especially in those dependent for activities of daily living. Objective: To identify the need for dental referral of geriatric patients who were admitted to a non-acute geriatric ward in Hospital Kuala Lumpur. Methods: A retrospective analysis was undertaken on records obtained from an oral health screening conducted on patients who were admitted to the Geriatric Ward, Hospital Kuala Lumpur from November 2013 to March 2014. The proportions of patients with oral health problems and those who required referral to the Special Needs Dentistry (SND) team were identified. Results: A total of 82 patients (27 males, 55 females; mean age 73.3 years) were screened during the study period. Just over half of those screened (55%; n=45) required a referral to the SND team for dental management. Among problems detected included poor oral hygiene (30.5%, n=25), decayed teeth/retained tooth roots (28.0%, n=23), mobile teeth (15.9%, n=13), poor denture hygiene (8.5%, n=7) and oral ulcerations (2.4%, n=2). Conclusion: This study demonstrated that more than half of patients admitted to the geriatric ward had oral diseases that required attention. ‘Look into the mouth’ should form part of medical examination so that signs of oral disease can be detected, early referral can be made and treatment can be provided in order to prevent discomfort and infection in these patients.

Poster presentation at the 10th National Geriatric Conference on 12-14 June 2014, in Ipoh, Perak

Poster presentation at the National Oral Health Research Conference, on 10-12 November 2014, in Kuala Lumpur (Showcase category)

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70. ASSESSMENT OF THE COMPLIANCE TO REFERRAL GUIDELINES IN SPECIAL NEEDS DENTISTRY

Siti Zaleha H

Introduction: The referral guideline in Special Needs Dentistry (SND) was developed in 2011. However, there are still a lot of confusion arises among referring clinician as to when and how to refer patient to specialist. Inadequate information given in the referral form often results in prolonged consultation time as the information with regards to chief complaints, patient’s medical and dental history, treatment done before referrals are lacking. **Objective:** To assess the appropriateness of clinician’s referrals and the information stated in the referral form. **Methods:** The sample was identified from SND Unit daily log book from 1 July 2013 to 31 March 2014 which consisted of 41 samples. Patient’s clinical dental record (LP 8) was traced using the ID number. A referral letter which was attached in the clinical record during the patient’s first visit to the SND Unit was reviewed in details. The data variables were identified according to the information required in referral letter as stated in the National Referral Guidelines to Specialist in Special Needs Dentistry. **Results:** Reason for referral was found to be stated in 85.3% (n=35) of the referral letters and the highest component to be complied with. Subsequently, followed by patient’s and carer’s details (n=26, 63.4%), accurate medical history including a list of medications (n=22, 53.6%), dental history (n=18, 43.9%), clinical signs and symptoms (n=14, 34.1%), patient’s disability category (n=13, 31.7%) and the lowest compliance represented by the history of condition and treatment provided (n=17, 17%). In addition, 12.1% (n=5) of the cases were considered as inappropriate referrals. **Conclusion:** It was observed that none of the referral letters contained adequate information required in the guidelines. A small number of referring clinicians did not properly assess the cases and referrals made based on assumptions and inadequate clinical judgement.

Oral presentation at the National Oral Health Research Conference, on 10-12 November 2014 in Kuala Lumpur

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