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Poster Session P13 – Epidemiology 2

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# Poster Session P13/Epidemiology 2

## P13-182

### Provision of dental general anaesthesia for children and associations with social deprivation

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**Introduction:** This study investigated the provision and distribution of episodes of care under general anaesthetic (GA) for management of dental caries in children in Sheffield, UK. The sociodemographic profile of service users was also explored.

**Patients and methods:** Data for all paediatric dental GA lists were obtained from June 2007 to July 2008 from Sheffield Children's Hospital. Patient data included age, postcode, attendance type and dental diagnosis. Only data from patients undergoing treatment of dental caries were analysed. Population data, postcodes and the percentage of households receiving income support/unemployment benefits were used to produce rates of dental GAs per 1000 children for each neighbourhood in Sheffield.

**Results:** There were 1633 episodes of dental care provided under GA, of which 1502 were solely for the management of caries. The mean age of patients was 6.6 years (range 1–15 years). The majority of GAs were daycase admissions ( $n = 1447$ , 96.3%). The average rate of dental GA per 1000 children in Sheffield was 11.07. The rate ranged from zero GAs per 1000 children in the least deprived neighbourhood to 23.7 per 1000 children in the most deprived neighbourhood. There was a significant relationship between deprivation and GA rates ( $r = 0.76$ ,  $P < 0.01$ ). Approximately 58% of the variation in GA rates between neighbourhoods could be explained by deprivation.

**Conclusion:** Marked differences exist in the use of GA services for the management of dental caries in children in Sheffield which reflect greater disease levels and poorer access to routine care in areas of high social deprivation.

## P13-183

### The pattern of attendance of the paediatric patient to the undergraduate clinic

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**Introduction:** Poor attendance of Paediatric Patients to the Undergraduate Clinic at the Dental Hospital has been recognised as a significant problem. This has an impact on the quality and the consistency of training provided to Undergraduate dental students. The aim of this audit was to assess the extent of the problem and to identify means of encouraging patient attendance.

**Patients and methods:** The training record portfolios of 60 final year Undergraduate students were analysed. Data recorded included the number of patients contacted for appointments and the number of patients who failed to attend. The patients' details including age, gender and postcode were also recorded for those children who failed to attend.

**Results:** In total 249 children (age range 2 to 16 years) were contacted for appointments. 152 children (61%), of which 83 were

male and 73 female, failed to attend at least one visit during a course of treatment. Of these, 63 (41%) did not attend any appointments. Eight pre-school children aged 2 to 5 years (Mean = 4 years, SD = 0.74) and 144 school children aged 6 to 16 years (Mean = 11 years, SD = 3.48) failed to attend. The profile of the typical patient who failed to attend was a boy, aged 11, who lives within 5 miles of the Dental Hospital.

**Conclusion:** The clinical experience of individual students is varied. A large number of patients failed to attend their Undergraduate appointment, resulting in wasted clinical resources and teaching time. Further analysis of the treatment needs for those patients who failed to attend is required to ensure more efficient utilisation of teaching time. Patient information leaflets have been designed to encourage attendance for prevention and routine dentistry with Undergraduate students.

## P13-184

### Effect of health counseling of women in childbed on children's dental health

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**Introduction:** Aim of this study was to compare dental health in 5- and 8-year-old children whose mothers received education and counseling on caries prevention on postnatal stations with that in children whose mothers did not receive such interventions.

**Patients and methods:** 778 children from Vorarlberg/Austria were involved in the study. 29% of the children had an immigrant background. Mothers of 206 children aged 5 years and of 176 children aged 8 years had received personal counseling and education on postnatal stations by dental health educators. The control group enclosed children (190 5-year-olds; 170 8-year-olds) of mothers without any health promoting interventions. Children were examined according to the WHO oral health survey standard (1997). Parents of all participating students had given written informed consent. Mann-Whitney's *U*-test was used to determine significant differences in caries experience between both groups.

**Results:** Children whose mothers had participated in the caries prevention program on postnatal stations revealed a significantly lower caries experience (5-year-olds: 1.5 dmft/3.1 dmfs; 8-year-olds: 1.9 dmft/4.3 dmfs) than children whose mothers were not subjected to such intervention (5-year-olds: 3.3 dmft/7.7 dmfs; 8-year-olds: 4.3 dmft/11.2 dmfs). Significant differences in dental health were also found in children with immigrant background, favoring children of mothers having received counseling (5-year-olds: 4.3 dmft/8.7 dmfs; 8-year-olds: 4.7 dmft/12.5 dmfs) compared to children of mothers who had no counseling (5-year-olds: 4.9 dmft/11.9 dmfs; 8-year-olds: 6.6 dmft/18.2 dmfs). However, the inequality in dental health compared to native children could not be compensated by the intervention.

**Conclusion:** Counseling and education of mothers on postnatal stations seems to be an effective community-based approach to improve dental health in pre-school and school-children with and without emigrational background.

# P13-185

## Characteristics of children treated for early childhood caries in Tygerberg, Cape Town

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**Introduction:** Problematically, large numbers of children under six years of age have to be treated by reason of early childhood caries (ECC). As there is currently no research-based information pertaining to this particular community, certain baseline information is needed in order to plan future intervention strategies to reduce the incidence of ECC. The aim of our study was to determine the epidemiologic profile of these children and identify risk factors for ECC in this patient pool. The specific habits, beliefs and cultural factors that may play a role will also be investigated.

**Materials and methods:** Records of 140 patients kept by the Paediatric Dentistry Division were included in this survey.

**Results:** Most of the patients originate from economically disadvantaged areas. Diet, feeding and oral hygiene habits were shown to be the most significant factors which contributed to the development of ECC in these patients. All the children were either breast- or bottle-fed past one year of age. More than 90% of the children went to sleep with the bottle or while on the breast and were also fed on demand during the night. On average, children were bottle-fed up to 23 months of age. Where oral hygiene practices were concerned, 52.6% of children brushed their own teeth without supervision. Frequency of brushing varied between subjects.

**Conclusion:** The results of this study demonstrate that there is a need for culturally appropriate education campaigns to inform parents especially those in disadvantaged communities about the importance of oral health and the prevention of oral disease.

# P13-186

## Emergency dental care for children: an attendance profile

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**Introduction:** Access to National Health Service dentistry in the U.K. has become an increasing problem, following changes to dentists' service contracts. Availability of urgent dental care, particularly for vulnerable groups, is of specific concern. This study aimed to determine the profile and outcomes of children presenting for urgent dental treatment at three U.K. dental hospitals.

**Patients and methods:** Fifty consecutive patients, from paediatric departments in Liverpool, Manchester and Sheffield Dental Hospitals, were included in the survey. Demographic data including age, social deprivation, relationship to their escort, primary diagnosis and treatment outcome were recorded.

**Results:** 150 children were seen over a 2-month period. The mean age was 8.8 years (SD = 3.92), and most were accompanied by their parent or guardian (97%). The majority of children came from areas ranked as highly socially deprived. Less than half had a general dental practitioner (47%), and a quarter had attempted to access dental care elsewhere (27%). The most common diagnosis was dental caries (65%) and, of those, the majority sought treatment due to toothache (76%). Advice and reassurance were

the most likely interventions (24%), followed by a prescription for antibiotics (20%). Most children required further treatment, commonly involving general anaesthesia (31%). There were some interesting differences between the centres for interventions provided, reflecting available dental resources and the needs of children in those regions.

**Conclusion:** These findings suggest that children who seek urgent hospital dental care are from vulnerable backgrounds, with poor access to dental care and mostly present with caries-related sequelae.

# P13-187

## Salivary antioxidant status of healthy and type 1 diabetic children

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**Introduction:** Antioxidants are the elements of the defense system, which are responsible for removal of the harmful effects of free radicals and reactive oxygen species. Lipid peroxidation often occurs in response to oxidative stress and a great variety of aldehydes is formed when lipid peroxides break down in biological systems. The aim of this study is comparing the salivary antioxidant status in children type I insulin-dependent diabetes mellitus (type I DM) as compared to healthy controls.

**Patients and methods:** 68 children ( $n = 40$  girls,  $n = 28$  boys), divided into 3 groups: 22 children with type I DM of long duration (Group A); 22 newly diagnosed children with DM (Group B) and 24 healthy children (Group C). Mean age of groups A, B, C were 10.3, 13.0, 11.0 years respectively. Saliva samples were collected after gaining ethical approval from each child. The total antioxidant capacity of the saliva samples were analyzed with the ferric reducing/antioxidant power assay (FRAP) which is a colorimetric method. The thiobarbituric acid reactive substances (TBARS) concentration in saliva has been determined which measures various aldehydes derived from lipid hydroperoxides. All data were analyzed with Mann-Whitney-U-Test and/or Kruskal-Wallis-Tests.

**Results:** Mean FRAP values of each group is 129.5  $\mu$ M, 146.1  $\mu$ M and 148.3  $\mu$ M and mean TBARS content of each group is 2.1 nmol/mL, 2.0 nmol/mL and 2.0 nmol/mL. No statistically significant differences were observed in antioxidant status between Group A, B and C.

**Conclusion:** There is no difference in salivary antioxidant status between children suffering from DM type I and healthy children.

# P13-188

## Knowledge of parents about oral health in children with heart disease

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**Introduction:** Parents of children with endocarditis frequently have a lacking knowledge about this heart disease in Zahedan, Iran. Transient bacteremia in dentistry is discussed as an important initiating factor in bacterial endocarditis. The aim of this study was evaluate the knowledge about importance of prevention of dental caries in parents whose children had heart disease.

**Patients and methods:** In this descriptive cross sectional study a nonrandom sampling was used and 320 parents (125 fathers, 195 mothers) referred to the Heart Clinics of Zahedan were evaluated by a questionnaire. The questions were about the demographic

information and their knowledge about oral health and its relation to heart disease. Data were analyzed using Mann–Whitney-*U*-Test and Kruskal–Wallis-Tests.

**Results:** The results showed that the mean of knowledge was  $21.3 \pm 10.1$  of 100. The father's knowledge ( $24.4 \pm 8.7$ ) was higher in comparison of the mothers ( $19.23 \pm 10.3$ ). The rural families' knowledge was more than the urbans ( $22.5 \pm 9.8$  and  $14.51 \pm 11.2$  respectively).

**Conclusion:** Our study showed a limited knowledge of the parents about the interactions between oral hygiene and the risk of the onset of an endocarditis.

## P13–189

### Epidemiological evaluation of temporomandibular disorder in a group of Iranian students

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**Introduction:** Temporomandibular Disorder (TMD) is the most common condition that affects temporomandibular joint. TMD is a general term, comprising pain and dysfunction of muscular apparatus. Determination of pre-dominant characteristics of this disease is difficult, because many signs and symptoms contribute to this disease. Studies have shown that the number of TMD patients has increased in recent years. The aim of this study was to determine the prevalence of temporomandibular disorder in a group of Iranian students.

**Patients and methods:** In this descriptive cross-sectional study 800, students aged between 14 and 18 years attending high schools in Mashhad, Iran, were examined. In this study the cluster sampling method was applied. Ethical committee of Mashhad University of Medical Sciences approved this research (# 86743). Parents were sent an information sheet about the study, and just children with informed consent were examined. The history of related signs, symptoms and etiologic factors was evaluated. Data were analyzed by Chi-Square Test, Fisher Exact Test, Logistic Regression and Mann–Whitney-*U*-Test.

**Results:** The prevalence of TMD was 34.7%. The most frequent TMD sign was clicking. Muscle tenderness and temporomandibular joint tenderness were less prevalent. The most important etiologic factor of TMD was pre-mature contact at protrusive movement of the lower jaw and the next ones were clenching and bruxism.

**Conclusion:** The prevalence of signs and symptoms of TMD was fairly high among Iranian adolescence and it was higher in girls than boys.

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## P13–190

### Comparing the root-crown ratio of Japanese, Hungarian and German young population

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**Introduction:** The aim of the study was to compare Japanese, Hungarian and German healthy, young population's root-crown ratio to know, if there are any relations between the populations.

**Materials and methods:** 104 Japanese, 95 Hungarian and 102 German patient's panoramic X-rays were investigated according to Lind's index (Lind V: Short root anomaly. *Scand. J. of Dent. Res.* 1972; 80:85.). The panoramic X-rays were performed at Semmelweis, Asahi and Freiburg University between 2001 and 2008. One way ANOVA, two tailed t-test and correlation *t*-test was used to evaluate the data.

**Results:** One way ANOVA showed that significant differences between sexes, nations and tooth types (both  $P < 0.001$ ) existed. *T*-test showed significant differences between the same types of teeth of the different ethnic groups ( $P < 0.05$ ). The greatest correlation was found between German and Hungarian root-crown ratio (correlation coefficient 0.95,  $P \leq 0.08$ ), and the least one between Japanese and German root-crown ratio (correlation coefficient 0.66,  $P \leq 0.19$ ).

**Conclusion:** Root-crown ratio seems to be a representative factor in the investigated nations. Significant difference was found in root-crown ratio between nations, sexes and the different tooth types.

## P13–191

### Oral health awareness in 8- to 12-year-olds in Adana, Turkey

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**Introduction:** Aim of this study was to describe the awareness of the own dental health of 8- to 12-year-old Turkish children.

**Materials and methods:** A total of 2458 children aged between 8–12 years old who could read and write, were randomly selected from 15 different schools representing a total of 255 schools of Adana. Of the total 2435 mothers and 2266 fathers filled a questionnaire at home. Children attending to 1st 2nd 3rd 4th 5th classes asked out fill the self-administered questionnaire in their classroom supervising by a researcher.

**Results:** Self-assessment of dental status of children was generally good (66.4%), 24% of the pupils answered that their teeth were 'quite poor' and 9.6% claimed having 'very poor' teeth. Of the total 2435 mothers, 36.1% were mentioned their dental health status is good, it was 35.4% for the fathers. There was a weak correlation between parents and children self-assessment dental health status. Parents declared that 15.9% of the children have been visited the dentist before age 6 due to different problems. 7.2% of children said that other pupils made fun of their teeth; 31.5% had experienced once or twice toothache and 15.5% had more than three times toothache during the previous 12 months. Risk factors such as age, gender, socio-economic status, ethnic origins were evaluated for all groups.

**Conclusion:** The self-assessment of oral health status should be completed by objective data of an oral examination.

## P13–192

### Abstract withdrawn



### P13-193

#### Parent's awareness on their children's malalignment and malocclusion in China

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**Introduction:** Aim of this study was to investigate parent's awareness on their children's problems of malalignment and malocclusion in China.

**Patients and methods:** A pre-structured questionnaire was distributed to parents visiting the Department of Pediatric Dentistry, School of Stomatology, The Fourth Military Medical University.

**Results:** The sample consisted of 783 children with a mean age of 7.2 years old (SD = 2.4), and 51.3% of their presenting main complaints was to obtain treatment of dental caries and its complication. While 35.0% of their presenting main complaints was to obtain consultation about or treatment of malalignment and malocclusion. 65.1% of the parents had shown their concern about the problems of malalignment and malocclusion of their children, with a degree of 56.6% for upper anterior teeth dentition and 47.4% of the lower anterior teeth dentition. The rate of coincidence of malalignment and malocclusion between presenting main complaints and clinical diagnosis was 59.6%. The results also indicated meaningful association between malalignment and malocclusion concern and orthodontic treatment needs assessed by their parents' education level. However, some patients with great needs do not express malalignment and malocclusion concern.

**Conclusions:** More and more parents in China showed their concerns about their children's problems of malalignment and malocclusion. Therefore, efforts need to be exerted to enhance the attention of parents on current situations of malalignment and malocclusion of their children.

### P13-194

#### Radiographic evaluation of third molar development in a group of Turkish children

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**Introduction:** The aim of this study was to evaluate the crypt formation and calcification of the maxillary and mandibular third molars according to age and gender on panoramic radiographs in a group of Turkish children.

**Patients and methods:** After gaining ethical approval, a total of 656 children (355 boys and 301 girls, age 4-13 years, mean age:  $9.16 \pm 2.04$ ) that referred to the Istanbul University, Faculty of Dentistry, Department of Pedodontics were assessed in this study, and their orthopantomographs were examined. The mandibular third molar was staged according to Moorrees *et al.* Statistical analysis was done with NCSS 2007 package program using chi-square test with significant level  $P < 0.05$ . The criteria for inclusion in the sample were the availability of an orthopantomography of adequate quality and no history of medical or surgical disease that could affect the presence and development of permanent teeth, including third molars.

**Results:** No statistically significant differences were observed in third molar presence and developmental stages between genders ( $\chi^2:0.75$ ,  $P = 0.386$ ;  $\chi^2:5.9$ ;  $P = 0.544$ ). When the segmental presence of the third molar was compared with genders no statistical differences were observed ( $\chi^2:0.05$ ,  $P = 0.815$ ;  $\chi^2:0.01$ ,

$P = 0.893$ ;  $\chi^2:0.14$ ,  $P = 0.705$ ;  $\chi^2:0.26$ ,  $P = 0.61$ ). We detected all four third molars in only 40% of 656 patients aged from 4 to 13 years old. The earliest age for third molar crypt formation was 5 years.

**Conclusions:** Third-molar development among the Turkish white population occurs at an earlier age than in other populations for almost all stages when we compared this study with the previous studies.

### P13-195

#### The related factors of bruxism in children

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**Introduction:** Bruxism has been defined as a nonfunctional contact of the teeth and that includes clenching or grinding in a nonvoluntary form, rhythmical or spasmodic. Most people thought that there were many factors affecting the occurrence of bruxism, the focus were occlusion and psychology. But most studies of bruxism were performed in adults, the study of bruxism in children especially in the primary and mixed dentition, seldom found in the literature. The aim of this study was to find the relative factors of bruxism in children through evaluation of psychology and occlusion in children with bruxism.

**Patients and methods:** 59 children were included in the bruxism group and 58 children in control group, aged 4-10 years. Oral and temporomandibular joint examinations (about teeth, occlusion and TMJ situation) were taken on each child, and the parents were asked to fill the questionnaires regarding the normal situation and behavior problems of children. Each child was scored according to the same method, the data were statistically calculated, and the relationships between the factors and the occurrence of bruxism and the abrasion degree of teeth were analysed.

**Results:** Odds ratios for psychology factor, occlusal factor, specific sleep posture, parent's heredity specify and relatives heredity were 1.1, 1.5, 4.5, 11.2 and 8.8 respectively. The standardized coefficient of occlusal factor and time length of bruxism to the degree of teeth abrasion were 0.239 and -0.345.

**Conclusion:** Specific sleep posture, psychology-, occlusal- and heredity factor seem to be related factors for child bruxism. The degree of teeth abrasion increases as the occlusal condition gets worse.

### P13-196

#### Use of sealants among general dental practitioners and paediatric dentists in Greece

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**Introduction:** Although sealants have widely been recommended as one of the best preventive measures in managing dental caries of the pits and fissures, their usage is not as common in the profession as expected. The aim of this study was to evaluate the extent and patterns of using sealants by dentists in Greece and explore attitudes and beliefs of the profession that affect their use.

**Patients and methods:** 1214 general dental practitioners (669 males and 545 females) and 52 paediatric dentists (28 males and 24 females) answered 20 questions about prevention and use of sealants. The mean age of the sample was  $45.3 \pm 10.7$  years.

**Results:** The data suggested that although 68.8% of the general dental practitioners believed in prevention and 59% believed in the effectiveness of sealants only 30.3% applied them in practice, while 41.5% did not believe that sealants are effective and they don't use

them. On the contrary, all paediatric dentists believed in prevention and the effectiveness of sealants and 96.1% used them routinely. Among the reasons the dentists mentioned for not using sealants 34.4% claimed that the problem is financial (parents don't pay), 13.7% don't believe in them, while 28% don't know how to use them.

**Conclusions:** The use of sealants among general dental practitioners in Greece is low and dentists need more information and training on effectiveness and use of sealants.

### P13-197

#### Abstract withdrawn

### P13-198

#### Some issues on dental public health in rural parts

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**Introduction:** The lack of dental hygienists and epidemiologists in Mongolia result in a weak status of dental public health. Yet the supply of dental techniques and the number of private dental clinics are increasing in central areas of Mongolia. The basic tooth-brushing utensils are supplied by foreign countries, particularly from China. According to the health statistical data (2005–2007) the progression of oral diseases and HIV infection including hepatitis B and C are increasing in Mongolia due to inadequately sterilized, reusable hypodermic needles and other medical practices.

**Patients and methods:** This study was implemented by the research group including dentists, nurses, public health doctors and local physicians. 50 children aged between 8 and 15 years in Khuvsgul a rural area of Mongolia were selected. Data were obtained with questionnaires and interviews for key personal and clinical examinations were performed.

**Results:** In this study high rates of caries were found in 8 to 10 year-old children. They try to obtain treatment, but due to the low level of the rural health sectors, there are sparse rural health centers that provide dental care.

**Conclusion:** Dental preventative service and public health are critical in rural areas of Mongolia. The relatively high rates of dental diseases in tertiary hospitals are particularly troubling due a

shortage of trained dental staff, equipment and drugs. The increasing rate of caries illustrates the importance of strengthening dental emergency services and primary care in rural areas.

### P13-199

#### Oral health status according to WHO criteria and laser fluorescence measurements

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**Introduction:** The purpose of this study was to analyse the oral health status of children in Zagreb, Croatia, by using visual and laser fluorescence methods.

**Patients and methods:** The study comprised of 638 children aged 7–14 years from two elementary schools in Zagreb. Patient's parents gave written, informed consent and permission had been obtained from the ethical committee of School of Dental Medicine. Children were examined in a dental polyclinic by two calibrated examiners, using visual methods (WHO 1997). DMFT, DMFS and deft values were recorded. Additionally, laser fluorescence device DIAGNOdent (KaVo) was used to examine total of 2552 first permanent molars. The results of these two methods were correlated. Data were statistically analysed using chi-square test.

**Results:** Average mean DMFT = 3.2, average mean DMFS = 4.2 and average mean deft = 3.2 were found analysing data for all children (aged 7–14 years) included in the study. Regression analysis showed that the DMFT value increased by 1.0 and DMFS value by 1.6 for each year of age. Only 25.7% of all children (aged 7–14 years) were caries free. Agreement of the results obtained by visual examination and DIAGNOdent was 76.3% ( $\chi^2$ ,  $P < 0.001$ ) for occlusal, 94.1% ( $\chi^2$ ,  $P < 0.001$ ) for buccal and 92.6% ( $\chi^2$ ,  $P < 0.001$ ) for oral surfaces.

**Conclusion:** This study has found a statistically significant agreement in the results obtained by visual examination and laser fluorescence. We concluded that DIAGNOdent can be used as a helpful supplementary tool in caries diagnosis. The results of DMFT, DMFS and deft indices indicate the need for additional investments in preventive programs.

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