



Title	Oral health of a group of type 2 diabetic patients in Hong Kong
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96 Social-economic Factors and Childhood Traumatic Dental Injuries in Chiang Mai. C. CHEUNSUWONAKUL (Dental Public Health Subdivision, Chiang Mai Municipal Hospital, Thailand), P. MALIKAEW* and A. DUSADEPPAN (Department of Community Dentistry, Faculty of Dentistry, Chiang Mai University, Thailand)

A cross-sectional study was carried out in the Class Level 6 Chiang Mai Municipal School Children to investigate the associations between socio-economic factors and traumatic dental injuries to anterior permanent teeth. 372 students including 209 males (56.2%) and 163 females (43.8%), aged 11 to 18 years, were examined for the evidence of traumatic dental injuries. 366 parents of the students (98.4% of the examined sample) returned the questionnaire of their socio-economic information. The results showed that the prevalence of traumatic dental injuries was 42.2 per cent. Boys significantly suffered from traumatic dental injuries more than girls did (OR = 2.36; 95% CI = 1.32 to 4.21, $p = 0.004$) after controlling for age and all socio-economic factors in the study. The most important indicator of socio-economic factors in this study was 'occupational status of mother'. After controlling for sex, age and other socio-economic factors in the study, the children unemployed mothers statistically and significantly experienced traumatic dental injuries 3.78 times (95% CI = 1.23 to 11.61) as much as those with employed mothers ($p = 0.02$). However, a statistically significant protective effect presented in the children with their mothers being housewives compared to those mothers being employed (OR = 0.14; 95% CI = 0.06 to 0.37, $p < 0.001$). It is concluded that the socio-economic factors played an important role on the occurrence of childhood traumatic dental injuries. This study was supported by the Thai Government.

97 Synergistic Effect of TGF- β and 1,25(OH) $_2$ D $_3$ in Human Pulpal Fibroblasts. P. PAVASANT*, T. YONGCHAITRAKUL, K. PATTAMAPUN and M. ARKSORNNUKIT (Department of Anatomy, Faculty of Dentistry, Chulalongkorn University, Bangkok)

1,25(OH) $_2$ D $_3$ and TGF- β can influence function and differentiation of dental pulp fibroblasts. In this study, we examined the effect of 1,25(OH) $_2$ D $_3$ and TGF- β on the synthesis of SPARC and alkaline phosphatase (ALP) activity in human pulpal fibroblasts. Two isoforms of SPARC, the 43 and 38-kDa, were detected in this cell type. TGF- β increased the synthesis of SPARC about 2.5 folds after 3-day treatment but had no effect on the ALP activity in comparing with the control. On the contrary, 1,25(OH) $_2$ D $_3$ increased ALP activity for twofold but had no effect on SPARC. The combination of TGF- β and 1,25(OH) $_2$ D $_3$ induced increasing of SPARC synthesis and ALP activity by five and nine fold, respectively. This finding suggested the synergistic effect between TGF- β and 1,25(OH) $_2$ D $_3$ in dental pulp fibroblasts on the synthesis of SPARC and ALP activity. This interaction could influence the function and differentiation of dental pulp fibroblasts. (Supported by Ratchadapisek Somphot Endowment year 2001, Chulalongkorn University)

98 The Effect of Time, from the Recording of Definitive Impressions, on the Acceptability of Fit of Cast Cobalt-Chromium Frameworks. Samdan PRAMONO* (Department of Prosthodontics, Faculty of Dentistry, Trisakti University, Jakarta)

The aim of this study was to determine if there is an optimal time for the placement of cobalt-chromium prosthesis in a patient's mouth after the recording of definitive impressions. The Null Hypothesis was that there would be no difference in fit on the casts irrespective of time from recording the definitive impressions. Thirty five cobalt-chromium frameworks were made and each framework was assessed for fit on the definitive master cast plus other casts poured from impression recorded two, four and eight weeks after the definitive impression. Assessment of fit was *via* visual and indirect means. There was a statistically significant difference ($p < 0.05$) in fit on the casts at baseline up to eight weeks after recording the definitive impressions. The results indicated that the fit of cast cobalt-chromium frameworks was influenced with time. It is recommended that further research should be undertaken in an attempt to produce guidelines to general dental practitioners.

99 Use of Prior Information for Reducing Dental Anxiety. S.K.S. NG*, A.W.L. CHAU. (The University of Hong Kong, Hong Kong SAR, China)

A major issue in both dentistry and health psychology is the strategies for stress management and anxiety coping, e.g., preparing a patient for a critical yet noxious dental procedure. Common approaches involve providing the patient with information about the forthcoming event, instruction of relaxation and coping techniques as well as cognitive, behavioural and modelling approaches. This study examined the role of pre-operative information in reducing anxiety and how the effectiveness of these techniques varies for patients with high and low trait anxiety. Participants were randomly assigned to one of the four groups receiving, prior to the operation, a) basic information only (N), b) basic information with details of the operative procedures (P), c) basic information with details of the recovery (R), and d) basic information with details of both the operative procedures and recovery (PR). Results indicated that pre-operative provision of details about the recovery only or details about both the operative procedures and recovery led to significant reduction in self-reported anxiety in all patients. In contrast, information on operative procedural details only led to anxiety reduction in low but not high trait anxiety participants. It can be concluded from the present study that the provision of prior information, if it is supposed to help reduce anxiety towards threatening situation or noxious stimulation, should be decided in accordance with the trait anxiety of the subjects. For low trait subjects, prior information should be provided in any one of the formats P, R or PR; but for high trait subjects, only the formats R or PR should be provided in prior information to help reduce the anxiety. E-mail: Samng@hkstar.com

100 Student dental care service in the universities in Hong Kong. M.C. WONG* and C.H. CHU (Faculty of Dentistry, The University of Hong Kong, Hong Kong)

Objectives: The objective of this study was to describe the provision of dental care service by the universities in Hong Kong. Method: Interviews were held with the administrator in-charge of the dental service in each of the seven universities in Hong Kong on their missions, policy, background, development, organization, staffing, management and future plan of the university student dental service. Results: It was found that there are two modes of operation of the student dental service in the universities in Hong Kong. It can be institution-run, which forms part of the overall university health service. This system was established in the two oldest universities. The institution-run dental clinics are on-campus clinics and are generally larger in terms of space, facilities and staff. The other mode of operation is adopted by the five newly established universities, which out-source the dental service to private dentists. Four of them have on-campus clinics and one out-sourced the dental care to a private group practice with clinics in different districts of Hong Kong. All universities provide subsidized dental care service to their students. The treatment charging system varies with universities and is time-based, item-based or a combination. All the administrators interviewed were satisfied with the student dental service in their own university. Conclusion: The mode of operation and the charging system of the student dental service varies between the universities in Hong Kong. Despite the variations, the university administration is satisfied with the service provided.

101 Oral health of a group of type 2 diabetic patients in Hong Kong. W.S. RONG*, E.C.M. LO (Faculty of Dentistry, The University of Hong Kong)

Objectives: To describe the oral health status and oral health related quality of life of a group of poorly controlled type 2 diabetic patients in Hong Kong; and to evaluate the impact of oral conditions on quality of life in this group of patients. Materials and Methods: Type 2 diabetic dentate patients, aged 41-70 years old, with documented records of glycated hemoglobin (HbA $_{1c}$) levels over 8% for at least six months participated in an oral health examination and took a panoramic radiograph. They also completed a questionnaire including the General Oral Health Assessment Index (GOHAI) in a face-to-face interview. Oral health status was assessed according to the WHO recommended procedures and criteria. Results: 120 patients (53 males, 67 females) participated in the study. The mean HbA $_{1c}$ level was 9.011.71%. 71.7% of the patients were taking oral hypoglycemic medication and 24.2% of them used insulin injection. The mean DMFT score of the subjects was 12.1 \pm 6.8 (DT 1.5, MT 8.6, FT 2.0). The mean number of tooth with a periapical lesion was 1.1 \pm 1.4. 65% of the patients required extraction and/or root canal therapy. None of the patients had a completely healthy periodontium, 78.3% and 35.8% of them had shallow and deep periodontal pockets respectively. The mean GOHAI score of the patients was 50.8 \pm 5.8. Using a multiple linear regression analysis, the number of tooth with a periapical lesion and the method to control blood glucose was found to be associated with the GOHAI score. Conclusion: Oral health status of this group of diabetic patients was unsatisfactory, and this was associated with their oral health related quality of life.

102 The prevalence of cervical abrasion in non-institutionalized Thai elderly. S. LEELASTHORN¹, C. HOSANGUAN^{2*}, P. PRASERTSOM¹, and C. UNGCHUSAK¹ (¹Ministry of Public Health, ²Chulalongkorn Univ., Thailand)

The purpose of this study was to investigate the prevalence of cervical abrasion among non-institutionalized dentate Thai elderly. The sample included 453 dentate older adults aged 51 years and over living at home in an urban community in Bangkok. Data were collected from a clinical oral examination and an interview. The tooth wear index (TWI) was used to assess the level of cervical abrasion. In these dentate older adults, 81.8% had some cervical abrasion, with 37.1% having extensive abrasion (TWI scores 3+). About 3.2% had defect greater than 3 mm deep or pulp exposure (TWI scores 5). The prevalence rates were highest among maxillary premolars, followed by mandibular premolars. Based on logistic regression analyses, factors found to be significantly associated with extensive cervical abrasion were the number of sites with recession (OR = 1.04), frequency of toothbrushing (OR = 2.03), and percentage of sites with bleeding on probing (OR = 0.99). In conclusion, these correlates were in accord with a hypothesis of forceful toothbrushing as the major etiologic factors. This study was supported by TRF grant No. RDG3/09/2541.

103 Phospholipase enzyme and phospholipase B1 gene (*caPLB1*) expression in *C. albicans*. Y.H. SAMARANAYAKE, L.P. SAMARANAYAKE, B.P.K. CHEUNG*, R.S. DASSANAYAKE, J.Y.Y. YAU and K.W.S. YEUNG (Oral Bio-Sciences, Faculty of Dentistry, University of Hong Kong, Hong Kong, SAR)

Candidal phospholipase activity which is linked to the pathogenesis of oral candidiasis has not been investigated in yeasts from HIV-infected individuals. The main aims of this study therefore were to i) investigate quantitatively the phenotypic expression of phospholipase in 426 oral *C. albicans* obtained from 16 HIV-infected individuals and ii) to correlate the enzyme production with phospholipase B1 gene (*caPLB1*) expression in a select group of phenotypes that produce the enzyme to varying extents. The quantitative assessment of the phospholipase production was investigated using the plate assay method of Preece *et al.* (Sabouraudia, 1982; 20: 7-14) using egg yolk as the substrate. The phospholipase production in seven isolates was correlated with phospholipase B1 gene (*caPLB1*) expression using a RT-PCR assay (Schaller *et al.*, Molecular Microbiology, 1998; 29: 605-15). A total of 393 (92.25%) *C. albicans* isolates were phospholipase-positive. *Candida* isotypes which secreted significant amounts of phospholipase enzyme also expressed *caPLB1* gene whereas phospholipase negative strains failed to do so when analysed by RT-PCR (and compared with a control EFBI gene). Further, semi-quantitative analysis of the level of *caPLB1* gene expression, using quantitation software (Quantity One, Bio-Rad, Hercules, CA) showed a significant positive ($p < 0.05$) correlation between *caPLB1* gene expression and the phospholipase level of the phenotype. These data strongly suggest that phospholipase secretion *in vitro* is due to the expression of *C. albicans* phospholipase B1 gene (*caPLB1*). (Supported by a grant from the Research Grants Council and the CRCG of the University of Hong Kong, Hong Kong SAR).