

The 12th Annual Conference of the European Association of Dental Public Health: Poster Presentation Sessions

Session 1 – Oral Epidemiology – Jubileumzaal A

Friday 21 September 2007: 14.30 – 16.30

Chairs: Nigel Pitts and Roos Leroy

1. Factors associated with oral hygiene and gingival health in Flemish pre-school children

LEROY R¹, GARCÍA-ZATTERA MJ², JARA A², HOPPENBROUWERS K³, MARTENS L⁴, LESAFFRE E², VANDEN BROUCKE S⁵, DECLERCK D¹*

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2. Association of caries experience in deciduous incisors with independent variables

PIEPER K, NEUHÄUSER A, KRECKER M, JABLONSKI-MOMENI A*
Department of Paediatric and Community Dentistry, Philipps University Marburg, Germany

3. Study regarding the prevalence of initial caries in first permanent molars in 8-10-year-olds

NUCA C, AMARIEI C, ARENDT C, ANDREI JIPA I*
Faculty of Dental Medicine and Pharmacy, Ovidius University, Constanta, Romania

4. Examination rates and related factors in Finnish 12-year-olds

SUOMINEN-TAIPALE L¹, WIDSTRÖM E², SUND R²*
¹National Public Health Institute (KTL), Helsinki, Finland, ²National Research and Development Centre for Welfare and Health (STAKES), Helsinki, Finland

5. Socio-economic differences in oral health among Italian adolescents

*CAGETTI MG¹, CAMPUS G², SENNA A¹, SACCO G², STROHMENGER L¹**
¹WHO Collaborating Centre for Epidemiology and Community Dentistry, Milan, ²Department of Dentistry, Sassari University, Sassari, Italy

6. Oral status of dental assistants – an investigation in a district of Thuringia

ZIEBOLZ D, KOPFLEISCH S, HORNECKER E, MAUSBERG RF*
Department of Operative Dentistry, Preventive Dentistry and Periodontology, University of Goettingen, Germany

7. Oral hygiene habits and use of dental services among Finnish university students

TIPURI M¹, PÖNTYS K¹, MARINESCU-GAVA M¹, VUORINEN A¹, KUNTTU K², HUTTUNEN T³*

¹Finnish Student Health Service, Tampere, Finland, ²Finnish Student Health Service, Turku, Finland, ³Pharma Ltd, Turku, Finland

8. The use of sugar-containing foods among Finnish university students

PÖNTYS K^{1}, TIPURI M¹, VUORINEN A¹, MARINESCU-GAVA M¹, KUNTTU K², HUTTUNEN T³*

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9. Tooth loss and obesity in a defined Swedish population

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10. Trends in periodontal conditions among 35-year-olds in Oslo, 1973-2003

SKUDUTYTE-RYSSTAD R^{1}, ERIKSEN H M², HANSEN BF¹*

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11. Attitudes of smokers and non-smokers towards oral hygiene in Czech Republic

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Session 2 – Oral Health Services Research – Jubileumzaal B

Friday 21 September 2007: 14.30 – 16.30

Chairs: Eeva Widström and Joana Carvalho

12. The “garbage can”; rational versus political logics in decision- making

ORDELL S, SÖDERFELDT B*

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13. Private dental care market after a major health political reform

WIDSTRÖM E, MIKKOLA H*

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14. Access to dental care in rural communities in England

YEUNG CA^{1}, PATEL D², MCGOUGH T², OSBORNE S²*

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15. Collaboration among Danish dentists in private general practices

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16. Children's use of health services in the Nordic countries

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17. High and low use of dental services among Finnish children and adolescents

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18. Oral health in children and adolescents under different dental health care services provided

CHRISTENSEN LB^{1}, PETERSEN PE¹, HEDE B²*

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19. Contract and fee-for-service care - regression modelling of oral health-related quality of life

JOHANSSON V^{1}, AXTELIUS B¹, SÖDERFELDT B¹, SAMPOGNA F^{1,2}, SONDELL K³*

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20. Five-year changes in dental care of the elderly at Laukaa PDS, Finland

RUOHO MJ^{1}, VEKALAHTI MM²*

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21. Evaluation of the emergency dental services in the Public Dental Service of Helsinki

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Session 3 – Oral Health Promotion – Jubileumzaal A
Saturday 22 September 2007: 15.00 – 16.20
Chairs: Hannu Hausen and Astrid Vanden Abbeele

22. Follow-up of dental visits made by 2-year-old children

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23. Oral health status among kindergarten schoolchildren of low-income communities in Peru

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24. Noninvasive control of dental caries in children with active initial lesions

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25. Dental hygiene activities for promotion of oral health in a clinical trial

LUÍS HS¹, MORGADO B³, ASSUNÇÃO V¹, BERNARDO MF¹, LEROUX B², MARTIN MD², DEROUEN TA², LEITÃO J¹*

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26. The nutritional habits of children on the Greek island of Milos

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¹Department of Pediatrics, ²Oral Health Services, ³Department of Family Medicine, Primary Health Care Center of Milos, Greece

27. Knowledge and attitudes towards oral health among parents and teachers in Iasi, Romania

DANILA I, BARLEAN L, SAVEANU I, MIHAIOVICI L, EVGHENIKOS A*

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28. French dentists' involvement in oral hygiene education

VINAY N, TRAMINI P, ESCLAPEZ C, VALCARCEL J*

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29. Dentists' and oral hygienists' enquiry into tobacco usage by patients

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Session 4 – Workforce Planning in Oral Health, Organisation of Oral Public Health and Oral Health Services Research – Jubileumzaal B
Saturday 22 September 2007: 15.00 – 16.20
Chairs: Kenneth Eaton and Cédric Jurista

30. A survey of national oral health care workforce planning in the EU/EEA

EATON KA¹, AGUSTSDOTTIR H²*

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31. Organization of the dental health care system in Romania during transition period

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32. The views of paediatric dentists and dental hygienists about caries prevention

CAMPUS G ON BEHALF OF THE ITALIAN STUDY GROUP FOR CARIES PREVENTION*

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33. Survey of HBV vaccination among dentists and dental staff in North Iran

RABIEI M¹, MOHTASHAM AMIRI Z², NIKROOH E¹, HODJATI S¹*

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34. Treatment of mucosal infections of the oral cavity in Kyrgyzstan

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35. Complications and antibiotic use after the surgical extraction of lower wisdom tooth

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36. Intra-oral radiography for patients receiving comprehensive public dental care in Helsinki, Finland

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Session 5 – Oral Epidemiology – Jubileumzaal A
Saturday 22 September 2007: 16.40 – 17.40
Chairs: Cynthia Pine and Peter Bottenberg

37. Validation of the Italian version of the Oral Health Impact Profile (OHIP-49)

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²Department of Dentistry, Sassari University, Sassari, Italy

38. Reliability and validity of the Romanian version of the Oral Health Impact Profile (OHIP-14)

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39. Impact of oral health on quality of life among adults in Iasi, Romania

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40. Prevalence of edentulousness and related factors among elderly Finns

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41. Impact of tooth brushing frequency on periodontal health in Lithuanian elderly

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42. Cleaning of teeth/dentures in relation to functional capacity in the Finnish elderly population

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Session 6 – Special Needs Groups – Jubileumzaal B
Saturday 22 September 2007: 16.40 – 17.40
Chairs: Andreas Schulte and Luc De Visschere

43. Social indices and oral health in a group of socially deprived adolescents

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44. Dentists' perceptions of underprivileged patients

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¹Université de Montréal, Montreal, Canada, ²McGill University, Montreal, Canada

45. Oral health awareness and oral health in pregnant Polish women

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46. Investigation of periodontal tissues and dental caries in single low-income mothers

ABASKANOVA PD

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47. Periodontal health status of diabetic patients in two Greek islands: Milos and Tinos

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48. Recently graduated dentists' knowledge and perception of older people

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Poster Abstracts

1. Factors associated with oral hygiene and gingival health in Flemish pre-school children

LEROY R^{1*}, GARCÍA-ZATTERA MJ², JARA A², HOPPENBROUWERS K³, MARTENS L⁴, LESAFFRE E², VANDEN BROUCKE S⁵, DECLERCK D¹

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Aim The study aimed to identify factors associated with dental plaque accumulation and gingival health in young children. **Methods** Cross-sectional data on convenience samples of 1,250 3-year-old and 1,283 5-year-old children from four geographical areas in Flanders (Belgium) were analysed. The children were examined at school by 8 trained and calibrated dentist-examiners using standard examination methodology and criteria. Plaque accumulation and gingival health were assessed buccally on six index teeth. Data on oral hygiene, dietary habits, oral health behaviour and socio-demographic background variables were obtained through structured questionnaires that were completed by the parents. **Results** A total of 31% of the 3-year-olds and 37% of the 5-year-olds presented with visible plaque accumulation. In both age groups, only 3 to 4% of children presented with signs of gingival inflammation. Multiple logistic regression models revealed that brushing frequency had a significant effect on plaque accumulation in both age groups; in 3-year-olds, other the statistically significant covariates were age, educational level of the mother and frequent consumption of drinks. With gingival health as the dependent variable, multiple logistic regression analysis revealed that plaque accumulation (OR=67.0; 95% CI: 7.9–571.5) as well as the age at which brushing had been started (OR=12.6; 95% CI: 1.9–82.2) had significant effects in the 5-year-olds. **Conclusions** Parents should be motivated to start brushing teeth frequently at an early age in order to maintain good oral health in their off-spring. **Acknowledgements** This study was supported by GABA International and GABA Benelux.

2. Association of caries experience in deciduous incisors with independent variables

PIEPER K*, NEUHÄUSER A, KRECKER M, JABLONSKI-MOMENI A

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Aim The aim of the present study was to assess caries prevalence in deciduous incisors in a county in Northern Hesse and to correlate this parameter to various independent variables. **Methods** In spring 2006, all 5-7-year-old preschool children visiting kindergarten in Waldeck-Frankenberg County (n=1,600) were invited to take part in the study. Only those children participated whose parents had given their informed consent. A total of 1,081 preschool children were examined and d₃₊₄mfs values were recorded. Information about feeding practices during early childhood and preventive measures carried out at home, in kindergarten or by the family dentist were collected by a structured questionnaire for each child. The data were analysed using the statistical software package SPSS. Mean caries scores of various subgroups were compared and non-parametric tests were performed to evaluate the significance of the differences. Variables associated with caries were included in a binary stepwise logistic regression analysis. **Results** Constantly giving babies a bottle during the night and nightly breastfeeding in the parents' bed for longer than seven months showed a positive correlation to d₃₊₄mfs scores in the bivariate analysis. For example, the mean d₃₊₄mfs in incisors of children who were given a baby bottle during the night for longer than seven months was 1.17, while it was 0.39 among the ones who were not fed in this way ($p < 0.001$). The respective caries score of children who were breast fed during night in the parents' bed for longer than 7 months amounted to 1.25 while children who were not nursed in this way exhibited an average value of 0.49 ($p = 0.004$). Systemic intake of fluorides showed a negative correlation to d₃₊₄mfs scores of incisors. **Conclusions** The results of the binary logistic regression analysis suggest that long-term use of baby bottles at night is the most important factor in the development of dental caries in incisors. **Acknowledgements** This study was supported by GABA International, Münchenstein Switzerland.

3. Study regarding the prevalence of initial caries in first permanent molars in 8-10-year-olds

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Aim The aim of this study was to assess the prevalence of the initial enamel caries in the first permanent molars of a group of 8- to 10-year-old children in Constanta.

Methods The study group included 448 randomly selected children (106 girls and 108 boys aged 8 years; 132 girls and 102 boys aged 9 years), with all four first permanent molars fully erupted. The prevalence of initial caries was evaluated by age and gender for each group and for each tooth surface: occlusal, buccal, palatal/lingual, mesial and distal. The diagnostic methods employed were: (1) a clinical examination consisting of a visual examination in optimal light and palpation with a blunt probe (after washing and drying the teeth), associated with the use of a dye for disclosing sub-surface lesions at occlusal, buccal and palatal surfaces (2) bitewing radiographs to screen proximal surfaces and (3) the measurement of the laser-induced fluorescence (DIAGNOdent) of the enamel surfaces. In the case of the clinical examination, the surfaces with less translucence, increased porosity, which remained coloured after using the dyeing substance and rinsing with water and which were confirmed as having non-cavitated lesions by using DIAGNOdent, were registered as initial caries (the surfaces without these features were excluded). In the case of the bitewing examination the surfaces that showed a limited enamel transparency on the radiological film and that were confirmed as having non-cavitated lesions, by using the DIAGNOdent, were registered with initial caries (the surfaces with radio-transparency over the enamel, in dentine, were excluded).

Results The overall prevalence of the initial caries in all the surfaces examined in this study (n=8,960) was 19.8%, with values of 15.8% in the 8-year-olds (20.6% for girls, 11.2% for boys) and 23.3% in 9-year-olds (24.5% for girls, 22.0% for boys). The overall prevalence of the initial caries in the occlusal surfaces (n=1,792) was 34.2%, with values of 33.8% in the 8-year-olds (35.8% for girls, 31.9% for boys) and 34.5% in the 9-year-olds (36.3% for girls, 32.4% for boys). On the proximal surfaces (n=3,584), the overall prevalence was 24.6% (23.4% for 8-year-olds and 25.8% for 9-year-olds). In the lower-buccal and upper-palatal surfaces (n=1,792) the overall prevalence was 21.5% (16.0% in 8-year-olds and 26.7% in 9-year-olds). The overall prevalence of initial caries in the upper-buccal and lower-lingual surfaces (n=1,792) was 4.8% (5.3% in 8-year-olds and 4.3% in 9-year-olds).

Conclusion In this study, the overall prevalence of the initial enamel caries in the first permanent molars was 19.8%. The prevalence was highest on the occlusal surfaces and decreased by type of surface in the order: proximal, upper-palatal and lower buccal, upper-buccal and lower lingual surfaces.

4. Examination rates and related factors in Finnish 12-year-olds

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Due to improved oral health, individual recall intervals are recommended for use in the Finnish Public Dental Service (PDS) which provides practically all oral care for children and youngsters. **Aim** The aim of this study was to report on and analyze examination rates and related factors in 12-year-olds treated by the PDS in 2003. The study also sought to investigate whether or not different examination rates were reflected by the means of traditional caries indices. **Methods** The data were collected from the PDS units as part of a three yearly monitoring survey and supplemented with information from a national register (Sotka). The final data were drawn from 203 PDS units and the response rate was 73%. The number of 12 year-olds examined, percentage caries-free and municipal (individual PDS) mean values for decayed teeth (DT) and DMFT were collected. Other variables analyzed were: total numbers of children and adults treated in the PDS and private sector, number of visits to a dentist and/or a dental hygienist, number of children receiving orthodontic care, number of acute patients, number of dentists and dental hygienists, supply of services, area, level of education of the municipal residents, tax income per resident, degree of urbanization of the municipality and population. Weighted and adjusted mean values for caries-free and DMFT by examination rates were calculated. **Results** The number of 12-year-olds included in the study was 57,206 and 70% of them had had a dental examination in 2003. 41% were caries-free, and the mean values of DT and DMFT were 0.6 and 1.3, respectively. Over half (56%) of the PDS units had examined more than 75% of the children in their municipality, about a third (34%) 50-75% and the remainder (11%) less than 50%. High examination rates indicated high coverage of population treated in PDS (both children and adults), low utilization of dental hygienists, a low dental hygienist/dentist ratio, low proportion of residents with high educational levels living in the municipality, and rural status. Low examination rates were indicative of poor oral health, measured by all the three indices, indicating that those with poor oral health had more frequent examinations and care than the healthier ones. Weighting and adjustment slightly increased the proportion of caries-free to 43% and lowered the mean DMFT value to 1.2. **Conclusions** Large variations in examination rates reflected local circumstances and treatment traditions of individual PDS units. Where individual recall intervals were used it appeared that they complied with the recommendations. The variable examination rates tended to overestimate the national mean DMFT value and underestimate the mean number of caries-free in the age group studied giving false signals of deterioration in oral health.

5. Socio-economic differences in oral health among Italian adolescents

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Aim The aim of this study was to evaluate the possible association between the type of secondary school attended, oral clinical data and self-perceived oral health and behaviour among Italian adolescents. **Methods** Two secondary schools located in two areas of Milan (Italy) were selected: school A, a grammar school, located in the city centre; and school B, a secondary technical school, located in the south-west area of the city. Adolescents were recruited using systematic cluster sampling. The first cluster on the list was randomly chosen, while the others were selected at systematic intervals of three classes. The number of subjects in each class was approximately the same. Altogether 1,624 subjects (aged 13-18 years) were enrolled. Data on oral health behaviour and attitudes were collected using an anonymous questionnaire. Only one sheet of paper per subject was used, one side for the questionnaire, the other one for the clinical chart. A total of 913 adolescents (participation rate 56.2%) were examined for dental caries (DMFT) and periodontal diseases (CPI), following WHO recommendations. Data were collected by three calibrated examiners (Cohen's kappa=0.8). Analysis of variance was used to evaluate the statistical significance of differences in mean values. Stepwise logistic regression analysis was applied to determine whether the clinical outcome variables (DMFT =0 vs. >0 and CPI =0 vs. >0) were associated with the subjects' self-perceived oral health, and with oral health or life-style behaviour. **Results** Type of school was related to DMFT and CPI. The odds of having at least one DMF tooth among students in school B over the same odds in school A (Odds Ratio, OR) were 2.3 (95% CI: 1.8-2.9). For CPI, the corresponding OR was 0.5 (95% CI: 0.3-0.79) indicating less signs of periodontal diseases among students of school B than those of school A. Both in school A and school B, experience of self-perceived tooth discomfort was related to the presence of DMFT (school A: OR=1.9, 95% CI: 1.4-2.6; school B: OR=1.9, 95% CI: 1.3-2.9). In school A, the consumption of sweet food items more than once a day was indicative of having at least one DMF tooth (OR=1.2, 95% CI: 1.1-1.3). No such effect was found in school B. **Conclusions** The results of this study indicate that the type of secondary school may be a sensitive indicator of oral health status among adolescents.

6. Oral status of dental assistants – an investigation in a district of Thuringia

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Aim The aim of this study was to assess the oral status of dental assistants (DAs) in a district of Thuringia. The findings were compared with the oral status of patients (PTs) who received preventive dental care on a regular basis in a single dental practice of the same district. **Methods** All DAs who were employed with the 59 dental practices of the district were asked by a letter to join the study; 19% declined their participation. The final study sample comprised 100 DAs between 18 and 60 years of age (mean age 38.8 years). A total of 126 patients were invited and 100 (79%) participated in the study (16 to 67 years old, mean age 44.0 years). The PTs were examined at the beginning of the ordinary course of a preventive dental appointment. The dental examination included the assessment of DMFT, oral hygiene (API), gingival inflammation (PBI), periodontal condition (PSI) as well as bleeding on probing (BOP). **Results** DMFT: The mean DMFT was significantly lower (12.52) among DAs than among PTs (16.95, $p < 0.001$). The main reason for this difference was the number of missing teeth. The mean MT was 0.88 and 4.83 among DAs and of PTs, respectively ($p < 0.001$). Significant differences between DAs and PTs could not be found in the number of filled and decayed teeth; the mean FT and DT values were 11.54 and 11.84 ($p > 0.05$) and 0.11 and 0.28 ($p > 0.05$), for the DAs and PTs, respectively. Oral hygiene: The mean API value was significantly lower among DAs (44%) than it was among PTs (67%, $p < 0.001$). In 32 DAs and in 14 PTs, the API value was below 30% indicating good plaque control. Significant differences between the two groups were found in PBI, with the mean PBI value being 0.13 among DAs and 0.26 among PTs ($p < 0.01$). Periodontal condition: In both groups, quite a few participants needed periodontal treatment. Nevertheless, the number of DAs with PSI scores 3 or 4 was significantly lower (9%) than the corresponding number of PTs (63%, $p < 0.001$). Furthermore, a significant difference was found in bleeding on probing; 17% of DAs and 44% of PTs presented with positive BOP findings ($p < 0.001$). **Conclusion** Although the overall oral health status of the dental assistants was clearly better than that of the patients, we found that dental assistants did not make full use of their job-related knowledge and skills to optimise their own oral health.

7. Oral hygiene habits and use of dental services among Finnish university students

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Aim The aim of the study was to investigate the key aspects of oral health behaviour and use of dental care services among the Finnish university students. **Methods** In the years 2000 and 2004, surveys were carried out among Finnish university students who are entitled to health care services provided by the Finnish Student Health Service (FSHF). The target group consisted of Finnish undergraduate students aged 18-35 years. The selection of the study sample was based on stratified random sampling. In both years, the sample size was 5,030 students, with the response rate being 63.1% in 2000 and 62.7% in 2004. The percentages of male and female students were 46.1% and 53.9% in 2000 and 45.7% and 54.3% in 2004, respectively. The data were gathered by means of a postal questionnaire, with three repeat questionnaires. The respondents represented well the study population for all background variables: gender, age, duration of studies, study location and field of studies. **Results** In 2000, 68.7% of all students reported brushing their teeth twice a day; in 2004 the corresponding percentage was 67.9%. Dental floss was used daily by 7.7% (2000) and 7.4% (2004) of all respondents; with the percentages of occasional users being 51.3% and 39.8% among the male students and 67.2% and 63.4% among the female ones in 2000 and 2004, respectively. The percentage of respondents using xylitol products at least twice a day was 18.3% in 2000 and 20.2% in 2004. Of the subjects, 48.5% and 41.6% had visited a dentist and 31.9% and 24.6% a dental hygienist at FSHS during the preceding 12 months in 2000 and 2004, respectively. The percentages of those who had used public dental services were 7.4% in 2000 and 12.3% in 2004. The corresponding percentages for the use of private dental services were 5.4% and 14.1%, respectively. During the first or second academic year, the students can get a dental check-up free of charge. In 2000, 76.5% and in 2004 71.2 % either did not take advantage of this possibility or did not remember whether he/she had used it. **Conclusion** No significant difference was found in tooth brushing and daily use of dental floss between the years 2000 and 2004. The use of xylitol products was slightly more frequent in the latter year, but still clearly below the level that is recommended in Finland (at least three times a day). The percentage of students who had visited FSHF dental clinic was smaller in 2004 than in 2000; the opposite was true for the percentages of those who had used public and/or private dental services.

8. The use of sugar-containing foods among Finnish university students

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In the years 2000 and 2004, surveys were carried out among Finnish university students who are entitled to health care services provided by the Finnish Student Health Service (FSHF). The aim of the surveys was to monitor: (1) the students' physical, mental and social health, (2) certain key aspects of health behaviour, (3) external factors affecting health and health behaviour and (4) the use of health care services. **Aim** In this study we wanted to find out the frequency of consumption of sugar-containing foods, especially sweets, chocolate and drinks with added sugar. **Methods** The target group consisted of Finnish undergraduate students aged 18-35 years. The selection of the study sample was based on stratified random sampling. In both years, the sample size was 5,030 students, with the response rate being 63.1% in 2000 and 62.7% in 2004. The percentages of male and female students were 46.1% and 53.9% in 2000 and 45.7% and 54.3% in 2004, respectively. The data were gathered by means of a postal questionnaire, with three repeat questionnaires. The respondents represented well the study population for all background variables: gender, age, duration of studies, study location and field of studies. Eating habits were analysed for five components: use of fat, salt, sugar and intake of fibre and calcium during last seven days. Percentages of respondents with different intake frequencies were calculated for all respondents and for age- and gender-specific subgroups. **Results** Nearly one half of the students (47.5% in 2000 and 48.6% in 2004) reported eating sweets and chocolate once or twice weekly; the percentage of subjects who consumed these items daily was 7.1% in 2000 and 10.4% in 2004. Between 2000 and 2004 there was a clear increase in the percentage daily users of sweets and chocolate among 30-34-year-old females (from 7.9% in 2000 to 15.4% in 2004). For all respondents, the daily consumption of cold drinks with added sugar was 5.0% in 2000 and 7.9% in 2004. Among male students, the daily use of drinks with added sugar was more common (7.8% in 2000 and 11.0% in 2004) than among females (4.1% in 2000 and 6% in 2004). For many students, the eating habits were healthy. In general, the students tended to be more concerned about the use of fat and salt than that of sugar. **Conclusion** The percentage of daily users of sweets and chocolate as well as cold drinks with added sugar increased between 2000 and 2004, the former especially among the male and the latter among the female students.

9. Tooth loss and obesity in a defined Swedish population

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Aim The aim of the present study was to explore the association between tooth loss and obesity in a defined adult Swedish population and to investigate whether psychosocial factors could explain a tentative association. **Methods** The study is based on a population survey 2001-2005 in two municipalities within the same mainly rural area in south-western Sweden, being part of a comprehensive epidemiological study on hypertension, type 2 diabetes, and obesity (The Skaraborg Project). A random sample of 30-74-year-olds (five year strata) was selected and 2,918 people participated (76%). Information on remaining number of teeth was collected by a self-administered questionnaire. Tooth loss was defined as <20 remaining teeth, as compared to ≥ 20 . Obesity was defined as body mass index (BMI) ≥ 30 kgm⁻². Associations were estimated using logistic regression and adjustments were made for demographic, clinical and life-style variables as well as co-morbidity. **Results** The mean BMI value was 26.9 kgm⁻² in men and 26.8 kgm⁻² in women. Obesity was still more frequent among women than among men (23.6% versus 17.7%, $p < 0.001$). Including all ages, there was a statistically significant association between tooth loss and obesity among women (OR 1.98; CI 1.44-2.72), but not among men (1.40; 0.98-2.00). However, in participants below 60 years of age, this association was stronger and statistically significant in both genders, while it was lost in older participants. **Conclusions** In this study, tooth loss was associated with obesity in the younger adults with a stronger association in women than in men. **Acknowledgements** This study was funded by Skaraborg Institute, Skaraborg Primary Care, West Gothaland Region, Swedish Medical Research Council, and the Medical Faculty at Lund University, Sweden.

10. Trends in periodontal conditions among 35-year-olds in Oslo, 1973-2003

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Aim The aim of the present study was to describe trends in periodontal conditions and oral hygiene using data available from four epidemiological studies on 35-year-olds in Oslo performed from 1973 to 2003. **Methods** Periodontal status of randomly selected 35-year-olds was assessed clinically and radiographically. A total of 117 individuals were examined in 1973, 156 in 1984, 121 in 1993 and 149 in 2003 with the response rates varying from 64% to 80%. The percentage of non-western immigrants varied from 1% in 1973 to 15% in 2003 and this group was excluded from further comparisons. Clinical registrations were based on the Community Periodontal Index of Treatment Needs (1984-2003) and on the Simplified Oral Hygiene Index. Prevalence of marginal bone loss was assessed using available orthopantomograms. **Results** The prevalence of deep periodontal pockets (≥ 6 mm) decreased from 17.4% in 1984 to 4% in 2003 ($p=0.001$). While the proportion of individuals with all sextants scored as healthy remained unchanged, there was almost a three-fold increase in the mean number of healthy sextants per person from 0.35 (SD=0.95) in 1984 to 1.44 (SD=1.42) in 2003 ($p<0.001$). In addition, the mean number of sextants with deep pockets was significantly lower in 2003 than previously. The percentage of individuals without recorded bone loss increased from 45% in 1973 to 83% in 2003 ($p<0.001$). During this period, an improvement in oral hygiene scores was also observed. **Conclusions** The results suggest that oral hygiene and periodontal conditions have been improving among 35-year-olds in Oslo during the last 30 years.

11. Attitudes of smokers and non-smokers towards oral hygiene in Czech Republic

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Aim The aim was to determine the attitudes of smokers and non-smokers towards oral hygiene and the influence of smoking on the periodontium and teeth. **Methods** Patients in the age group of 30 to 69 years, reporting to Department of Dentistry and to three private dental practitioners were invited to participate in the study with prior informed consent. The study consisted of two parts, a self-administered questionnaire and a clinical examination. Clinical findings on periodontium were recorded using Community Periodontal Index for Treatment Needs (CPITN) and those on teeth by the DMFT index. Statistical analyses were performed by NCSS 2004 program using descriptive statistics, Mann-Whitney test, Kruskal-Wallis ANOVA and chi-square test. **Results** A questionnaire inquiry of a total of 684 respondents revealed that 292 of them had a positive smoking history i.e. they were current/occasional/former smokers (180 males and 112 females; mean age 44.4 years). The remaining 392 respondents were non-smokers (161 males and 231 females; mean age 44.3 years). The non-smokers had better oral hygiene habits than the smokers had: they brushed their teeth more often daily ($p=0.022$), used an inter-dental tooth brush and mouth wash more frequently ($p=0.012$) and a higher percentage of non-smokers abstained from eating anything after evening tooth brushing ($p<0.001$) compared to smokers. The percentage of respondents participating in regular dental preventive check-ups (twice a year) was higher among non-smokers than smokers (72% vs. 58%, $p<0.001$). Among smokers, the percentage of subjects with basic education was higher and the percentage of those with a university degree lower than among non-smokers ($p<0.001$). We did not find any significant difference in the level of income between the groups. Clinical findings showed that the median number of missing teeth was significantly higher in smokers (3 vs. 2; $p=0.032$), while the median number of filled teeth was higher in non-smokers (10 vs. 9; $p=0.043$). Chi-square test revealed a significant difference ($p=0.007$) in CPI values between smokers and non-smokers. Smokers had sextants with CPI values 3 and 4 (moderate or severe pocketing) more frequently than did non-smokers who, in turn, presented with a higher frequency of sextants with healthy periodontal tissue (CPI 0). **Conclusion:** Non-smokers had better oral hygiene habits and periodontal health compared to smokers. **Acknowledgements** This study was supported by the Ministry of Health Grant Agency, No. NR8781-3/06.

12. The “garbage can”; rational versus political logics in decision-making

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Organisations that are dependent on external settings, among them political, need to understand the logics that shape their environment. The professionals in medical and dental organisations are used to decision-making processes based on “science logics” wherein each step is transparent and steps follow each other in a predictable manner. Political decision-making is often not possible to understand from that background. Olsen (1972) described an alternative model of non-rational decision-making, the “garbage can model”. According to this model, a decision will be made only when four “streams” of requisites are present at the same time. These streams are: (1) problems to be solved, (2) solutions, (3) choice opportunities, and (4) decision-makers. **Aim** The aim of this study was to describe some changes in the National Dental Insurance (NDI) that is an important part of the environment for dentistry in Sweden, and to analyse the underlying political logic. **Methods** The description was made using backgrounds in official documents and proposals to reform the NDI and these descriptions were analysed using theories from decision-making. **Results** The objectives in the NDI changed from a formal emphasis on prevention to an insurance against high cost for specified groups of patients. These changes were in contradiction to the stated objectives in the reformed NDI. These changes can be better understood by using a non-rational model of decision-making. **Conclusions** The “garbage-can” model for decision-making can be used to gain a better understanding of the logics in the political system that forms the environment for a care organization.

13. Private dental care market after a major health political reform

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A dental care reform in 2001-2002 changed the operational environment of private dental practices in Finland. The age limits restricting adults' access to the Public Dental Service were abolished and thus the private and public sector were put in competition - at least in theory. Also the national health insurance reimbursements of private dental care were expanded to cover all age groups. After the reform, a patient was free to choose between the municipal health centres or the private sector. **Aim** The aim was to study how changes in the operational environment caused by the reform affected the private dental care market. **Methods** Based on findings from interviews of eleven chief executive officers of the biggest dental care companies and two chief dentists in state administration, a questionnaire was constructed inquiring how the structure and strategies of the private dental care industry were evolving and how the expanding Public Dental Service and rivalry within the industry influence the private market participants. The questionnaire was mailed to all the 1,121 private dentists in the 12 biggest cities in Finland. The response rate was 60%. An industry analysis on forces driving the evolution of private dental care was provided. Prices were used as indicator of business performance. **Results** The study period was found to be successful for the private dental care industry in terms of growth and profitability, but not directly due to the dental care reform. Between 2000 and 2005, the growth of the industry's aggregate revenue was 36.4%. Prices of private dental care grew more than the consumer prices (+5.6%) and the price increase explained half of the growth of the industry's aggregate revenue. Prices of dental services were lowest in solo practices (price index 93.3), second lowest in small practices (98.4), third lowest in loosely integrated practices (102.3) and highest in integrated practices (104.3). About 40% of the respondents had noticed an increased demand for their services and also 40% felt that competition among care providers had increased. Larger group practices with a high level of process integration and service differentiation experienced less competition and performed better than smaller group practices and solo practices. **Conclusions** Greater differentiation in service provision was the main strategy for facing the new competitive pressures and for enjoying higher performance. From a consumer point of view it is worth noticing that increased competition did not lower prices. **Acknowledgements** The study was supported by the Academy of Finland, Health Services Research Grant Terttu.

14. Access to dental care in rural communities in England

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From 1 April 2006, reforms in National Health Service (NHS) dental services in England meant budgets were devolved to Primary Care Trusts. Many dental practitioners were not happy with such changes, resulting in reduction of NHS dental services provision. **Aims** The aims were to identify current provision of dental services available to rural communities in England; to establish whether there is a gap in these services; and to make recommendations to eliminate any identified gaps. **Methods** A questionnaire was sent to all the 1,066 dental practices located at a rural postcode in England. The postal survey sought to establish baseline information relating to access to dental care, practice characteristics, out-of-hours and emergency arrangements, domiciliary services and referral procedures. Additional information was collected via a focus group discussion held in London, and several face-to-face interviews were conducted at rural dental practices which were carefully selected to cover different characteristics. **Results** A total of 569 dental practices returned the questionnaire. Response rate was 53%. Thirteen specially invited stakeholders participated in the focus group session. Seven semi-structured face-to-face interviews were carried out. Within rural communities, there seems to be a significant issue regarding provision of NHS dental care for fee paying adults. After 1 April 2006, only 40% of dental practices reported that they would be treating all adults under NHS, compared to 49% before the NHS reforms. Also, there is a significant gap in provision of domiciliary care, with the proportion declining from 64% to 29% after 1 April 2006. These are only two examples of reduction in dental services provision as a direct result of the new changes in NHS. Accessing specialist dental services and out-of-hours dental provision have always been problematic for rural communities. Lack of adequate public transport is a significant barrier to accessing dental services, resulting in some patients having to travel long distances to alleviate dental pain, to seek referrals and out-of-hours care. Also, it is more difficult for rural dental practices to recruit and retain dentists, particularly newly qualified dentists, than urban practices. **Conclusions** Current dental provision for rural communities is patchy and far from ideal. Several recommendations were made, including regular collection of information on patient needs using patient forums; improvements in delivery of domiciliary care and out-of-hours services; and establishment of satellite clinics and mobile clinics. **Acknowledgements** The study was supported by the Commission for Rural Communities.

15. Collaboration among Danish dentists in private general practices

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Perceived social support is a central concept in classical stress models and is known to be important to health. **Aim** The aim of this study was to investigate to what extent Danish general dental practitioners support each other, in relation to background factors. **Methods** The study was a cross-sectional survey with a postal questionnaire sent to 300 dentists who were randomly selected members of the Danish Dental Association. Response rate was 80% after one reminder. Factor analyses of items describing collaboration among colleagues were performed. The extracted support factors were used as outcome variables in multiple regression analyses with background factors like age, gender, and work characteristics as independent variables. **Results** Two factors were extracted describing perceived support and were interpreted as emotional and practical support. The regression analyses with support as dependent variables gave the following main results (Model 1: $R^2=0.34$; $F=13.53$ 8/184; $p \leq 0.000$; Model 2: $R^2=0.24$; $F=8.50$ 8/184; $p \leq 0.000$):

- Dentists from solo practices perceived significantly less emotional and practical support than dentists working in bigger units ($p=0.002$; $p=0.001$);
- The more time dentists spent with colleagues outside the clinical sphere, the more emotional support was perceived ($p \leq 0.000$). A parallel relation, but weaker was found for practical support ($p=0.041$);
- Male dentists reported significantly less emotional support than their female colleagues ($p=0.004$). A similar gender difference was not found for practical support ($p=0.843$).
- Being single in private life was associated with less perception of practical support compared to married dentists ($p=0.044$).

Conclusion The study underlines the importance of structural and cultural conditions in work environment for the perception of social support from colleagues.

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16. Children's use of health services in the Nordic countries

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Aims The aim was to compare differences in children's use of dental and numerous other health services in the Nordic countries from the 1980s to the 1990s and to analyse trends during the period. **Methods** The participants were 20,500 children aged 2-17 years from Denmark, Finland, Iceland, Norway and Sweden. Cross-sectional population surveys using random samples comprising 3,000 children in each country were conducted in 1984 and 1996. Time trends in use of dental services and numerous other health services *e.g.* GP, medical specialist, district nurse, nurse, physiotherapist and other were studied by age, sex, parents' highest level of education, and living area. The main outcome was utilisation of health services on the basis of responses to a questionnaire item asking whether the parents had consulted a dentist, a medical doctor, a nurse or other with regard to their children's health during the previous three months. The response rate was 67% in 1984 and 70% in 1996. The statistical significance of differences was evaluated by chi-square tests. Logistic regression analysis was used to calculate odds ratios (OR) for the associations between the dependent and the independent variables. **Results** In general, children's utilisation of numerous health services in the Nordic countries increased during the time period. The prevalence of children's utilisation of GP and medical specialist services varied from 23% in 1984 in Sweden to 40% in 1996 in Iceland. The prevalence of children's utilisation of services provided by a nurse varied from 2% in 1984 in Iceland to 7% in 1996 in Finland. Utilisation of dental services varied between 60% in 1984 and 30% in 1996. A clear time trend towards increasing utilization of GP services (OR=1.32, $p<0.05$) was observed at the same time as the use of dental services decreased significantly (OR=0.69; $p<0.05$). No major gender differences were observed. Use of health services provided by a district nurse and a nurse remained fairly constant. A trend towards an increasing use of services by physiotherapists and other health care personnel was also found. Children in families with the lowest level of education used medical services less frequently (OR=0.79) and dental services more frequently (OR=1.31) than those in families with a higher education. **Conclusion** Children's use of health services increased in the Nordic countries from the 1980s to the 1990s, while their use of dental services decreased significantly.

17. High and low use of dental services among Finnish children and adolescents

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In 2002, the amended provisions of the Primary Health Care Act and the Health Insurance Act abolished the age limits to publicly subsidised dental care in Finland. Before that, local authorities could limit the access to the Public Dental Services (PDS) on the basis of patients' age. The increased demand for care by adults generated pressures to explore treatment routines in the PDS, especially in big cities where dental care had mainly been offered for children and adolescents. **Aim** Our aim was to study differences between high and low users and reasons for the high and low use of dental services among children and adolescents in one of the biggest cities in Finland. **Methods** All patients under 18 years of age having had 6 or more dental visits (n=2,451) in 2004 and a comparison group of those having had 3 or less visits (n=30,498) were selected from the patient register of the PDS in the city of Espoo (232,000 inhabitants). A sample of 250 patients was randomly selected from each group and information on age, sex, number and types of visits and treatments provided were collected from their treatment records. All visits to general practitioners and dental hygienists were included but visits to specialists (orthodontics) were omitted. **Results** Seven percent of the children and adolescents who had visited the PDS in 2004 could be classified as high users according to the definition used. Their treatments made up 31% of all dental visits by children and adolescents. High users did not differ from the low users according to sex. The average age of the high users was about 2 years higher than that of the low users and the high users had more caries lesions (mean DMFT=2.2 and D=1.3) than the low users had (DMF=0.95 and D=0.4). Of the low users, 44% had a healthy periodontium (CPI=0) compared to 30% of the high users. Despite differences in oral health status the low users received on the average more preventive treatment (topical fluoride application and motivation and instruction in home care) than did the high users. The majority (65%) of the high users received less complicated orthodontic treatment given by a general practitioner compared to only 10% of the low users. About 25% of the patients in both groups had visited a dental hygienist. **Conclusions** Our study revealed three main reasons for high use of dental services: poorer oral health, badly targeted prevention and time-consuming orthodontic treatments provided by general practitioners. **Acknowledgements** The study was supported by the Academy of Finland, Health Services Research Grant Terttu.

18. Oral health in children and adolescents under different dental health care services provided

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Aim The aim of the study was to describe and analyse the oral health of children and adolescents under different dental health care programmes provided and further, to analyse the possible influence of socio-cultural factors on the oral health of these population groups. **Methods** Data on children's oral health status from the year 2004 was obtained from public oral health registers and were linked with data from questionnaires sent to the parents of the children and adolescents. The study comprised individuals aged 5, 12 and 15 years (total n=2,168) who were randomly drawn from seven Danish municipalities. In four municipalities, dental care was provided by salaried dentists in public dental clinics, and in three municipalities dental care was provided by dentists in private practice. Data on oral health was obtained from 84% of the children and 70% of the parents completed a questionnaire including questions on socio-cultural background and lifestyle-related factors. In addition, self assessment of parents' oral- and general health was included. **Results** In the three age groups, 5-, 12- and 15-year-olds, the mean caries experience (DMFS+dmfs) was 3.0, 2.8 and 1.8, respectively. No variation was found in relation to type of provider of dental care, while some minor differences between the seven municipalities were seen. Ethnic background, educational level, use of tobacco and self-assessment of general health and oral status among the parents were associated with the level of caries experience of the 15-year-olds ($p<0.05$). In the youngest age group, caries experience was associated with income level, ethnic background and self-assessment of general health among the parents ($p<0.05$). Multiple dummy regression analysis showed that a low educational level, poor general health and foreign nationality of parents were the most important determinants of caries experience ($p<0.01$). **Conclusion** The present level of caries experience among Danish schoolchildren and adolescents is low, even though some variation was found in relation to socio-cultural factors. The future challenge to the public oral health care system seems to be to maintain the present oral health situation through population directed health promotion activities. **Acknowledgements** The study was supported by the Danish National Association of Public Health Dentistry.

19. Contract and fee-for-service care - regression modelling of oral health-related quality of life

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In 1999, the public dental health service (PDHS) in the county of Värmland, Sweden, implemented contract care alongside the traditional patient financial system of fee-for-service care. In contract care, the patient pays a fixed sum annually for dental care and then receives basic dental care without additional costs. **Aim** The aim was to study the relation between patient financial system and oral health-related quality of life (OHRQoL). **Methods** In 2003, a questionnaire was sent to 2,400 consecutively selected patients in the PDHS in Värmland, 1,200 from each patient financial system. The questionnaire was answered by 1,324 participants (57% of those who could be reached). The questionnaire contained questions about willingness to pay for dental care, how much one had paid for dental care the previous year, OHRQoL (measured with the OHIP-14), dental anxiety, humanism of caregiver, general health (measured with the SF-36), multidimensional health locus of control, sense of coherence, self-esteem and demographics. Data on patient financial system, gender and age were obtained from the sampling frame. The data were analysed with a block method of multiple linear regression, adding blocks of variables in six steps: financial system, economic factors, individual factors, social factors, psychological factors and health factors. The threshold for statistical significance was set at $p \leq 0.05$. **Results** OHRQoL was affected by the financial system of the respondent: those in fee-for-service care had a worse OHRQoL than those in contract care. OHRQoL was also affected by health, sense of coherence and to some extent by psychological and economical factors. Of the social variables, only being foreign born had a significant effect on OHRQoL. **Conclusions** OHRQoL was found to be affected by patient financial system. **Acknowledgements** The study was financed by the Swedish Research Council.

20. Five-year changes in dental care of the elderly at Laukaa PDS, Finland

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In 2005, following a legislative change in Finland, patients with acute dental problems became entitled to an appointment within three days. This might have affected the pattern of dental treatment offered by the Public Dental Service (PDS) whose services are highly subsidized by the community and the government. **Aim** To evaluate changes between 2001 and 2006 in dental treatment received by 60-79-year-olds attending the PDS in Laukaa, a Finnish municipality with a population of 17,300. **Methods** Data from patient records and official PDS statistics were analysed. Altogether seven dentists, three dental hygienists and nine dental assistants (nurses) worked for the PDS. The data covered all 60-79-year-olds treated in 2001 (n=192) and in 2006 (n=162). They were divided into two age groups: 60 to 69 and 70 to 79 years of age. The number of decayed teeth (DT) was recorded for each patient. The number of visits to a dentist, a dental hygienist and a dental nurse were recorded separately. The numbers of treatment items, such as fillings, endodontic and periodontal treatments, extractions, and preventive measures were also recorded. Comparisons were made within and between the two groups. Chi-square and t-tests were used for evaluating the statistical significance of the observed differences. **Results** In 2001, 29% of all 60-79-year-old residents of Laukaa attended the PDS; the corresponding figure was 27% in 2006. Between 2001 and 2006, the percentage of edentulous patients treated decreased from 11% to 5% and the percentage of those receiving comprehensive care fell from 30% to 21% ($p=0.02$). In 2001, the mean number of DT was 1.6 for the 60-69-year-olds and 1.7 for the 70-79-year-olds. In 2006, the corresponding mean values were 1.1 and 1.2, respectively. The mean number of visits by all elderly patients treated was 3.4 in 2001 and 2.6 in 2006 ($p=0.05$). Of all dental visits, those to a dentist accounted for 59% in 2001 and 66% in 2006 ($p=0.01$). During the five years, the pattern of dental treatments changed notably as regards preventive treatments (from 12% in 2001 to 21% in 2006). The percentage of fillings placed decreased from 55% to 44%, whereas there was a slight increase in the percentage of tooth extractions (from 9% to 12%) and periodontal treatments (from 15% to 20%) among the total number of treatment procedures. The majority of the periodontal treatment items had been carried out by dental hygienists, 85% in 2001, and 81% in 2006. **Conclusions** The focus of PDS in Laukaa seems to have changed to some extent from comprehensive to acute care but at the same time the preventive approach has strengthened.

21 Evaluation of the emergency dental services in the Public Dental Service of Helsinki

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In 2001-2002, the oral health care provision system in Finland was reformed. The Public Dental Service (PDS) that had mainly been responsible for children and younger adults and special needs groups (especially in larger communities) was opened to the whole population. According to the new statutes, care should be prioritized according to need and urgency. In Helsinki, the demand for care increased considerably and the PDS was obliged to reorganise its services by establishing a call centre for making appointments and a separate emergency unit for working-aged patients. A first evaluation of the need for care and its urgency was to be made by telephone, usually by dental nurses working in the new call centre.

Aim The aim of this study was to evaluate the appropriateness of the emergency services from patients' and dentists' viewpoints. **Methods** All emergency visits to the new emergency unit were recorded during a nine-day-period. All patients were asked to fill in a questionnaire about their problems and the dentists on call evaluated the urgency of the care required by each patient. Data for 554 patients were collected. **Results** The most frequent reasons for emergency visits were pain or swelling (62.5%) and a lost or broken filling (16.9%). Only 14.7% of the patients had made or obtained an appointment during the first 24 hours since the onset of their problem and more than 20% had had the problem for more than a week. Of the patients, 7.5% considered their problem as intolerable (continuous pain that pain killers did not help) and 61.3% claimed that their problem was severe (continuous pain but pain killers helped) or had a strong negative effect on their quality of life (difficulties with eating and sleeping). According to the dentists, 83.1% of the emergency patients fulfilled the criteria set by the PDS for emergency appointments. While 48.4% of the patients claimed that treatment should have been given the same day, the dentists thought that 40.8% of the patients needed immediate care. Overall the dentists considered that 92.2% of the patients needed treatment within a week. More than half (52%) of the emergency patients had attended for emergency care during the previous six months and 17.6% during the last month. Pain or swelling had been the reason for their visit in 36.3 % of the cases. **Conclusions** The quality of the first evaluation of the need for emergency dental care made via a telephone call was found to be satisfactory. It was obvious that practically all patients seeking emergency care were in need of treatment. Patients tended to wish quicker treatment than the dentists felt was necessary. A large number of patients had made a previous emergency visit shortly before calling the emergency dental services. This may indicate problems in the quality of the emergency dental treatment provided or problems with organising further treatment after the emergency treatment.

22. Follow-up of dental visits made by 2-year-old children

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All children in Sweden, 3-year-old and older, are being offered free dental examinations at regular intervals. In the County of Stockholm, most young children have good dental health, but particularly in socio-economically less privileged areas there are those who contract caries at a very early age. **Aim** The aim of this study was to see whether dental visits at the age of 2 in the most troubled areas would have a positive impact on dental health one year later. **Methods** As of 2001, following an initiative by the Dental Purchaser of the County Council, all 2-year old children living in the most troubled areas are invited to attend the Public Dental Services. The child's dental risks are identified with regard to dental plaque and caries and the parents are given dental health information accordingly. The system of personal identification numbers has in this case been used since 2003 and makes it possible to find out whether or not a child returns at the age of 3, when a more detailed examination can be made. **Results** During the period 2001-2006, some 10,000 (more than 70%) of all 2-year olds who were invited, responded by attending the Public Dental Services. When children in the same areas were examined at 3 years of age in 2004, it could be seen that 1,679 had attended a year before at the age of 2 whereas 1,665 had not attended. The following two years, the corresponding numbers were 2,163 vs. 1,168 (2005) and 2,809 vs. 517 (2006). Most of the 3-year-olds had no caries lesions, no matter if they had attended a year before or not; in 2004, the percentages were 86.5 and 84.2, in 2005 88.0 and 86.4, and in 2006 89.0 and 86.5, respectively. During the 3-year period, among those examined who had attended a year earlier, 4.1% (274 children) nevertheless had 4 or more caries lesions. The corresponding percentage was 5.4 (180 children) among those who had not attended before. So, statistically, if all these 180 children would have attended at 2 years of age and would have had the same caries incidence as those 274 who did attend, 30 children (0.3% of all examined) would have been "saved" from this group, i.e. would have had less than 4 caries lesions. **Conclusion** Most 3-year old children in Stockholm have no caries, no matter if they attend the Dental Services at 2 years of age or not. The 3-year olds with 4 or more caries lesions do not seem to benefit much from having attended the Dental Services at the age of 2.

23. Oral health status among kindergarten schoolchildren of low-income communities in Peru

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Aim The aim of this study was to determine the oral health status in kindergarten schoolchildren from low-income communities in Peru as the first stage of an oral health-promoting school program. **Methods** Children (n=276), their parents and schoolteachers of 4 kindergartens in the city of Chiclayo, Peru, were invited to participate in this study in February, 2007. The selection of the kindergartens was made according to the following criteria: (a) they must belong to low-income communities, (b) they were not participants of any previous dental program, (c) parents and schoolteachers realized the urgency of an oral health program by sending a letter with their interest in being part of the sample, (d) kindergartens had potable water, a septic system and restrooms adequate for young children and e) they had previously participated in a medical program (provided by the Regional Hospital) so that the behaviour and collaboration of parents and schoolteachers with regard to this kind of experiences were demonstrated. The participation rate among children was 96%. Parents completed a questionnaire related to their oral health knowledge, attitudes, beliefs, behaviours and personal dental experiences. Children, all in generally good health, were divided into two groups: primary dentition phase (group A, n=264, mean age 3.9 years) and early mixed dentition phase (group B, n=12, mean age 5.1 years). DMFT, dmft, plaque score and any abnormality in the teeth were recorded. One examiner conducted oral examinations in both groups throughout the study using the World Health Organization (WHO) diagnostic criteria (WHO, Oral Health Surveys, 4th Edition, 1997). Dental plaque on labial surfaces of upper central incisors was assessed by applying Erythrosine B. **Results** Among the whole sample, 46% of the children were caries-free, while 54% were affected by dental caries. Group A: dmft 2.4, plaque score 1.6. Group B: DMFT 3.9, plaque score 1.6. Fifty children (18.1%) had more than 5 decayed teeth (D+d). Abnormalities in the dentition were infrequent: two supernumeraries, three fusions, one dentinogenesis imperfecta, and four hypoplasias of enamel. Data from the parents' questionnaires will be analyzed separately and published in the near future. **Conclusions** This is the baseline assessment of a 2-year longitudinal study where an oral health-promoting school program will be evaluated. The data obtained have demonstrated the need to improve the oral health status in these low-income communities. The willingness of parents and schoolteachers to improve the situation by participating in an oral health-promoting school program may be a strong factor in the success of the next stage of our study.

24. Noninvasive control of dental caries in children with active initial lesions

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Aim The aim of this study was to investigate whether DMFS increment can be decreased among children with active initial caries by oral hygiene and dietary counselling and by using noninvasive preventive measures. **Methods** Except for mentally disabled and handicapped children attending special schools, all 11- to 12-year-olds in Pori, Finland, with at least one active initial caries lesion (n=706) were invited to participate in the study. A positive consent was received for 577 children who were randomized into two groups. A total of 497 children (86%) completed the study. Children in the experimental group (n=250) were offered an individually designed patient-centred preventive program aimed at identifying and eliminating factors that had led to the presence of active caries. The program included counselling sessions with emphasis on enhancing use of the children's own resources in everyday life. Toothbrushes, fluoride toothpaste and fluoride and xylitol lozenges were distributed to the children. They also received applications of fluoride/chlorhexidine varnish. The children in the control group (n=247) received basic prevention offered as standard in the public dental clinics in Pori. For both groups, the average follow-up period was 3.4 years. A community level program of oral health promotion was run in Pori throughout this period to provide social support for the children participating in the trial. **Results** Mean DMFS increments for the experimental and control groups were 2.56 (95% CI 2.07, 3.05) and 4.60 (3.99, 5.21), respectively ($p<0.0001$), the prevented fraction being 44.3% (30.2%, 56.4%). **Conclusion** The results show that by using a regimen that includes multiple measures for preventing dental decay, caries increment can be significantly reduced among caries-active children living in an area where the overall level of caries experience is low.

25. Dental hygiene activities for promotion of oral health in a clinical trial

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Dental Hygiene activities were developed as part of a randomized clinical trial designed to assess the safety hazard of low-level mercury exposure from dental amalgam restorations. Enrolment of children from the Casa Pia school system, born in 1986-1989, commenced in February 1997, with annual follow-ups for seven years concluding in July 2005. Of the 845 children who were initially identified and whose parents/guardians were approached, consent was obtained for 647 (76.5%). Inclusion criteria were met by 507 children, with an average age of 10.2 years old at baseline. The percentage of children who remained in the study was 85% or greater by the fifth year of follow-up. It then declined to just fewer than 70% at follow-up year seven. Along with dental hygiene clinical work, a community program was implemented after investigators noticed the poor oral hygiene habits of the participants. All children participating in the clinical study were recruited to the oral health promotion program along with their consenting classmates. **Aim** The goal was to promote oral health and prevent new disease through clinical and community activities. **Methods** Dental hygiene clinical work consisted of prophylaxis and the application of sealants and topical fluoride during the entire follow-up period. Four dental hygienists, all with training in community activities, implemented a school-based dental hygiene program, which consisted of in-class sessions on oral health themes such as dental plaque, dietary habits, dental caries, periodontal disease, the role of fluoride in caries prevention, tooth brushing and flossing. Twice a month fluoride mouth rinses and bi-annual tooth brushing instruction took place. Participation in dental-hygiene activities, numbers of sealed teeth with no need of restoration and dental-plaque-index were measures used to evaluate the success of the program. **Results** Improvement in dental hygiene was shown by the decrease in dental plaque index scores, a mean baseline plaque score of 98.2% was reduced to a value of 72.9% in study year eight ($p < 0.0001$); a total of 6,489 pit and fissure sealants were placed and integrity of sealants was achieved in 86.3 % of teeth, with only 888 teeth previously sealed being restored or lost. Of the total number of sealants, 90.6% were placed in the first four years of the study. Children participated actively in dental hygiene activities. Teachers became aware of the problem and included oral-health in school curricula. **Conclusions** Dental hygiene activities were shown to be helpful in preventing new disease, promoting oral health and providing school-age children with education on habits that will be important for their future good health. **Acknowledgements** The study was supported by a Cooperative agreement U01 DE11894 from the National Institute of Dental and Craniofacial Research (NICDR) of the National Institutes of Health, USA.

26. The nutritional habits of children on the Greek island of Milos

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Aim The aim of this study was to assess children's nutritional habits on the Greek island of Milos in the fall 2006. In the school year 2004-2005 these children had been attending a school in which a pilot health-promotion program was implemented with the aim of reducing the consumption of sugar-containing products. **Methods** The entire kindergarten and elementary school student population (n=100), aged 5-12, in Milos, Greece, were invited to the study in the fall 2006. With their parents' assistance, all of them (100 %) completed questionnaires including items on nutritional habits, SES and oral health-related knowledge. The students were grouped in three behaviour groups according to their nutritional habits. The brunch that was offered at school was looked upon with particular attention. The Good Behaviour Group, (GBG), (75% of the participants), included all children who reported consuming sugar-containing products as brunch fewer than two times a week. The Moderate Behaviour Group, (MBG), (20% of the participants), included children consuming sugar-containing products as brunch 3 or 4 times a week; and the Poor Behaviour Group, (PBG), consisted of all remaining participants. **Results** The GBG group exhibited frequent consumption (6-7 times a week) of vegetable salads (95% of participants), white bread (92%); whole milk (88%) and fresh fruit (88%). Children who belonged to the MBG group exhibited average consumption (2-4 times a week) of rice (81%), seeds (77%), fresh vegetables (74%), eggs (70%), fish (65%), as well as red meat and poultry (61%). Children in the PBG group consumed pasta (40%); sweet pastries (41%) and sugar-containing soft drinks (33%). The daily sugar consumption among the studied children was 18% less compared to the results of a similar study in the school year 2003-2004. **Conclusions** Children having attended the pilot health-promotion program consumed sugar-containing products less frequently than did comparable children before the program was implemented.

27. Knowledge and attitudes towards oral health among parents and teachers in Iasi, Romania

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Aims The aims of this study were: (1) to assess the knowledge level of and attitudes towards oral health among children's mothers and teachers; (2) to analyze the oral health habits of mothers in relation to their socio-economic status (SES); (3) to evaluate the impact of an oral health educational program for parents and teachers in Iasi, Romania. **Methods** In 2004, a two-year longitudinal, questionnaire-based study commenced. Its participants were a convenience sample of 375 mothers of 9-11-year-old school children and 103 school teachers from 18 schools in Iasi. The participants received two self-administered questionnaires (Petersen, 1992), regarding oral health knowledge and attitudes. Mothers and teachers then took part in an oral health educational program using a variety of educational tools and methods (interactive lessons on selected topics, demonstrations, printed materials, videos, slides and media campaigns). The participants' knowledge level and attitudes towards oral health were re-evaluated in 2006. The data were analyzed using the Statistica program. **Results** The response rate in the mothers' group was 92% in 2004 and 86% in 2006. In teachers' group the corresponding response rates were 92% and 90%. Depending on SES and educational level, there were significant differences ($p < 0.05$) in mothers' group regarding the frequency of tooth brushing of children. In 2004, mothers of lower SES reported that they rarely brushed their children's but after the oral health education program they recommended daily brushing. The level of knowledge and attitudes towards the factors incriminated in the development of dental decay were significantly higher in teachers than in mothers. In 2004, dental flossing was used by 32.1% of mothers and 44.6% of teachers. In 2006, the percentages had risen to 41.2% of mothers and 52.4% of teachers. The educational program resulted in an increased number ($p < 0.05$) of mothers' positive answers concerning the role of sugar consumption in dental decay (from 50.2%, in 2004 to 59.7%, in 2006), the role of fluoride and tooth brushing in preventing dental decay (from 58.2% to 64.2% and, respectively, from 90.8% to 95.7%). **Conclusions** The findings of this study revealed a positive relationship between mothers' SES and the level of knowledge and attitudes towards oral health. The impact of the oral health education program was positive and resulted in improved oral health care knowledge and attitudes among mothers and teachers.

28. French dentists' involvement in oral hygiene education

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Until now, dental hygienists have been unauthorized in France, and dental practitioners are supposed to give recommendations on oral hygiene to their patients before treatments. **Aim** The aim was to investigate French dentists' concern for oral hygiene education among their patients. **Methods** A questionnaire was delivered by mail to one hundred and fifty randomly selected dentists in three departments in southern France. The sampling was performed taking into account the urban/rural areas. The global sampling rate was 1/10. Of the subjects, 94 (62.7%) were males and 56 (37.3%) females. The questionnaire included items on practitioners' prescription habits, dental hygiene measures, oral health and nutrition education, and data on SES of their patients. A total of 97 recipients (64.7%) completed the questionnaire with the response rate being 60.7% for females and 67.0% for males. Descriptive and comparative statistical analyses were performed using the SAS statistical software package. Statistical significance was evaluated by Mann-Whitney tests for discrete variables and chi-square tests for categorical variables. **Results** It was found that 8 (8.2%) of the dentists did not have the time to give recommendations regarding oral hygiene to their patients, 4 (11.8%) of the females and 4 (6.3%) of the males ($p=0.65$). Recommendations about nutrition were given by 67 (69.1%) of the dentists: 25 (73.5%) of the women and 42 (66.7%) of the men ($p=0.49$); and 89 (91.7%) of the dentists declared that their recommendations were accepted and followed by the patients. The dentist's prescriptions habits varied according to gender and age so that female and older dentists provided more oral hygiene measures for their patients than male and younger dentists did. Of the women, 23 (67.6%) and 25 (39.7%) of the men prescribed dental floss ($p=0.01$); 28 (82.4%) of the women and 35 (55.6%) of the men prescribed a toothbrush ($p=0.01$), and 11 (32.4%) of the women and 7 (11.1%) of the men prescribed disclosing tablets ($p=0.01$). The mean duration for scaling was 25 minutes for female and 21 minutes for the male practitioners ($p=0.08$). **Conclusions** Generally, little time was available for oral hygiene education at the dentists' surgeries. Female and older dentists provided more oral hygiene measures for their patients than male and younger dentists did. Most of the respondents declared that their recommendations were well accepted by their patients.

29. Dentists' and oral hygienists' enquiry into tobacco usage by patients

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One of the goals in the dental public health services (DPHS) of Espoo, a city with 230,000 inhabitants in the Helsinki metropolitan area, is to ensure that the dental health personnel ask all patients, who are more than 12 years old, about their tobacco usage habits, and record the findings in the computerised patient file. **Aims** The aim of this study was to find out to what extent this goal was achieved in 2006 at different levels of the organisation, and what the obstacles against asking and recording tobacco usage habits could be. **Methods** Statistics from the computerised data system (Effic@) on the coverage of the recordings were analyzed at an individual, personnel group and district level. A questionnaire was sent to all dentists and oral hygienists who had been performing clinical work in the Espoo DPHS in 2006 and who still were at work at the beginning of 2007; in all 97 dentists and 27 hygienists. The overall response rate was 75.0%; 71.1% among the dentists and 88.9% among the hygienists. **Results** Tobacco usage habits of the patients were recorded for 46.8 % of patients aged 12 years or more with a range from 38.3% to 54.2% in the five administrative districts within Espoo. The coverage was very low among orthodontists; only 1 of 11 of whom reached the average level for the whole organisation. Of the 93 respondents, 46.2% regarded it to be very important to ask patients about their tobacco usage, 51.6% somewhat important and 2.2% not at all important. Oral hygienists regarded it as more important than dentists did. The main obstacles against asking patients about their tobacco usage habits were forgetting due to shortage of time (40.4%), lack of somewhere to refer the patient for help to change the habit (23.0%) and lack of sufficient knowledge about tobacco (18.6%). **Conclusions** In a large organisation, more than one year is needed before dental health personnel will make it a habit to ask their patients about the use of tobacco. Personnel need to get enough information to start with, continuous motivation from their superiors, and repeated feedback. In addition, a place is needed where to refer the patients who after discussing the matter with their dentist/oral hygienist are motivated to try to change their tobacco usage habits.

30. A survey of national oral health care workforce planning in the EU/EEA

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In spite of freedom of movement for goods and workers within the European Economic Area (EEA), there appears to have been little published information on the process of oral health care workforce planning in the EEA. Therefore the **Aim** of this study was to determine how oral health care workforce planning took place at a national (member state) level in EEA member states (EEAMS). **Methods** After discussions during the Council of European Chief Dental Officers meeting in May 2003, a questionnaire was developed, piloted and then distributed to the Chief Dental Officers (CDOs) of 29 EEAMS. Questions covered all members of the dental team, included a range of workforce planning issues and asked CDOs for general comments. **Results** By the end of 2005, results had been obtained from 27 of the 29 EEAMS. Seven reported annual reassessment of their oral health care workforce plans, 13 reported reassessment at two-yearly or greater intervals and seven that they never assessed such plans. Government departments and universities were inevitably involved when re-assessments took place. The number of training places for dentists was controlled in 22 EEAMS, for dental hygienists in 11 EEAMS, for dental technicians in ten EEAMS and for dental nurses (chair-side assistants) in seven EEAMS. **Conclusions** The results indicate that at present oral health care workforce planning appears to be non-existent in some EEAMS. In view of the freedom of movement for dental workers within the EEAMS, it is suggested that this is a most unsatisfactory situation and that there is a need for a co-ordinated Pan-EEA approach to oral health care workforce planning. **Acknowledgements** The authors thank the 27 CDOs who responded to this survey and the CECCDO for commissioning it.

31. Organization of the dental health care system in Romania during transition period

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Aim The aim of this study was to analyse the changes that have occurred in the dental health care system in Romania and the impact of the country's entry to the E.U. on oral health care. **Methods** The study was descriptive and retrospective. It assessed the dental health care system during the transition period from 1 January 1990 to 1 January 2007, the day that Romania joined the EU. It used the official data from the Health Ministry and the experience of one of the authors as a former counsellor to the Health Minister, as a Dean of a dental school and as a member of the National Board of Dentists. It considered the following aspects: legislation, types of dental care providers, financing, professional regulation and the dental education system. **Results** It was apparent that the management of the dental health care system is and was weak at national and regional levels, because the transition period in Romania extended for approximately 20 years. The present laws of the health system are compatible with the EU laws, but they are applied by people with the old attitudes. Frequent political changes have resulted in very different regulations. In 1990, dentistry was the first field to be privatized. By 2007, 20% of the population could not access dental services because of their poverty (the national minimum salary is 100 EUR/month and the national mean salary is 250 EUR/month). The National Health Insurance system now allocates only 0.81% of its total funds to the dental care system. In 1999, it allocated 4.3%. Because Romania is a country with serious health and poverty problems, oral health funding is not a priority. The National Health Insurance insures adults only for dental emergencies. Children under 18 years old still receive 100% coverage. The dental offices in schools were closed but have now re-opened and multiplied. They are poorly managed and most are not efficient. Caries prevention programs were operating in 41 districts. They are now found in only 3 districts and in these districts their funding has been reduced by 70%. Although the National Board of Dentists is legally recognized as the regulatory body for dentists, there are many associations which interfere with its activities and so the problems of the dental health care providers are not recognized at any level. The number of dental schools has increased from five in 1990 to 12 (three of which are private) in 2007. This increase has had an adverse influence on the quality of education provided. It is hoped that the EU regulations, which came into effect on 1 January 2007, will help Romania to solve some of these problems but the question is: how long will it take? **Conclusion** We think that a first step for organizing the dental health care system is to establish some specific strategies in the former communist countries, because true integration within the E.U. will be a long process.

32. The views of paediatric dentists and dental hygienists about caries prevention

CAMPUS G* ON BEHALF OF THE ITALIAN STUDY GROUP FOR CARIES PREVENTION

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In 2006, a panel of experts from different fields: public health, psychology, paediatrics, gynaecology and paediatric dentistry joined together to develop national guidelines for caries prevention. **Aim** The aim of this paper was to evaluate the oral health knowledge of Italian paediatric dentists, dental students and dental hygienists in relation to age, gender, background characteristics, knowledge of preventive care, and attitudes towards preventive dentistry. **Methods** An *ad hoc* prepared 22-item questionnaire with a covering letter was submitted to the participants (n=210) of a congress of the Italian Society of Paediatric Dentistry (December 2006). The response rate was 56.2% (n=118, of which seven questionnaires were incomplete and were discarded). The item-specific answers of the questionnaire were scored on a five-point Likert scale. The data were analysed using descriptive statistics. Chi square tests were carried to evaluate the significance of the observed differences between groups. **Results** The mean age for the different groups of respondents was: paediatric dentists 37.4 years \pm 12.4 (age-range 25-58 years), dental students 23.3 years \pm 8.2 (age-range 18-25 years), and dental hygienists 20.2 years \pm 3.5 (age-range 18-22 years). This age distribution was not representative of the age distribution of the underlying study-population of dentists and dental hygienists. The response rate was 89.5% for dental students *versus* 42.8% for paediatric dentists ($p<0.01$). A good knowledge of caries aetiology was claimed by 91.0% of the respondents (scores 4-5 of the Likert scale). The respondents' claimed awareness of the benefits of fluorides was good, but their overall claimed knowledge of fluorides was inadequate with statistically significant differences among the three different groups of respondents ($p<0.05$). The overall claimed prevention awareness tended to be at a higher level among public health practitioners, although not statistically significantly ($p>0.05$). **Conclusions** Overall, the results of this study suggest that the majority of dentists and dental hygienists appeared to have correct information concerning the aetiology and prevention of dental caries, mechanisms of action of fluoride, and the effectiveness of preventive procedures for children and adults, but some inadequate information appeared to be present. **Acknowledgements** The study was supported by Gaba international^(R) and the Italian Society of Paediatric Dentistry (SIOI).

33. Survey of HBV vaccination among dentists and dental staff in North Iran

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Aim The aim of this study was to determine probable immunity against Hepatitis B virus (HBV) infection among dentists and their staff on the basis of HBV vaccination. **Methods** In 2004-2005, all dentists (n=319) and their staff who worked in public or private dental offices in Guilan, North Iran, received a questionnaire on the topic of HBV vaccination. The questionnaire asked about their age, sex, duration of employment (time in post) and number of doses of vaccination. **Results** The response rate was 75% (241 dentists and 258 staff members). Of the responding dentists, all specialists 24 (100%) and 214 (94.9%) of the general dentists had received three doses of vaccine. Eleven (5.1%) general dentists had not received any vaccine. In contrast, only 129 (50%) of the respondents among the staff reported that they had been vaccinated. There was a significant ($p<0.001$) difference in the reported vaccination rate between the responding dentists and their staff. However, 73.9% of the staff members who had been in post for more than five years reported that they had received three doses of vaccine compared with 55.0% who had been in post for less than 5 years. Furthermore, only 31.8% of those who had been in post for less than one year had received three doses of vaccine ($p<0.001$). **Conclusion** In this study, length of service was a major determinant for vaccination of dental staff against HBV.

34. Treatment of mucosal infections of the oral cavity in Kyrgyzstan

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Aim The purpose of our study was to compare the efficacy of local treatment with Butadion ointment (standard therapy) versus Rapin solution and a combination of the two modalities in patients with erosive-ulcer lesions of the mucous membrane of the oral cavity (MMOC). Butadion ointment consists of 5% butadion. The contents of Rapin include: fluorine, hydrocarbonate, chloride sodium salts, calcium, and magnesium. It exhibits anti-inflammatory, antiviral and antimicrobial activity. **Methods** Within a period of two years, 76 patients (21 men and 55 women) with erosive ulcer lesions of MMOC were subdivided into 3 groups according to local treatment modalities. The 20 patients in the first group (B, 4 men and 16 women) were treated by local application of Butadion ointment. The second group (R) included 24 patients (6 men and 18 women) who were treated by Rapin solution. The third group (B+R) comprised 32 patients (11 men and 21 women) who were treated by a combined local therapy with Butadion ointment and Rapin solution. Each treatment was performed 3-4 times a day for 3 weeks and the duration of each application lasted about 20-30 min. Clinical and cytological investigations of smears from the lesions were carried out before and after treatment. **Results** In group (B) after therapy with Butadion ointment, mucosal oedema, tenderness, and burning decreased in 30% of patients. In group (R), hyperaemia of the mucosa disappeared on day 3-4 and mucosal oedema on day 4-5. Epithelisation of erosive lesions was observed on the average on day 6. In group (B+R), mucosal oedema disappeared in 95% of patients with marked reduction of pain, burning and rippling. Erosions decreased in 84% of patients on day 2-3 and disappeared (diameter <2 mm with only mild hyperaemia) on day 5 in 92% of patients. Complete clinical recovery was observed on the average on day 5. All treatment modalities were well tolerated by all patients and new eruptions were not observed during treatment. Cytological investigations before treatment revealed a great number of nucleo-segmented neutrophils, mononuclears indicating inflammatory destructive reactions in the local lesions. After treatment the total number of epithelial cells of all types, and especially those of the third and fourth type increased considerably. **Conclusion** In this comparative clinical study good clinical results were obtained in all patients with erosive ulcer lesions of the MMOC, but best clinical results were observed by the combined treatment with Rapin solution and Butadion ointment, which should now become the standard of care in these frequently observed infections of the oral cavity in Kyrgyzstan.

35. Complications and antibiotic use after the surgical extraction of lower wisdom tooth

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It has been debated for a long time whether or not antibiotics should be constantly administered after the removal of bone during the surgical extraction of teeth. In our clinic, antibiotics are prescribed according to the diagnosis and the extent of the surgery performed. **Aim** The aim of this study was to evaluate the occurrence of complications after the surgical extraction of impacted lower wisdom teeth and the effect of antibiotics in limiting complications. **Methods** In 2006, 1,263 patients attended for surgical extractions of lower third molars and 168 of them made subsequent visits due to suffering from side effects. In this study, the prescription of antibiotics was recorded for all the 337 healthy patients who had attended general dentists for extraction of lower wisdom teeth between 15 June and 31 October 2006 and the patients were monitored for post-operative complications. **Results** In all, 143 (43%) of these patients were given antibiotics pre- or post-operatively, whilst 194 (57%) were not. A total of 37 (11%) patients reported some problems with the healing; these included paraesthesia of the mandibular nerve, infection, severe pain or other discomfort. Only 11 of the 37 (30%) were prescribed antibiotics for their complications. Paraesthesia of mandibular nerve occurred in only 2 cases, even though pre-operative radiological examination showed the roots of the lower third molars in close proximity to the mandibular nerve in 114 cases. None of the reported complications occurred among smokers. In the opinion of the operating general dentists, only 21 (6%) of the patients had real complications. The problems of the 16 other patients were not substantial complications. These patients complained because they were surprised at post-operative pain or at the healing process, either because they had not read and/or listened to the recommendations given by the dentist, or did not take analgesics according to the prescription. **Conclusions** The occurrence of significant complications following the surgical extraction of lower third molars may be overestimated because of patient complaints. In the opinion of the authors, the fact that there were five cases of infection among the 194 patients, who did not receive antibiotics after surgical intervention, and two cases among the 143 patients who did receive post-operative antibiotics supports the view that post-operative antibiotics should not be prescribed routinely even when bone has been removed. **Acknowledgements** The study was supported by the Finnish Dental Society Apollonia.

36. Intra-oral radiography for patients receiving comprehensive public dental care in Helsinki, Finland

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Aim We evaluated the frequency and targeting of intra-oral radiographs in comprehensive public dental care. We hypothesized that radiographs were more frequent for patients with untreated lesions of dental caries (DT>0). **Methods** The present cross-sectional data covered all 3- to 36-year-olds (n=71,735) receiving comprehensive dental care in the Public Dental Service (PDS) in Helsinki, Finland, within one year. Dental care in PDS is free of charge up to 18 years of age and after that strongly subsidised. Comprehensive dental care includes a thorough clinical dental examination and, according to the dentist's decision, any radiographs needed, and further, recording of number of DT and the value of other relevant dental indices, and all treatments as needed. Data on diagnostics and treatments in the PDS came from computerized patient files, recorded by visit. Only intra-oral radiographs were included in the present data. Patient's age was determined to the nearest year and categorized into 3 to 5 (n=8,366), 6 to 13 (n=28,021), 14 to 18 (n=11,097), 19 to 24 (n=6,209), and 25 to 36 (n=18,042). Based on their ID codes, Helsinki City Health Department provided data on the dentists' age and gender (85% female). Chi-square tests and ANOVA were used for evaluating the statistical significance of the observed differences. **Results** Intra-oral radiographs had been taken for 19% of all patients, and by age group, for 1% of the 3- to 5-year-olds, for 7% of the 6- to 13-year-olds, for 20% of the 14- to 18-year-olds, for 23% of the 19- to 24-year-olds, and for 41% of the 25- to 36-year-olds. The mean number of radiographs taken was 0.6 (SD=1.3), the mean number of DT being 1.0 (SD=1.9). Of all patients, 61% had DT=0, 26% had DT=1-2, and 13% had DT=3+. In the DT=0 group, radiographs had been taken for 11%, in DT=1-2 group for 28%, and in DT=3+ group for 41% ($p<0.001$); the mean numbers of radiographs in these groups were 0.3, 0.8, and 1.3, respectively. Radiographs had been taken more frequently for those patients treated by female dentists (21% vs. 15%; $p<0.001$) or by dentists aged 35 to 44 (22%) or 55+ (21%). In every DT group, the mean numbers of radiographs taken were greater for those patients treated by female than by male dentists: 0.3 vs. 0.2 in the DT=0 group, 0.8 vs. 0.6 in the DT=1-2 group, and 1.3 vs. 0.9 in the DT=3+ group ($p<0.001$). **Conclusions** The more untreated caries lesions the patients had, the more radiographs had been taken. The coverage of radiography can, however, be considered as insufficient. **Acknowledgements** The study was supported by grants to SH from Helsinki City Health Department and Finnish Dental Organizations.

37. Validation of the Italian version of the Oral Health Impact Profile (OHIP-49)

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Measuring the impacts of oral conditions on quality of life is an important part of oral health needs assessment. For this purpose, a variety of oral health-related quality of life instruments have been developed. The need for appraisal of oral health-related quality of life has been increasingly recognized over the last decades. The Oral Health Impact Profile (OHIP-49) has the aim of identifying and estimating how oral health problems are able to influence the quality of life. **Aims** The aims of this study were to develop an Italian version of the OHIP-49 and to evaluate its convergent and discriminative validity, and its internal consistency. **Methods** The original English version of OHIP-49 was translated into Italian using a forward-backward method, revised for understanding and semantics by two independent dentists, and then re-translated again to Italian by an independent bilingual translator. The data used to validate the Italian OHIP-49 were obtained in a cross-sectional study conducted in Sassari, Italy. The sample consisted of 129 patients (61 males and 68 females, age range 35-56 years) who attended for their regular dental check-up at the Department of Dentistry of the University of Sassari. The patients were invited to participate in the study and all accepted to complete a brief questionnaire containing information on socio-demographic factors; oral health related behaviours; and self-reported oral health status (rated as good, fair or poor). The unweighted OHIP-49 score was calculated by adding the scores of the responses to the 49 items. The weighted OHIP-49 subscale scores were calculated by adding the scores of the responses to items corresponding to the subscales. The internal consistency of the translated OHIP was assessed using Cronbach's alpha coefficient. **Results** The Italian version of OHIP-49 showed a good reliability and validity. The weighted Kappa value was 0.91 and the value of Cronbach's alpha coefficient was 0.76 (range 0.68-0.82). **Conclusions** The Italian version of the OHIP-49 revealed suitable convergent and discriminative validity and appropriate internal consistency when tested using Cronbach's alpha coefficient.

38. Reliability and validity of the Romanian version of the Oral Health Impact Profile (OHIP-14)

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Aim The aim of the study was to translate the original English version of the Oral Health Impact Profile (OHIP-14) into the Romanian language (OHIP-14-RO), and to assess its psychometric properties in order to be used among the adult people of Iasi, Romania. **Methods** The original English version of the short form Oral Health Impact Profile (OHIP-14) was translated into Romanian using a formal forward-backward translation technique. A total of 1,030 adult patients who attended for dental treatment the University Policlinic in Iasi, Romania, were interviewed and clinically examined. In addition to the OHIP-14-RO, information on the subjects' socio-demographic background and oral health condition were collected. The reliability of the OHIP-14-RO and its internal consistency were examined using Cronbach's alpha and intraclass coefficient (ICC). Construct validity was evaluated by comparing the OHIP score with the number of decayed teeth and prosthodontic treatment need using Spearman's correlation coefficient. **Results** The Cronbach's alpha value for OHIP-14-RO was 0.85 with an item-specific range from 0.84 to 0.87. The value of the intraclass correlation coefficient was 0.81 (item-specific range from 0.80 to 0.84). Spearman's correlation coefficient for convergent validity was also found to be acceptable. **Conclusion** The OHIP-14-RO was found to be valid and reliable for use in cross-sectional studies among Romanian adults. **Acknowledgements** This study was supported by Romanian National Centre for Programmes Management

39. Impact of oral health on quality of life among adults in Iasi, Romania

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Aim The aim of this study was to assess the impact of oral health on quality of life among the adult population of Iasi, Romania. **Methods** The impact of oral health on quality of life was assessed by the validated Romanian version of the Oral Health Impact Profile 14 (OHIP-14-RO) among 1,030 patients, 18 to 64 years of age, who attended for dental treatment the University Dental Clinic in Iasi, Romania, in 2006. The patients were divided in three age groups: 18-34-year-olds (n=287), 35-44-year-olds (n=398), and 45-64-year-olds (n=345). All patients were examined clinically according to the WHO criteria (Oral Health Surveys, Basic Methods, 4th edition) in order to assess oral status and treatment needs. Data on OHIP-14-RO were obtained by an interview (response rate 87%). The age group-specific response rates ranged from 77% to 95%. Logistic regression was used to analyze the influence of denture status, decayed teeth and socio-demographic factors (age, gender, geographic area, family income) on quality of life. **Results** For the youngest age group (18-34 years), the highest oral health impact was observed for the psychological discomfort domains (in 35.6% of individuals). A statistically significant ($p=0.001$) correlation was observed between OHIP-14-RO and DMFT ($r=0.433$), DT ($r=0.298$) and MT ($r=0.438$). In the second youngest group (35-44 years), psychological discomfort, physical disability and physical pain were reported by 38.2%, 28.8% and 15.2%, respectively. A statistically significant correlation was observed between OHIP-14-RO and socio-economic level ($p=0.016$) as well as between OHIP-14-RO and treatment need for fixed prostheses ($p=0.005$). The subjects in the oldest age group (45-64 years) presented with the worst scores: 36.1% of them perceived that oral health affects the psychological dimension; 24.1% and 22.3% reported an impact on physical disability and physical pain, respectively. Logistic regression analysis revealed a strong effect among the subjects who needed prosthodontic treatment (OR=8.3, 95% CI 1.9-36.4) as compared to the people who did not need prosthodontic treatment (OR=1.4, 95% CI 0.4-4.6). The same phenomenon was observed for subjects who had more than 4 missing teeth (OR=13.1, 95% CI 3.4-49.5) versus subjects who had 0 to 3 missing teeth (OR=2.2, 95% CI 0.7-5.4). **Conclusions** Oral health status was a stronger predictor of an impaired quality of life than socio-demographic factors were. Oral condition had the greatest impact on quality of life among the oldest age group (45-64 years). **Acknowledgements** This study was supported by Romanian National Centre for Programmes Management

40. Prevalence of edentulousness and related factors among elderly Finns

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Edentulousness is a multi-factorial phenomenon. Whilst its prevalence is diminishing in Finland, it is still common in older age groups. **Aim** The aim of this study was to assess the prevalence of edentulousness among the elderly in two municipalities in northern and southern Finland and to evaluate the factors related to it. **Methods** All persons born in the years 1919, 1922, 1925, 1928, 1931, 1934 and 1937, who lived in two Finnish municipalities (Kirkkonummi and Lakeus) were sent a postal invitation to participate in the study. The target population consisted of 1,733 subjects of whom 1,191 were clinically examined by a dentist; 624 subjects were from the southern (Kirkkonummi) and 566 from the northern (Lakeus) municipality. The participation rates were 62% and 78%, respectively. The subjects completed a questionnaire comprising socio-demographic data as well as questions on dental and general health, oral and general health habits and attitudes towards health issues. A multiple logistic regression analysis was used to assess the associations between edentulousness and background factors. **Results** Overall, the prevalence of edentulousness was 37%, 53% in the northern and 22% in the southern municipality. Edentulousness was positively associated with a greater age (OR 1.09, 95% CI 1.06-1.12), female gender (OR 2.07, CI 1.44-2.98), northern place of residence (OR 1.97, CI 1.41-2.75), low level of education (OR 6.84, 95% CI 3.07-15.26), presence of cardiovascular diseases (OR 1.54, 95% CI 1.05-2.27) and current smoking vs. never smoking (OR 1.58, 95% CI 1.06-2.34). After stratifying by gender the association of smoking and edentulousness was significant among men also when past-smokers were compared with those who had never smoked (OR 2.70, 95% CI 1.30-5.61). **Conclusions** The results suggest that in Finland the prevalence of edentulousness is higher among those living in the northern areas. Factors associated with high prevalence of edentulousness were high age, female gender, low level of education, presence of cardiovascular disease and smoking.

41. Impact of tooth brushing frequency on periodontal health in Lithuanian elderly

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Poor periodontal conditions can challenge oral health in dentate adults and the elderly. Twice-daily tooth brushing has been recommended for adequate oral self-care, but does this really help in maintaining a healthy periodontium? **Aim** This study evaluated the presence of dental plaque and deep periodontal pockets in relation to the frequency of tooth brushing in elderly dentate patients in Lithuania. **Methods** A total of 104 patients, aged 60 years and older, visiting two public dental clinics in Kedainiai, Lithuania, were asked to give their permission to examine their periodontium, four refused. Half-mouth recording was carried out in the first and third quadrants for patients entered into the database by odd numbers, and the second and fourth quadrants for those entered by even numbers. The presence/absence of dental plaque on five surfaces (buccal surface of the most distal upper molar, labial surface of the lateral upper incisor, buccal and lingual surfaces of the most distal lower molar and labial surface of the lower canine) was recorded in one of four categories ranging from clean surface to abundant plaque. Periodontal pockets were assessed as: no pockets, 4 to 5 mm in depth, and of 6 mm or more in depth. Six subjects with incomplete clinical data were excluded. Frequency of tooth brushing was assessed as: more than once a day, once a day, weekly, less frequently, and never. Background information included the subject's gender and level of education, assessed as: low (up to 4 years), medium (total of 11 years), and high (a total of at least 16 years). Statistical analyses were completed on 94 elderly, 43 women and 51 men, by means of the Chi square tests, ANOVA, and logistic regression models. **Results** Twice daily tooth brushing was reported by 26% of all subjects, once daily by 36%, and less frequently by 38%; women predominated amongst those who practiced twice daily tooth brushing ($p=0.03$). The average scores for dental plaque were lower for those with a high level of education ($p=0.01$) or reporting twice daily tooth brushing ($p=0.03$). The mean pocket depths were smaller for those with a high level of education ($p=0.02$) or reporting twice daily tooth brushing ($p=0.0001$). Those with the lowest plaque scores were more likely to have higher levels of education (OR=2.7; $p=0.04$), older age (OR=1.2; $p=0.001$), and higher numbers of teeth (OR=1.1; $p=0.02$). Those with the lowest scores for periodontal pockets were more likely to have a higher frequency of tooth brushing (OR=2.1; $p=0.04$) and higher numbers of teeth (OR=1.2; $p=0.004$). **Conclusions** In this study, higher frequencies of tooth brushing were indicative of fewer and shallower periodontal pockets. There should be more emphasis on the guidance to follow recommended oral self-care. **Acknowledgements** The study was supported by grants to SV from CIMO, University of Helsinki, and the Finnish Dental Society Apollonia.

42. Cleaning of teeth/dentures in relation to functional capacity in the Finnish elderly population

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Aim The aim was to analyze the role of physical and social dimensions of functional capacity on the frequency of cleaning of teeth and/or dentures in the elderly Finnish population. **Methods** The study analyzed data from the nationally representative Finnish Health 2000 Survey, carried out in 2000-2001, and involving adults aged 30 years and older (www.ktl.fi/health2000). The present study population consisted of those aged 65 years and older (n=1,713). The data were gathered by personal interviews and postal questionnaires. The outcome measure was the combined frequency of tooth brushing and cleaning removable dentures, which was put into three categories: twice daily, once daily and less. Values for the measures of the physical and social dimensions of functional capacity were sums of the scored answers to Likert-scale questions, 4 to 5 on each dimension, which were categorised into high, moderate and low. Chi square tests were used to evaluate the statistical significance of the observed differences. **Results** Seventy one percent of women reported cleaning teeth/dentures twice daily, 26% once daily and 3% less than daily. For men, the corresponding figures were 44%, 43% and 13% ($p<0.001$). Among women, the score for the physical dimension of functional capacity was high for 50%, moderate for 22% and low for 28%; for men the figures were 60%, 18% and 22%, respectively ($p<0.001$). As for the social dimension of functional capacity in women, the score was high for 27%, moderate for 49% and low for 24%; the corresponding figures for men were 16%, 43% and 41%, respectively ($p<0.001$). A higher frequency of cleaning teeth/dentures was indicative of a higher physical capacity both among women ($p<0.001$) and men ($p=0.02$). In women, twice daily oral cleaning was a habit for 74% of those with a high and for 63% of those with a low physical capacity. For men, the corresponding percentages were 47% and 38%, respectively. The effect of physical capacity on oral hygiene was strongest for women aged 75+. A higher frequency of cleaning teeth/dentures also indicated a higher social capacity both among women ($p=0.004$) and men ($p=0.04$). In women, 76% of those with a high social capacity reported twice daily oral cleaning, as opposed to 62% of those with a low social capacity. For men, the corresponding percentages were 46% and 40%, respectively. A low social capacity seemed to be the strongest indicator of a low frequency of oral hygiene among men and a higher frequency among women aged 75 years and older. **Conclusion** Maintaining good levels of both physical and social dimensions of the functional capacity in the elderly seems to help them to maintain a good level of oral hygiene. **Acknowledgements** The study was supported by a grant to PK from the Finnish Dental Society Apollonia.

43. Social indices and oral health in a group of socially deprived adolescents

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Aim The study aimed to investigate the effect of social indices on oral health and oral health behaviour in socially deprived adolescents and young adults in Flanders.

Methods The study design was cross-sectional and included 68 subjects aged 12 to 26 years, who called for help by "Habbekrats", a non-profit organisation rendering assistance to adolescents and young adults living on the fringes of our society. The clinical oral examination was performed using criteria based on the diagnostic criteria for caries prevalence surveys published by the BASCD. Information on parental occupational level, educational level, living condition and oral health behaviour was obtained using questionnaires completed by the participants themselves and their social workers. The social determinants were used as explanatory variables in a multiple logistic regression model where age was adjusted for. DMFS-index and care-index, generated by the clinical examination, as well as the oral health behaviour, as an intermediate factor, were used as outcome variables. Odds ratios were calculated together with their corresponding 95% confidence intervals. A between group analysis of variance for the statistically significant explanatory variables was performed using the non-parametric Kruskal-Wallis test. **Results** The mean age of the subjects was 16.2 years. Within the sample, 92% and 91%, respectively, had a father or mother belonging to a low social level. For 68% of the sample, the educational level was low. Concerning oral health behaviour, 67% reported tooth unfriendly nutritional habits, whereas 64% reported good oral hygiene habits. The mean DMFS score was 11.4 (SD=14.3) and the mean care-index value equalled 0.60 (SD=0.39). Statistical analysis by means of a logistic regression model revealed that only the 'living condition' had a statistically significant influence on oral health behaviour and care-index value. Compared to subjects living at home with their parents or on their own, subjects living in an institution had more favourable dietary ($p<0.05$) and oral hygiene habits ($p<0.05$) and higher dental attendance ($p<0.05$) and care-index value ($p<0.05$). Among the study group, neither parental occupational level nor subjects' educational level correlated significantly with the subjects' oral health behaviour or oral health status. **Conclusion** From this analysis it became obvious that 'living condition' had a significant influence on the oral health behaviour and care-index value of the studied population of socially deprived adolescents.

44. Dentists' perceptions of underprivileged patients

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In Quebec (Canada), welfare recipients benefit from public insurance that covers their basic dental care. In spite of this coverage and major needs for care, these individuals rarely visit the dentist. To justify this low level of recourse to dental care, welfare recipients explain that they often have negative experiences at the dentist's office and that they sometimes feel stigmatized by oral health care providers. Data available from other health professionals are rare, but support the hypothesis that practitioners form their practical knowledge of underprivileged patients, and poverty in general, based on stereotypes. **Aims** The objective of this study was to determine what these stereotypes conveyed by the dentists consist of, in regard to their underprivileged patients, and what are the socio-demographic characteristics of the dentists, their experiences and the context for the dental practice associated with these perceptions. **Methods** This quantitative research used data collected in October 2006 in the framework of the *Dental Practice in Quebec 2006 study* under the direction of the Ordre des Dentistes du Québec. Descriptive as well as logistic regression analyses of the data were carried out. **Results** A questionnaire was sent to every dentist working in the Province of Quebec. The sample consisted of 1,007 general dental practitioners working in private practice. The response rate was 29.1%. Non-response bias was assessed by comparing demographic information from respondents with information from the membership of the Ordre des Dentistes du Québec. In this respect, the respondents appeared to be representative of private practitioners in Quebec. When data adjustment using weighting techniques was carried out to produce estimates that correct for non-response, 52.5% of the dentists had negative perceptions about the personality of their underprivileged patients and 58.2% about their behaviours. A total of 57.1% stated that their underprivileged patients missed a lot more appointments than their other patients; 59.1% considered that their lifestyles were much more inferior, and 55.7% stated that they were less pleasant to deal with. Younger dentists and new graduates seemed to have the most negative stereotypes about their underprivileged patients. **Conclusion** It would be useful to include the issue of poverty and access to care in the dental curriculum in order to try to improve access of the unprivileged people to dental services. **Acknowledgements:** This study received financial support from the CIHR Strategic Training Program in Applied Oral Health Research, CIHR, the FRSBO and AnEIS.

45. Oral health awareness and oral health in pregnant Polish women

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Aim The aim was to investigate oral health awareness and knowledge among pregnant Polish women, and their relationship to oral health. **Methods** The study group was selected by stratified random sampling, and came from 8 randomly-chosen administrative regions of Poland. In each region, urban and rural localities were equally represented. Participants were recruited from among patients attending women's clinics and on maternity wards in each of the localities selected. Overall, 1,398 women (80% of those invited), aged 15-44 years, agreed to participate in the study. Participants completed a questionnaire investigating oral health awareness and knowledge, and underwent a dental examination performed by a trained oral epidemiologist using a WHO probe and mirror. Findings were recorded according to the WHO diagnostic criteria. **Results** Most women (78.1%) were aware of the importance of their own oral health for their child's health. However, only 39.3% reported having good or very good oral health-related knowledge. The most common sources of knowledge for mothers were the media (86.6%) and medical/dental personnel (77.4%). To assess oral health-related knowledge, women responded to 12 statements as being true or false. A correct response was given in 9.9%-76.5% of cases, depending on the question (median 39.5%). Results showed a relatively high level of "don't know" answers (median 28.2%). Overall, the highest percentage of women answered most questions correctly in a region with epidemiological scores indicating better oral health, in a region with the highest percentage of women with DT=0 (55.3%) and DMFT=0 (1.3%), as well as one of the lowest DT values (1.4) and percentages with DMFT>12 (41.5%). The greatest number of incorrect answers was given in a region with scores indicating poorer oral health, in a region with one of the lowest percentages of women with DT=0 (20.0%) and DMFT=0 (0.6%), and one of the highest mean DT values (3.1) and percentages with DMFT>12 (55.7%). **Conclusions** The results suggest a need to improve oral health awareness and knowledge in pregnant women in Poland.

46. Investigation of periodontal tissues and dental caries in single low-income mothers

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There are a growing number of single low-income mothers who are often affected by social problems associated with poor health and poverty and who also have poor oral health status that attracts little attention in society. **Aim** The aim of this study was to investigate the periodontal status of and dental caries in single low-income mothers. **Methods** 120 single mothers who visited the Social Aid Department in Bishkek during 2001 formed the study sample. A control group included 109 women from complete families, aged between 21 and 42 years, who visited doctors at the Therapeutic Stomatology Department of KSMA. The social status of mothers in both groups was assessed through questionnaires. The methods of examination used were: the Kulazhenko test, Phedorova-Volodkina Index, X-ray and the Periodontal Index. **Results** The most prevalent oral disease in the single mothers' group was dental caries (96.6% among the single mothers and 62.0% in the control group). The second most prevalent disease was gingivitis (72.5% and 40.7%, respectively); the third was periodontitis (45.8% and 19.4%, respectively). Many single mothers seemed to prefer to have their teeth extracted rather than restored, in all probability, for economic reasons. Of the total number of mothers, 78 were poor with a low income and 62 were extremely poor. Most of their food consisted of flour and sugar products, only 4 women had fruit and vegetables on a regular basis. **Conclusions** Findings of this study revealed a higher susceptibility to oral diseases such as caries, gingivitis and periodontitis, among single mothers in Bishkek.

47. Periodontal health status of diabetic patients in two Greek islands: Milos and Tinos

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Aim The aim of this study was to assess the periodontal health status of the diabetic patients attending the Diabetic Clinic at the Primary Health Center in Milos and Tinos. **Methods:** A total of 87 diabetic patients living permanently in Milos, and 92 patients in Tinos, were randomly selected for a dental examination from among the 356 recorded diabetic patients of the two islands. The examinations were carried out using a dental mirror and a periodontal probe according to the WHO criteria. The outcome measures were: the number of teeth present, the number of carious teeth, Oral Hygiene Index (OHI) and Gingival Health Index (GHI). For the assessment of OHI and GHI, the presence of plaque and bleeding on probing were recorded for four aspects of each tooth: mesial, distal, buccal, and lingual/palatal. Fuchsin staining was used for disclosing plaque. **Results** Patients having full artificial dentures were excluded from the study. One patient could not be examined as he felt uncomfortable sitting on the dental chair. The final study sample included 62 individuals from Milos and 59 from Tinos. The average number of teeth present was 19.2 (Milos) and 20.1 (Tinos). In all, 5.8% of the subjects had at least one carious tooth. The average OHI and GHI scores were 49.4% and 55.1% in Milos and 50.8% and 58.4% in Tinos, respectively. For both indices, the minimum and maximum ranged from 1 to 100%. **Conclusions** It is well known that diabetic patients tend to suffer from periodontal diseases and tooth loss, especially when the disease is not well controlled. The values of GHI and OHI observed in the present study show the imperative need for oral health promotion among diabetic patients. Our main goal for the future is to organize proper oral health promotion for these patients.

48. Recently graduated dentists' knowledge and perception of older people

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Aim The aim was to investigate knowledge and perception of recently graduated dentists in Belgium regarding older people with respect to the influence on the delivery of oral health care. **Methods** A validated questionnaire was sent by mail to all dentists (n=264) who graduated at all six dental schools in Belgium in 2004 and 2005. Data were collected on their socio-demographic profile, interaction with their grandparents, motives for pursuing a dental career, knowledge about aging, training received in geriatric dentistry, their perception of institutionalised elderly people and their attitude towards oral health care delivery to older people. The impact on perception of participating in an oral health promotion project in nursing homes during graduate training was assessed. Part of the questionnaire was based on the Aging Semantic Differential (ASD) in order to measure attitudes and to quantify bias and stereotypes towards older people. Data were analysed by using methodology for frequency distributions and correlations. Statistical significance of the differences between groups was evaluated using ANOVA. **Results** The overall response rate was 43%. Basic knowledge about aging was poor: questions were answered correctly in 50%, incorrectly in 28% and undecidedly 22% of the cases. With respect to educational curricula, the majority of the respondents judged the training received in geriatric dentistry as incoherent, i.e. spread over several courses and disciplines. Significant differences concerning most topics of geriatric dentistry appeared to exist among the 6 dental schools in Belgium. The overall perception on institutionalised elderly people was mainly negative. Within the respondents of Ghent University, who all participated in an oral health promotion project in nursing homes during education, the graduates who considered this project positively, had a mainly positive perception of this population ($p < 0.05$). Correlation analysis showed that recently graduated dentists reporting to have regular interactions with their grandparents, were significantly more positive about elderly people. A significantly negative attitude ($p = 0.001$) was found in dentists reporting financial interest as the predominant motive for pursuing a dental career. Frequent and unprepared clinical contacts with elderly people during undergraduate training led to a principally negative attitude towards this population ($p < 0.05$). **Conclusions** The attitude of recently graduated Belgian dentists towards institutionalised elderly is mainly negative and their basic knowledge of different aspects of aging is poor. Revising the educational curricula of geriatric dentistry in Belgium and including participation to oral health promotion projects into graduate training programmes should be

considered in order to improve the readiness to deliver appropriate oral health care to this population. ***Acknowledgements*** The study was supported financially by GABA International.