Behavioral aspects of oral health, disease and interventions

12th - 14th June, 2014
Conference Centre Wallenberg
Gothenburg, Sweden

19th Annual Congress of the European Association of Dental Public Health
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Welcome from the Presidents

A warm welcome to the 19th conference of the European Association of Dental Public Health and Gothenburg, Sweden. We are proud to host this meeting and we hope that you will enjoy all the different activities during the three days here in Gothenburg. There will be exciting scientific presentations by invited renowned researchers who will present up to date evidence about the interplay between odontology and psychology in enhancing behavior change for better oral health for children, adolescents and adults. We are also looking forward to the poster presentations of around 90 participants that will cover a wide range of dental public health themes and extend to all areas of Europe and beyond. Social events will take place on Thursday and Friday evenings with a reception at the city hall and a dinner at the Gothenburg opera, respectively.

A special gratitude goes to the sponsors of the conference. Their contributions have once again been essential in making this meeting possible. The Borrow Foundation and Colgate have sponsored the travel awards enabling many young researchers from central and Eastern Europe to attend the EADPH conference. GSK, Colgate, and the Borrow Foundation have supported the conference speakers and the key distinguished lectures. Zendium, Meda, TePe, internetodontologi, Johnson & Johnson and Proxident have also sponsored the conference.

The Public Dental Service, Region Västra Götaland have sponsored the conference in many ways, organizational matters, special know-how and input to the social events. Göteborg & Co contributed to the excellent conference brochure.

Welcome to Gothenburg and make the most of what promises to be a scientifically intense and socially enjoyable experience.

Magnus Hakeberg    Georgios Tsakos
Co-President, EADPH    President, EADPH
Chair, organizing committee
Sponsors

The organisers would like to express their gratitude to the following sponsors:

The Borrow Foundation
Colgate/Gaba
Zendium
TePe Munhygienprodukter
Proxident
Meda
Johnson & Johnson
Internetodontolgi

Congress Site Map
Congress Programme  
(Wallenberg conference centre)

Thursday 12th June

Chair: Dr Georgios Tsakos, President EADPH

12.00 pm  Registration, Light Refreshments, Poster Viewing, Exhibitions

1.00 pm  Opening Ceremony and Welcome by The Presidents

1.30 pm  Health care systems: Nordic aspects and experiences  
Professor Eeva Widström, Finland

2.15 pm  Special Interest Groups with Coffee
  Caries Epidemiology and Prevention (Lyktan)  
Chair: Professor Andreas Schulte, Professor Klaus Pieper,  
Professor Nigel Pitts
  Gerodontology (Mikrovågen)  
Chair: Professor Jacques Vanobbergen, Dr De Visschere
  Periodontal Epidemiology (Ljudvågen)  
Chair: Professor Ken Eaton
  Prevention of Oral Cancer (Lobby)  
Chair: Dr Katrin Hertrampf, Dr. Colwyn Jones
  Tooth Surface Loss/Erosion (Digitalen)  
Chair: Professor Carolina Ganss
  Quality of Life (Ljusvågen)  
Chair: Dr Georgios Tsakos
  Dental Public Health Education (Radiovågen)  
Chair: Dr Jenny Gallagher

5.00 pm  EADPH Annual General Meeting

7.00 pm  Evening Reception at the City Hall Börsen (by ticket only)

Friday 13th June

Chair: Dr Magnus Hakeberg, Co-President EADPH

9.00 am  Welcome by Co-President

9.10 am  Keynote Address: The management of patient concerns in oral disease prevention: a communication perspective and building the evidence base. Professor Gerry Humphris, Scotland
10.00 am Keynote Address: Behavioral interventions in dentistry. 
Associate professor Ulla Wide Boman, Sweden

10.40 am Competence centers in Norway: Dental anxiety. 
Professor Tiril Willumsen, Norway

11.10 am Coffee, Poster Viewing, Exhibitions

11.30 am Dental care systems and older patients. 
Professor Lars Gahnberg, Sweden

12.00 am A new dental insurance scheme – effects on dental health and behavior. Professor Magnus Hakeberg, Sweden

12.30 pm Lunch, Poster Viewing, Exhibitions

Learning From One Another

1.45 pm Poster Abstracts and Discussion I (parallel sessions) (1h 30min)
3.15 pm Coffee
3.30 pm Poster Abstracts and Discussion II (parallel sessions) (1h 30min)
5.00 pm Finish

7.00 pm Dinner at the Opera house (by ticket only)

Saturday 14th June

Chair: Dr Jacques Vanobbergen, Vice President EADPH

9.00 am Presentation of Poster Awards and travel grants

9.15 am Working groups – plenary feedback

10.00 am Keynote Address: Oral health promotion. 
Dr Sarah Baker, United Kingdom

10.50 am Coffee, Poster Viewing

11.20 am Research using register-based data. 
Dr Hans Östholm and Dr Thomas Jacobsen, Sweden

12.00 pm Selected Poster presentation (3 presentations) 
1) R Sava-Rosianu 2) A Stenebrand 3) A Verlinden

12.50 pm Closing Ceremony by Co-President

1.00 pm Conference Closing
City Map

Opera House (Dinner)
Street: Christina Nilssons gata

City Hall Börsen (Reception)
Street: Östra Hamngatan 21

Wallenberg conference centre

Bus and tram stop: Medicinaregatan
Speakers’ Abstracts

Professor Eeva Widström
National Institute for Health and Welfare (THL), Helsinki, Finland and Institute of Clinical Dentistry, the Arctic University of Norway

Health care systems: Nordic aspects and experiences
Unlike general health care, the whole population, from young children to the elderly, are advised to make regular visits to a dentist or to a dental hygienist, because oral and dental diseases are difficult for lay persons to recognize. Use of dental services depends on several factors: perceived treatment need, financial and practical resources, ease of access, costs and cultural traditions. Equal access to oral health care and use of services according to needs have long been key elements in health policy in the Nordic countries (Denmark, Finland, Norway, Sweden and Iceland). The aim of this presentation is to compare developments in their dental care provision systems and the results attained. What procedures contribute to better oral health and efficient care provision? Which indicators are appropriate? Dental services in the Nordic countries have many common features in their organization, including provision of free or virtually free care for all children. Which groups receive publicly provided care apart from children varies from country to country.

The Public Dental Services of all Nordic countries offer free-of-charge dental care for children and adolescents and emphasize prevention and proper self-care. While the costs are large, the results have been good. Organization, reimbursement of costs and treatment provided in adult dental care is more variable and there are also bigger differences in outcomes. The frail elderly retaining their own teeth is a new challenge for dental and other health care personnel.

Professor Gerry Humphris
University of St Andrews/Medical School, Scotland

The management of patient concerns in oral disease prevention: a communication perspective and building the evidence base
Oral health care professionals have implicit effects on their patients which have been largely ignored. New systems of observation, coding and analysis are available including the study of the management of distress and emotional talk in consultations. Studies are now being conducted which collect substantial numbers of consultations onto videotape and then analyse using reliable coding systems (e.g. SABICS and VR-CoDES). Some results of this multi-level work will be shown to illustrate the powerful potential of this research approach to deliver nuanced interpretation of complex processes that reveal, sometimes unexpected, findings that question conventional clinical wisdom. The phrase: ‘It’s all in the timing!’ can now be investigated in detailed models of care delivery.

This presentation will attempt to convince that we are embarking on a new era of improved understanding of the detailed processes of interaction, using new technology for investigation (e.g. eye trackers) to enhance our service delivery and improve health outcomes.
Associate professor Ulla Wide Boman  
Dept. of Behavioral and Community Dentistry, Institute of Odontology,  
The Sahlgrenska Academy, University of Gothenburg, Sweden

Behavioral interventions in dentistry

Common oral diseases are related to health risk behaviors (unhealthy diet, smoking, alcohol), and health promoting behaviors (attendance and adherence to dental care, oral hygiene behavior). Traditional methods of patient education are not effective to achieve behavior change.

Following the emphasis in dental public health today on social determinants of health and upstream interventions, what rational is there for clinical behavioral downstream interventions? Can multi professional teams in specialist and general dentistry add to the effectiveness of dental care?

This lecture will discuss behavioral interventions in dentistry, from the perspective of health psychology and cognitive behavioral therapy. For this purpose, two different areas of behavioral interventions in dentistry will be presented: treatment of dental phobia in adults, and promotion of oral health behaviors in adolescents and adults.

Professor Tiril Willumsen  
Faculty of Dentistry, University of Oslo, Norway

Competence centers in Norway: Dental anxiety

In 2011 the Norwegian government allocated funds to establish treatment programs to facilitate dental treatment in victims of torture, violent or sexual abuse and those who suffer from odontophobia. Basis for the treatment programs was treatment of dental anxiety. It was aimed that patients in all parts of the country should be given the same opportunity for treatment and receive evidence-based treatment. Teams of psychologist, dentist and dental nurses were recruited and trained by the 5 regional competence centers.

Essential in the process has been the establishment of a national network. The network consisted of the dentists and psychologists representing the 5 competence centers and academic staff in behavioural science from the three Norwegian Dental Faculties. The first task for the network was to identify treatment methods that might be adapted to the patient groups. Secondly, the network planned and carried out a competence building program.

Treatment manuals developed by the national network will be presented as well as some preliminary results.
Professor Lars Gahnberg
Dept. of Behavioral and Community Dentistry, Institute of Odontology,
The Sahlgrenska Academy, University of Gothenburg, Sweden

Dental Care systems and older patients
In Sweden there is an increasing awareness of the oral health problems in elderly. Although the change of demographics has been well known for many years the authorities and dental community have been relatively slow to respond with education, organization and research in order to meet the needs of a population with a growing number of dentate, frail and dependent elderly. For most elderly in Sweden there is a good access to dental care.

As for all adults there is a dental insurance system with financial subsidization for dental checkups and more expensive dental treatment. For the dependent elderly there is a system with free oral health screening and subsidized dental care. Despite a fairly good access to care and the different subsidization systems, however, many elderly suffers from oral health problems.

During the last years a number initiatives have been taken to improve the oral health among elderly. One example is the implementation of Senior alert—a quality registry in nursing care. In this registry a systematic screening of oral health is included. Other examples of positive initiatives are the increasing number of competence centers with focus on oral health of elderly and the growing interest in gerodontological research. Recent studies show that many frail elderly loose a former regular dental contact and that this fact often is associated with a deteriorated oral health.

Professor Magnus Hakeberg
 Dept. of Behavioral and Community Dentistry, Institute of Odontology,
The Sahlgrenska Academy, University of Gothenburg, Sweden

A new dental insurance scheme – effects on dental health and behavior
The public dental care service in all county councils nationwide in Sweden have decided to alter the dental financing system by introducing a new payment model, a capitation dental plan. The traditional fee for service system will be optional as a parallel system.

Thus, the adult patient may after information about both payment models decide what dental plan he or she believes will be optimal. Such a large scale change in a financing system has the objective of finding the maximal societal benefit from the resources that individuals and society choose to use for dental care. Is capitation such a system?

Very few scientific publications are found in this area of research. This presentation will focus on the capitation plan’s definitions and structure, and also report on the research projects that are ongoing.
Dr Sarah Baker  
School of Clinical Dentistry, University of Sheffield, United Kingdom

Oral health promotion

In this presentation, Dr Baker will outline the role behavioural sciences, particularly psychology, can play in improving oral health. The presentation will examine where we are now in relation to behavioural interventions for promoting oral health and the weaknesses associated with current approaches. Dr Baker will outline what psychology can contribute to oral health interventions focusing on the use of theory to guide their development and evaluation. She will discuss, as an example, the importance of salutogenic theory for oral health; outlining the potential of salutogenesis as an oral health promotion tool by way of examples from her and her colleague’s recent research.

Dr Hans Östholm  
Public Dental Service, Region Värmland, Sweden
Dr Thomas Jacobsen  
Public Dental Service, Region Västra Götaland, Sweden

Research using register-based data

In this lecture, the speaker will describe the philosophy of National Quality Registries (NQR) in Sweden. A short description of quality registries and their role in improvement of care, both medical and dental care, and their potentials for research will also be presented. A NQR contains individual patient data concerning clinical findings as well as diagnoses and treatments. NQRs are annually monitored and approved for financial support by an Executive Committee within the Swedish Association of Local Authorities and Regions.

SKaPa is The Swedish Quality Registry for Caries and Periodontitis. SKaPa publishes annual reports based on approx. 3 million patients from 15 participating County Council public dental health organisations and one private dental practice. In Swedish dentistry, there are regulations from The Dental and Pharmaceutical Benefits Agency (TLV), which is a central government authority, and all dental clinics have to use well defined codes for both diagnoses and treatments. This has made it possible to build an automatic system for the loading of information from the dental record systems to the SKaPa database.

The vision for the NQRs, and the competence centres supporting the registries, is to constitute an over-all knowledge system that is actively used on all levels for continuous learning, quality improvement and management of all healthcare services.

The long term goal for SKaPa is to include all public dental care and most of the private dental care. The most important purpose is to provide dental clinics with information for improvement of their own practices. Comparisons over time and comparisons with others are important incentives for quality improvement.
The Swedish Council on Health Technology Assessment (SBU) is an independent national authority with a mandate from the Swedish Government to comprehensively assess healthcare technology from medical, economic, ethical, and social standpoints. SBU has identified more than 300 knowledge gaps in dental care. This lack of evidence makes the implementation of National Guidelines a challenge.

There are numerous examples of improvements achieved by using data from the registries in Swedish health care. In addition to quality improvement, NQRs are also important as a source for research. We have at present a couple of studies going on with data from SKaPa. Recently we have established a scientific board which will evaluate applications for the access to data from SKaPa database. Considering the great number of patients in SKaPa with information about both caries and periodontal disease the potentials for clinic research are great. The National Board of Health and Welfare also gives SKaPa possibilities for cross-fertilization with other registries.
## Poster Sessions

**Poster presentations Friday 13th June**

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*Presentation on saturday*
2566. Motivation of students to study dentistry at the faculty of dental medicine in skopje, macedonia.

JULIJANA NIKOLOVSKA*, KAPUSEVSKA B, DONEVA. Faculty of Dental Medicine, University “Ss Cyril and Methodius”, Skopje, Republic of Macedonia.

Aim: The aim of the study was to investigate the motivation of students to study dentistry at the public Faculty of Dental Medicine in Skopje and to analyse whether they were still motivated in the third and last year of study. Methods: The study was conducted at the Ss.Cyril and Methodius University, Faculty of Dental Medicine in Skopje, Macedonia. Dental students from the first, third and fifth year were eligible to participate. The University deemed that it was unnecessary to obtain ethics approval for the study. Before the questionnaire was delivered to the students they signed an informed consent, their participation was on a voluntary basis, they were informed about the aims of the study, and confidentiality was assured. Two hundred nine self-administrated questionnaires which consisted of five groups of questions were distributed. Respondents were asked to identify factors influencing their choice for applying to the faculty. The students from the third and fifth years were asked whether they are still motivated to study dentistry, did they feel they made a wrong choice for their profession, about their opinion on what is needed in the study program to feel more satisfied and whether they would like to change their vocation at the present moment. The data were analysed using the SPSS 13 statistical package. Differences between groups were tested by chi-square test. Results: Two hundred questionnaires were completed. The response rate was 95.7%. Most of the students in first year 52 (57.1%) and 19 (40.4%) students in fifth year answered that they opted for dentistry because they had positive image for dental profession and for 3rd year students 22 (35.5%) said they opted for dentistry because they were familiar with it as a business. There are no significant differences between the groups in regards to this question (Chi square=17.0 (df=10); p>0.05). Most of the third year 40 (64.5%) stated that they are not motivated to study dentistry anymore and the third and fifth year differ significantly (Chi square=11.04 (df=2); p<0.01). Fifty three 3rd year students (85.5%) answered that they would like to change their vocation or they don’t know, and the groups from third and fifth year differ significantly (Chi square=19.54 (df=4); p<0.01). For most of the students in fifth year 24 (22%) and in third year 19 (17.4%) better organisation on the faculty is needed to improve satisfaction and for 20 students in fifth year (18.4%) and 19 students in third year (17.4%) sufficient practicing on patients is missing. For 23 students from first year (22.1%) better theoretical lectures are missing. There are significant differences between groups (Chi square=19.41 (df=3); p<0.01). Conclusions: The most frequent reason for applying for the Faculty in Dental Medicine at the University Ss. Cyril and Methodius in Skopje is the positive image of the dental profession or dentistry as a familiar business. Coming to the end of their study students are facing reality and most of them report being disappointed with their choice.
2572. Dental students’ oral health-related behaviours’ changes during academic year.

A ROVAS*, A STANIULYTĖ & A PŪRIENĖ. Institute of Odontology, Faculty of Medicine, Vilnius University, Lithuania

Oral health-related behaviours have a significant impact on overall oral health status. However, these behaviours can be affected by various factors over time. **Aim:** To assess changes in oral health-related behaviours when levels of sleep disturbance, fatigue and stress increase. **Methods:** Participants in this repeated cross-sectional study were undergraduate dental students from Vilnius University, Institute of Odontology. A self-administered questionnaire consisting of Fatigue Assessment Scale (FAS; Michielsen et al., 2003), Karolinska Sleep Questionnaire (KSQ; Kecklund and Åkerstedt, 1992), Reeder Stress Assessment Scale (Reeder, Chapman and Coulson, 1968) and questions assessing oral health-related behaviours was given. Participants completed the questionnaire twice: at the beginning of the academic year (September 2013) and during the examination period (December 2013). In September 126 out of 147 dental undergraduate students participated in the study (response rate = 85.7%) and 101 students participated in December (response rate = 68.7%). As participation in the study was voluntary and anonymous with all respondents being over the age of 18 years old, no ethics approval was required. **Results:** In September 15 (11.9%) students reported symptoms of insomnia, 28 (22.2%) students reported symptoms of daytime sleepiness, 75 (59.5%) students reported awakening difficulties and 42 students (33.3%) reported stress. In December the prevalence of those symptoms increased: insomnia to 24 students (23.8%), daytime sleepiness to 34 students (33.7%), awakening difficulties to 68 students (67.3%), and stress to 57 students (56.4%). Most of the reported oral health-related behaviours were also worse in December compared to September. The largest impact was on students’ use of dental floss and mouth rinse. In September 22 (17.5%) students reported that they did not use dental floss, while in December this number increased to 29 (28.7%) students. Similarly, 37 (29.4%) students reported that they did not use mouth rinse in September, whereas 46 (45.5%) students did not use it in December. **Conclusions:** Even though dental students are aware of the importance of maintaining good oral health, when levels of stress, sleep disturbance and fatigue increase, oral health-related behaviours tend to become worse.


LYNN KIM*, BERGHOLM E & HAKEBERG M. Department of Behavioural and Community Dentistry, Institute of Odontology, The Sahlgrenska Academy, University of Gothenburg, Sweden. BAE KH, Department of Preventive and Public Health Dentistry, School of Dentistry, Seoul National University, Seoul, South Korea. WIDE BOMAN U. Department of Behavioural and Community Dentistry, Institute of Odontology, The Sahlgrenska Academy, University of Gothenburg.

**Aim:** To estimate the level of dental anxiety in 15-year olds in Seoul, South Korea. **Methods:** This cross-sectional study was based on a school/classroom survey of 15-years old students in June 2013. The sample consisted of 599 students in 8th grade from four middle schools located in regions with different socioeconomic status to provide as representative material as possible. The drop-out was 22 (3.6%) due to absence from class or incomplete questionnaires. Thus, the sample size for the analysis was 577 where 260 (44.9%) were female, and 317 (55.1%) were male. The principals for respective schools gave written permission prior to the study and participants signed an informed consent.
consent form. An ethical application was approved by the Institutional Review Board (IRB) of Seoul National University. The questionnaire included background information and the Dental Fear Survey (DFS). A DFS score ≥60 (total sum of scores range between 20 and 100) was used as cut-off for dental anxiety. Statistical analysis was performed with t-test and chi square-test. Results: Number of individuals classified as having dental anxiety was 132 (22.9%). The prevalence was higher in the female group as 75 (28.8%) females and 57 (18.9%) males were classified as having dental anxiety (p=0.002). The mean total DFS-score was 41.8 (SD 19.6) which also was higher in the female group as the mean value for females was 48.3 (SD 20.3) and the corresponding value for males was 38.9 (SD 18.6). This gender difference was significant (p<0.001). Conclusions: The prevalence of dental anxiety in South Korean 15 years olds was relatively high compared to the prevalence data from other countries. Dental anxiety was higher in the female group which is in consensus with previous findings. Methods of funding: Institute of Odontology, The Sahlgrenska Academy, University of Gothenburg, Colgate Tepe.

2608. Dentists’ attitudes towards young patients with dental anxiety.

KJETIL STRØM*, RØNNEBERG A, SKAARE A, WILLUMSEN T & ESPELID I, Faculty of Dentistry, University of Oslo, Norway

Aim: To explore dentists’ attitudes towards young patients with dental anxiety (DA).

Methods: An electronically anonymous questionnaire (QuestBack) was sent to all dentists (n=598) in the Public Dental Health Service (PDHS) in 8 counties in Norway with questions about the use of behaviour management techniques when treating children and adolescents with DA, and dentists attitudes towards these patients. The study was approved by the Norwegian Social Science Data Services (NSD). Statistical evaluation was done using cross-tabulation with chi-square statistics and logistic regression analyses. Results: The response rate was 65 % (n=391). The age and sex distribution of respondents did not differ significantly from dentists employed in the PDHS, (p=0.311 and p=0.435, respectively). The majority (74 %, n= 288) had their dental degree from Norway, while 26 % (n= 101) were graduated outside Norway. Participation in postgraduate courses in the treatment of patients with DA was undertaken by 53 % (n=208) of the dentists. The three most commonly found attitudes towards treating patients with DA were: making a contribution (72%, n=286), difficult or tiresome (54%, n=215) or a positive challenge (51%, n=203). Male dentists were more reluctant to treat patients with DA than female dentists (15% vs 7%, p=0.017). Dentists with postgraduate courses in the treatment of patients with DA were more likely to see dentally anxious patients as a positive challenge, (60% vs 42%, p<0.001) and were less reluctant to treat these patients (5% vs 15 %, p=0.002). Dentists graduated from Norway reported significantly less stress when treating patients with DA (13% vs 24% p=0.009), were less reluctant to treat these patients (7% vs 17%, p=0.005) and felt they were more contributing (77% vs 49%, p<0.001) than dentists graduated outside Norway. Conclusion: The dentist’s sex, country of graduation and participation in continuing education in the management of patients with dental anxiety is significantly associated with their attitudes towards these vulnerable young patients. This Project is funded by the Faculty of Dentistry at the University of Oslo, Norway.
Aim: The Internet allows interpersonal communication and the acquisition of information about factors affecting health, such as tobacco smoking, alcohol consumption or energy drinks. Smoking is a serious social and health problem and tobacco smoke contains more than 4800 chemical compounds that are harmful both for smokers and non-smokers. Alcohol according to the WHO ranks third among risk factors for the health of the population and is the cause of more than 60 diseases. Energy drinks available in Poland for about 20 years include, among others, nervous system stimulants and carbohydrates, and their consumption is increasing among young people. The aim of the study was the analysis of sources of information, including the Internet, about the effects of cigarette smoking, alcohol consumption and energy drinks on health. Methods: The study was carried out in a group of 178 persons, aged 19-65 years, randomly selected from the patients presenting to the Department of Conservative Dentistry with Endodontics, at the Medical University of Lublin in the year 2013. The research was approved by the Bioethics Board of the Medical University of Lublin. A questionnaire was prepared for this research. Owing to incomplete answers 18 subjects were excluded from the study. The data were analysed statistically with the use of Pearson’s Chi square test. Results: 86 (53.7%) of those surveyed indicated that the Internet was a source of knowledge about the harm caused by cigarette smoking. The respondents more frequently gained information on this subject from television (109; 68.1%) and school (98; 61.2%). In terms of alcohol related harm the Internet was an information source for 86 (53.7%) of the respondents, while television and school was reported by 103 (64.4%) and 95 (59.4%) of them, respectively. Information on energy drinks from the Internet was reported by 92 (57.5%) of the subjects, while from the television 90 (56.2%) and from school 35 (21.9%). There was no statistically significant correlation between the age of the respondents and health knowledge source. Women compared to men more often indicated television as a source of knowledge about the effects of energy drinks on health (Chi square =4.28, p<0.05). There was no correlation between gender and the use of the Internet as a source of information about energy drinks (Chi square =2.47, p>0.05). Neither interest in information on energy drinks (Chi square =1.96, p>0.05) nor effects of alcohol on health (Chi square=1.50, p>0.05) was dependent on the gender of the respondents. Conclusions: The Internet is becoming more and more frequently used as a source of health knowledge, though TV programmes and school still play an important role in providing pro-health information.
2637. Psychosocial characteristics in children with low and elevated risk for caries.

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Aim: To study the psychosocial characteristics of children with disruptive behavior with low versus elevated caries risk. Subjects and Methods: A total of 4500 families, with children (10-13 years old) in 10 districts in the City of Gothenburg, were asked if they had children with disruptive behaviour. If so they were invited, to participate in a study of two parental training programs (Family Check-Up versus i-Komet). Parents of 796 children with some disruptive behaviour reported interest in the study. 231 children met the inclusion criteria, which was a value greater than or equal to 3 on the conduct disorders subscale of the Strength and Difficulties Questionnaires (SDQ-CD). Children’s characteristics based on the Disruptive Behaviour Disorder rating scale (DBD), Family Warmth and Family Conflict (FW/FC), and Parental Knowledge and Monitoring scale (PKMS) were collected for each child. All children were systematically assessed for caries risk at their regular check-ups. Data for the caries risk assessment was compiled from the children’s dental records. The children were assigned to one of two groups; low and elevated caries risk. Statistics: The statistical package for Social Sciences (SPSS version 21) was used for the analyses. Independent Samples T-test was use to compare means for the low caries risk group to the elevated caries risk group regarding the psychosocial characteristics. Ethics: The study was approved by the Ethical Committee in Uppsala (Dnr: 2010/119). Results: Complete dental records for 229 children were obtained. Data was dichotomized to a low and an elevated caries risk group consisting of 153 and 76 subjects, respectively. The children in the elevated caries risk group showed statistically significant higher values for: SDQ-CD (4.7 vs. 4.1), DBD- impulsivity (1.3 vs. 1.0) and DBD-CD (0.3 vs. 0.2). This group reported significantly less conflict in the family FC (7.1 vs. 8.9), but no differences for warmth in the family FW (18.7 vs. 19.4). Finally, the parents of the children in the elevated caries risk group had a higher degree of parental solicitation (engaged in their child’s activities) PKMS (2.5 vs. 2.3). Conclusions: A clear difference in the psychosocial characteristics was observed in the children with an elevated caries risk compared to children with a low caries risk. Children with disruptive behaviour and an elevated caries risk showed more impulsivity and more pronounced disruptive behaviour. Furthermore, there were fewer conflicts in the families but more parental solicitation. These findings ought to be considered when planning therapy. Acknowledgements: This study was supported by the region of Vastra Gotaland.
2639. Dental fear affects adolescent perception of interaction with dental staff.

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Aim: To explore possible association between subjective perception of interaction with dental staff and dental fear. Methods: Participants were 18-year-old adolescents (N=773) from a population-based, prospective follow-up study, The Finnish Family Competence Study (FFCS). The baseline families were a randomized stratified cluster sample from a geographically defined, unselected general population in south-western Finland, and children were followed up since their early foetal period. Dental fear was measured with the Modified Dental Anxiety Scale (MDAS) and the interaction with the Patient Dental Staff Interaction Questionnaire (PDSIQ). Associations between adolescent perception of interaction and dental fear, adjusted for gender and sense of coherence (SOC), were evaluated using univariate and multivariate binary logistic regression models. The FFCS was approved by the Ethical Committee, Faculty of Medicine, University of Turku, and the dental fear study by the Ethics Committee, Hospital District of Southwest Finland. Results: Compared with adolescents with no to moderate dental fear, those with high dental fear perceived negative interaction with the dental staff more often through experiencing less trust and safety (Odds Ratio 0.1 [0.01-0.4]), and less kind atmosphere and mutual communication (OR 0.2; 0.1-0.8) with dental staff. On the other hand, they felt more often roughness (OR 2.6; 1.5-4.5), insecurity (OR 8.0; 4.5-14.1), and perceived more often shame and guilt (OR 2.1; 1.1-4.1). The differences remained significant even after adjusting for gender and SOC except for perceived feelings of shame and guilt. Conclusion: High dental fear felt by adolescent seems to be associated with adolescent’s negatively perceived interaction with dental staff. Thus the adolescents suffering from high dental fear might benefit from special attention from dental staff concerning interaction in order to attain trust and security. Acknowledgements: This study was financially supported by the state funding for (university-level) health research; Turku Society of Dentistry; the Finnish Dental Society Apollonia Research Fund and the University of Turku Graduate School.


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Aim: The aim of the present study was to analyze the prevalence of dental anxiety and concomitant factors, in the general population of Sweden. Methods: This national prevalence study included 3500 adult (>19 years of age) individuals randomly selected from the population of Sweden. The study was made as a telephone survey performed by a telemarketing company, TNS SIFO, during two months in 2013. The survey consisted of 40 questions and the participation rate was 50%. This report is a selection of the questions in the survey with focus on dental anxiety. The study was approved by the Regional Ethical Review Board (Dnr 801-12). The statistical analysis consisted of descriptive statistics, bivariate (t-test and Chi square test) and multivariate (logistic
regression) analyses. Level of statistical significance was set at p= 0.05. The Odds Ratio (OR) was at 95% confidence level. **Results:** Severe dental anxiety in the population was 4.7% (n=166), moderate dental anxiety 4.5% (n=157), low dental anxiety 9.8% (n=343), no dental anxiety 80.9% (n=2832). The prevalence of severe dental anxiety was more frequent among women than men (6.7% vs. 2.4%; \( p<0.001 \)). Subjects who reported severe dental anxiety were younger and had lower education than those who reported no dental anxiety (M=49.4 years, SD=15.3, vs. M=54.2 years, SD=17.7; \( p<0.001 \); 68.9% vs. 58.3% reported low education; \( p=0.008 \)). A multivariate analysis including the variables age, gender and education showed statistical significance for all three factors, with women =OR 2.5, age=OR 0.9, and low education=OR 1.4. **Conclusions:** The results from this prevalence study showed 4.7% of adults reporting severe dental anxiety. Dental anxiety was significantly correlated with age, gender and education.

2651. Dental anxiety: manifestations and impact on daily life.


**Aim:** The aim of the study was to investigate the association between oral health and impact on daily life in patients with dental anxiety. **Material:** A consecutive sample of 168 patients (mean age 41 years, range 20-81, 60 male, 108 female) referred to a special dental fear clinic were included in the study. The patients underwent an adapted clinical examination including a radiological survey where the number of missing and decayed teeth were registered; and answered questionnaires measuring dental anxiety (Dental Fear Survey, DFS), and oral health-related quality of life (OHRQL) (Oral Impacts on Daily Performances, OIDP). The study was approved by the Regional Ethical Review Board (nr 395-10). The statistical analysis consisted of descriptive statistics, the Mann-Whitney U-test and the Kruskal-Wallis test. **Results:** The patients reported a high level of dental anxiety (DFS total score M=75.4, SD=15.1). A majority (n=136) reported at least one oral impact (on OIDP) that affected their daily life. Patients with more than 1 missing teeth (n=110) had lower OHRQL than those with no missing teeth (n=58) (OIDP score M=27.1, SD=26.5 vs. M=16.8, SD=19.6, \( p=0.010 \)). Patients with >3 decayed teeth (n=84) had lower OHRQL than those with no or 1-3 decayed teeth (M=32.0, SD=27.1 vs. M=16.9, SD=22.2 and M=14.3, SD=17.4, respectively; \( p<0.001 \)). **Conclusion:** The results indicate that poor oral health has a substantial impact on oral health-related quality of life in individuals with dental anxiety. This research was supported by a grant from The Local Research and Development Board for Gothenburg and Södra Bohuslän, Region Västra Götaland, Sweden.
Prevalence of caries among the population living in urban and rural areas of Russia.

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Caries prevalence among the population differs within seven main Federal Regions of Russia and has a tendency to increase with age. There are no data available about any difference in caries prevalence among people living in rural and urban areas in Russia. The aim of our study was to investigate caries prevalence among populations living in urban and rural areas in Russia. Materials and Methods: 48443 people aged 6, 12, 15, 35-44, 65+ years were randomly selected from different regions in Russia in 2008. The examinations were done by specialists who were calibrated at the Department of Preventive and Community Dentistry of Moscow State University of Medicine and Dentistry. The dmft/DMFT Index were calculated. The T-test was used to compare difference in mean scores. The study was approved by the ethics Committee of Moscow State University of Medicine and Dentistry and Ministry of Health of Russia. There were no people who refused to take part in the study. The results showed that the mean dmft among 6-year-olds in urban and rural areas were 4.48±0.21 and 4.43±0.22, respectively (p>0.05). However, the “d” component was significantly higher among children living in rural areas, compared to those living in urban areas (3.33±0.15 and 2.82±0.13, p<0.05). The DMFT of 6-year-olds were 0.24±0.03 and 0.18±0.03 (p>0.05), 12-year-olds - 2.59±0.13 and 2.44±0.14 (p>0.05), 15-year-olds - 3.85±0.18 and 3.59±0.16 (p>0.05), 35-44-year-olds - 13.45±0.68 and 13.58±0.67 (p>0.05), 65-year-olds and older - 22.64±1.45 and 22.85±1.56 (p>0.05), in urban and rural areas respectively. However, the “D” component of DMFT values was significantly higher among people living in rural areas as compared to those living in urban areas (1.18±0.07 and 1.42±0.06, 1.56±0.08 and 1.93±0.10, 2.78±0.15 and 3.33±0.17, respectively, p<0.05) at the age of 12, 15 and 35-44. In conclusion, there was no significant difference observed in mean dmft and DMFT among people living in urban and rural areas in Russia. However, there are significantly higher levels of untreated caries among 6, 12, 15 and 35-44-yr-olds living in rural Russian areas.

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Several studies have reported the relationship between caries prevalence and possible local factors, related to residence, among children. In southeastern area of Estonia the DMFT is considerably higher (DMFT = 7-8) than the Estonian average (DMFT = 2.7; by WHO 1998). The aim of this study was to analyse different factors related to caries prevalence in the mixed dentition. Methods: The study group subjects (n=485; average age 8.3 years) were randomly selected 10% first- and second grades pupils of all schools (total number 102) and of all children in this age group (total number 1450) in this region. The exclusion rate was 7% (n=37) because of illness during the examination. The Research Ethics Committee of the University of Tartu approved the study (Reference 166/T-7). Many factors, like level of fluorides in drinking water, urban versus rural residential location, and socio-economic status of families, were included in the data analysis (SPSS version 19.0). Results: The mean DMFT = 0.97 in permanent and 5.93 in mixed dentitions and DMFS 1.62 and 11.86, accordingly. The data were analysed by the localization (urban versus rural schools) - 5 schools of county centres (n=338) and 5 small village schools (n=150). The children from families with lower income and living in rural areas had a higher number of dentinal caries lesions and a lower number of fillings in the permanent dentition. There were no statistically significant differences in the mixed dentition. Data analysis by three different fluoride level groups (<0.5, 0.5-0.8, and >0.8 mg/L) showed only differences in caries lesions per tooth (in the permanent and in the mixed dentition) and per surface (in the permanent dentition). Conclusion: All differences were smaller than expected. Young schoolchildren’s oral health was not related to their geographical distribution in the mixed dentition. The level of fluoride in drinking water was related only to the number of cavities. Methods of funding: A Cargill R&D Centre Europe grant was received for this study.

2578. Periodontal Status of children with bronchial asthma.

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Aim: The primary cause of periodontal diseases is dental biofilm (previously referred to as dental plaque). A number of local and general factors can play a role in modifying the response of the periodontal tissues to biofilm. One of the main general factors in the development of periodontal diseases is a presence of concomitant systemic diseases, one which is bronchial asthma. This study therefore aimed to compare the periodontal status of a group of children with bronchial asthma with a group of healthy children without this disease. Methods: 240 children with bronchial asthma aged 7 to 15 years (test group) treated in the pediatric department of the Ternopil hospital (Ukraine), and 100 of their peers without concomitant systemic disease (control group), who were under treatment in the city clinic of Ternopil (Ukraine) were clinically examined. The mean age of the children was (11.25 ± 1.42) years. Periodontal (PMA, CPI) and oral hygiene (OHI- S) indices were recorded for all the children. Parental consent was obtained. Ethics approval was given agreed by the Committee of Bioethics at the Ternopil State Medical University (Ukraine). The data were statistically tested with Statistica 7.0 (StatSoft Inc.) computer software. Results: Gingivitis was common in both study groups but was 1.5 times (106 children
(44.17 %)) more common in the asthma group than in the control group (29 children (29%)), (p<0.05). Localized periodontitis was seen 1.3 times more often in the test (asthma) group (57 children (23.75 %)) than in the control group (19 children (19.0%±3.0), (p>0.05). In the asthma group there were established signs of initial forms of generalized periodontitis in 9 children (3.75 %). There were no signs of generalised periodontitis in the control group. **Conclusions:** In the children studied, the periodontal health of children with bronchial asthma was significantly worse than that of children from the same schools who did not have this disease. **Methods of funding:** Ternopil State Medical University of I.J.Horbachevsky.

2581. Association between moderate to severe psoriasis and periodontitis.

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The aim of the present study was to compare prevalence of periodontitis and alveolar bone loss among individuals with moderate to severe psoriasis and a group of randomly selected controls. **Material and methods:** Fifty psoriasis individuals and 121 randomly selected controls completed a structured questionnaire and were examined clinically and radiographically at the Faculty of Dentistry, University of Oslo, Norway. Oral examination included numbers of missing teeth, probing pocket depth (PPD) and clinical attachment level (CAL), presence of dental plaque and bleeding on probing as well as registration of alveolar bone loss from radiographs. Questionnaires contained information on age, gender, education, dental care, smoking habits, general diseases and medicament use. The study was approved by the Regional Committee for Medical and Health Research Ethics, and conducted from October 2011 until December 2012. **Results:** Psoriasis individuals had significantly higher mean number of missing teeth and higher mean per cent of sites with plaque and bleeding on probing than controls. The prevalence of moderate and severe periodontitis was significantly higher among psoriasis individuals (24%, n=12) compared to healthy controls (10%, n=12). Similarly, 36% (n=18) of psoriasis individuals had one or more site with bone loss greater than 3mm, compared to 13% (n=16) of controls. The association between periodontitis and psoriasis remained significant (OR=4.0, 95%CI 1.3-13.1), when controlling for age, gender, education and smoking habits. Similarly, the association between psoriasis and one or more sites with bone loss greater than 3mm remained statistically significant when controlling for age and gender, education and smoking habits (OR=6.1, 95%CI 2.0-18.4). The association was only slightly attenuated and remained statistically significant after further adjustment for plaque scores. **Conclusions:** Individuals with psoriasis had higher prevalence of periodontitis and radiographic bone loss than controls. This association remained significant after controlling for possible confounders.
2584. Risk indicators associated with dental erosive wear among Norwegian adolescents.

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Aim: To investigate the association between dental erosion and selected background and behavioural risk indicators among 16-18-year-olds. Methods: The study was conducted in four Public Dental Health Service (PDHS) clinics in Norway. All 16-18-year-olds, scheduled for recall examinations during eight months in 2012 (n=846), were invited to participate and 795 (94%) accepted. The study was approved by the Regional Committee for Medical Research Ethics and all participants gave written, informed consent. All adolescents completed a self-administered questionnaire, which included information about the participants’ background, medical history, behaviour and diet. Erosion was assessed by calibrated dentists and hygienists using the Visual Erosion Dental Examination system (VEDE) (Mulic et al. 2010). Index surfaces: the occlusal surfaces of the upper and lower first and second molars and the labial and palatal surfaces of the upper incisors and canines. Subjects with three or more surfaces affected by dental erosion were considered as having the condition. Associations between erosion and risk indicators were assessed by chi-square test and logistic regression analysis.

Results: Dental erosive wear was found in 37% (n=295) of the participants. Males had more erosion than females (n=134, 42% vs. n=161, 33%, p=0.007). Participants brushing teeth twice daily or more often had significantly lower prevalence of erosion than those brushing less frequently (n=230, 35% vs. n=64, 46%, p=0.016). A high total consumption of soft drinks, juice and sports drinks daily was significantly associated with erosion (p<0.05), while the intake of low calorie soft drinks, flavoured water and squash was not. Among participants drinking less than 0.25 litres acidic beverages daily (n=126), erosion was seen in 21% (n=27), opposed to 46% (n=102) among participants drinking at least one litre daily (n=219) (p<0.001). In the multivariate logistic regression analysis having erosion was associated with being male (OR: 1.5, 95% CI: 1.1-2.0) and having high consumption of acidic drinks (OR: 2.9, 95% CI: 1.7-4.8), while frequency of brushing teeth was not associated with dental erosive wear. Conclusion: Male gender and total consumption of acidic beverages consumed appear to be risk indicators for dental erosive wear among Norwegian 16-18-year-olds. Methods of funding: PhD scholarship.

2587. Istanbul Dentists’ Knowledge and Attitudes Towards Use of Mouthguards in Contact Sports.

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Aim: The aim of this study was to assess Istanbul dentists’ attitudes to the use of mouthguards in contact sports. Methods: A 16-item, one-page self-completion questionnaire was produced and distributed by a ‘hand-delivery’ system to 110 dentists, including those working in government hospitals and private dental clinics randomly selected in different parts of Istanbul. The questionnaire included questions on demographic features such as age, gender of dentists, the level of formal training in indications for the use of mouthguards and the knowledge and attitudes of the dentists
concerning mouthguard protection. The survey took place between September 2012 and February 2013. **Results:** All 110 dentists responded to the questionnaire. Thirty five (32%) indicated that they had received some training in the use of mouthguards but only in classroom lectures during their undergraduate training, 27 (25%) of them had been trained to make mouthguards during laboratory sessions and 48 (43%) reported that they had never received any formal training on the use or fabrication of mouthguards. Twenty eight (26%) of the dentists claimed that they had never recommended mouthguards to their patients who took part in contact sports. The main reason for not recommending mouthguards was reported as lack of knowledge and formal training in the fabrication or use of mouthguards. Seventy nine (74%) of the dentists said that they would prefer custom-made mouthguards for their contact sport playing patients. Only 37 (34%) were familiar with the different types of mouthguards, while 73 (66%) were not familiar and the majority of them would not be able to supervise or fabricate mouthguards. However, 94 (85 %) agreed that mouthguard usage should be encouraged among athletes, especially adolescents and young adults involved in contact sports. **Conclusion:** These results indicate that, in the group of Istanbul dentists who took part in this survey, knowledge of mouthguard protection in contact sports was inadequate. Most of them supported the use of mouthguards by patients who took part in contact sports. If the group who took part in this study are representative of Turkish dentists, in general, there is a need to educate Turkish dentists in the role of mouthguards in contact sports and in their fabrication and to ensure that this topic is included in the undergraduate curriculum of Turkish dental schools.

2591. Carious experience in first permanent molars of schoolchildren from Constanta, Romania.

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Even if there is decreasing caries experience in most developed countries, in Romania it remains at a very high level. **Aim:** To estimate the caries experience in the first permanent molars of 6-11 year-old schoolchildren from the Constanta District. **Methods:** An epidemiological cross-sectional clinical study was carried out in 2013 (April-July) on a randomly selected sample of 600 schoolchildren (3.8% sampling error; 95% confidence level) aged 6-11 years (mean age was 8.7±1.4 years). The clinical examination was performed in school dental clinics by trained and calibrated examiners. Dental caries was diagnosed at the caries into dentine (D3) threshold and the World Health Organisation 1997 criteria for clinical examination and caries data registration were used. Enamel and pre-cavitated lesions were excluded. The ethics committee of Ovidius University approved the study and written parental consent was obtained for each child. Data were entered in SPSS 19 and tested using descriptive statistics (ANOVA). **Results:** The response rate was 94.3%, the final study sample included 566 schoolchildren (3.9% sampling error; 95% confidence level). 2186 first permanent molars were available for examination, an additional 78 had not erupted. Carious lesions were present in 599 (27.4%) of occlusal surfaces, 30 (1.4%) of mesial surfaces, 185 (8.5%) of buccal surfaces, 22(1%) of distal surfaces and 133 (6.1%) of palatal and lingual surfaces of the first permanent molars. Fillings were present in 86 (3.9%) of occlusal surfaces, 3 (0.1%) of buccal (lower) and 3 (0.1%) oral (palatal) surfaces. No first permanent molars had been extracted due to caries and there had been endodontic treatment in 11 (0.5%) of these teeth. Fissure sealants were present in 99 (4.5%) of occlusal, 3 (0.1%) buccal (lower) and 3 (0.1%) oral (palatal) surfaces, with no significant differences between boys and girls (p>0.05). **Conclusions:** This study revealed a very high level of caries prevalence and dental treatment need in the first permanent molars of
the schoolchildren, who were examined. It demonstrated the need for reorientation of oral health services towards prevention. Methods of funding: Supported by Faculty of Dental Medicine, Ovidius University, Constanta.

2598. The impact of oral health status on eating behaviors and food choices.

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Aging is a life stage that is accompanied by numerous pathophysiologic changes affecting oral and general health. Oral diseases don’t show, in general, risk of life but can impact the level of mastication, phonetics, aesthetics and general welfare. Objectives: To evaluate, in a geriatric population, the association between food choices and avoidance due to oral health problems. Material and Methods: A sample of 129 individuals (69.8% females), aged 60 to 85 years, was interviewed and underwent an oral examination. This population of non-institutionalised elderly was recruited in the Research Centre in Physical Activity, Health and Leisure, University of Porto, Porto, Portugal. All the individuals invited agreed to participate. Data were collected, between February and April of 2012, on socio-demographic characteristics, dental status, oral complaints, chewing difficulties and frequency of eating a variety of food types. This investigation was approved by the Ethical Committee of the Faculty of Dental Medicine, Porto. All participants received oral and written information of the purpose and procedures of the study, and provide written informed consent to participate. Results: The majority, 59.5% (n=75), reported no dental problems and 24.5% (n=32) claimed to have gingival problems. The mean DMFT was 18.07 ± 7.33. Approximately two-fifths of the participants, (45.3%, n=57) avoid solid foods due to discomfort in the oral cavity, of which 74.5% (n=41) avoid fresh fruits, 61.8% (n=34) red meats and 38.2% (n=21) dry fruits. The prevalence of cutting foods into small pieces or grinding to facilitate the intake were 48.4% (n= 61), 42.0% (n=53), and 15.0% (n=19) for meat, fresh fruits and fish, respectively. The use of dental prosthesis, the sensation of dry mouth and gum disease were associated with the avoidance of solid food (chi square test; p<0.05). Conclusion: The participants in our study exclude specific food from their diet because of chewing difficulties and dental problems. Methods of funding: Faculty of Dental Medicine, University of Porto, Portugal.

2599. Caries diagnosis in permanent teeth of 12- to 13-year-olds in Minsk using ICDAS.

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Early diagnosis using modern techniques and indices allows early treatment to be performed and/or regression or stabilisation of initial carious lesions. It also restricts the size of restorations if they are required. Aim: To describe the pattern of carious lesions in permanent teeth of a sample of 12- to 13- year-old pupils of Minsk schools who needed treatment for caries. Materials and methods: In 2012 a sample of 61 students of Minsk school number 12 (all students of two classes) aged 12- to 13 years were examined for dental caries using ICDAS. 3330 teeth were examined. Before examination for caries all pupils carried out supervised tooth brushing. The teeth were assessed visually when
wet and after drying (for approximately 5 seconds). The resulting data were entered into Statistica 8.0 and statistically processed by using the t-test. Ethics approval and parental consent was obtained for this study. Results: 69.0% ± 1.5 occlusal surfaces were free of caries. This percentage was significantly (p<0.001) higher for smooth surfaces and fissures (96.9% ± 0.3 and 79.1% ± 1.5 respectively) and proximal surfaces (99.3% ± 0.2). Carious lesions without cavitation on the occlusal, oral and vestibular surfaces (codes 1, 2) were seen significantly (p<0.001) more often than cavitated lesions (codes 3, 4, 5, 6). It confirms the need for early diagnosis and remineralisation of noncavitated lesions in this age group of children. Frequency of carious lesions with and without a cavity on the proximal surfaces of teeth was not statistically different (0.4 ± 0.1% and 0.3 ± 0.1%). Most of carious lesions were found around fillings and sealants on the occlusal surfaces of the teeth and represented 6.0% ± 0.9 of the total number of lesions (p<0.001). It should be noted that signs of caries were found around 33.5% ± 3.7 of fillings and sealants on occlusal surfaces. Conclusion: In the sample studied, ICDAS was a precise tool for the early detection of carious lesions and appropriate intervention.
Is there a role of Community Pharmacists in Oral Health Promotion?

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The aim of the present study was to assess the role of the Community Pharmacist in Oral Health Promotion. **Methods:** The present study is a quantitative cross sectional survey conducted using a structured questionnaire from January 2013 to September 2013. A total of 750 pharmacies were randomly selected from a list of 2563 pharmacies registered with National Health Services (NHS) and practicing in London and Greater London area. Invitation letters were sent to the selected pharmacies and one pharmacist (in each pharmacy) was invited to participate. Following this an email with a web link was sent to the pharmacists in order to facilitate the completion of the questionnaire. Postal questionnaires were also sent to those who requested a hard copy. The questionnaire included a cover letter and 17 multiple choice or open ended questions. The questionnaire included questions on demographics, the role perceived in promoting oral health, the level of confidence when providing advice on dental conditions, the interest expressed to receive further training on oral conditions and willingness to incorporate oral health promotion in their NHS pharmacy contract. The collected data was analysed for descriptive statistics and data analysis was completed using the Statistical Package for Social Science (SPSS v. 21). Ethical approval for the study was obtained from Queen Mary University Research Ethics Committee. **Results:** 583 pharmacists responded to the initial invitation, with 354 agreeing to complete the questionnaire. 229 pharmacists declining the offer complete the questionnaire but did acknowledge a role for pharmacists in oral health promotion. Out of those agreeing to complete the questionnaire, 99.4% (n=352) pharmacists perceived a role in oral health promotion. 91.5% (n=324) of pharmacists reported a fairly high level of knowledge for most of the common oral conditions, 336 (94.9%) of the pharmacists were interested in receiving further training on oral conditions. A positive response 85.8% (n=304) was also obtained from the pharmacists regarding their willingness to incorporate oral health promotion within the NHS pharmacy contract. No analysis was completed on those pharmacists who failed to respond to the invitation apart from the individual postal codes where the initial invitation was sent. **Conclusions:** The majority of the pharmacists perceived role in oral health promotion and were interested in receiving further training on oral conditions. Pharmacists also expressed their willingness to incorporate oral health promotion within the NHS pharmacy contract. **Financial support in the form of a small grant was provided by GlaxoSmithKline (GSK) UK.**
2576. Oral health attitudes, behaviour and smoking habits of dental and medical students in Bucharest.

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**Aim:** To evaluate and compare differences in self-reported oral health attitudes, behaviour and smoking habit between dental and medical students from the University of Medicine and Pharmacy, Carol Davila, Bucharest. **Methods:** This cross-sectional study involved 223 subjects in the third academic year, divided into 2 groups: 109 dental (41.3% males, mean age 22±2.92) students (before studying preventive dentistry curriculum) and 114 medical (38.6% males, mean age 20±0.66) students. Data collection was conducted during the first semester of academic year 2011-2012. A self-administered questionnaire based on a modified version of the Hiroshima University-Dental Behavioural Inventory (HU-DBI) was completed anonymously during faculty hours. Demographic information was obtained including age, gender and faculty. Ethical approval and subjects informed consent was obtained prior to the study. The response rate was 84% for the dental students and 76% for the medical students. SPSS 17.0 statistical program was used and descriptive summary statistics were employed for data analysis. A p-value<0.05 was considered statistically significant. **Results:** Although 91.5% (n=204) of students had been to a dentist in the past, the medical students were more frequently seeking emergency treatment (77.2% vs. 13.8%, p<0.001). Tooth brushing twice per day was significantly higher for the dental students (89.9% vs. 58.8%, p<0.001), although a specialist never gave them tooth brushing recommendations (37.6% vs. 68.4%, p<0.001). Also, bleeding gums associated with tooth brushing was significantly higher for the medical students (60.5% vs. 19.3%, p<0.001). Daily flossing was significant higher for the dental students (37.6% vs. 17.5%, p=0.001) and the same group was associated with using mouthwash on regular basis (53.2% vs. 33.3%, p=0.003). Smoking was more prevalent among medical students (63.2% vs. 28.4%, p<0.001), they were smoking daily over a half a cigarettes pack (53.5% vs. 21.1%, p<0.001) and the habit lasted more than a year from the date of the questionnaire (52.6% vs. 26.6%, p<0.001). **Conclusions:** The study showed that the self-reported oral health attitudes and behaviour of both dental and medical students needs to improve and considerable effort needs to be made towards changing our University students smoking habit so they become later role models for Romanian society. **Methods of funding:** The study was supported by the University of Medicine and Pharmacy, Carol Davila, Bucharest.

2582. Oral health behaviour change intervention aimed at children in a deprived community.

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**Aim:** Health behaviours are critical determinants of child oral health. Oral health promotion must target the mechanisms of behaviours in order to change them. Behaviour change techniques (BCTs; Abraham and Michie, 2008) are theory linked ways in which to provide messages focused on the psychosocial determinants of behaviour. This study piloted a novel intervention in the form of a children’s story (Kitten’s First Tooth) embedded with BCTs with the aim of testing the effectiveness of the intervention for improving parents’ self-efficacy (confidence) for and intention to enact oral health behaviours for their child. Kitten’s First Tooth was provided in 2 formats: an animation on a DVD and a
Methods: This was a controlled before and after study in a deprived area of North West England in 2012. Two areas of study were selected (one as intervention; one as control), participants were accessed via schools. All eligible parents living in the areas of study were invited to participate (response rate: n=149; 29%). Parents were eligible if they had a 3-5 year old child. Completion rate for the study was 87% (n=129). Participants completed a validated assessment, the Oral Health Behaviours Questionnaire (OHBQ; Adair et al., 2004) at baseline and 3 months post intervention. The OHBQ measures parent self-efficacy for and intention to carry out child oral health behaviours. The subscales of the OHBQ were summated to form composite scores and these were compared for change over the study period using paired t-tests. Ethical approval was granted by the University of Salford, UK. Results: Paired t-tests showed a significant improvement in self-efficacy for child tooth brushing (p<0.01) as well as intention to enact this behaviour (p<0.01) among the intervention group only. Positive change in intention for child dental attendance could also be seen in the intervention group (p<0.05) with a negative change in the control (p<0.05). No change however could be observed with regard to parent self-efficacy for or intention to control child sugar snacking in either group. Conclusion: This study has shown that a theorised children’s story can be effective in delivering oral health promotion. A positive impact was observed with regard to tooth brushing but not sugar snacking. Future work should seek to strengthen the intervention components relating to sugar behaviours.

Methods of funding: Funding was provided by NHS Salford.


The aim of this study was to determine reach and effectiveness of a web-based film about oral health, oral hygiene and dental care for parents of young children. Methods: A RCT study was conducted in the Netherlands. Parents of children aged 0 - 5 years were asked to participate when they visited well-baby clinics. In the experimental group, at t0 parents completed a questionnaire on demographics, dental knowledge and behaviour and subsequently were given a postcard with a link to the web-based film. After watching the film at home, parents completed the questionnaire again (at t1), this time web-based. Six months later at t2, the experimental group again completed the questionnaire. The control group completed the first questionnaire at t2 and subsequently received usual care. Differences in level of knowledge between the experimental group and controls at t0 and t2 were tested by t-test, as were differences between t0, t1 and t2 in the experimental group. The level of parents ‘knowledge was tested with 12 questions about oral health. Oral health behaviour was measured with 4 questions about parents' behaviour related to oral health. Ethical approval was not required. Results: It is unknown how many parents refused to participate in the study, this was not reported by well-baby clinics. The experimental group consisted of 584 parents and the control group of 509 parents. No statistically significant differences in dental knowledge and behaviour were found between experimental group and control group (6.4 vs 6.5, p=0.24). The reach of the film was 18% (103/584). Watching the film resulted in a 35% (6.9 vs 11.1, p<0.0001) increase of knowledge. Six months after t0, a 16% (7.2 vs 9.1, p<0.0001) increase in dental knowledge remained. Also a positive behaviour change of 15% (2.6 vs 2.0, p<0.0001) was reported by parents, after 6 months. Conclusions: Oral health education via internet proved to be effective. The reach of the web based film was moderate, but Dutch well-baby clinics are visited by nearly all parents, so on a population level many parents received adequate oral health education (Statistics Netherlands, 2010). It is still important.
Methodology Aim: To develop a toolkit to facilitate communication between socially excluded parents and Dental Health Support Workers (DHSW) to aid parental empowerment, for dental attendance. Methods: Discussions with Duncan of Jordanstone College of Art and Design, allowed a toolkit to be conceived using interactive storyboarding. The initial storyboard went through a series of prototypes, user testing and stakeholder meetings and resulted in CHATTERBOX. Results: CHATTERBOX is a set of bespoke tools: a timeline base, activity cards and appointment postcards. The cards are pictorial representations of everyday family activities and of barriers identified by parents as influencing dental attendance. Seventy-two cards are colour coded into categories to assist selection. Nine blank cards allow for parents to describe other concerns not already represented. Parents select relevant cards and place them on the timeline to provide a picture of their day. The cards are also used to raise issues relating to dental attendance such as transportation, childcare, social support, previous dental experiences and other dental-related concerns that families have. The structured conversation using CHATTERBOX helps parents identify where, when and why problems occur when attending for dental care. Once the problems are identified, parents, with support from DHSWs, find a solution, thus placing the power with the parent. The parent’s solution is transferred onto the appointment postcard which is thus unique to each family. The populated timeline is photographed by the DHSW and used as a platform to aid discussion at subsequent visits and to empower the socially excluded parent. Conclusions: CHATTERBOX is an interactive storyboard to empower parents by increasing their ability to identify, consider various options and solve their own problems. CHATTERBOX aims to increase parental confidence and consolidate their relationship with the DHSW. This mutual participation model has the potential to increase partnership working and attendance for dental care. Methods of funding: Funded by Childsmile Programme - Award Number: 121.804490.
2589. Tobacco use and smoking cessation among Lithuanian dental students.

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Aim: Health care professionals have a responsibility to prevent smoking and help patients stop smoking. The role of oral health professionals in tobacco control programs has been highlighted. The objective of our study was to investigate tobacco use, knowledge of and attitudes towards smoking cessation among Lithuanian dental students. Methods: A cross-sectional survey among all dental students at the Lithuanian University of Health Sciences was conducted in 2012. The Bioethics Center of LUHS approved the study. The students at the Faculty of Odontology were asked to participate in the anonymous and voluntary survey during their ordinary classes. The questionnaire included questions of the students smoking habits, knowledge of tobacco health effects and attitudes towards smoking cessation in the dental setting. The response rate was 85% (512/602). Chi-square test served for statistical analyses. Results: Daily or occasional smoking was reported by 25% of the dental students while one-third (35%) of them had smoked at least 100 times during their lifetime. Daily smoking was more frequent among males (19% vs. 5%). The students were generally aware of the harmfulness of smoking; however, 31% of them did not consider environmental smoke very harmful to health. Smoking was regarded as physically (46%), psychologically (83%), socially (47%), and habitually (79%) addictive. A majority of the students (77%) were willing to help patients quit smoking, but only 17% had regularly discussed health risks with smokers during the past 12 months. The smoking students agreed less often that smoking prevention should be part of health care personnel’s education compared to the non-smoking students (p<0.01). One-third of the students (35%) reported their knowledge and skills to be sufficient to guide patients stop smoking. Conclusions: Tobacco use is common among Lithuanian dental students. The students have willingness to help patients quit smoking, but lack knowledge and skills for it.

2593. Attitudes and knowledge towards xylitol use in day care among kindergarten nurses.

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Oral health promotion in child care settings is one possible way to encourage children to take care of their teeth. Use of xylitol products in kindergarten can promote oral health in children and recently the Ministry of Health in Finland recommended giving xylitol products free-of-charge to all children in municipal kindergartens. Aim: The aim of our study was to investigate attitudes and knowledge towards oral health promotion and use of xylitol products in day care among kindergarten nurses. Methods: The study was carried out in 2013 in Ylivieska region, Finland, where all children in day care have got free xylitol candies after lunch. Nurses in all 13 municipal kindergartens completed an anonymous and voluntary self-administered questionnaire regarding their knowledge and attitudes towards oral health promotion and use of xylitol in day care. Approval of an Ethical Committee was not needed. The background variables were age, work experience and healthcare education, and the chi-square test served for statistical analyses. Results: The response rate was 95% (142/150). Generally, knowledge and attitudes towards children’s oral health were good among the nurses. Respondents with longer than 5 years’ working
experience were more aware of the association between oral health and general health (p<0.05) and that caries is a disease caused by bacteria (p<0.05) than those with shorter experience. The nurses considered use of xylitol products in day care to be beneficial 97% (132/136) and the procedure was not perceived to be laborious or troublesome by 95% (129/136). Most of them did not endorse children's tooth brushing at day care 71% (100/140). **Conclusions:** The study showed that when day care nurses knowledge towards children’s oral health promotion is good, they are motivated to give children xylitol products and don’t perceive it as inconvenient.

2600. The parahnoSorridente project: Oral health promotion & changing oral health care needs.

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The "parahnoSorridente" project is a Community Oral Health program directed at children from 3 to 10 years attending public schools in the parish of Paranhos, Porto. Portugal. This program was created in October 2008 and developed based on a partnership between the Faculty of Dental Medicine of the University of Porto (FMDUP) and the Parish of Paranhos. **Aims:** To describe the "parahnoSorridente" project and the dynamics of its operation. **Materials and Methods:** The "parahnoSorridente" project includes the diagnosis of oral health problems, the diagnosis of treatment needs and the promotion of oral health. The project has two major components: screening children for oral disease at the outpatient clinic of FMDUP and promoting oral health in schools. The protocol for the FMDUP includes the collection of socio-demographic data, information related to dietary and oral hygiene habits and a multidisciplinary clinical extra and intra - oral examination. At the schools, measures to promote oral health include: training in oral health (oral health education, nutrition education, oral hygiene practices), monitoring of oral conditions, teaching and the practice of oral hygiene techniques. **Results:** Between 2008-2013, 1993 children were screened in the FMDUP outpatient clinic and there were 44 sessions to promote oral health in the schools. The number of children who visited the dentist increased. The application of fissure sealants increased significantly and the number of children with urgent treatment needs decreased. **Conclusion:** Oral health programs such the "parahnoSorridente" project should be adopted by institutions with educational and political responsibility to contribute to the improvement of oral health and thus the quality of life of individuals. **Methods of funding:** Faculty of Dental Medicine, University of Porto, Portugal. Parish of Paranhos, Porto, Portugal.
2602. Effect of comprehensive preventive measures on saliva microbiota in children with S-ECC.

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This study aimed to evaluate changes in the amount of Streptococcus mutans in saliva before and after comprehensive preventive measures (CPM) in children with S-ECC, and to compare the amount of Streptococcus mutans and flora structure of saliva in S-ECC children who had undergone CPM to those who had not. **Methods:** Children with S-ECC from two kindergartens in Beijing were randomly divided into two groups on a kindergarten basis. The study group received CPM. Stimulated salivary samples were collected at baseline and after one year. The Peking University ethics committee approved the study and parental consent was obtained for each subject. The amount of Streptococcus mutans was measured using Absolute Quantitative Real-time Polymerase Chain Reaction (PCR) and the flora structure was analysed using bands from Denaturing Gradient Gel Electrophoresis (DGGE). The amount of Streptococcus mutans and flora structure were compared between the two groups and within each group both at baseline and after one year by SPSS and GelCompareII. Study group and control group results were analysed by Independent Sample T tests, and results in one group between baseline and one year were analysed by Paired Sample T tests. Based on the similarity coefficient between any two samples, a dendrogram was formed by an unweighted pair-group method with arithmetic means to analyse similarity between two groups in Cluster Analysis. Principle Component Analysis was based on the principle components that could separate samples in two groups to analyse any similarity, using the first to sixth principle component as X axis and Y axis to draw a two-dimensional coordinate graph. The closer two samples are, the more similar, and a cluster would be formed if samples in one group are similar to each other in both Cluster Analysis and Principle Component Analysis. **Results:** The amount of Streptococcus mutans reduced 1.74+10⁷ (55.4%) on average in the study group after one year (p=0.022), and 2.37+11⁰⁶ (22.8%) on average (p=0.511) in the control group. After CPM the number and intensity of bands were decreased (p<0.001) in the study group, as there were 12.93+12.36 bands at baseline and 10.93+12.60 bands after one year, and the intensity dropped from 38.78+17.60 to 30.32+17.17. Clusters were formed between baseline and one year in study group. A tendency to cluster was observed in Principle Component Analysis. At baseline, the number and intensity of bands for 30% to 40% and 50% to 60% of DGGE migration areas were statistically significant higher in the study group (p<0.05). Clusters were formed between two groups to some extent. After one year, there were 0.52+10.69 bands in the study group for 10% to 20% of DGGE migration area, which were statistically significant lower than in control groups 1.28+10.98 bands (p=0.002), and so was the intensity of bands (p=0.001, 0.61+10.85 in the study group, 1.64+11.22 in control group). Samples in the study group had a tendency to cluster when using Principle Component Analysis. **Conclusions:** Comprehensive preventive measures reduced the amount of Streptococcus mutans and changed the dominant salivary bacteria in children with S-ECC. Comprehensive preventive measures may primarily affect cariogenic bacteria.
2560. Treatment modalities and referral patterns: a survey of general dentists in Lithuania.

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Different countries recognise different dental specialties. In Europe, the most cost-effective model of medical care is one that emphasises strong primary care. However, in many European countries, the number of specialist dentists is increasing and care must be taken to avoid an oversupply. The aim of the present study was to assess specific treatment modalities and the need for Lithuanian general dentists to refer patients to dental specialists. **Methods:** The study was approved by the National Data Protection Inspection (No. 2R-3247). Ethics approval was not required. Census sampling was employed (n=2971) and the data collected by means of a structured questionnaire asking dentists about the specific treatment modalities they perform and the frequency of referrals they make to different dental specialists. The response rate was 67.6% (n=2008). Univariate and bivariate analyses were used to describe the study sample regarding demographic characteristics, specific treatment modalities performed and referral frequency to different dental specialists. Exploratory Factor Analysis (EFA) with Varimax Rotation was performed in a cohort of general dentists to examine trends or patterns in the provision of different treatment modalities. **Results:** The analyses showed that there were significantly fewer younger dentists, males and dentists from big cities among the responders compared to the non-responders. Respondent dentists indicate that of cases needing orthodontic treatment, 76.3% were referred to orthodontists. About half of patients needing specialised care were referred to periodontists (50.2%), prosthodontists (46.9%) and oral surgeons (45.0%). Thirty-nine percent of cases needing specialised care were referred to endodontists. Only a third of patients were referred to paediatric dentists. About 60% of respondents said they extracted teeth and roots, made incisions in acute jaw infections and treated young children; about half of general dentists said they performed complex endodontic manipulations and treatment with fixed and removable prostheses. **Conclusions:** Lithuanian general dentists often provide simple surgical procedures, complex endodontic manipulations, treatment with fixed and removable appliances and treatment for young children. However, there is a clear need for Lithuanian dental practitioners to refer patients for treatments performed by all types of dental specialists.
2568. Development of THR (tooth-hygiene-registration), a dental hygiene assessment instrument designed for caregivers.

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Many elderly in nursing homes are care-dependent in terms of dental hygiene. A dental hygiene assessment instrument enables caregivers to monitor and evaluate resident’s dental hygiene on a daily basis. **Aim:** To develop and evaluate DHR (dental hygiene registration), a dental hygiene assessment instrument for caregivers working in institutions. **Methods:** A reference group of both dental and medical personnel designed DHR. Dental plaque was used as a measure of dental hygiene. DHR was validated against the plaque index score of the Oral Hygiene Index (OHI-S) on 41 patients. A pictorial series of teeth with various levels of plaque was used for intra-examiner agreement. DHR was scored on 50 patients to assess inter-examiner reliability between one dental hygienist and one clinical nurse. The Regional Ethics Committee approved the study. **Results:** DHR consists of a five point plaque score scale. It rates from zero, indicating good dental hygiene to four, indicating poor dental hygiene. Intra-examiner agreement on plaque was good for dental hygienist (kappa=0.6) and clinical nurse (kappa=0.7). Inter-examiner reliability for DHR between dental hygienist and clinical nurse was moderate (kappa=0.4). **Conclusion:** DHR is a valid and reliable instrument for caregivers to assess dental hygiene on a regular basis. **Methods of funding:** PhD-student at the Faculty of Dentistry, University of Oslo.


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**Aim:** From 1999 patients in Sweden with extreme dental phobia have a right to subsidised dental treatment combined with cognitive behavioral treatment (CBT). The objective of the 1999 reform was that after the dental phobia treatment, patients should be able to visit regular dental care. The aim of this follow-up was to evaluate the service to see if it had had the desired effect. **Methods:** In 2012 a postal questionnaire was sent out to all dental phobia patients who had completed CBT treatment in Östergötland County, Sweden, in the year 2008. In addition to the questionnaire a covering letter was sent, explaining the aim of the survey and that participation was voluntary. Two reminders were sent out to enable as high a response rate as possible. The total number of questionnaires sent out was 722 (66% women). The questions reported in this survey aimed to measure whether the earlier treated patients had visited dental care after completed phobia treatment and how they experienced this. **Results:** The response rate was 49% (n= 351) (67% women). When analysing the data it was seen that 64.5% (n= 225) of the respondents had received dental health care again after they completed their dental phobia treatment. They expressed higher level of anxiety, discomfort and pain during the latest dental visit compared to a convenience sample of the normal population. However, it is not clear whether the study patients attended their dentist for an emergency visit or for a regular check-up. **Conclusions:** A majority of the respondents had visited dental health care again after the CBT, which indicates that the intentions of the introduced reform have been met. Nevertheless, the response rate was low and therefore it is hard to draw any conclusions. Further analysis is also needed to understand the reasons for those who had not visited a dentist again.
2594. Dentists’ attitudes towards participation in an oral health promotion program.

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The aim of the study was to test practitioner’s current knowledge and willingness to participate in an oral health promotion program. Methods: All practitioners (n=544) working in dental care in Timisoara, Romania, were invited to take part in this study in 2012-2013. No ethical approval was needed for the study. After receiving information sheets and an informed consent form by e-mail, each dentist completed an 11 item questionnaire regarding attitudes, willingness to participate in an oral health program and types of oral health promotion. Statistics were analysed using SPSSv.16, Chi-squared analysis and correlation analysis was calculated to test associations, alpha being set at 0.05. Results: Out of 544 dentists, 16 were excluded, because they couldn’t be contacted or refused to take part. 31% (n=144) were aged between 25-35 years, 53% (n=176) being female. No statistical significant difference was seen by gender (Chi-squared =0.77, p=0.38) or by type of dental practice (university hospital, private practice) (Chi-squared =0.11, p=0.74). Recent participation in oral health promotion programs was low (38.8%, n=180), but willingness was high, 85% (n=336) willing to spend between 1-3 hours/week for these activities. 69.8% of the dentists (n=324) think that information regarding oral health for patients should be provided through interesting flyers, 65.5% (n=346) through IT presentations, websites or social networks. Regarding the time span for the development of such a program, the answers ranged from 1 year to 2-3 years. Conclusion: This study identifies low participation in oral health programs but shows nevertheless willingness of the practitioners to spend a certain amount of time for such activities. Acknowledgements to the Regional dental health board.

2597. Do people get what they need in Finland?

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In Finland dental services are provided by the public and the private sectors. The Public Dental Service (PDS) is run by local municipalities and caters for most children, half of the younger adults and, since 2002, should also cater for older adults seeking treatment there. Recent clinical epidemiological population studies have revealed great need for periodontal and prosthetic treatment in the adult population. The aim of this study was to analyse treatment provided for those who visited the PDS in 2009. Methods: The lead dentists of the individual PDS units (194) were asked to collect data on numbers of patients, visits and treatment provided in three age groups (<18, 18-64 and 65+ years) and by provider category (dentist, dental hygienist or assistant) from their municipal data bases during the year 2009. Data were obtained from 166 PDS units (86%). Ethical approval to collect the register data was given by the R&D Centre of Welfare and Health (STAKES). Results: Altogether 8.9 million treatment measures were provided for the 1.7 million patients at the participating PDS units. The largest treatment categories were examinations (including radiographs), restorative treatment and anaesthesia, making up about 60% of all treatment. Preventive measures (8.4%) and periodontal treatment (6.3%) were small proportions of the total. Treatment of bite disorders and prosthetics (each 0.5%) were less common. Working age adults received half of all treatment measures (53.2%), children and adolescents a third (36.4%) and the elderly 10.4%. About a fifth (18.2 %) of all treatment measures were provided by dental hygienists or
dental assistants. These auxiliaries provided a third of all treatment measures (28.3 %) on children and adolescents, 11.3 % on working age adults and 14.3 % on the elderly.

**Conclusions:** According to our study, examinations and restorative treatment made up most of the care provided in the PDS and periodontics and prosthetics were minor treatment areas, indicating that treatment given to adults was not fully in line with their needs. It was clear that children and adolescents received treatment measures disproportionate to their share of the population and their basically good oral health. Furthermore, a greater proportion of basic treatment could have been provided by dental hygienists, which might have improved efficiency. **Acknowledgement:** The study was supported by Kela, the National Insurance Institution of Finland.

### 2605. Information management in dental offices from Arad county, Romania.

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The aim of the study was to analyse the information technology used in dental medicine services in Arad County, Romania. **Methods:** an 11 items questionnaire, referring to demographics, dental office equipment and existing information management software, was sent to all dentists in Arad county (n=454). The questionnaire was previously validated on a sample of 30 dentists. No ethical approval was needed, the study being approved by the Regional Council of Dentists. Data was analysed by SPSS 19.0. **Results:** out of the all dentists, 87.9% (n=400) were practices in primary offices, 6.4% (n=29) in university hospitals, 3.7% (n=17) in private clinics, 1.3% (n=6) in schools and 0.7% (n=2) in oral surgery clinics. There was a weak correlation between dentists’ and dental office demographics, Spearman coefficient =-0.233, in that dentists who work in rural areas work in primary care offices. Only 1.1% (n=5) said that they own a PC, 9.9% (n=45) a laptop, 16.7% (n=75) have an internet connection, 9.7% (n=44) use management software and most of them 62.6% (n=284) don’t use any information technology equipment. **Conclusion:** technical equipment of dental offices is scarce and therefore strategies should be oriented to using IT and for oral health promotion. **Acknowledgements to The Regional Health Board Arad, Romania.**

### 2607. Oral health care self-efficacy beliefs among Finnish geriatric home care nurses.

**TARU PIHLAJAMÄKI***, SYRJÄLÄ A-M., LAITALA M-L. & VIRTANEN J.I. Institute of Dentistry, University of Oulu, Oulu, Finland.

**Aim:** In Finland municipalities are expected to enhance older peoples’ independent managing of daily tasks and organise the services they need. Municipalities supply home visits to provide social and health services including oral health care to older people. The objective of our study was to investigate self-efficacy beliefs of oral health care for the older people among Finnish home care nurses. **Methods:** An anonymous self-administered survey among all home care nurses in Ylivieska region, Finland was conducted in 2013. All nurses working for the geriatric home care were asked to participate in the voluntary survey. The self- efficacy scale was derived from Dental Coping Beliefs Scale index, including 7 items about nurses’ self-efficacy beliefs towards oral health care of older people using a 5-point Likert scale. The response rate was 75% (106/141). Principal component analysis was employed for analysing construct of the scale and Cronbach’s alpha measuring the reliability of the scale and factors. Sum scores
for each factor were calculated, and the relation between background variables (age, work experience, and additional education) and sum scores of factors were analysed using t-test and ANOVA. Approval of an Ethical Committee was not needed. Results: The principal component analysis identified two factors labelled as ‘confidence of knowledge’ (4 items) and ‘attitude to education’ (2 items) with Cronbach’s alpha of 0.542 and 0.711, respectively. A clear majority of the young nurses (<30 years) had low ‘confidence of knowledge’ scores (72%) and high ‘attitude to education’ scores (89%). The older nurses had significantly higher ‘confidence of knowledge’ when compared to the younger nurses (p=0.01). Work experience was not related to the factor scores. Conclusions: The young nurses and those without additional education had low confidence of self-efficacy beliefs of oral health care for the older people. On-the-job oral care training ought to be directed towards young home care nurses.

2610. How Much Dentists in Iran and Switzerland are Ethically Concerned about Overtreatment?

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Aim: To investigate the differences between male and female dentists, and between Iranian and Swiss dentists judgment on how the dental profession in their country adhered to moral standards with regards to the issue of overtreatment. Method: A questionnaire containing a vignette describing an ethically relevant situation of overtreatment was sent to groups of dentists in Switzerland and Iran. The questionnaires were posted to all 2482 dentists in the German-speaking cantons of Switzerland. In Iran, a convenience sampling approach was used and the questionnaire was passed to 204 dentists through snowballing. The respondents were asked to rate each of four possible actions in the vignette according to the expected prevalence of the behaviour among dentists in their country and its degree of ethical soundness. A composite index of dentists' concern over the ethical impact of the vignette, namely "Relative Importance" (RI), was created by multiplying the perceived negative or positive effect by an estimate of how prevalent each practice was thought to be. Having tested normality of distribution and homogeneity of variances of RI, the independent samples t-test was used for the comparison of RI between the two groups. Results: 204 Iranian and 732 Swiss dentists (response rate= 30%) completed the survey. The mean values of RI in Switzerland and Iran were 0.713 and -0.006, respectively. The difference between these two subgroups was statistically significant (p>0.0001). There was a statistically significant difference (p=0.043) between males and female, while the mean values of RI according to the responses of female and male dentists were 0.439 and 0.630, respectively. Conclusion: The results showed that Iranian dentists, who responded to the questionnaire, seemed to be more concerned about the prevalence of unethical behaviour, i.e. overtreatment by dental professionals in their own country than their peers in Switzerland. Moreover, female dentists may be more concerned about the unethical behaviours of dentists than male dentists. The survey in Switzerland was funded by University Hospital Basel.
2614. Erosive wear resistance of composite restorations - a public health problem?

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Aims: Dental erosion can be considered as a public health problem because of resulting need for treatment and the more frequent replacement of composite restorations, if they are subjected to an erosive environment in the mouth. This in vitro study therefore aimed to evaluate the erosion rate of two different types of composite restorations in acidic conditions. Methods: The composites were: a universal nanofilled (Filtek Z550, 3M) and a posterior composite (X-tra fil, VOCO). Forty disks (10mm diameter, 2mm thickness) of each material were prepared and polished. These samples were kept in artificial saliva at 37°C. After 24 hours each group was further divided randomly into two subgroups (n=20). The specimens from the first subgroup were exposed to 1% citric acid for 60 minutes (to simulate frequent consumption of citric fruit and drinks) and the disks in the second subgroup were cycled in an acidic soft drink (Coca-Cola) five times/day, for 5 minutes, over 30 days. Initial surface roughness (ISR) and final surface roughness (FSR) were measured using profilometry (Mitutoyo Surf-test SJ 201, Japan). The wear rate was calculated (ΔSR=FSR-ISR). One-way analysis of variance was used to compare wear rates between the two materials. Post-hoc t tests identified differences between specific pairs at the p<0.05 level. Results: The erosive wear rate (mean ±SD, µm) after exposure to citric acid was 0.41±0.29 (X-tra fil, p=0.003) and 0.56±0.30 (Filtek, p=0.0002). Following immersion in Coca-Cola it was 0.03±0.01 (X-tra fil, p=0.0006) and 0.20±0.02 (Filtek, p=0.0001), respectively. There were significant differences between the tested materials in the two erosive solutions (p<0.05). Conclusions: Under acidic conditions, such as those found in heavy consumers of citric fruits and drinks and Coca Cola both composite materials showed degradation. The erosive wear resistance of posterior composite was greater than that of the universal nanofilled composite and less depth loss was observed when it was immersed in acidic soft drink. These findings suggest that patients’ diets should be considered before placing composite restorations. If this factor is not considered and the restorations fail or have a short life-span, there are cost implications for both patients and funders of oral health care. Acknowledgement: The study was supported by the Internal Research Grant no. 5/30.01.2013 of the University of Medicine and Pharmacy of Tirgu Mures.
**Poster Session 5:**
**Oral health related quality of life (I)**

Room: Mikrovågen

### 2556. Self-reported behaviour in patients with acute dental pain.

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**Aims:** To examine patient-related factors associated with the development of acute odontogenic infections. **Methods:** From 1st January 2012 to 1st December 2013, a total of 365 patients with odontogenic infections were treated in Vilnius University Hospital. 308 completed questionnaires about dental care habits and behavior after initiation of dental disease. The male to female ratio and age of the non-responders was similar to the responders. The 308 patients received clinical and radiological examination, the DMFT Index (decayed, missing, filled teeth) was calculated and the oral hygiene status was assessed in 153 randomly selected patients. **Results:** Male to female ratio was 1.47:1 and mean age was 38.9±17.7 years. The mean ± SD of DMFT was 16.35 ± 7.55. Despite their acute medical condition, these patients delayed attending a doctor by a mean of 6.0±6.7 days. The main reason for the delayed appointments in majority of cases (57.5%) was expecting symptoms to disappear. Half of the patients (49%) reported twice daily tooth-brushing, but only 7 (4.6%) patients had good oral hygiene. Of the total, 19 (6.2%) reported visiting their dentist twice a year, while 52.3% (161) of patients sought medical care only when in pain. **Conclusions:** The following trend was observed among this cohort of patients: poor oral hygiene, delaying professional appointments; neglecting dental pain, emergency-associated dental visits, all contributing to the development of odontogenic infections. Self-reported knowledge about oral hygiene was not associated with clinical findings of good oral hygiene.

**ID: 2567. Anxiety provoking characteristics of the dental setting and their effects on patients.**

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Dental anxiety is a common problem, associated with poor oral health and low dental service utilisation but relatively little psychological research has been carried explaining underlying mechanisms of this prevalent fear. **Aim:** The current study aimed to explore patients’ thoughts and feelings in-depth, focusing on characteristics of the dental setting with the potential to evoke anxiety. **Methods:** Theoretical models guiding this research are the Dynamic Well-being Model and the Elaborated Intrusion Theory. A semi-structured interview guide was developed and 18 adult students were purposively sampled based on
their scores on a preceding questionnaire. Dental anxiety was assessed with an 11-point scale and the Dental Fear Survey and interviewees with low and high dental anxiety were recruited to allow for comparisons. Interviews were carried out from April to May 2012 and material was transcribed verbatim and analysed with the software NVivo using Thematic Analysis for coding and developing overarching themes. Inter-rater reliability checks and systematic data collection and analysis helped ensure validity and reliability of findings. Ethical approval for this study was obtained by the Plymouth University ethics committee. **Results:** Findings provide insight into the high level of distress caused by dental appointments and typical fear provoking features of the dental setting. Interviewees felt vulnerable and helpless at the dentist, especially due to positioning and communicating difficulties while being treated. Uncertainty was another important aspect. Interviewees anxiously anticipated the ‘surprise moment’ when the dentist would tell them if treatment was required. A lack of knowledge about treatment procedures evoked distrust and fear of accidents. Negative past experiences were frequently reported in rich sensory details, accounting for intrusive memories, and similarly vivid images were mentioned in the form of negative anticipations of future visits. Some interviewees feared being judged by the dentist regarding their oral health state or even for displaying signs of anxiety. **Conclusions:** The study provides a basis for the development of dental anxiety interventions, stressing the importance of dentists’ communication skills to counteract identified anxiety components. Simple strategies like providing adequate information might improve patients’ experiences and counteract causes of anxiety. Additionally, the potential of imagery techniques is suggested to change negative memories and anticipations that reinforce dental anxiety. **Methods of funding:** PhD studentship.

2583. Inequality in oral health related to early and later life socio-economic position.

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**Aims:** The aim of the study was to assess influence of early- and later life socio-economic position (SEP) on tooth loss and oral health-related quality of life, OHRQoL, focusing on elderly people in Norway and Sweden. It was hypothesized that adverse early life SEP increases the risk of tooth loss and OHRQoL in older people independent of later life SEP. **Methods:** In 2007 and 2012, all inhabitants born in 1942 in Norway and Sweden were invited to participate in a questionnaire survey. In Norway, 4211 were invited and 3733 responded in 2007 and 2012 (follow-up rate 70%). Corresponding numbers in Sweden were 6078 and 5697 (follow-up rate 80%). Early life SEP was measured by gender, education and country of birth. Later life SEP was determined using marital status, social network and denture status. OHRQoL was measured using the Oral Impacts on Daily Performances (OIDP) inventory. **Results:** Logistic regression analysis revealed that early-life SEP factors contributed to tooth loss and OIDP independent of later life SEP across survey years and countries. Foreign country of birth had an adverse effect on tooth loss and OIDP. Education impacted negatively on tooth loss and positively on OIDP. Later life SEP factors were the strongest predictors of oral health. Generalized estimated equations (GEE) revealed significant interactions with tooth loss: survey year x denture status ($p<0.001$) and survey year x marital status ($p<0.05$). **Conclusions:** Early life SEP had an independent effect on tooth loss and OIDP among elderly in Norway and Sweden. Social inequality in oral health remained stable from age 65 to 70 years. Inequality related to
marital and denture status declined with ageing in Sweden. The authors acknowledge the numerous participants for their efforts in completing the questionnaires.


JANA VASAKOVA*, BROUKAL Z., TEUBEROVA Z. & NAVAROVA L. Institute of Clinical and Experimental Dental Medicine (ICEDM), Charles University and General Teaching Hospital, Prague, Czech Republic.

Aims: To assess children’s behaviour during the initial dental visit using Entonox (factory-prepared, ready-to-use equimolar mixture of nitrous oxide & oxygen) facilitated dental treatment and during the follow-up visit. Methods: A group of 86 children referred to the Paediatric department of the Institute of Clinical and Experimental Dental Medicine due to uncooperativeness during outpatient dental treatment were selected. There were no contra-indications to Entonox inhalation which was the requested procedure. Approval of the local ethics committee was obtained. Inclusion criteria: ASA (Physical Status Scale) score I and II, Frankl behaviour rating scale (FSB) score ≥2 during the initial visit, no medical contraindications for Entonox administration, parental informed consent. The study sample characteristics: 46 boys (53.5%), 40 girls (46.5%) aged 3-12 yrs, mean age: 6.84, SD 2.27. Every child underwent the whole procedure. FSB score was recorded during the initial visit, dental treatment (restorative care or local anaesthesia administration followed by extractions) and during the follow-up visit (3 months later). The four grade scoring was used for assessing children’s self-management of Entonox inhalation namely as 1. easy, 2. neutral, 3. difficult and 4. unacceptably difficult. The mouthpiece and the face mask appropriate to the age were used for the administration. The following variables were recorded: the patient’s age and sex, new patients vs. established ones, fillings vs. extractions, Entonox-naive patients vs. Entonox-experienced ones, Entonox-naive patients vs. previous conscious sedation using other medications. Chi-square test at the 5% level of significance was used to test the relationships between the variables and FSB score. Results: The patient’s behaviour rating: initial visit: FSB2 – 14 (16.3%), FSB3 – 50 (58.1%), FSB4 – 22 (25.6%); dental treatment: FBS1 – 1 (1.2%), FBS2 – 9 (10.4%), FBS3 – 32 (37.2%), FBS4 – 44 (51.2%); follow-up visit: FBS1 – 1 (1.2%), FBS2 – 2 (2.3%), FBS3 – 37 (43.0%), FBS4 – 44 (53.4%). Self-management of Entonox inhalation scoring: easy – 58 (64.4%), neutral – 22 (25.6%), difficult – 6 (7.0%), unacceptable difficult – 0 (0.0%). 6-12 aged managed self-administration of Entonox easier (p=0.03) than 3-6 aged. Behavioural change between the initial visit and follow-up visit: better cooperativeness 35 (40.7%), no change 47 (54.7%), worse cooperativeness 3 (3.5%). Differences in behaviour score: 3-6 yr olds vs. 6-12 yr olds: p=0.01, boys vs. girls – p=0.10, new patients vs. established ones – p=0.37, Entonox - experienced patients vs. Entonox-naive ones: p=0.02, previous conscious sedation using other medications vs. Entonox-naive patients: p=0.33, restorative treatment vs. extractions: p=0.78. Conclusions: Conscious sedation using Entonox in 6-12 aged children and repeated administration enhances children’s cooperativeness during dental treatment and helps reduce dental fear during the follow-up visits. These findings reflect not only its clinical, but also significant public health benefits for the dental treatment of uncooperative children. Method of funding: Supported by program PRVOUK-P 28/LF1/6.
2596. Attitudes and behaviours of general practitioners regarding their approach to dental anxiety.

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The aim of the study was to determine dental practitioners attitudes, and clinical approaches about dental anxiety for child and adult patients. **Methods:** An e-mail questionnaire and informed consent was sent to all 528 dentists registered in the regional dental health board of Timis county Romania. No ethical approval was needed for the study. Information collected for each practitioner included gender, year of qualification, type of practice in which anxious dental patients were treated, willingness to use dental anxiety assessment indices. Initially the questionnaire was piloted using 30 general dental practitioners. Descriptive statistical analysis used SPSS version 17. **Results:** A total of 64% (337/528) practitioners responded. Sixteen did not fully complete their questionnaires so data were analyzed for 321 (60%) respondents. 48% of respondents were female (n=154). 32% of respondents (100/321) treating anxious adults estimated that the proportion of anxious adults treated within their working week was 25% or more. 40% (124/321) estimated the proportion of anxious children treated within the working week was 25% or more. The use of dental anxiety assessment questionnaires was low (127/321). For adults the Modified Dental Anxiety Scale was the most frequently used questionnaire and for children the Visual Analogue Scale. Only 54 practitioners (20%) used adult dental anxiety assessment questionnaires and only 46 (14%) used child dental anxiety assessment questionnaires. Male practitioners were more likely to report questionnaire use in comparison with females (P<0.05), as indicated by logistic regression analysis, when treating dentally anxious adults (29% v 17%). **Conclusion:** The use of pre-treatment dental anxiety assessment questionnaires was low in this group of dentists. Improving attitudes and behaviour of dental practitioners regarding the assessment of dental anxiety might increase the acceptance of dental treatment. **Acknowledgement to the Regional dental health board.**

2611. Using Corah’s dental anxiety assessment scales in adults from Constanta region.

ADRIAN M GHEORGHE* & AMARIEI C. Doctoral School of Ovidius university of Constanta, Romania

**Aims:** The aims of the study were to assess the level of dental anxiety of adult dental patients in Constanta and any association with demographic variables. **Methods:** All patients (n=650) aged between 18 to 78 years, mainly rural, that were treated in 7 clinics in the Constanta region for a period of three months, were included in the study during the fourth quarter of 2013. Informed consent was obtained from all patients and ethical approval was obtained from the Ethics and Research Committee, University of Constanta. Participation was voluntary and the participants were assured of confidentiality and anonymity. The dental patients completed the questionnaire in the waiting area while waiting to see the dentist. The methods of measurement of dental anxiety were the Corah Dental Anxiety Scale (DAS) and the Modified Corah Dental Anxiety Scale (MDAS). Summary statistics using SPSS v.17 included frequencies and where appropriate means and standard deviations. All independent variables showing significant associations with the dependant variable - dental anxiety - at a significance level of <0.05 in the bivariate analysis were included in a logistic regression analysis. Relationships between variables were assessed using the Spearman correlation test. A one-way ANOVA test was used to
compare multiple groups; the unpaired t-test was used to compare dual groups. These tests were used to determine the internal consistency, reliability, intraclass correlation and the confidence intervals (95%) of the MDAS. **Results:** A total of 422 (65%) patients completed the questionnaire; the mean age was 38.8 ±14.4 years, 53% being female (n=223). 35% were not included because of incomplete questionnaires or refusal. There was a negative correlation between age and dental anxiety, with the level of anxiety varying significantly with age (P<0.05) and less anxiety was observed among older patients. For females, the mean DAS score was 9.95 ± 3.81 and mean MDAS score was 12.22 ± 4.91. These results were significantly higher than for male respondents, who scored 8.65 ± 3.30 using the DAS and 10.74 ± 4.12 with MDAS (P<0.01). MDAS had a high overall internal consistency and high reliability, as indicated by the Cronbach’s alpha and Spearman correlation results. Spearman correlation for scale and polish was 0.91 and for injection 0.93. The most anxiety provoking item was injection (mean score of 2.89 ± 1.29) and the item provoking least anxiety was a scale and polish (mean score=1.70 ± 0.96). No statistically significant correlation was found between level of education and dental anxiety (P>0.05). **Conclusion:** The prevalence of dental anxiety was found to be higher for Corah’s DAS and lesser for the MDAS. Both scales were found to be a reliable method of assessing dental anxiety.

**2613. The impact of Malocclusion on the quality of life of Californian Children: a pilot study.**

Kjeld Aamondt* & Maria Fernanda Orellana. University of California San Francisco, School of Dentistry

**Aims:** Malocclusion can have tremendous social impact. Children of normal dental appearance are judged to be better looking, more desirable as friends, and more intelligent. The appearance of children’s teeth is a common target of teasing and it can have a negative impact on oral health-related quality of life among children and their families. The aim of this study is to assess the impact of malocclusion on Oral Health Related Quality of Life (OHRQoL). **Methods:** For this cross-sectional pilot study, two calibrated trained orthodontists examined a convenience sample of 60 adolescents (23 male and 37 female) attending one public school in San Francisco, California. The school was selected based on its ethnic diversity and on being broadly representative of the San Francisco population. Malocclusion was determined by the Index of Complexity, Outcome and Need (ICON) and OHRQoL assessed by the Child Oral Health Impact Profile (COHIP) questionnaire. A pairwise associational analysis between the outcome and the primary predictor was conducted along with an analysis of the outcome and potential confounders. A linear regression of the outcome on each primary predictor adjusting for confounders identified in unadjusted analysis was also performed. Committee in Human research approval was obtained. Parents gave written consent before their children took part of this study. **Results:** The age of the children ranged from 14 to 19. The majority of the children were self-identified as Asian (n=45, 75%) and female (n=37, 62%). Only 7 students were undergoing orthodontic treatment at the time of the study. There was a mild association of the primary outcome OHRQoL (COHIP score) with malocclusion (ICON score). The presence of braces was associated with a higher COHIP score. **Conclusion:** Orthodontic treatment affects positively the quality of life of this group. Although not statistically significant, the results from this pilot study show that malocclusion may impact in a negative way on the quality of life of Californian adolescents. **Methods of funding:** UC-MEXUS grant to MFO.
2649. Oral Cancer Knowledge and practice among Patients, Iran.

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Aims: One of the main causes for delay in diagnosis seems to be the lack of awareness about oral cancer, both among the general population and health care professionals. The aim of this study was to assess the knowledge and practice of patients regarding oral cancer in Isfahan-Iran.

Methods: This study was approved by the ethics committee of Isfahan Medical University and was carried out in Isfahan-Iran in 2013. A valid and reliable 19 item self-administrated questionnaire was designed and piloted. Questions were focused on oral cancer risk factors, signs and symptoms, places of mouth which are more susceptible and treatment. Socio-demographic information such as age, gender, educational level and history of tobacco use was also collected. The questionnaire was distributed among patients attending dental clinics (private and public) which were chosen in 14 municipal regions in Isfahan in proportion to the population of each region. Chi-square, ANOVA, and Pearson correlation tests were used to compare variables.

Results: Completed questionnaires were obtained from 534 respondents (response rate=91%). Sixty four percent (n=408) of patients were female and 9.2 (n=56) % of them were smokers. Seventy nine percent (n=502) of patients did not know about early manifestations of oral cancer. Only 18% (n=118) knew the most likely sites for oral cancer. Sixty one percent (n=380) were unaware about the age groups more susceptible to oral cancer. Regarding risk factors, 42.3% (n=265) and 64% (n=400) knew alcohol consumption and tobacco were the main risk factors but their knowledge about other risk factors was only fair. Forty eight percent (n=293) of patients were aware of the risk of mortality related to oro- pharyngeal cancers and 81% (n=481) of them reported that they would consult with a dentist if there was an ulcer for more than two weeks in their mouth. There was no significant difference between knowledge of female and male and between patients with different educational levels. Also there was no significant correlation between age of patients and their sum of knowledge. Conclusion: According to the results of this study, information regarding oral cancer knowledge is quite low. Therefore, it seems necessary to increase the level of public awareness with the use of various educational programs in order to reduce oral cancer related morbidity and mortality. We would like to thank Isfahan University of Medical Science as this paper is based as part of the results of a project supported—financially and administratively—by the Vice Chancellery of research in this university.

2652. Orofacial aesthetics and dental anxiety.


Aim: The aim of this study was to investigate self-rated orofacial aesthetics in patients with dental anxiety and its relationship to psychological and oral health. Methods: A consecutive sample of 152 adult patients referred to a specialized dental anxiety clinic filled out the validated scales Orofacial Aesthetic Scale (OES), the Dental Fear Survey (DFS), the Hospital Anxiety and Depression Scale (HADS), and also a visual analog scale measuring self-rated oral health. Clinical measures of decayed, missing and filled teeth
as well as root remnants were also obtained. The study was approved by the Regional Ethical Review Board (nr 395-10) and all participants gave consent to participate. The statistics were descriptive and inference testing was performed using the t-test, ANOVA, the Kruskal-Wallis test, the Mann-Whitney U-test, the chi-square test, linear regression and the Spearman and Pearson correlation coefficients. **Results:** Compared with the general population, patients with dental anxiety had lower ratings of satisfaction on all aspects of their orofacial esthetics, which included the teeth, gingiva, mouth and face as well as a global orofacial assessment (OES summery score; dental anxiety group M=29.5 SD=15.2, general population M=50.3 SD=15.6, p<.001). Furthermore, the perception of the orofacial appearance was related both to dental status (p<0.001) and self-rated oral health (p<0.001), as well as to general anxiety and depression (p<0.001). Regression analysis with the HADS-Depression subscale, summary of decayed and missing teeth, self-rated oral health and age as independent variables resulted in the model: F(4,146)=56.05, p<0.001, explaining 59.5% of the variance. All entered variables were significant predictors. The level of dissatisfaction with the orofacial appearance was similar for both genders, but women reported more regular dental care and better dental status. **Conclusions:** The results of this study clearly show that in the group studied there was less satisfaction with dental and facial appearance in patients with dental anxiety, and that the self-rating of orofacial esthetics is related to both oral and psychological health. The OES can be used to assess orofacial esthetics in patients with DA. *This research was supported by a grant from The Local Research and Development Board for Gothenburg and Södra Bohuslän, Region Västra Götaland, Sweden.*
**Poster Session 6: Behavioural aspects of Oral Health (II)**

**Room: Wallenberg**

2654. The internet heavy users.

**Annukka Vuorinen**, Kristina Kunttu & Marjo Kokko, FSHS; Tampere Finland, Tommi Pesonen, Oy 4Pharma Ltd, Turku Finland.

The use of internet is rising and almost everyone uses it daily. **Aim:** The aim of the study was to find out the differences in the oral health behaviours between students who spend their leisure time on the internet for long time periods daily and students who spent less time on the internet. **Methods:** The questionnaire survey was carried out in 2012 to investigate students’ physical, mental and social health as well as their health-related behaviour. The study investigated daily behaviour affecting oral health like tooth-brushing, use of toothpaste and dental floss between heavy internet users and the others. It also assessed the consumption of soft and energy drinks, alcohol, sweets and chocolate. The target population consisted of undergraduate students, aged under 35 years and studying in Finnish universities. The sample consisted of 9,992 students, of whom 47% were men. The study protocol was approved by the Medical Ethics Committee of the Hospital District of Southwest Finland, and the participating students gave their informed consent by voluntarily responding to the questionnaire. **Results:** The overall response rate was 44 % (UAS 40 %; Univ 49 %). The size of the survey group was 4,389. The students used the internet daily for 10.5 hours on an average. A total of 1,844 (42%) of the students had been surfing on the internet the longer than they originally meant to. 752 (17%) of the students estimated that the time spent on the internet disturbed their studies or social life. About 1,300 (30 %) of the students were heavy users of the internet. They spent totally more than 40 hours weekly on the internet or more than 20 hours other than working or studying. In this study the heavy internet users had a more unhealthy diet and they skipped lunch more often than the others. They also consumed more soft drinks and a little more alcohol. They drank energy drinks several times during the surfing. Female users ate sweets and chocolate daily. More than one half of males, 793, and 910 (33.5 %) of females brushed their teeth once a day or even rarely. **Conclusion:** In the group studied, the use of internet several hours a day is a risk for oral health.
2656. Dental fear and anxiety among children of the Romanian minority in Hungary.

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Aims: The purpose of our survey was to investigate anxiety and dental fear among children of the Romanian minority living in Hungary in order to compare with the existing data from Hungary and Romania. Methods: In this cross-sectional study, 311 schoolchildren – a representative sample of the Romanian minority living in Hungary were investigated (163 females, 148 males, aged between 11-18 years) in five out of the seven Romanian or bilingual schools from Hungary. The subjects’ dental fear was evaluated with Corah’s Dental Anxiety Scale (DAS) and Kleinknecht’s Dental Fear Survey (DFS), the anxiety level with Spielberger’s State and Trait Anxiety Inventory (STAI-S, STAI-T) and their opinion of dentists with Gez’s Dental Beliefs Scale (DBS). Questionnaires were completed anonymously. The study was approved by the Ethical Committee of Semmelweis University, Budapest. For statistical analysis t-test and Pearson’s correlation test were used after data had been entered into by SPSS version 17.0. Results: The mean (±SD) scores of the surveyed subjects (mean age 13.6±2.1 years) were high: DAS 11.8(±4.4), DFS 36.7(±13.9), DBS 37.3(±11.9), STAI-S 37.0(±11.0) and STAI-T 38.8(±9.5), respectively. Except for DBS, higher scores were found in females for every questionnaire, though the differences were statistically significant only in DAS and DFS (p<0.05). DFS and STAI-S showed a peak around the age of 12 years, from his age the scores gradually decreased. There was a strong positive Pearson-correlation between DAS and DFS scores (r=0.73; p<0.01) and a somewhat lower correlation between these scales and the general anxiety scores. Conclusions: This was the first survey performed on dental fear and anxiety of Romanian children living as a minority in Hungary. The scores were higher than the international and also some of the Hungarian data, but lower in each case, than those found in the Hungarian minority living in Romania. The findings might suggest differences in dental care systems. Acknowledgements: Supported by the ‘Soós Kálmán grant’ from the Ministry of Human Resources of Hungary and the Balassi Institution awarded for the academic year 2012/2013.

2663. Comparing perceptions of own behaviour and social norm.

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Social norm is a group-held belief about how members should behave in a given context, and thus, it affects individuals behaviour. Aim: To compare perceptions of behaviour and social norm among children and their parents. Methods: The study population consisted of all sixth and seventh graders starting the 2002–2003 school year in towns of Pori (n=1651) and Rauma(n=850), Finland, and one of the parents of each child. In Pori, the children were exposed to oral health promotion for previous 1.5 years. The children in Rauma acted as a control group. In all, 1537 children from Pori (93%) and 757 (89%) from Rauma returned adequately filled questionnaires, and the corresponding figures for parents were 1346 (82%) and 620 (73%), respectively. Returning a completed questionnaire was considered as consent. Of the responding children, 51% were boys. Of the responding parents, 10% were fathers. The children and the parents were asked how healthy they thought their own and their peers eating habits were. VAS scale of 0 - 100 (0 indicating very poor and 100 very good) was used and the difference between the own behaviour and the social norm was calculated. Mean values were compared between the
towns using t-tests. The Ethics Committee of the Northern Ostrobothnia Hospital District and the City of Pori gave their approval for the study. **Results:** Among the children, there were no differences between the towns in perception of own behavior (38.8% in Pori vs. 39.0% in Rauma) or social norm (53.4% vs. 51.4%, respectively). Overall, children thought that their peers had healthier behaviours than they had themselves (difference -14.7% in Pori and -12.5% in Rauma, p=0.114). Among parents, there were no differences between the towns in perception of own behavior (32.2% in Pori vs. 32.8% in Rauma), but there was a difference in social norm (40.9% vs. 27.2%, respectively, p<0.001). Difference between social norm and own behaviour was -8.6% in Pori and 5.6% in Rauma (p<0.001). **Conclusions:** Children in both towns thought they did not reach social norm. Parents in Pori thought they did not reach social norm, but parents in Rauma thought that they had healthier behaviours than their peers had. The difference between towns suggests that the oral health promotion among parents in Pori may have affected their social norm. **Supported by Finnish State Research Funding (EVO).**

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2671. Dental Fear and Alcohol Use among University Students in Finland.

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Problems related to alcohol use and anxiety often occur in the same individuals and high rates of anxiety have been reported among people with alcohol use disorders. **Aim:** We aimed to evaluate the association between alcohol use and dental fear among first year university students in Finland. **Methods:** The data, representing Finnish first year university students (n=8514), were collected by the Finnish Student Health Service in 2011 with an electronic inquiry that was sent to all first year students, response rate was 50%. Dental fear was measured with the question: “How afraid are you of visiting a dentist?” with reply alternatives “Not at all”, “Somewhat” and “Very”. The Alcohol Use Disorders Identification Test (AUDIT) was used for determination of alcohol use. AUDIT is a 10-item questionnaire that asks about alcohol consumption, drinking behaviour and alcohol-related problems. An AUDIT sum score of 8 or more indicated hazardous, harmful or dependent alcohol use. Multiple logistic regression analyses were used to evaluate the association between dental fear and alcohol use disorders, controlling for the effect of age and gender. The level of statistical significance was set at p<0.05. Ethics Committee of the Northern Ostrobothnia Hospital District approved the study. **Results:** When age and gender were controlled for, those with an AUDIT sum score of 8 or more were more likely to have high dental fear than were those with AUDIT sum score 7 or less (OR=1.3, 95%CI=1.0-1.7, p=0.011). In the corresponding gender-specific models, a similar association was found among women (OR=1.3, 95%CI=1.1-1.7, p=0.026), but not among men (OR=1.4, 95%CI=0.8-2.4, p=0.217). **Conclusion:** The association with dental fear and alcohol use was not strong. However, the results support the suggestion that some people may have common vulnerability factors involved in development of dental fear and alcohol use problems. **This study was partly supported by the Finnish Dental Society Apollonia and by the Finnish Student Health Service.**
2675. Teledentistry: A solution for equity in accessing a dental consultation?

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Nowadays, teledentistry is starting to spread all around the world but structured and financed studies of this technique have seldom been undertaken. **Aim:** The purpose of a study which is about to start will be to test teledentistry consultations among a sample of patients needing special care. **Methods:** In France, telemedicine has officially been regulated since November 2011. Teleconsultation, aims at providing remote consultations to patients attending medical or dental services. A medical assistant may be present during the teleconsultation and even intervene with the practitioner. The legal aspects are essential in the implementation of such a new activity. An informed consent is needed to take videos and transmit data. The special tool to be used in this tele consultation study is an intraoral camera (Soprocare®). It is a fluorescent light device, which can easily display dental caries and gum inflammation without needing any other disclosing product(s). **Results:** This “e-DENT” project has been submitted to the “Regional Public Health Agency of Languedoc- Roussillon” (South of France) which decided that a feasibility survey would be conducted among 800 patients (100 prisoners, 100 frail people and 600 elderly people). Nurses will link to each patient twice, in an initial consultation and after a 4 to 6-month period between the two consultations, in order to assess each patient’s dental status. The project will cost 110,000 Euros and will be funded by the Regional Public Health Agency for one year. **Conclusions:** Implementing this new type of activity will be a big challenge, especially because it concerns all kinds of healthcare partner (dentists, nurses, patients, health institution managers and public health policies). Other French regions may join soon and help to develop this system, since it has already started with other types of patients (children, students and patients from psychiatric department of the hospital). **Funding:** Agence de Sante Publique du Languedoc Roussillon.

2765. Dental anxiety in 15-year olds, a repeated cross-sectional study.

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The aim of the present study is to report the prevalence of dental anxiety and its relationship to oral health in a Swedish adolescent population over a 30-year period (1973-2003) and to investigate the hypothesis that dental anxiety is associated with poorer oral health. **Methods:** For this purpose data from a series of epidemiological studies over a 30-year period were used. In 1973, 1983, 1993, and 2003, random samples of the age group 15 year old individuals were selected within the city of Jönköping, Sweden. The rate of participation varied for the surveys between 74% and 82%. Reported dental anxiety was assessed using three single questions. Number of permanent teeth, clinical and radiographic caries, restorations, decayed and filled surfaces and gingivitis were recorded. The 2003 study was approved by the Ethical Committee at the University of Linköping, Sweden. The statistical analysis included the t- test, Chi-square test, and Mann-Whitney U test. **Results:** A total of 405 (n=100; n=107; n=102; n=96 respectively) participants
attended at the four different surveys. A total of 92 (24%) participants answered yes to one or more of the three single questions concerning dental anxiety, with more girls than boys reporting dental anxiety (p<0.0001). The number of dentally anxious 15-year olds during the period were 37 (40%) in 1973, 28 (30%) in 1983, 15 (16%) in 1993 and 12 (13%) in 2003 with more girls than boys reporting dental anxiety in 1983 (p<0.005) and in 1993 (p<0.006). A trend analysis over time showed a statistically significant decreasing gradient in dental anxiety (p<0.0001). The mean number of decayed and filled surfaces (DF-S) decreased for every study occasion from a mean number of 37.8 in 1973 to 6.5 in 2003. The mean number of DF-S was significantly higher (p<0.0001) for those with dental anxiety, for the four surveys in total. No differences could be seen concerning gingivitis. 

**Conclusion:** The results showed a significant decrease of dental anxiety among 15-year olds over the 30-year period and showed an association with dental anxiety having an impact on oral health.

**2926. Development and Evaluation of an Oral Health Training Programme for Care Home Staff.**


**Aim:** This study aims to report the development and evaluation of a pilot preventative oral health programme in 3 care homes in NW London. **Methods:** The homes were in one local authority (Kensington and Chelsea) and were purposively selected as 1) a Local authority care home, 2) an NHS and 3) a private care home. Care home staff identified their need for training that provides knowledge but also demonstrates the translation of knowledge to practical skills. Based on this feedback; and working with the care homes, local authority public health and the community dental services, an oral care training package was designed with two components - provision of resources to improve oral care knowledge and support within the home to develop practical oral care skills. The study ran between September 2013 - January 2013, and the training was from March 2013 - May 2014. The homes provided a list of care staff at the beginning. A DVD on oral care was supported by oral care manuals and 'mouth care cards', which acted as guides to provide and reinforce knowledge. To ensure translation of knowledge, a member of the oral health promotion team visited care staff each month to support delivery of mouth care. Retention of knowledge, programme delivery and costs were evaluated. Questionnaires assessed knowledge retention. Evaluation questionnaires assessed the mode of delivery and tools. Costs were based on resource and staff time costs. This was a service redevelopment and ethical approval was not required. **Results:** We invited 137 staff for training. Pre training questionnaires were received from 60% (82/137). Post training, one home dropped out owing to a temporary closure. We trained 87 staff (63.5%), and received responses from 45 (52% response rate). The key cards were found to be useful reference tools, and the support offered by the oral health team has enabled translation of knowledge to skills. The level of oral care knowledge increased as a result of the programme, and knowledge retention was good at 3 months. **Conclusions:** Provisional feedback shows the programme has been well received. Working with the care homes to develop the training has ensured the training is fit for purpose and is implemented. It was vital to embed the programme within the care home operations and culture so that the homes took ownership, and consequently incorporated oral care with other personal care practices, ensuring sustainability. Face to face training has proven difficult owing to a low proportion of contacts with care staff, and operational difficulties. This package is flexible and the home implements it with our support rather than us directing the programme. The temporary closure shows the difficulty with working with care homes. Long term evaluation
is planned to show if the homes now integrate this training with other regular mandatory training.

2954. Dental status, Treatment and Restorative Index of the Belgian population.

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The aim of this study is to obtain a representative picture of the oral health status and related risk factors of the Belgian population. Methods: The results reported in this study are part of the Belgian “Oral Health Data Registration and Evaluation System (OHDRES) 2008-2010”. A multistage stratified sampling method was used to obtain a representative sample of the Belgian population aged 5 years or older. Data collection consisted of a Health Interview Survey (HIS - self- administered questionnaire, pre-tested and validated) and Health Examination Survey (HES - standardized oral examination using international criteria and performed by trained dentist- interviewers in the participant’s home), supplemented with (oral) health care consumption data retrieved from health insurance funds. Analyses were performed using the SAS statistical package (SAS v. 9.4). Regression analyses were performed controlling for socio- demographic and oral health behaviour variables. DMFt was used as outcome together with the derivatives Restorative Index (RI = Ft/DFt) and Treatment Index (TI = MFt/DMFt). The study was approved by the Ethics Committee of the University Hospital Ghent. Written informed consent was obtained from each participant. Results: 2755 participants were included in the analyses, 54.3% (N=1495) were female. The mean age was 43 years (range 5-98 years). The mean DMFt was 10.4 (SD 8.4). Individuals with a low plaque index (PI Silness & Loe ≤ 0.5) showed lower DMFt values than individuals with a PI >0.5 (8.3 versus 10.6; p<0.05). Significant differences in DMFt were found between different levels of education (p<0.01). Both the Restorative Index and the Treatment Index were higher in individuals with better oral hygiene. The low PI-group compared to the high PI-group had an OR for having a 100% RI of 2.1 (95% CI: 1.29-3.12) and an OR for having a 100% TI of 2.0 (95% CI: 1.27-3.13). For the Restorative and Treatment Index no other significant associations were found. The same trend was observed for the deciduous dentition. An apparent association was found between PI and a caries free deciduous dentition with an OR of 3 (95% CI: 1.11-8.15). Furthermore, an association was found between PI and a 100% RI with an OR of 5.9 (95% CI: 1.32-26.31) and between PI and a 100% TI with an OR of 5.6 (95% CI: 1.29-2.68). Conclusion: After controlling for socio-demographic and oral health behaviour variables, good oral hygiene, expressed by a low PI, was found to be the most effective protecting factor resulting in an increased chance of having less caries and fully restored dentition. Acknowledgement: this study was supported by the National Institute for Health and Disability Insurance. OHDRES is a joint initiative of the University of Leuven, Ghent and Brussels (KUleuven, UCL, UGent, VUB and ULB). This study was supported by the National Institute for Health and Disability Insurance. OHDRES is a joint initiative of the University of Leuven, Ghent and Brussels (KUleuven, UCL, UGent, VUB and ULB).
2609. The relation of smoking to the number of teeth in Finnish adults.

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Smoking is an established risk factor for periodontitis, which eventually leads to tooth loss. In this cross-sectional study we evaluated the association of smoking history with the remaining number of teeth among Finnish adults. **Methods:** The data consist of the Health 2000 Health Examination Survey carried out in Finland in 2000 and 2001. The sampling design was a two-stage stratified cluster sampling providing a representative sample of the Finnish adult population. The original sample included 8,028 subjects aged 30 or older living in continental Finland. The participation rate for primary health examination (including oral health examination) was 80%. Informed consent was obtained from the participants. The study was approved by the Ethical Committee for Epidemiology and Public Health of the Hospital District of Helsinki and Uusimaa. This study was carried out with the subjects having the available information for both smoking history (through in-home interviews) and the number of teeth (from the oral health examinations) (n=4,813) stratified to three age groups: 30–44, 45–54 and 55 or older. We calculated pack-years (based on 20 cigarettes per packet) to present smoking history. The number of teeth present was registered by five calibrated dentists in a way that all clearly visible teeth were counted excluding roots. We used 26 teeth as a cut-off point when forming a dichotomous outcome variable (< 26, 26 or more). **Results:** Among those who had smoked 21 or more pack-years, percentages for those who had less than 26 teeth remaining were 34%, 73% and 93%, respectively, in the three age groups. In the 45–54 year-olds, when stratified by pack-years (< 10, 11–20, 21 or more), the proportions of the outcome (< 26 teeth) were 57%, 63% and 73%, respectively. The similar trend for the frequencies was observed in all age groups (p<0.01). **Conclusion:** The number of remaining teeth appears to be negatively associated with cumulative smoking history.
Assessment of sIgA in smokers saliva - preliminary investigation.

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Aim: Secretory immunoglobulin A (sIgA) is present in the saliva, which takes part in the maintenance of oral homeostasis. The aim of the study was the assessment of sIgA concentration in the stimulated saliva in smokers.

Methods: Survey and biochemical studies of the stimulated saliva were carried out in the group of 84 people, 44 of whom smoked cigarettes whereas 40 had never tried smoking. The mean age of the subjects was 31.9 (32.3 for smokers and 31.4 for those non-smokers). Saliva was collected in Salivette test tubes (Sarstedt, Germany). After centrifuging, the obtained supernatant was stored at a temperature of -75°C prior to testing. sIgA concentration was determined using sIgA ELISA Kit (Immunodiagnostik AG, Germany). A Shapiro-Wilk test showed the data did not have a normal distribution. The data were compared using a Mann-Whitney test. Pearson chi-square test was employed for qualitative features. While comparing age and sIgA, Rxy-Spearman coefficient was used as both features were of quantitative type. Test values which were considered statistically important were those where p<0.05. The research project obtained the positive opinion of the Bioethics Board of the Medical University of Lublin.

Results: In the investigated group the mean value of sIgA concentration in the saliva was 55.7 mg/dl. A correlation between the age of the subjects and the level of sIgA was shown. In elderly people sIgA concentrations reached higher values in comparison with younger people (Rxy=0.26, p<0.005). sIgA concentration in smokers saliva had a mean value of 59.2 mg/dl and for non-smokers 51.8 mg/dl. No correlation was shown between cigarette smoking and sIgA concentration (Z=1.1, p>0.05).

Conclusions: The results did not show a correlation between sIgA concentration in the saliva and cigarette smoking.

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The number of Lactobacillus in the saliva of smokers, a preliminary investigation.

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Aim: Diet is an essential factor influencing the state of dental hard tissues. The titre of Lactobacillus (LB) in the saliva positively correlates with the content of carbohydrates in the diet and caries. The number of LB equal or higher than 105 CFU (number of colony-forming unit) in ml of saliva reveals high risk of caries. The aim of the study was assessment of the number of Lactobacillus in the saliva of smokers.

Methods: The investigated group included 104 people selected from the patients presenting to the Department of Conservative Dentistry for Endodontic treatment, at the Medical University of Lublin in the year 2013. The main criteria for inclusion a patient to the study were: age 19-50, smoking or no smoking. Mean age of the investigated was 31.9 (32.3 for smokers and 31.4 for non-smokers). The study was performed using a questionnaire specially prepared for the study. 59 people (56.7%) reported cigarette smoking, whereas 45 people (43.3%) never smoked. Number of LB bacteria colonies was assessed using CRT bacteria test (Ivoclar, Vivadent, Liechtenstein). Results were submitted to statistic analysis with the use of Mann-Whitney test where test function was marked with the letter Z. Pearson chi square test was employed for qualitative features. Test values which were
considered statistically important were those of p<0.05. The research project obtained positive opinion of the Bioethics Board of the Medical University of Lublin. **Results:** In the group of smokers 41 persons (77.4%) reported sneaking sweets between meals, among non-smokers 30 (69.8%) respectively. No correlation was stated between the status of smoking and sneaking (Z= 0.71, p>0.05). 22 (37.9%) smokers reported daily consumption of vegetables, for non-smokers this value was 17 (37.8%). No correlation was found between the status of smoking and daily consumption of vegetables (chi square=0.0002, p>0.05). A significant correlation was shown between smoking and LB CFU/ml. The number of LB colonies ≥10⁵ CFU/ml was shown in 33 (68.7%) of smokers, and in 16 (47.1%) of non-smokers. Non-smokers more frequently had a level of LB below 10⁵ CFU/ml (chi square=3.89, p<0.05). **Conclusions:** Investigations on dietary habits and the presence of cariogenic bacteria will be continued in a larger number of smokers. *Funded by government funds for science in 2010-2014 as a research project. Grant NN 403 111 739.*

2640. Root caries and lifestyle factors among adult Danes.

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**Aim:** To investigate the relationship between untreated and restored root caries lesions and selected lifestyle factors such as nutrition, alcohol consumption, tobacco use and oral hygiene routines among participants of the oral part of the Danish Health Examination Survey (DANHES). **Methods:** DANHES is a cross-sectional study on general health and lifestyle carried out in 12 different Danish municipalities in 2007-08 (n=18,065). The present study population comprised 4,369 dentate persons who volunteered to participate in an oral health part of the study, and of whom 3,212 had completed a validated structured questionnaire comprising lifestyle habits such as smoking, alcohol intake, oral hygiene and dietary habits. Data on food frequency, nutrient and energy intake values were calculated. Active root caries lesions as well as restorations on root surfaces were recorded visually/tactilely by 3 calibrated dental hygienists. The study was approved by the Regional Ethical Board and the Danish Data Authority. **Results:** Only 3.6% had untreated root caries lesions while 25.8% had restored root surfaces. Bivariate analyses showed only modest and statistical insignificant relations between root caries and restorations on root surfaces and the intake of sucrose, total sugar or carbohydrates, and furthermore, no associations were seen with educational level and marital status. Multivariate analyses showed that at age 45 years or more, smoking and wearing dentures were associated with the presence of untreated root caries (p<0.01). Being ≥45 years and wearing dentures were associated with the occurrence of restorations on root surfaces (p<0.001). Furthermore, the intake of 15 alcoholic drinks or more per week showed an odds ratio of 1.7 for having restorations compared to those with no alcohol intake (p<0.001). A total daily energy intake (kilo joule) above the mean was associated with restorations on root surfaces (OR=1.2; p<0.05). **Conclusions:** In the present study, diet was weakly associated with restorations on root surfaces while age and wearing dentures were more strongly associated with root caries as well as restorations. Also, smoking and high alcohol intake indicating unfavorable lifestyles were related to caries or restorations on the root surfaces. Although the results cannot be generalised to the total population, lifestyle factors such as use of tobacco and alcohol should be taken into consideration identifying persons with a need of preventive dental care. *Supported
2655. ORAL HEALTH STATUS AMONG TAMPERE UNIVERSITY STUDENTS IN 2010.

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Background: In Finland, we have many studies about the oral health of children and adults over 30 years old. Available oral health information about young adults in Finland is inadequate. The students have an opportunity to dental examination and dental care according the treatment plan. Aim: The aim of our study was to obtain up-to-date information on the oral health problems among university students. Methods: The study sample composed of all university students (n=3,393) who participated in oral examination in our clinic from January to the end of October in 2010. The mean age was 26 years and there were 53% female students. The oral examinations were made by dentists. The examination included dental and gingival status, the checking of the mucous membrane and the organ of occlusion. Also the need for wisdom teeth removal was evaluated. The radiographic examination, bite wings or panorama tomography or both were taken at the discretion of the dentist. DMFT (including. third molars), DT (including. third molars) and Community Periodontal indexes were recorded according to the WHO criteria (Geneva 1997). The study protocol was approved by Medical Director of FSHS. The ethical permission was not required. Results: The mean DMFT was 7.1. Only 8.9% had DMFT zero; between female and male students was no significant difference. The mean DT was 1.50; (female 1.26 and male 1.80). The prevalence of DT=0 was 47.1% (female 50.9% and male 43.1%). A total of 5,151 teeth needed restorative treatment. Calculus was found in 2,896 (85.4%) of students and 84 (2.5%) had deepened pockets. Almost one in five needed the wisdom teeth extraction. There were only 173 students (5.1%) who did not need any further appointments. Conclusion: Although oral health was fairly good among the university students, there was a need to provide caries prophylaxis especially for male students. A comprehensive examination with appropriate radiographs gives the best basis for dental treatment and preventive self-care.

2659. CARIES PREVALENCE AND ORAL HYGIENE KNOWLEDGE OF 6-10 YEAR OLDS IN CLUJ-NAPOCA.

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Aim: To identify the influence of oral hygiene and socio-economic status (SES) on caries in 6-10 year old children in Cluj-Napoca and surrounding area. Methods: A cross sectional survey of a convenience sample of 367 children (194 girls), aged 6-10 years (mean age 7.8±1.2 years) was undertaken between 2009-2012, by four calibrated examiners, in six randomly selected Cluj- Napoca dental offices. Ethics approval and parents’ informed consent were obtained. Plaque index (O’Leary 1967) and D3MFT were recorded together with four items completed by parents regarding socio-demographic data(SES level)-(four questions regarding parents education, monthly income, parent’s jobs, children’s neighbourhood/downtown schools), oral hygiene knowledge, oral hygiene habits and recall visits attended/year. Multivariate regression analysis was performed. Results: From the total number of 367 children, 10 children missed one to three of their
appointments and were considered to be non-responders. A further 23 children dropped out, making a total of 33 children (8.9%) who were excluded and a remaining total number of 334 children. Forty-one children (12.2%) were caries free, mean PI was 38.7% in case of children having more than one surface decayed, Significant Caries index (SiC) was 3.5±0.6, D3MFT 2.5±1.3 (boys: 2.5±1.3; girls: 2.5±1.3). 76 children (22.7%) had pulp involvement, but there were no significant gender differences. Multivariate regression analysis showed that age and PI were associated with caries, whereas it was independent of gender and SES. **Conclusions:** Higher levels of children and family knowledge about oral hygiene were associated with lower caries prevalence and severity of decay. Intuitively a good SES status of the parents might also be associated with a better dental health of the child. This might be explained by the fact that parents have a better motivation to seek dental education and treatment on a regular basis for their children.

### 2665. Association of caries increment in preschool children with different independent variables.

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**Aim:** The aim of the present study was to evaluate the influence of various risk factors on dental caries increment in deciduous teeth of preschool children over a period of 2.5 years. **Methods:** A longitudinal study was carried out in kindergartens in two German counties in Northern Hesse. The kindergartens are cared for by dentists working in a private practice who visit “the” kindergartens regularly and perform oral hygiene instructions and dietary counselling. At baseline examination in 2006/2007 the mean age of the children was 3.5 years. The children were surveyed until 2009. Caries experience was recorded on the basis of d3+4mf-t values. 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 statistical analysis was performed by means of the software package SPSS Version 16.0. The study was approved by the Committee for Ethics of the Medical Faculty, University of Marburg. **Results:** 566 children were included in the statistical analysis. 395 (69.8%) of the 566 children showed no caries increment. 171 (30.2%) had a caries increase of 1 to 10 dmf-teeth. The mean dmf-t increment amounted to 0.75. The bivariate analysis revealed the following: The consumption of sugary food and beverages had a negative impact on oral health. Early start of tooth-brushing, use of fluoridated childrens tooth-paste and frequent tooth brushing (at least once daily) exerted a positive influence on dental health. Stepwise backward logistic regression analysis confirmed that a high social status has a significant positive impact on dental health among preschool children (p=0.028), whereas the consumption of sugary food and beverages was significantly associated with a higher dental caries increment (p=0.004). **Conclusion:** Children from socially vulnerable families were not reached by the preventive program in that region. The study was funded by GABA International.
2669. Dental caries in children and adolescents: Results from one Swedish region.

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Aim: The aim of the present study was to survey the occurrence of dental caries in Swedish children and adolescents. Methods: Epidemiological dental records from 300,988 children and adolescents (3-19 years) were collected in Region Västra Götaland, the largest county council in Sweden. Data were derived from both the Public Dental Service and the private dental care. Each subject had one unique registration during the period 2007-2009 (coverage degree 97.3%). The examinations were carried out in clinical settings, including radiographs when indicated, by a dentist or a dental hygienist. Dental health data were registered according to the DMFT/deft system. The statistical analysis used descriptive methods (including mean values and SE) and analytical methods (Chi-square and ANOVA). The Regional Ethical Review Board of Gothenburg, Sweden, approved of the study.

Results: The mean deft value was 0.20 (SE 0.01) for 3-yr-olds (n=23,418) and the mean DFT value was 0.70 (SE 0.01) for 12-yr-olds (n=18,345), well below the target set to 2020 by the WHO (DFT=mean 1.5). However, among those suffering from caries, the mean deft value was 3.12 (SE 0.07) for 3-yr-olds (n=1,526/6.5%), and the mean DFT value was 2.05 (SE 0.02) for 12-yr-olds (n=6,264/34.1%). Conclusions: The majority of the young people in the region had a good dental health. The distribution of dental caries is highly skewed among Swedish children and adolescents. This should be considered when preventive measures are planned and allocated. Supported by the Region Västra Götaland through ‘The agreement concerning research and education of doctors’ and through ‘The Health & Medical Care Committee of the Regional Executive Board’, both gratefully acknowledged.

2681. The oral health status of 12-year-old children in Podgorica, Montenegro.

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The aim of this study was to establish the prevalence of caries in the permanent teeth of children aged 12 years, in Podgorica, Montenegro. Methods: The research was carried out in 2011 and the sample was primary school pupils of both sexes, aged 12 year in Podgorica. Approval of the Ethics Committee of the Medical Faculty of the Podgorica University was obtained. Informed parental consent was gained for every child. Examinations were done by two calibrated examiners. The parameters that used were: DMFT, Significant Index of Caries (SiC) and presence of sealants. All subjects were examined in line with WHO methodology and criteria. All children in the sample were checked using standard dental diagnostic equipment (plane dental mirror, standard CPITN periodontal probe), under artificial light, on dry teeth in a dental chair. Results: Agreement of the two calibrated examiners was kappa = 0.93. The average DMFT at the 12-years-old in Podgorica, Montenegro was 3.9. A total of 94.2% (2010/2134) of the examined children from this sample had dental caries. Percentage of children with untreated caries was 45.5%, the percentage of children with filled teeth was 47.6% and missing teeth was 5.9%. The SiC Index was 6.9. Among the examined children, 12.3% had at least one tooth with a fissure sealant. Conclusions: We conclude that the oral health of children aged
12 years in Podgorica, Montenegro is not satisfactory. The importance of the modern preventive measures and programs, applied through the primary oral care system should work intensively on the promotion of the oral health.
2604. Information resources for oral health promotion in children aged 3-6 years.

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The aim of the study was to test the most appropriate oral health information resources and their impact on children’s perception. **Methods:** Based on the WHO guidelines - Health-promoting schools: an opportunity for oral health promotion – personalised educational programs for children aged 3-6 years were developed. All 96 children from a kindergarten in Timisoara, Romania participated in the study after obtaining informed consent from their parents and ethical approval. The children were divided into 2 equal sized groups (control and test). The control group received “classic lessons” whilst the test group, the designed program. Three months after the oral health education lessons had taken place, children's knowledge about tooth structure, number of teeth, oral hygiene and healthy foods was tested. **Results:** Mean age for the test group was 4.35±1.13 years and for the control group 4.6±1.06 years. Gender distribution and socio-economic status were similar for both groups. Regarding the number of deciduous teeth, 32 (77%) of the test group gave the correct answer as compared to the control group 19 (40%), the difference being statistically significant, \( p= 0.001 \). Thirty eight (79%) of the test group and 20 (41%) of the control group knew the right answer regarding the tooth structure (\( p=0.03 \)). Regarding healthy foods, 35 (73%) in the test group recognized them, as compared to the control group 24 (50%). Twenty seven (56%) of the test group brushed their teeth three times per day compared to 11 (23%) in the control group. Sixteen (33%) of the test and 8 (17%) of the control group brushed twice per day. **Conclusion:** Informational oral health resources for children should be focused on interactive, personalized activities and should take place in a friendly environment rather than a dental office. **Acknowledgements** To The Regional Health Board, Arad, Romania.


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In the Republic of Macedonia in 2005 major changes in the health care system happened through privatisation of dentistry. However, preventive dentistry remained in the public sector. In order to improve oral health, especially among the younger population and a National strategy was prepared in 2007. Among other primary preventive measures
priority was given to fissure sealing. **Aim:** the aim of this study was to evaluate sealing as a way to reduce dental caries. **Method:** In Macedonia, this national programme did not require ethics approval and was supported by the local authorities and school staff. The results from the fissure sealing study were compared with the results from a separate previous survey conducted in 2007, before the beginning of implementation of the National Strategy. In the current study, approximately 120,000 participants were included, born from 2002 to 2007, with sealants placed in the period from 2008-2013. Sealing was conducted in dental offices by 147 paediatric dentists calibrated to WHO standards. Data analysis was performed by epidemiologists from the Department of Epidemiology, School of Medicine, University of Skopje. In this abstract the results from the Skopje area are presented. **Results:** There were 647(9%) children who for various reasons (illness, moving, changing schools, resistance to the procedure) did not receive sealants. In the Skopje region in 2007 the DMFT of 8 year-old children was 3.18. Ninety one percent of all children born in 2002 in Skopje region and,16058 teeth (62.5%) were sealed. The DMFT was 0.87 in 2010 (72.7% reduction of caries in the first permanent molars), in 2011 the DMFT was 1.07(reduction of 66.4%) and in 2012 DMFT was 1.48(reduction of 53.5%). **Conclusion:** The results from the Skopje region of the National fissure sealant programme show that it was an effective primary preventive measure for caries control especially for children at high caries risk. National results will be available when the first generation of children in the programme turns 12- years of age later in 2014. **Methods of funding:** Coordinative Body for implementation of National Strategy

2630. The Prevention of Dental Trauma among French Rugby Players.

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Dental trauma related with the practice of high risk sports, as specified by the International Dental Federation, requires the implementation of dental preventive measures. **Aim:** The purpose of this study was to investigate the degree of observance of these preventive measures among a convenience sample of non-professional rugby players from Bordeaux and Montpellier teams (France). **Methods:** Questionnaires about dental injuries and the players’ habits concerning the mouthguards were addressed in spring 2013 to the rugby team of Bordeaux and Montpellier. Only non-professional players were concerned by this cross-sectional survey and 81 of them returned the forms (20 from Bordeaux and 61 from Montpellier). The response rate was almost 50%. **Results:** The age ranged from 17 to 34 years. The prevalence of dental trauma was rather high (38.3%, CI:27.5%;49.1%). Despite the high level of prevention awareness expressed by players who said that the mouthguards were important or essential, 19 players (23.5%) still declared having none. Actually, 43 (53.1%) wore it systematically during competition and only 23 (28.4%) during training. The main reason for not using it was discomfort for 39 of them (47.4%). These mouthguards were mostly supplied by sport shops (46.5%), so in this study the involvement of dentists in providing mouthguards was low. **Conclusions:** In conclusion, the dental practitioners have a role to play in preventing dental injuries, firstly by giving precise information about the risk of trauma in each sport, and secondly by providing adequate mouthguards (custom-made instead of mouth-formed). In order to assess the attributable risk of this preventive measure, it would be necessary to conduct a prospective survey including professional players so that the proportion of dental trauma avoided by wearing adequate mouthguards could be evaluated.
Introduction and aim: The Glimlachen.be® oral health promotion program is conducted by the Flemish Dental Association (VVT) under the authority of the National Institute for Health and Disability Insurance (NIHDI). The program aims to help children and their parents establish good oral health habits for the prevention of dental diseases. The program is targeted at children and adolescents aged between 0 and 18, mainly studying in primary and secondary schools or followed by Child and Family, an agency that works actively in Public Health, Welfare and Family policy area. The program provides and supports schools/agencies with educational materials to conduct school/agency-wide oral health promotion activities. The aim of the present study was to evaluate the impact of the oral health promotion program on oral health knowledge and attitude, oral hygiene and level of care of primary school children involved in the program. Methods: Data available from the Glimlachen Tandmobiel project were used. In this prospective longitudinal epidemiological survey data were collected from a representative sample of 1,058 children (born in 2002) and examined yearly (between 8 and 11 years of age) by trained dentist-examiners. Cross-sectional control groups with approximately 300 children were also examined yearly. Oral health condition was recorded by direct inspection, knowledge and attitude was assessed using a validated questionnaire. The study was approved by the Ethics Committee of the University Hospital Ghent. Mixed model analyses were conducted to evaluate changes over time. Results: There were no baseline differences in Plaque Index (PI) between intervention and control. A decreasing PI over time was observed in both groups but the evolution over time was different for both groups with a significant lower PI in the intervention group compared to the control group at the end of the 4-year study period (p<0.001). A significant increase of knowledge was found in the intervention group (p<0.001), not in the control group (p=0.28). Both groups showed a significant increase in attitude over time (p<0.01). From all children with $D_{3MFT}>0$ (history of decay) there were no baseline differences in care index ($FT/D_{3MFT}$) between control and intervention. A significant improvement in the care index has occurred over the past four years in the intervention group (54.7% → 69.0% - p<0.001). A more limited improvement was observed in the control group (57.0% → 63.9% - p<0.13). Conclusion: The Glimlachen.be® oral health promotion program has been effective in improving oral hygiene and oral health knowledge of the primary school children and resulted in a higher care index. Methods of funding: National Institute for Health and Disability Insurance Belgium.
2636. In-Depth Evaluation Of The Smile For Life Oral Health Intervention In Preschoolers.

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Aim: This study evaluates the effectiveness of a multi-component oral health promotion intervention in preschool children in a non-randomised intervention study with a complementary baseline control. Methods: Participants in the main study were 2,137 children born between October 2003 and July 2004 in four regions in Flanders, Belgium. In the intervention group (50.5% of participants), an oral health education module was added to a standard preventive care program during the first three years of life. Informed consent was obtained and the protocol received ethical approval from the Medical Ethics Committee at the KU Leuven, Belgium. Oral health examinations were performed by trained dentists when the children were three (2007) and five years old (2009). Data on demographic factors, dietary habits, oral hygiene habits, dental attendance, and related behavioural determinants based on the Theory of Planned Behaviour were obtained through structured questionnaires completed by the parents shortly after the child’s birth, at age three and at age five. Regression analyses were applied to compare the results of the intervention and control group with baseline measurements obtained before the intervention (2003) in other cohorts of three- (N=1291) and five-year-olds (N=1325) living in the same regions. In addition, qualitative and quantitative methods were used to evaluate implementation fidelity, based on Carroll’s theoretical framework of implementation fidelity. Results: Response rate was 95% at birth. At age three and five, respectively 24 and 16% of the children could not be retrieved, leading to missing data. Caries experience at the d3-level was found in 27 three-year-olds in the intervention group (2.5%) and 45 (4.3%) in the control group (p=0.52). The prevalence of caries experience was generally lower in the main study compared to the baseline cohorts. For the oral health-related behaviours, the control group scored mostly better. Nevertheless, compared to baseline, limited differences between intervention and control group were observed in dental attendance and helping with brushing (p<0.05). The received intervention dose ranged between 60 and 70% of the total program. Conclusion: The study illustrates that a multi-component, theory-based intervention at community level had only a limited effect on oral health-related behaviours in the community under study. Linking implementation data to program outcomes contributes to understanding the rationale for success or failure of preventive health interventions. Study supported by GABA International.

2642. Long-Term Evaluation of A School-Based Toothbrushing Program For The Prevention of Dental Caries.

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The aim of this study was to assess the long-term efficacy of a school-based supervised toothbrushing program using remineralising toothpaste for prevention of dental caries in the permanent dentition. Methods: The supervised (by school teachers) toothbrushing program was introduced in 2006 in three randomly selected schools in Minsk city involving 142 7-year-olds (mean age 7.4 years) children (A group). The commercially
available fluoride free toothpaste with active component “Mineralin®” (Ca, P, Mg, xylitol) was provided to children. Ethical approval and parents’ consent were obtained. Daily toothbrushing (on school days) was carried out during two school years for 1st and 2nd classes in 2006-2010. In 2011-2013 the dental caries prevalence was assessed annually in the 12-year-old children who were involved in the toothbrushing program starting at age 7-8 years. The DMFT was recorded by a clinically calibrated dentist. The comparison groups were 130 children of the same age in neighboring randomly selected schools where only routine oral health education & instruction were provided (B groups). Data were analysed by Students t-test. **Results:** At baseline the DMFT in children at age 7 years in A and B groups in 2006-2008 was not statistically different 0.29±0.9 - 0.41±1.2, (p>0.05). The average DMFT of the same children by age 12 years in A group was 2.04±1.83 in 2011 (n=110); 1.8±1.62 in 2012 (n=104); 1.6±1.38 in 2013 (n=99). The average DMFT of 12-year-old children in comparison groups B were 2.76±1.85 in 2011 (n=103); 2.68±1.72 in 2012 (n=95); 2.53±1.66 in 2013 (n=89). The reduction of DMFT in groups A vs B in 2011, 2012, 2013 were 26.1%, 32.8%, 36.8% respectively (p<0.05). **Conclusion:** The school-based supervised two-year toothbrushing program for 7-8-year-old children was effective in reducing dental caries at age 12 years by 26-37% as compared with the routine oral health education & oral hygiene instruction. **Supported by Minsk Public Health Committee.**

2664. Dental Hygienists Working In Schools – An Oral Health Intervention Program In Sweden.


**Aim:** The aim of the study was to investigate the factors that may influence adolescents caries incidence, knowledge and attitudes to oral health and tobacco through a school-based oral health intervention program. **Methods:** For practical reasons, the participants could not be randomly selected. Instead four schools in the county of Uppsala, Sweden were randomized to one intervention and one control group. At the intervention schools, two trained dental hygienists worked four hours every week for two years. Education about oral health and preventive measures, such as fluoride varnish treatments every 6 months, were performed in an open dental clinic at school. The control group had no intervention. The study was approved by the Ethics Committee, Uppsala University, Sweden. Informed consent was obtained from all participants and their guardians before the study started. **Participants:** The study included 534 participants, aged 12-16 years. Outcome variables of the study were 1) caries incidence (dentine and enamel on level D1+2+3) assessed on bite-wing radiographs 2) knowledge and attitudes measured through questionnaires. Education about oral health took place in conjunction with ordinary lessons like biology and chemistry, where the dental hygienists co-operated with the school teachers. The education aimed to stimulate communication between the participants and to increase self-confidence and through interaction with classmates and school staff help them to clarify their own attitudes and thoughts with regard to oral health and tobacco use. At the open school dental clinic (four hours a week), dental health screenings and fluoride varnish treatments were performed every six months. Adolescents identified as at-risk for caries were offered preventive measures such as dietary advice, and oral hygiene instructions. Using dialogue, the dental hygienist attempted to motivate the adolescents to improve their oral health behaviour. **Results:** In total 556 adolescents, were invited and 534 accepted to participate. The distribution of individuals between the intervention and control groups was even. The proportions of dropouts were equal
in both groups. The intervention program impacted on the prevalence of enamel caries (p=0.002), while no effect on dentine caries could be seen. Data from the questionnaires showed that the adolescents considered their teeth as important. Adolescents in the intervention group had better knowledge about oral health and oral hygiene compared to the control group after the two years, but no impact on attitudes to tobacco could be seen. A majority of the adolescents were positive to the education about oral health and tobacco and they believed that the dental hygienists would help them improve their oral health.

**Conclusions:** Although the effects of the intervention as regards to caries incidence, knowledge and attitudes were limited, the presence of dental hygienists in school was appreciated by the adolescents and seemed to increase their interest in their own health. Supported by Uppsala County and the Public Dental Health Service. We also thank the Dental hygienists Marie Lindén and Carina Landh for their skillful implementation of the oral health program.

2668. Use of Sucrose-Sweetened Beverages And Sweets In Early Childhood In Finland.

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**Aims:** Many general diseases and disorders such as diabetes and obesity, and the most common oral diseases, share the same risk factors. One of those is regular use of sucrose-sweetened beverages (SSB). The aim of the study was to evaluate the use of SSB and sweets among Finnish infants up to 24 months in relation to their mothers' health behaviours. **Methods:** All mothers of 0-24-month old children (n=179) attending two municipal child health clinics in southern Finland completed an anonymous and voluntary self-administered questionnaire on the frequency of the use of SSB as well as sweets for their children, and on their own health behaviours. The mothers were grouped according to their education level (low, median, high), smoking habits (yes, no), and the children according to their age (0-12, 13-24 months). Statistical evaluation included Chi-squared test, Pearson's correlation coefficient, and Fischers test for r' 0. The study was approved by the Ethical Committee of Human Sciences, University of Oulu. **Results:** Mothers reported that 61% (94) of the children used SSB; the frequency was greater for the older rather than the younger ones (r=0.37; p<0.001). Of the 0-12-month-olds 14% (16) used SSB several times a week, 5% (6) once a week, 15% (18) less than once a week, and 66% (78) never. Among the 13-24-month-olds, the corresponding figures were 34% (21), 26% (16), 28% (17), 12% (7), p<0.001. Of all, 47% (83) consumed sweets with a greater frequency for the older than the younger ones (r=0.28; p<0.001). The frequencies of the use of SBB and sweets correlated strongly (r=0.59; p<0.001). Mother education, smoking, tooth brushing or consumption of sweets showed no role in the variation of the childs use of SBB and sweets. **Conclusions:** In the group studied, frequent use of sucrose-sweetened beverages and sweets starts in early childhood. Thus, tackling these common risk factors in the first years of life is essential and calls for multi-professional health promotion to parents of infants.
Background: In England, 70% of adolescents consume sugar sweetened drinks (SSBs) on a regular basis. High SSB consumption is associated with obesity. **Aims:** To conduct a feasibility trial using motivational interviewing (MI) intervention to reduce soft drink consumption among young people attending primary dental care practices. **Methods:** A feasibility trial (cluster RCT) was performed in an effort to reduce SSBs, using motivational interviewing (MI) intervention among adolescents attending NHS dental practices. **Participants:** 10 randomly selected dental practices recruited 149 potential adolescents aged 11-16 years. Primary outcome was mean daily consumption of soft drinks, measured using standardised 24 hour dietary recall. Secondary outcomes were anthropometric measures of body mass index (BMI) and waist circumference, measured at baseline and at 6 months. The intervention consisted of 3-4 sessions of motivational interviewing. Analysis included unpaired t-test to assess differences between baseline and follow-up for the outcome measures. Linear regression was conducted adjusting for baseline measures, sex and ethnicity. Ethical approval was obtained from Camden and Islington Community Research Ethics Committee. **Results:** 10 dental practices were recruited (5 control and 5 intervention). Out of 149 potential participants, 39 (26.2%) conformed to the eligibility criteria. Of the 39 participants, 5 (12.8%) withdrew from the study, and 3 (7.6%) adolescents were lost to follow-up, resulting in a retention rate of 79.5%. At follow up, consumption of daily sugary soft drinks decreased by 67.0mls (95%CI: -54.7, 188.7) in the control group and 120.9mls (95%CI: -19.9, 267.7) in the intervention group, but the difference between the groups was not significant (p=0.55).

There was a slight decrease in BMI and waist circumference z-scores, at follow-up: mean difference of 0.01 (95% CI: -0.20, 0.17) for BMI and 0.03 (95%CI: -0.28, 0.22,) for waist circumference, respectively. **Conclusions:** This study has shown that MI is a feasible tool aimed at reducing consumption of soft drinks among adolescents attending dental practices. However, further research is required to assess its effectiveness in primary dental care. **Acknowledgements:** This paper presents independent research funded by the National Institute for Health Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number- PB PG 1207 14085). The views expressed are those of the authors.
Aim: The aim of this study was to assess the existing knowledge, attitudes and practices about the use of fluorides in caries prevention among public dentists in Macedonia, which is included in the implementation of the National Strategy for prevention of oral diseases among children up to 14 years of age. Methods: Cross-sectional design. Inclusion criteria: public dentists (lists obtained from the Ministry of health, total 322). Public dentists working on the secondary and tertiary level were excluded, because they do not conduct primary preventive measures according to the National Strategy. A pretested, self-administered questionnaire, consisting of 25 questions with a cover letter was mailed to a total 147 public dentists in December 2013. Participation was voluntary and consent to participation was given by completing and returning the questionnaire. Ethical approval for the study was given by the Ministry of health. Consensual validity was tested by sending the pilot version to the relevant experts in this field. Reliability was tested when key points of the questionnaire were reissued to 10% of the study population (15 dentists). Results: The usable response rate was 67% (n=98). The study population consisted of 80 (81.6%) females and 18 (18.4%) males. 49 (50%) were general dentists, 5 (4.6%) specialist- paedodontology, 4 (4%) other specialties. Age distribution was 10 (10.2%) 25-34 years old; 16 (16.3%) 35-44 years; 41 (41.8%) 45-54 years; 30 (30.6%) 55-64 and 1 (1%) above 64 years. Individual caries risk assessment was performed only by 24 (24.7%) of the respondents, 73 (75.3%) not using it as a routine. Although 27 (27.8%) strongly agreed and 58 (59.8%) agreed that post eruptive topical effect of fluorides is the dominant mechanism of the effect of fluorides on caries prevention, their attitude about the most appropriate type of fluoride prevention was use of F supplements as a first priority and their general attitude towards F supplements was positive 33 (33.7%) and 64 (65.3%) strongly agreed or agreed. This was confirmed by their answer regarding the mechanism of incorporating fluorides in the prematuration phase (systematic use) to be the most important mechanism of the fluorides action in caries prevention, 39 (39.8%) strongly agreed and 58 (59.2%) agreed. Although milk fluoridation was introduced in Macedonia in 2009 and 66 (67.4%) had a positive attitude towards it, there were 22 (22.4%) who did not agree with this method and 10 (10.2%) gave a neutral answer. The higher level of knowledge regarding post eruptive topical effect of fluorides, effect on remineralisation and inhibition of bacterial metabolism was reflected in respondents’ reported practice about the recommendations for concentration of fluoride in tooth paste in children younger and older than 6 years (depending on caries risk), but they routinely did not perform caries risk assessment. Conclusions: These public dentists are in key position to implement preventive activities in children, especially
the use of fluorides. Dental caries risk assessment is strongly recommended for every patient. One of the barriers of a dentists ability to implement research evidence into their clinical practice is their knowledge of the recommended practice. Evidence based knowledge and understanding is essential for both clinical practice with individual patients and for community-based programmes. For evidence based dentistry to become a reality in Macedonia, clinical guidelines (recommendations) on the use of fluorides must be prepared for the prevention of dental caries. Clinical recommendations must be balanced with professional judgment and individual patient preferences.

2616. Influence Of A New Reimbursement System On Prosthetic Therapy-Options At A University-Clinic.

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Aims: On 1st January 2005 the subsidy of prosthetic treatment for members of the German public health insurance system changed by law from a percentage subsidy on therapy to a diagnosis based fixed-subsidy system. The aim of this study was to measure the influence of this change on the spectrum of prosthetic therapy- options at a university clinic. Methods: All prosthetic therapy carried out between July 1st 2005 and June 30th 2006 (study group) and between July 1st 2003 and June 30th 2004 (control group) was documented and analysed. The data were gathered using the digital patient record system of the clinic. The study was approved by the responsible ethical board. The data were analysed using descriptive statistical methods. Differences between the two groups were assessed using the t-Test. The study group comprised of 379 cases, the control group comprised 475 cases. The analysed clientele is not representative for the German population due to the specific characteristics of university clinic patients. Results: A decrease of more than 20% over all in the number of cases treated was detected. The number of crowns decreased from 666 (63.4%) in the control group to 455 (58.0%) in the study group. The number of bridges decreased from 141 (13.4%) in the control group to 95 (12.1%) in the study group. The number of cast metal partial dentures increased from 35 (3.3%) to 55 (7.0%). The comparison of the average cost showed an increase in almost all classified categories. Conclusions: A shift of the spectrum in prosthetic treatment could be shown. It can be stated that the change in the reimbursement system had slight influences on the spectrum of prosthetic therapy- options that were performed.

2635. Sequential DMFT Values in the Family Health Programme, Duque Caxias, Brazil.

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The national Family Health Programme (PSF) is the Brazilian public health strategy that has been gradually implemented in the cities and villages around this very big South American country. In this programme dentists combine preventive and appropriate restorative oral care to a registered population that lives at the demographic area covered by its own Health Family Unit (USF). This programme was introduced in Duque de Caxias in the year 2008. This city is divided into 4 health districts, it has the third largest
population of the State of Rio de Janeiro in the southwestern region of Brazil and it is located in a region of general deprived social development. The aim of this study was the annual evaluation of the sequential DMFT index values according to WHO criteria for 12 years old children of all 4 health districts and it was carried out after Ethics Committee approval and collection of signatures of parental consent for each subject. 69 trained and calibrated dentists (overall Kappa score = 0.7) examined 7031 children in schools between the years 2009 and 2012 and showed 90% concordance. Data were analysed using Kruskal-Wallis test followed by multiple comparisons. Results showed that despite the social problems in Duque de Caxias, Family Health Programme dentists were able to improve the oral health of 12-year-olds in this population. The mean DMFT fell in all of the 4 health districts between 2009 and 2012. District I: 1.56 to 1.11; District II: 2.32 to 1.99; District III: 1.71 to 1.61; District IV: 2.28 to 1.63. The caries free percentage of all children rose from 32.7% in 2009 to 45.4% in 2012. The authors conclude that continuous and systematic actions of oral health promotion and appropriate dental treatment must however be further reinforced and implemented to improve the dental health of children in this city.

2638. Permanent Integration of Oral Care Into Day-To-Day Nursing Home Care.


The aim of the present study is the development and validation of an oral health care model emphasising a permanent integration of oral care into day-today care of care home residents. **Methods:** The strategy to develop an oral health care model was determined by the PRECEDE-PROCEED model, a theoretical health promotion planning model of Green & Kreuter. At study start (2002) a comprehensive exploration of the intramural field was performed by four cross-sectional studies (Precede phase). Accordingly, an evidence based oral hygiene protocol was developed, implemented (non-supervised) and evaluated during a 5-year longitudinal RCT in 13 randomly selected care homes (Belgium - East- Flanders). An adapted oral hygiene protocol, taking into account the results of the longitudinal study was implemented (supervised) within a 6 month study period. A second group randomized trial was set up in 12 care homes in Belgium (West- Flanders). The outcome variables for the effect evaluation were residents dental (Sillnes&Löe) and denture (Augsburger) plaque levels. Non parametric tests were used to explore plaque level differences between study groups and between T0 and T1. Additional individual variables were gathered by questionnaires. A qualitative study explored enabling and disabling factors influencing the integration of oral health care into day-to-day care (Proceed phase). All studies were approved by the Ethics Committee of the Gent University Hospital (2002/94 and OG017/2008/440). **Results:** Dental and denture plaque levels remained both unsatisfactory after 5 years non-supervised implementation while denture hygiene significantly improved after 6 months supervised implementation. Multilevel analyses taking into account random care home effect clearly showed that oral hygiene levels were influenced by characteristics of the care home rather than by the intervention. The qualitative data analysis showed that the oral hygiene protocol itself was well accepted by nurses but a lot of barriers to integrate oral health care into day-today care were observed. Nurses’ underestimation of the seriousness of oral health problems and lack of professional oral health care delivery were important barriers to the integration of daily oral care into day-to-day care. **Conclusions:** Taking into account the study results the oral health care model focus on an assessment of nurses’ attitudes and perceptions prior to the start of the implementation process. Disabling factors should be identified
and tailor made education and implementation should be organized tackling the barriers assessed. The process of implementation should be continuously supervised, supported and monitored by a professional oral health team. Internal evaluations of residents’ oral health conditions and ongoing integrating processes have to be performed periodically. **Acknowledgments:** The authors are indebted to GABA International for supporting the data collection.

### 2653. Patients’ Attitudes To A New Dental Insurance Model.


**Aim:** The aim of the present study was to generate knowledge of patients’ views and attitudes towards a new dental insurance system implemented in the Public Dental Service in Sweden. **Methods:** Twenty patients were included in this interview study. The participants were chosen according to a strategic sampling technique based on age and gender. There were 12 women and 8 men with mean age 35.0 years (SD 10.2). The patients attended different Public Dental Service clinics (general dental clinics) and had previously chosen a new dental insurance as the payment system corresponding to a capitation model. This payment system was implemented 6 years ago making it possible for patients to choose between a capitation and fee for service system. The interview was performed by two clinical psychologists and researchers at the university, and was guided by an interview protocol including questions about the new payment system, dental care and oral health. All interviews were tape-recorded and transcribed verbatim. The qualitative method used was thematic analysis. **Results:** In general, the patients were satisfied with the new payment system. The main findings reported by the participants were: (i) the contract established between the patient and the caregiver was based on a beneficial agreement, (ii) a feeling of economic safety concerning future dental costs, and (iii) a positive change towards more positive dental care behaviours. **Conclusions:** The participants’ attitudes to the new dental insurance and payment system were mainly positive. **Swedish Research Council for Health, Working Life and Welfare. TUA-grants. Research grants, Region Västra Götaland.**

### 2666. Dentistry as a Professional Career – the views of London’s secondary schoolchildren.

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**Aim(s):** To explore young people’s perceptions of dentistry as a potential future career, including features which would attract or deter them from wanting to become dentists, and the perceived influences on their career decision-making process. **Methods:** Purposive sampling of London schools (independent, grammar, state, academy, further education colleges) was undertaken. Exploration of academically able, science-minded young peoples (aged 16-18 years) perceptions of dentistry as a potential career was achieved through a series of focus groups conducted in the school setting (10 focus groups and 71 students). A topic guide, informed by the literature and previous research, explored
the perceived features that would attract/deter students to/from a career in dentistry and identify factors which students perceived would influence their choice of degree. Ethics committee approval was granted by Kings College London; consent was obtained from the school and individual participants. Discussions were audio-taped, transcribed and analysed using Framework methodology. **Results:** Multiple factors were identified by the students that would attract them to dentistry, termed pull factors. These included a vocational qualification and science-based career, with the attraction of becoming a professional working within healthcare in a role that involved working with people. A range of features of the job were considered attractive by participants which included a healthcare business, artistic, practical, using technology and the changing practice of dentistry which would require constant learning. Many features of the job were particularly attractive which could support their lifestyle aspirations, providing job security, independence, career opportunities, and a structured working day. ‘Push factors’ away from a career in dentistry included repetitiveness, the negative image of dentists, the requirement of patient management and working in the mouth, and the high stress from the responsibility of the job. Factors which were cited conversely as both push and pull factors were the business of dentistry, its specialism and the work environment. Wider influences on their decision making included social and community networks, experience both personal and work, the school environment, as well as wider socio-economic, cultural, political and environmental conditions. **Conclusions:** The findings suggest that a wide range of determinants influence teenagers career choice. Teenagers report similar features as dental students and new graduates that attract to dentistry as a professional career, with particular emphasis on it being a vocational degree; however, a negative perception of dentistry in society, including schools, appears to deter students from choosing it as a potential career. **Acknowledgements:** Teachers and pupils of participating London secondary schools.

2667. Dentists Knowledge and Attitudes toward Children’s Pain and Pain Management.

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Dentists influence how children perceive pain and pain management during dental treatment, but methods for measuring this are lacking. **Aim:** The aim was to alter a present questionnaire, used in the caring sciences, for application in the dental profession and to present normative data for dentists’ attitudes and knowledge regarding pain and pain management in children and adolescents. It was hypothesized that dentists’ gender, age, professional experience, proportion of working time devoted to treating children or adolescents and being a parent would affect attitudes and knowledge. **Methods:** In the questionnaire Dentists Knowledge and Attitudes toward Child Pain Perception (DKA-CPP) was modified exploring attitudes and knowledge of pain in different areas, which were: A) Views on the care of children in pain, B) Physiology, C) Pain alleviation, D) Medication, E) Sociology/psychology. All 567 active dentists at general dental clinics in Region Västra Götaland, Sweden were approached and 68.3% responded. Statistic tests were performed using Chi 2 and ANOVA. In Sweden, ethics approval is not required for anonymised questionnaire studies. **Results:** Findings showed the treatment of pain was
favoured when the dentist was female, older, or had more work experience (p<0.04). Differences were shown in female/male dentists' attitudes regarding items dealing with children's perception of pain and the role of the parent (p<0.03). In comparison, the dentists age/professional experience showed more knowledge-related differences (p<0.03). Conclusions: The study presented normative data for DKA-CPP in Swedish dentists. The DKA-CPP is suitable in undergraduate education/recurrent educational support for dentists in order to improve pain management in dentistry for children. This work was supported by the Public Dental Service, Region of Västra Götaland, Sweden and Mun-H-Center, National Orofacial Resource Centre for Rare Disorders, Göteborg, Sweden. A special thanks to Mrs. Birgitta Ahlström.

2670. Full dental care coverage and oral health outcomes in preschoolers.


Dental care for all children up to 18 years of age is covered by the obligatory health insurance, both in the Netherlands and in Flanders (northern part of Belgium). Aim: The aim of the present study was to explore whether this leads to good oral health, regular dental attendance and acceptable restorative care levels in 5-year olds. Methods: Dutch data were derived from the Kies voor Tanden 2011 project, performed in 4 cities considered as representative for the population of the Netherlands. Flemish data came from the control group included in the Smile for Life study (2009). Available data consisted of clinical data collected using comparable methodologies (visual- tactile examination on school premises or in a mobile van, standardized caries experience scoring criteria, calibration of examiners, no radiographs) and questionnaire data (socio-demographic information and oral health related habits). Caries experience (CE) was summarized using the d3mfs-index (cavitation level) and the Restorative Care Index (RCI) was calculated as fs/(ds+fs)x100%. Socio-economic background (SES) was assessed based on mothers highest educational level attained and dichotomized as low (<12 years of education) vs high (>12 years of education). Informed consent was obtained from parents and both studies received ethical approval from respective committees. Chi-square tests and ANOVA were applied for comparison of results. Significance level was set at 5%. Results: Data from 302 Dutch and 772 Flemish 5-year olds were available. Reported dental attendance in the preceding 12 months was 95.0% in Dutch and 69.9% in Flemish children (p<0.001). The percentage of children with CE was 35.1% in Dutch children and 24.2% in Flemish children (p<0.001). Mean RCI¿s were 29.9% and 39.5% respectively (p<0.01). In both regions, high SES was associated with more positive outcomes for all variables considered, except for RCI in Dutch children (low SES: 30.4% versus high SES: 29.6%, p=0.927); respective percentages in Flanders were 25.4% and 47.4% (p<0.003). Conclusion: In spite of full coverage of preventive and restorative oral care by health insurance in both countries, dental attendance was much higher in the Dutch sample. Interestingly, the latter did not enhance the overall restorative care level but did lower the discrepancy in restorative care between high and low SES children. Further research is needed to explore underlying mechanisms. The “Kies voor tanden 2011” study was financed by CVZ, Health Care Insurance Board; the Smile for Life study was possible by support received from Gaba International.
This study aimed to examine whether there are differences in the experience of communication and care between native-born (NB) and foreign-born (FB) patients in the Swedish dental service. **Methods:** Consecutive patients at four different public dental service clinics in a major Swedish city (Gothenburg) were asked to complete the Dental Visit Satisfaction Scale (DVSS), eight additional items concerning communication and care, and a questionnaire eliciting background information. The questionnaires were available in English, Swedish, Arabic and Farsi. No power calculation was performed prior to the study. Formal ethical approval was not necessary according to information given by the Ethical Committee at University of Gothenburg. Participation in the study was voluntary. Information about the study, formulated according to the general outlines provided by the Ethics Committee was handed out together with the questionnaires. **Results:** The response rate was 74% (204 patients, mean age: 42 years, range 18-86). Of the participants, 96 (47%) were NB and 108 (53%) were FB; 80 (40%) were men and 121 (60%) women. The NB group was significantly older, had higher education and more regular dental care habits, and reported higher dental fear than the FB group. Among FB who had lived in Sweden for more than 5 years, 76% believed that the dentist treated them in the same manner as he/she would treat any other patient compared to 93% among those who had stayed 5 years or less and 96% in the NB group (p=0.002). The only significant difference found between NB and FB according to the total DVSS sum and the three DVSS dimensions was that NB were more positive in the dimension Technical Competence compared to the FB (p=0.001). **Conclusion:** Fewer FB than NB patients thought the dentist treated them in the same manner as he or she would treat other patients. FB patients were as satisfied with the information and communication they received from the dentist as those born in Sweden, but that they were more sceptical about the dentist’s technical competence. The differences between the two groups were otherwise smaller than might have been expected in view of the probable language difficulties and differences in dental care background. The Local Research and Development Board for Gothenburg and Södra Bohuslän funded this study.
**Aim:** to assess socioeconomic inequalities in subjective measures of oral health and quality of life in a national sample of adults in England, Wales and Northern Ireland.

**Methods:** We used data from the 2009 Adult Dental Health Survey, which collected interview data from a sample of 11,380 adults aged 16 years and over. We selected participants aged 21 years and over with complete information on the variables used in analysis. Three measures were used as outcomes: self-rated oral health, Oral Health Impact Profile (OHIP-14), and Oral Impacts on Daily Performance (OIDP). We examined inequalities by three socioeconomic position (SEP) indicators: educational attainment, occupational social class and equivalised household income. Multivariable logistic regression models were fitted to show the relationships between oral health outcomes and SEP indicators, adjusting for age, gender, marital status, geographical location, self-rated general health and long standing illness. From the regression coefficients we then estimated predictive margins and conditional marginal effects to compare predicted probabilities of the outcome across different SEP levels. Models were fitted for the total analytic sample and stratified by the presence of natural teeth. Among dentate participants, analyses were further stratified by gender and age groups. We also assessed the effect of missing data on our results by re-estimating the regression models after imputing missing data.

**Results:** There were significant differences in predicted probabilities of the outcomes by SEP level among dentate participants. For example, a significantly greater proportion of participants with no qualifications reported “bad” oral health (13.5%) compared to those with a degree (4.4%). There were clear gradients with higher predicted probabilities of the outcomes at each lower SEP level with only two exceptions: 1) income and self-rated oral health (not exactly graded between intermediate and second poorest quintiles of income), and 2) income and OIDP (predicted probabilities for the second highest and intermediate quintiles of income were not significantly different from the highest income quintile). Among edentate participants, there were no significant differences in the oral health outcomes by all SEP indicators. The associations of income and education with both self-rated oral health and OHIP were stronger among young people and tended to decrease with age. We found similar results when using imputed data.

**Conclusions:** There were clear socio-economic inequalities in subjective oral health among adults in England, Wales and Northern Ireland with stronger gradients for those at younger ages. Economic and Social Research Council (ESRC) grant ES/K004689/1: Investigating socioeconomic inequalities in oral health in the UK.
2672. Multiple Workplace’s Effect On Job Satisfaction And Mental Health.

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Aims: The objective of this study was to evaluate the effect of working in more than one institution on overall job satisfaction and self-perceived stress among publicly employed dentists and dental nurses. Methods: An anonymous survey of 587 employees of all 9 public dental clinics in Vilnius was performed. The questionnaire investigated work-related stress factors, mental state, job satisfaction. Responses were given on a 0-100% scale. Descriptive statistics, Chi-squared and Mann-Whitney tests were used to analyse the results. In Lithuania, ethics approval is not required for anonymous questionnaire studies. Results: Anonymous self-reported questionnaires were completed by 388 dentists and dental nurses, obtaining a response rate of 66.1%. 160 (41.3%) respondents reported working in more than one institution. Those working in more than one institution were significantly less satisfied with executive personnel and their relations with colleagues. Working in more than one institution significantly increased nervousness, anxiety and uneasiness. Conclusions: Working in more than one dental institution was associated with decreased job satisfaction and increased prevalence of mental health issues.

2673. Knowledge of The Main Dental Laws Among Employees of Public Dental Institutions.

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Aims: The aim of the study was to evaluate knowledge of the main Lithuanian dental laws among publicly employed dentists and dental nurses in Vilnius, Lithuania. Methods: An anonymous survey of 587 employees of 9 public dental clinics in Vilnius was performed. The questionnaire investigated knowledge of the main Lithuanian dental laws, such as the one on dentist’s competencies, rights and obligations, the law on dental care, the law of the Lithuanian Dental Chamber, the law on patients rights and health damage compensation and the law on health insurance. Responses were given to close-ended “yes, no” questions. All responses were collected and analysed. Descriptive statistics and the Chi square test were used for statistical analysis. Results: Anonymous self-reported questionnaires were completed by 388 employees of public dental institutions, a response rate of 66.1%. Only 50.0% (standard deviation 5.0) of respondents stated that they knew and were able to comment on the main dental laws. Dentists knew the dental acts significantly better than dental nurses, however no statistically significant difference in knowledge of juridical laws was found between genders. There was also no statistically significant difference between those working as executive officers and non-executive workers. Conclusions: Publicly employed Lithuanian dentists and dental assistants’ knowledge of the main dental laws was poor. Nevertheless, dentists knew the dental acts better than their assistants.
2676. The Main Problem For Adult Patients With Dental Anxiety And Regular Dental Care.

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Dental anxiety is a common and widespread problem but most people with dental anxiety attend for regular dental treatment. Successful dental treatment requires great effort from both the patient and the dental staff to handle the patients’ anxiety. A better understanding of patients’ thoughts and feelings about dental treatment is important to be able to meet the needs of patients in a supportive way. Aims: The aim of this study was to gain a deeper understanding of the main problem facing patients with dental anxiety undergoing regular dental care; specifically what the patients were afraid of about the dental treatment. Methods: Fourteen patients with dental anxiety and undergoing regular dental care were interviewed. Qualitative analysis of the transcribed interviews was undertaken in line with principles of grounded theory. Results: A substantive theory was generated and the main concern for patients with dental anxiety undergoing regular dental care was identified as “a self-fulfilling prophecy”. Three categories explained the patients experiences during dental treatment that affects, interacts or leads to a self-fulfilling prophecy of being dentally anxious. The categories were labelled “being out of self-control”, “feeling defenceless”, and “experiencing pain, danger and discomfort”. Conclusions: The results show that the self-fulfilling prophecy of dental anxiety is affected by feelings of being out of self-control and being defenceless. This includes negative and catastrophic thoughts, generalisation, exaggeration and lack of realistic assessment and probability calculation, but also by the patients’ experience of pain, danger and discomfort during treatment. Methods of funding: The Research and Development Council of the Counties of Gothenburg and Södra Bohuslän.


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Aim(s): The aim of this study was to evaluate the opinions of freshmen who were studying in health related Faculties of Hacettepe University, Turkey on oral health related issues. Methods: All first year students (a total of 964) from health related faculties of Hacettepe University were invited to participate in the study. Data were collected via a structured, pre-tested, self-administered questionnaire. Participation in the study was voluntary. The Ethical Committee of Hacettepe University approved the study and oral consent of the students was obtained. The data were processed by SPSS 15.0 program. Results: 853 students returned completed questionnaires, which was an 88.5% response rate. They were studying in the Medicine, Pharmacy, Dentistry and Health Sciences Faculties; 303 (35.5%) were male. The mean age of respondents was 18.87 years (±1.17). 502 (58.9%) were satisfied with the appearance of their teeth, 433 (50.8%) evaluated the health of their teeth as "medium" and 366 (49.2%) their gum health as good. The three commonest answers to the question "if a dentist examines your mouth now, what will he/she recommend were 284 (33.3%) improve your tooth brushing, 248 (29.1%) he/she should provide a filling, 187 (21.9%) he/she should provide orthodontic treatment. Of the students 412 (48.3%) thought that they needed treatment related to their teeth. 282 (33.1%) did not know whether there was a protective substance in the tooth paste or not; only 64 (13.2%) knew about the benefits of fluoride. According to the students, the main reason
for bleeding from gums was inflammation 358 (42.0%), and 408 (47.8%) stated that taking vitamin C will prevent bleeding. 781 (91.6%) thought that it was important to have healthy teeth for general health; and 635 (74.4%) that regular tooth brushing could prevent decay. **Conclusions:** The opinions of the students have importance in the planning and implementation of the oral related training. *Financially supported by Hacettepe University Scientific Research Unit.*


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Globally, tobacco is killing humans without discrimination of caste, creed or colour. The role of (oral) health professionals in combating this epidemic has been time and again endorsed by world health agencies. Tobacco control may be the single most important service dental professionals can provide for their patients’ overall health. **Aim:** Assess the understanding and contribution of oral health professionals’ towards tobacco control activities. **Methods:** Oral health professionals comprising of a dentist, teachers, students, dental hygienist, dental assistant, dental technician and secretary formed the study subjects. The purposeful sample of nine included five males and four females, and was based in the city of Umeå in the north of Sweden. All subjects were aware of the topic of the study before agreeing to participate and written informed consent was obtained from each of them. They gave in-depth interviews to open-ended questions using a semi-structured interview guide following four themes: individual, professional, regional/national and global. Interpretation of data was done using a content analysis approach. **Results:** It was established that a lack of training, disintegrated profile of the oral health profession, conservative thoughts about the role of dentists and importance of time and absence of payment for prevention, account for the lack of adherence to tobacco control services. Dental hygienists are the only group involved in tobacco control services. Furthermore, it was shown that the easy availability and accessibility of smoking tobacco and/or “snus” (a moist powder tobacco product placed under the upper lip) and peer influence lead to initiation of tobacco use in Sweden. A general lack of understanding and awareness amongst the study subjects on tobacco production harms and global treaties was another major finding. **Conclusions:** The study shows oral health professionals in Umeå believe that Sweden owes its success in smoking reduction to the network of local activities, as most oral health personnel are unaware of global activities, but are aware and do participate in local and national efforts. For the complete cessation of smoking in Sweden, by the year 2025 under the ‘Tobacco Endgame’ program, involvement and inclusion of oral health professionals in this public health approach may strengthen the impact of this and other such programs and endow larger global health gains. **Methods of funding:** A scholarship award for this study to Nausheen Khan, by a philanthropic organisation, Harpreet Foundation based in New Delhi India.
Clinical profiles and psychosocial status of temporomandibular disorders (TMD) patients can be used for identification of their treatment-seeking behaviour and for planning a comprehensive treatment care program. The aim of this study was to examine the relationships between psychosocial profiles and treatment seeking behaviours in TMD patients with chronic pain at least 6 months in duration. **Methods:** Between July and September 2012, one hundred and four consecutive patients (40 male and 64 female) referred to the Department of Prosthodontics, Faculty of Dentistry, Istanbul University, were included in the study. Clinical examinations were performed in accordance with the Research Diagnostic Criteria of TMD (RDC/TMD). Subjects completed the RDC/TMD Axis II self-report measures, which include the Graded Chronic Pain Scale, the Jaw Disability Checklist, and the Revised Symptom Checklist. Patients were excluded from the study if they: (1) had acute TMD pain for less than 6 months; (2) had systemic rheumatic disease; (3) were under the age of 18 years; (4) had a history of psychiatric illness; (5) were pregnant; and (6) were unable or unwilling to consent. All patients were subsequently divided into 3 groups based on their RDC/TMD axis I diagnostic groups. Patients were classified into two groups according to their treatment-seeking status before attending our clinic using a single specific question of the RDC/TMD axis II questionnaire: treatment-seeking group and non-treatment-seeking group. Data were analysed using descriptive statistics, t-test, Mann–Whitney U-test, and chi-square test. Statistical analysis was performed using IBM SPSS Statistics 19 for Windows (SPSS Inc., Chicago, IL, USA). All participants signed informed consent and the study was approved by the ethics committee of Istanbul Faculty of Medicine. **Results:** Muscle and joint pain were found in 64.9% and 31.8% of the patients, respectively, and 27.3% of the patients suffered from both muscle and joint pain. Of the 104 patients who were enrolled, 43 were self-referred and 61 were referred from general and specialist dental or medical practitioners in the community. Psychosocial dysfunction was observed in 26% of patients based on graded chronic pain scores (Grade III and IV). There were no statistically significant differences between the treatment seeking and non-treatment seeking groups with regards to the socio-demographic characteristics (gender, age, education, employment, and marital status). In addition, no significant differences were found in depression and somatization scores between groups. Patients who had never been treated before being referred to our clinic reported lower levels of pain–related disability, functional impairment, and pain intensity than patients who had been treated for TMD pain. **Conclusion:** Before treatment, patterns of treatment seeking behaviour for chronic TMD pain may be used by clinicians to identify TMD patients at high-risk for pain-related disability and functional impairment who need a comprehensive treatment approach.
In Sweden approximately 80% of the adult population are enrolled in a regular dental check-up system. Increasing numbers of elderly patients have retained their own teeth. **Aims:** This study examined the oral health of frail/dependent newly arrived elderly in nursing homes. **Methods:** All new residents (>70 years old) at ten nursing homes in the Gothenburg region were asked consecutively to participate in the study. During the investigation period 94 elderly moved into the accommodations. Two declined and five were too ill to attend. Of the 87 who participated 27 (31%) were male (mean age: 86.1) and 60 (69%) women (mean age: 88.3). The study included an interview and clinical examination. Dental occlusions were registered with the Eichner index. Information regarding dental care and dental attendance during the last ten years was obtained from dental records for 55 of the participants. For another ten information of dental attendance was received from their relatives. The Ethical Committee at University of Gothenburg approved the study. Participation in the study was voluntary and written consent was needed. **Results:** Sixteen participants (19%) were edentulous and of these, two had no prosthetic replacements. Among the 70 dentate participants the mean number of teeth was 17 (range:1-29). Dental status according to Eichner’s index including both fixed and removable constructions revealed that 21 (24%) of participants lacked occlusal contacts completely and eight (10%) of these also lacked frontal contacts. The clinical examination showed that among the dentate, 17 (24%) had visible caries and 15 (21%) root remnants. Twelve participants (14%) had urgent need of dental treatment. When moving to the nursing home 38 (58%) had no regular contact with dental services. Dental records (max 10 years back in time) showed that 40 (73%) had had emergency dental care and that the most common treatment was extraction. **Conclusion:** This study showed the oral health of the elderly moving to nursing homes often are poor and many lack a good chewing ability. Thus, the good oral health of most elderly people in Sweden may be at risk to deteriorate when general health is failing and effective actions to prevent this are essential to find. **Methods of funding:** The Research and Development Board at the Goteborg Region Association of Local Authorities (FoU i Vastra/GR) funded this study.
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