



## Abstracts Presented on 15 September 2023 during 27th Annual European Association of Dental Public Health (EADPH) Congress

### Introduction

One hundred and eight abstracts were submitted for presentation at the 2023 EADPH annual congress. A number were subsequently withdrawn and the authors of abstracts 166 and 167 did not appear on the afternoon of Friday, 15 September, when their abstracts were due to be presented. The 97 abstracts which were presented on 15 September appear in the following pages. At the top of each abstract an asterisk appears by the name of the presenter.

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### EADPH 2023 ABSTRACT 157

#### Attitudes of Gynaecologists to Oral Health Care during Pregnancy in the Republic of North Macedonia

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**Aims:** The aim of the study was to determine the attitudes and the knowledge of gynaecologists in the Republic of North Macedonia on oral health care during the pregnancy.

**Methods:** The specialists and residents in obstetrics and gynaecology in Republic of North Macedonia were involved in this cross-sectional study. The survey was conducted by a questionnaire, which included questions on demography and issues related to the attitudes of gynaecologists to oral health care of pregnant women. The data were collected from January to May 2022 using Google Forms, a link to the questionnaire was sent, via social media platforms, to all 410 gynaecologists in the Republic of North Macedonia.

**Results:** There were 120 respondents, 86 (72%) were specialists and 34 (28%) residents in obstetrics and gynaecology. The response rate was 29%. As many as 116 (97%) gynaecologists reported that they advise their patients to visit the dentist for an examination. However, of these 16 (13%) advised their patients to postpone a visit to the dentist until the end of the pregnancy. Seventy nine (66 %) gynaecologists reported that their patients complained of gingival bleeding during pregnancy. Forty (33%) reported that their patients complained about tooth mobility during pregnancy. When asked where they get information about the connection between oral health and pregnancy, only 27 (24%) of the respondents answered correctly. Only 7 (6%), of whom 5 were specialists and 2 residents in obstetrics and gynaecology knew that breastfeeding a child can cause dental caries.

**Conclusion:** Additional collaboration between gynaecologists and dentists is essential in order for every pregnant woman to receive a satisfactory level of dental care and proper education in the prevention of oral diseases.

**Keywords:** Dental health education, Oral health, Pregnancy

**Acknowledgement:** The presenter thanks Colgate for financial support towards the costs of attending the congress

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## Parents-Observed Dental Treatment Needs among Lithuanian Schoolchildren in 2009 and 2022

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**Aim:** The aim of the study was to assess the parents-observed dental treatment needs among schoolchildren, living in the Klaipeda district of Lithuania, in 2009 and 2022.

**Methods:** In 2022, Parents' Behaviour Questionnaires (PBQ) were distributed to all the parents of 6-8, 10-12 and 14-17 year-old schoolchildren in all schools in the Klaipeda district. The same PBQ had been distributed in 2009. The study was approved by the University's Bioethics Committee. Data were analysed using IBM SPSS.17 software. Analysis was performed with a two sample independent proportions test and Chi-square test. A p-value <0.5 was considered as significant.

**Results:** In 2009, there were 206 responses (response rate 46.8%). In 2022, there were 539 responses (response rate 55.0%). In 2009 and 2022, responses by age group were as follows: 6-8 year-olds 80 (39.0%) vs 201 (37.3%), 10-12 year-olds: 72 (35.1%) vs 209 (38.8%), 14-17 year-olds: 54 (25.9%) vs 129 (23.9%). In 2009, (47.5%, n=38) of the 6-8 year-old schoolchildren had parents-observed dental treatment needs as compared with 14-17 year-olds (26.4%, n=14), p<0.05. In 2009, more 6-8 year-olds (36.3%, n=29) were taken to the dentist by their parents for preventive purposes as compared with 14-17 year-olds (28.3%, n=15), p<0.05. In 2022, more 6-8 year-olds (34.8%, n=70) had parents-observed dental treatment needs as compared with 14-17 year-olds (8.5%, n=11), p<0.001. A similar proportion of 6-8 year-olds (63.7%, n=114) were taken to the dentist by their parents for preventive care as compared with 14-17 year-olds (69.9%, n=86), p>0.05.

**Conclusions:** In the population studied, in both 2009 and 2022, parents-observed dental treatment needs were more frequent in 6-8 year-old children as compared with 14-17 year-olds. However, in 2022 there were no significant differences, regarding children's age, in the frequency with which the parents took their children for preventive check-ups.

**Keywords:** Dental treatment, Schoolchildren, Parents

**Acknowledgement:** The presenter thanks the Borrow Foundation for financial support towards the costs of attending the congress

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## Prevalence of and Risk Factors for Erosive Tooth wear among Schoolchildren in Tirana Albania

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Erosive tooth wear is a significant problem starting predominantly in adolescence and affecting the teeth throughout life.

**Aim:** The aim of the study was to estimate the prevalence of erosive tooth wear (ETW) and the related risk factors in 11-16 year-old schoolchildren in Tirana.

**Methods:** A cross-sectional study was conducted using cluster sampling in four schools in Tirana. A sample of 198 schoolchildren aged 11-16 years-old was recruited. Permission was received from the school authorities and written consent from the parents. The study was approved by the University of Tirana. Participants completed a questionnaire concerning diet, oral habits and oral care. A dental examination was performed by one trained and calibrated examiner. ETW was assessed by using the Basic Erosive Wear Examination (BEWE) index and dental caries with the D<sub>3</sub>MFT index. Descriptive statistics and Pearson correlation analysis were used.

**Results:** Prevalence of erosive tooth wear (BEWE>0) was 26%. Based on the cumulative score the risk of ETW was low for 22 (12%) and no risk for 160 (88%) of participants. The ETW correlation with age and vitamin C usage was slightly positive and statistically significant at p<0.05. Prevalence of D<sub>3</sub>MFT caries was 77%. This was slightly correlated with ETW but not significantly significant. Relative risk RR=1.13 indicated that individuals with BEWE>0 had 13% more chances for developing caries. Odds ratio = 2 indicated that the BEWE>0 group had 100% more chances having D<sub>3</sub>MFT>0 compared with BEWE=0 group. There was a slight positive correlation between ETW and acidic beverage, fruits and sweet consumption but this was not statistically significant.

**Conclusions:** There was a low risk of ETW among the study population. Individuals with ETW had a higher chance of developing dental caries.

**Keywords:** Erosive tooth wear, BEWE index, D<sub>3</sub>MFT

**Acknowledgement:** The presenter thanks Colgate for financial support towards the costs of attending the congress

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## EADPH 2023 ABSTRACT 160

### **Executive Functioning and Flossing Behaviour: A Temporal Self-Regulation Theory Perspective**

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Executive functioning (EF) processes facilitate self-control over behaviour, however despite links to several health behaviours and outcomes they have received little attention regarding oral health.

**Aim(s):** To test Temporal Self-regulation Theory (TST), which accounts for EF-capacity, as an explanation of flossing behaviour and explore the roles of unique EF-processes. TST posits that EF moderates the relationship between intention and behavioural frequency.

**Methods:** The University of Oslo, Regional Committee for Medical Research Ethics, and Norwegian Centre for Research Data approved the study. Young adults were recruited from several Norwegian universities to complete a digital survey, self-reporting monthly flossing frequency, flossing-intentions and behavioural-pre-potency (BP; i.e., flossing automaticity), and EF using the BRIEF-A. The BRIEF-A measures dysfunction related to global-EF, meta-cognitive and behavioural regulation capacity, and nine unique EF-processes. Model fit and moderation effects were tested using multivariate linear regression.

**Results:** Following 383 responses, 362 participants, of whom, 277 (76.5%) were female, were included in the analyses. A multivariate linear regression model explained flossing frequency ( $R^2=0.74$ ), and flossing was associated with intention ( $b=0.25$ ) and BP ( $b=0.68$ ). Interactions between intention and both BP ( $b=-0.14$ ) and global-EF ( $b=-0.06$ ) were significant ( $p < 0.05$ ). Sub-scales of EF were explored using the same model, revealing that behavioural regulation processes, specifically emotional control and task-shifting, best fitted the current TST model. Simple slopes revealed that moderation effects were only present given lower levels of BP.

**Conclusions:** In the population studied, EF moderated the translation of intentions into flossing behaviour. Specifically, emotional control and task-shifting were influential, and the influence was greater when support for behavioural automaticity (BP) was lower. As BP is lowest when beginning new behaviours, overcoming EF-barriers may represent a key step in establishing flossing routines that should be taken into consideration when developing health promotion efforts.

**Keywords:** Oral hygiene behaviour, Executive functioning, Temporal Self-Regulation Theory, Self-regulation, BRIEF-A

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## EADPH 2023 ABSTRACT NO 161

### **An international Delphi Study of Fluoride-based Caries Prevention in Nursery and Primary Schools**

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**Aim:** The aim of this study was to develop an international expert consensus on fluoride-based interventions in early-years education settings (nursery and primary schools) for reducing Early Childhood Caries (ECC), a recognised global public health challenge which has substantial impact on child wellbeing and healthcare system expenditure.

**Methods:** A systematic overview of systematic reviews, trials, and observational studies was performed to identify and critically appraise the available evidence on the effectiveness and cost-effectiveness of fluoride-based interventions in early-years education settings to prevent ECC. This was followed by a three stage Delphi panel study (n=21) consisting of round 1, an online survey to gather opinion on overview findings, round 2 an online survey to present collated group opinion and gather feedback and round 3 an online workshop with presentations and facilitated in-depth, recorded group discussions.

**Results:** There was high consensus that supervised toothbrushing delivered in nurseries (kindergartens) or primary schools should be supported, it shows greater benefit to most disadvantaged children, helps child social development, and is feasible in low/middle-income countries. There was more moderate support for fluoride varnish application in this setting in terms of preventive effectiveness (especially where fluoride toothbrushing is in place) and cost-effectiveness. It was agreed that policy makers should target at-risk groups where resources are limited, and that systemic fluoride interventions in this setting are no longer a priority.

**Conclusion:** In the population studied, toothbrushing with fluoridated toothpaste is internationally agreed as the most effective and cost-effective caries-prevention measure for children, providing the opportunity for universal population coverage including in low/middle-income countries.

**Keywords:** Early Childhood Caries, Fluoride based interventions, Delphi methods, Early years education

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## EADPH 2023 ABSTRACT 162

### White Spots Prevalence and Impact of Tooth Brushing during Orthodontic Treatment

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**Aim:** The aim of this study was to evaluate the prevalence of white spot (WS) lesions during orthodontic treatment with fixed appliances (FA) and its correlation with tooth brushing habits.

**Methods:** This cross-sectional study was conducted in a sample of patients requiring orthodontic treatment with FA. The study was approved by the University of Medicine, Tirana, Department of Prosthetics. Consent was obtained from the patients or parents for underage participants. Each patient received three examinations for WS: at T0 baseline, the day of FA application (WS =0); T1, three months later; and T2, six months after. Examination for WS was performed following the ICDAS criteria (score from 0 to 2) by two trained and calibrated examiners (Kappa = 0.88). At T0, teeth were first cleaned with prophylactic paste, isolated with cotton rolls, air-dried for 5 seconds and examined under dental chair light. Patients with WS lesions at T0 were excluded. The sample size was 74. During examination at T1 and T2 the bands were removed, the teeth were examined for WS. Patients were asked about the frequency of tooth brushing (from 0 to 4 times per day). Descriptive statistics and Independent sample t-test were performed and the type I error was set as  $p \leq 0.01$ .

**Results:** Prevalence of WS lesions was 59.5% at T1 and 60.8% at T2. The sequence of most frequently affected teeth was: upper first molars, lower left first molar, upper right central incisor, upper left lateral incisor, upper right canine, upper left first premolars, and lower right first molar. A higher frequency of daily tooth brushing was accompanied by a lower prevalence of WS with no statistical significance. In addition, no significant effect of gender was observed.

**Conclusions:** The prevalence of WS lesions increased during orthodontic treatment with FA. The most frequently affected teeth were the upper molars. Tooth brushing habits may influence the WS prevalence.

**Keywords:** White Spot Lesions, Orthodontic Treatment, Toothbrushing habits

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## The Opinions of Lithuanian Dental Hygienists on Their Essential Professional Qualities

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**Aim:** The aim of this exploratory study was to investigate the opinions of Lithuanian dental hygienists on essential professional qualities necessary for them to work effectively.

**Methods:** This was a qualitative study, with a semi-structured interview, which enquired into dental hygienists' experience, with regard to understanding their duties and concept of their profession. The study question was "How do dental hygienists understand their specialty and what duties do they perform?" Interviews were conducted with seven dental hygienists, who consented to participate in the study. They were audio recorded and a transcript was produced from which a thematic analysis of data from the interviews was performed. The study was approved by the Ethics Committee of the Dental Faculty of the University of Lisbon.

**Results:** Three themes were extracted from the transcript. They were: 1) understanding the specialty, 2) personal qualities, 3) the practical activities carried out by dental hygienists.

**Conclusions.** The study results showed the participating dental hygienists realised that their role is very broad and includes not only clinical work but also educational activities. A dental hygienist should have a variety of personal qualities, the most commonly mentioned were communication skills and empathy and patience with patients. In many cases, dental hygienists perform their activities in the private sector, performing the functions specified in their scope of practice, which is codified in national documents. However, it was mentioned that sometimes they have to perform additional activities that are not related to their competences, such as acting as dental nurses (chairside assistants), which do not allow them to fully engage in their roles as dental hygienists.

**Keywords:** Dental hygienist, Profession, Activities, Experience.

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## Exploring the Link between Parental Education Level and Dental Caries in Romanian Children

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**Aim:** The study, part of the first national oral health survey for children in Romania, aimed to determine the correlation between the level of the parents' education level and their 11–14-year-old schoolchildren's oral health status, taking into account preventive behaviour and socio-economic parameters.

**Methods:** A questionnaire was completed between 2019-2020 by a representative sample of 814 schoolchildren (388 boys and 426 girls), average age 12.29± 0.6 years. The children were then examined by calibrated dentists. The University Victor Babes at Timisoara's ethics committee approved the study. ICDAS criteria were used to classify visual caries lesion severity. Statistical analyses of the data were performed using SPSS 23.

**Results:** The mean D<sub>3</sub>MFT index for the sample was 2.93±2.70. High-school was the most common level of education completed by the parents. There was a positive and significant relationship between the mother's (rs = 0.02 \*\*, p < 0.01), and father's (rs = 0.18 \*\*, p < 0.01) education level and the frequency of toothbrushing in children and between the use of several oral hygiene aids and the level of education of the mother (rs = 0.06 \*\*, p < 0.01). The mean D<sub>3</sub>MFT was correlated significantly and negatively with the level of education of the mother (rs = -0.09 \*\*, p < 0.01). The higher the education level of the mother, the higher the RT index in children (rs = 0.09 \*\*, p < 0.01). A significant negative correlation was found between the D3T index and father's education level (rs = -0.18 \*\*, p < 0.01).



**Conclusions:** The results imply that increased caries prevalence may be correlated with low educational level of the parents. Preventive behaviour influenced caries prevalence and severity and was correlated with the presence of carious lesions and absence of treatment.

**Keywords:** Children's oral health, Parental education, Preventive behaviour

**Acknowledgements:** This research was funded by the Borrow Foundation, with the research grant registered at the University of Medicine and Pharmacy "Victor Babes", Timisoara, Romania under contract no. 18688/18.12.2018. The presenter thanks Colgate for financial support towards the costs of attending the congress.

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## EADPH 2023 ABSTRACT 168

### Caries Prevalence and Severity in Immature Permanent First Molar Teeth

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**Aims:** The first permanent molars (PFMs) are the most susceptible to caries. This retrospective study aimed to assess the prevalence and severity of caries in the immature PFMs of children 6-10 years old using panoramic radiographs.

**Methods:** The study protocol was approved by the Clinical Research Ethics Committee of Marmara University Faculty of Dentistry. (2022/52) A total of 985 panoramic radiographs of children aged between 6 and 10 years old were examined. Radiographic caries scoring of PFMs based on Pitts (1984) criteria: R0D0-Sound (no radiolucency), R1D1-Initial caries (radiolucency confined to outer half of enamel), R2D2-Enamel caries (radiolucency in the outer and inner halves of enamel), and R3D3-Dentine caries (in both the outer and inner halves of dentine) was performed. The relationship between the variables was analysed with chi-square, Kruskal-Wallis, and Bonferroni tests, and  $p < 0.05$  was considered statistically significant.

**Results:** Among 985 panoramic radiographs, 762 radiographs of 3048 immature PFMs met the inclusion criteria. The age range of the children (391 (51.3%) boys, 371 (48.7%) girls) was 6-10 years (mean age 8.12 years). The prevalence of PFMs caries was 40.3%, 44.3%, 56.1%, 75%, and 67.3% in children aged 6, 7, 8, 9, and 10, respectively. Of the 3048 PFMs examined, 1989 (65.25%) had R0D0, 552 (18.1%) had R1D1, 349 (11.5%) had R2D2, and 158 (5.2%) had R3D3. The mandibular first right molar was the most commonly affected tooth (41.2%). While there was a significant relationship between caries severity and upper or lower jaw ( $p=0.001$ ), and age ( $p=0.001$ ); no gender differences were observed. ( $p=0.613$ ).

**Conclusion:** The severity of carious lesions in the developing first permanent teeth increased with chronological age. This study emphasises the significance of early assessment of post-eruptive permanent first molars (PFMs) and raising public awareness about oral health, to prevent the necessity for more complex and costly treatments.

**Keywords:** Dental caries, Prevalence, Permanent first molars

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## EADPH 2023 ABSTRACT 169

### Treatment Needs and Treatment Provided for Children in the Dental Clinic University of Banja Luka; Bosnia and Herzegovina in 2019-2022

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**Aim:** In Bosnia and Herzegovina, the Public Dental Service (PDS) has provided free annual examinations, preventive measures and all necessary care for all children and adolescents (< 15 years). This study aimed to examine the relationship between treatment needs and treatment measures provided by the Dental Clinic of the University of Banja Luka to children under 15 years of age from 2019 to 2022.

**Methods:** Data on patients (< 15 years), DMFT/dmft and treatment provided between 2019 and 2022 were collected retrospectively from the Dental Clinic University of Banja Luka database. Prior to the research, written consent for conducting the research was obtained from the Ethics Committee (reference number 18/4.78/22) of the Faculty of Medicine, University of BL. Treatment measures were listed in 4 categories (preventive and prophylactic measures, restorative, endodontic and extraction).

**Results:** 771 children and adolescents visited the Dental Clinic, 13,726 teeth were examined and 6,994 treatment measures were provided for them during the study period. 2,986 (93.5%) of caries teeth were treated (restorative, endodontic and extraction). 2,207 (73.9%) of all treated carious teeth were filled, 696 (23.3%) were endodontically treated and 83 (2.7%) were extracted. Preventive and prophylactic measures were provided for only 3,048 (22.2%) of teeth included in the study.

**Conclusion:** Although children's oral health was improved and restorative treatments were provided, the provision of preventive measures not as frequent as that of invasive treatments.

**Keywords:** Treatment needs, Treatment provided, Children,

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## EADPH 2023 ABSTRACT 170

### **Diagnostic Accuracy for Caries Detection of Digital Images Using an Intraoral Camera in a Primary School Setting. A Pilot Study**

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**Aim:** A cross-sectional study was carried out to compare the diagnostic accuracy of digital images using an intraoral camera with visual examination for the detection of caries in a primary school setting as part of a supervised toothbrushing programme.

**Methods:** Qualified Dental Care Professionals (DCPs) captured intraoral digital images of all children from two randomly selected schools participating in a supervised toothbrushing program using an intraoral camera between January and February 2023. In parallel, an experienced dentist performed a visual examination on all children using a dental mirror and a torch. Examinations were assisted by DCP students. All children received supervised toothbrushing training and fluoride varnish application. Subsequently, digital images were remotely and asynchronously evaluated by another dentist. High-risk cases were referred to local dental services. The study was approved by the University of Portsmouth Ethics Committee and parental consent was obtained for each child.

**Results:** Fifty six children (Mean age=5.7 years old) from two primary schools were screened. A total of 547 digital images were obtained. On average, 7 images per child were considered usable. Caries prevalence was 21.4% with a visual examination and 51.8% using digital photographs. Digital images had 91.7% sensitivity and specificity 59.1% compared with the visual screening for caries detection.

**Conclusions:** Digital images obtained through intraoral cameras showed comparable diagnostic accuracy to visual examination for caries detection in children. The digital images had a high sensitivity for caries detection. Asynchronous assessment of digital images may serve as an alternative approach for caries detection in oral health screening programs in school settings.

**Keywords:** Caries, Intraoral Cameras, Supervised Toothbrushing, Primary Schools

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## EADPH 2023 ABSTRACT 171

### **Reasons For Betel Quid Chewing And Dependency Among Adults In Manipur**

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**Aims:** The areca nut in betel quid, the fourth most psychoactive substance, is a Group 1 carcinogen. Betel quid consumed with and without tobacco additives is a widely accepted practice in the South-East Asian Region. In India, it is used in various ways, ranging from religious ceremonies to a mouth freshener. This study aimed to assess the reasons for areca nut consumption and the dependency associated with its use.

**Methods:** The descriptive cross-sectional survey was conducted in an outpatient department of a tertiary hospital in Manipur between January and May 2023. All patients who attended the outpatient department and met the selection criteria were invited to take part in the study. It employed a self-administered questionnaire to elicit the reasons for: areca nut consumption and for betel quid chewing and to assess dependency, using the Betel Quid Dependence Scale. Participation was voluntary and free not to answer or quit. Ethics approval for the study was given by the Regional Institute of Medical Sciences Imphal ethics committee. Chi-square and univariate and multivariate binary logistic regression analyses were employed to analyse the data.

**Results:** Out of 500 participants, 441 (92%) experienced pleasure and 327 (68%) chewed betel to relieve stress. The results revealed relatively high levels of endorsement for 'physical and psychological urgent need'. Users with and without tobacco additives were highly statistically significantly associated with dependence ( $p=0.0001$ ). Dependence was statistically significantly associated with gender, level of education, amount of betel quid consumed daily and duration of use ( $p<0.05$ ).

**Conclusions:** Areca nut use is of major concern in India, especially in the North-Eastern states and its use has been increasing globally, as betel quid chewing is a personal behaviour. Because of its high dependency it is not easy to quit, so designing behavioural change motivation programs may help its users to quit. Also, there is a need to refine strategies for control by policymakers and adapt them to the local context, with surveillance and cessation guidelines, in order to address this issue.

**Keywords:** Betel quid, Tobacco, Addiction, Carcinogens

**Acknowledgement:** The presenter thanks Colgate for financial support towards the costs of attending the congress

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## EADPH 2023 ABSTRACT 172

### **Effectiveness of Sign Language with Other Educational Interventions in Improving Oral Health of Hearing Impaired Individuals: A Systematic Review and Meta-analysis**

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**Aim:** Individuals with special needs, who require special care, are more vulnerable to developing oral health problems. Sign language has been used as an intervention for improving the oral health of hearing impaired individuals. The aim of this systematic review and meta-analysis was to assess the effectiveness of sign language, compared to other educational interventions, in improving the oral health of hearing impaired individuals

**Methods:** The focused question of the review was: Is the use of sign language more effective than other educational interventions in improving oral hygiene, plaque levels and gingival health among hearing impaired children and adolescent? PubMed, Scopus, Embase and Cochrane Central Register of Controlled Trials databases were searched with no restriction on publication date. The search terms Hearing Loss, Hearing Impairment, Deaf, Disability, Oral Health, Dental Health were used. Analytical and experimental studies evaluating and comparing the effectiveness of sign language with other educational intervention groups such as videos, posters etc were included in the study. Risk of bias was assessed using RoB2 for randomized and ROBINS ( Risk of Bias in Non- Randomised Studies- of interventions) for non-randomised trials. Exclusion and inclusion criteria were applied.

**Results:** Five thousand five hundred sixty eight (5,568) publications and training aids were initially identified. However, only three relevant publications, which fulfilled the inclusion criteria were identified, and included in the systematic review and meta-analysis. A significant difference was reported with respect to the plaque level, gingival health and oral hygiene status favouring sign language over other interventions was found.

**Conclusion:** The three studies reported that sign language interventions was effective in improving the gingival health, plaque levels and oral hygiene status of hearing impaired individuals. More studies are required to confirm this finding.

**Keywords:** Oral health, Oral hygiene, Hearing impairments

**Acknowledgement:** The presenter thanks Colgate for financial support towards the costs of attending the congress

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## Pregnancy and Oral Health Related Quality of Life - A Phenomenological Study

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**Aims:** Complex psychological and physiological changes occur in women's body during pregnancy. These changes affect both oral health status and oral health-related quality of life (OHRQoL). In almost all of the previous cross-sectional design studies on pregnant women, generic OHRQoL instruments have been used to measure OHRQoL. While such instruments may be reliable, they may not be appropriate to evaluate the OHRQoL in special populations such as pregnant women. The aim of this study was to investigate the self-perceived factors affecting the OHRQoL among pregnant women.

**Methods:** In this qualitative descriptive study, twenty-seven pregnant women were recruited from four healthcare centres located in Isfahan city, Iran. The study protocol was approved by the Ethics Committee of Isfahan University of Medical Sciences. The aim of and protocol for the study were explained to each participant, and written consent was obtained before each interview. The interviews were conducted from October 2019 to March 2020. Interpretative phenomenological analysis was used to collect and analyse the data. Four criteria of credibility, dependability, transferability, and confirmability were implemented through established procedures to confirm the study's rigour.

**Results:** Three major themes and six sub-themes, capturing the impacts of pregnancy on women's OHRQoL, were identified. They covered all areas of life, including daily life, psychological well-being, social life, physical impact, and also barriers to utilisation of dental care services. Some new domains such as "dentists' refusal to treat pregnant women", "negative feelings about pregnancy" and "concerns about foetal health" were found as important factors which could influence the OHRQoL during pregnancy.

**Conclusion:** The findings of this study help to understand the oral health issues impacting women during pregnancy better and to achieve person-centred care and improved oral health outcomes in pregnant women. The conceptual framework created, based on the results of this study, may help health care workers and policy makers to improve the health of pregnant women.

**Keywords:** Pregnancy, Oral health, Health related quality of life, Qualitative research

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## Projection of the Dentists/population Ratio According to Scenarios for Population Growth Rate

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**Aim:** The population of Iran is changing from a young population to an older one, and new policies of the Ministry of Health and Medical Education have increased the number of dental students entering dental schools. The aim of present study was to assess the dentist/population ratio according to three scenarios of projected population growth rates, and increasing number of dentists until 2060.

**Methods:** In this descriptive study the data were collected from relevant authorities, including the Ministry of Health, the Iran Medical Council and the Statistical Centre of Iran. Two different scenarios for population growth rate were applied based on an investigation by the Statistical Centre of Iran. The dentists/population ratios were reported for general and specialist dentists.

**Results:** According to two fertility rate estimates (low=1.6 and high=2.5), the population of Iran will be 91,415,635 or 93,310,440 in 2035 and 93,481,520 or 107,217,445 in 2060. The number of dentists in 2020 was 43,394, of whom 37,871 were general dentists and 5,523 were specialists. In 2035 and 2060, the number of dentists is estimated at 80,676 or 147,251, respectively. The total number of dentists, general dentists, and specialist dentists per thousand people in 2020 was 0.5, 0.4, and 0.07, respectively. It is projected that in 2035, these numbers will be 0.9, 0.8, and 0.11 per thousand people, for both scenarios of low and high fertility rates. This number in 2060 will be 1.6, 1.4, and 0.2 per thousand people for the low scenario and 1.4, 1.2, and 0.2 people, for the high scenario.

**Conclusion:** In both scenarios of low and high population growth rate in Iran, the dentist/population ratio will surpass normal need in 2035, and if it continues there are likely to be unemployed dentists by 2060.

**Keywords:** Human resource, Dentistry, Population growth rate, Iran

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## EADPH 2023 ABSTRACT 176

### Patients' Knowledge about COVID-19 Transmission and Prevention in Dental Settings

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**Aims:** The Coronavirus disease 2019 (COVID-19) pandemic resulted in limiting dental treatments to emergencies, and taking intense precautionary measures in dental settings. This study aimed to investigate the knowledge of Iranian dental patients about transmission routes of COVID-19 in the dental setting and required preparation to prevent the disease from spreading, and its related factors.

**Methods:** This cross-sectional study was approved by the Research Ethics Committee of the Tehran University of Medical Sciences. The study was conducted in October 2021 through phone-interview and online-survey. A systematic random sampling method was used to select dental patients from TUMS' dental clinics. All respondents gave their informed consent to participate in the study. Backward step-wise multilevel logistic regression served to assess the association of background factors with knowledge domains with the level of significance at 5%.

**Results:** Out of 378 successful phone calls, a total of 244 respondents completed the survey (response rate=64.5%) of whom 137 (56.1%) were female. Better knowledge of COVID-19 transmission routes was associated with living with high-risk people and receiving COVID-19 vaccine ( $p=0.014$  and  $p=0.013$ , respectively). The logistic regression model, controlled by age, revealed that among 30-year-olds and older participants, better knowledge of necessary preparations in dental settings was associated with being female or vaccinated ( $p =0.012$  and  $p =0.001$ , respectively).

**Conclusion:** Although dental patients showed acceptable knowledge about the transmission routes of COVID-19 and the required preparations in dental settings, there seemed to be room for improvement in this regard. The findings have some implications for public awareness and preparations for possible future pandemics.

**Keywords:** Surveys and questionnaires; Knowledge; COVID-19; SARS-CoV-2; Disease Transmission, Infectious; Prevention and Control.

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## Dental Erosion in Competitive Swimmers in Istanbul: A Pilot Study

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**Aim:** This study aimed to evaluate dental erosion in young competitive swimmers.

**Methods:** The study was designed as a cross-sectional survey, with a questionnaire and an intra-oral examination. The study protocol was approved by the Medipol University Faculty of Dentistry Clinical Research Ethical Committee. Full details about the study were given to participants and consent was obtained. Thirty-seven swimmers aged 7–19 years, who regularly practice under the Turkish swimming federation in Istanbul between March 2020 and March 2021 were included in the study. Common erosion risk factors and dental erosion were assessed using the questionnaire and the BEWE index. The Shapiro-Wilk test was used to determine whether continuous variables were normally distributed. The swimmers were allocated into two groups according to their swimming hours (<10 hours, >10 hours per week). The comparison of two independent groups for non-normal data was analysed by the Mann-Whitney-U test. Statistical analysis of the data was performed with SPSS V.26 package programme at  $p < 0.05$  significance level.

**Results:** The participants consisted of 18 females (mean age 12.9 years ( $\pm 3.1$ ), and 19 males (mean age 13.3 years ( $\pm 2.9$ )) who spent an average of 10.1 ( $\pm 4.2$ ) hours in the swimming pool per week. Dental erosion was detected in 18 (49%) of the swimmers. The mean value of the BEWE index was 0.6 ( $\pm 0.6$ ). The mean BEWE score was 0.6 for females and 0.5 for males. There was no statistically significant difference between BEWE indices according to gender ( $p = 0.644$ ). Females reported consuming 57% of the acidic, carbonated foods, while males reported consuming 41%. There was no statistically significant difference in BEWE indexes ( $p = 0.534$ ).

**Conclusions:** In the population studied, dental erosion of a very low degree was observed in half of the competitive swimmers. Further studies with a larger sample size are needed to determine the effect of swimming pools and the diet habits of swimmers.

**Keywords:** Dental erosion; Swimmers; BEWE index

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## The Utilisation of Dental Services and Socio-economic Status in Two Districts of Tehran

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**Aim:** This study aimed to evaluate the rates of dental service types used by patients with different socio-economic status in Tehran. **Methods:** This cross-sectional study evaluated dental services provided for 440 patients, who were selected from those attending dental clinics on two campuses of Tehran University of Medical Sciences, Faculty of Dentistry from October 2018 to Jan 2019. The participants were selected using quota sampling. The campuses were in districts where the residents had different socio-economic status. The first Campus was in a district where its inhabitants were predominantly of moderate/high socio-economic status. At the second campus the patients had a predominantly low socio-economic status. The study was approved by the Ethics Committee of Tehran University of Medical Sciences.

**Results:** The mean age of participants was 38.4 years (SD=11.9, range 3–73). The majority 317 (72%) were female of whom 352 (80%) were married. Most of the participants 243 (55.2%) had high school diplomas. At the first campus higher rates of restorative treatments (18.3%), orthodontic treatments (31.5%), dental implants (3.9%), and prevention & caries diagnosis (7.3%) were provided. At the second campus, restorative treatments comprised 16.4% of services and no dental implants had been provided. Orthodontic treatments comprised only 4.8% of services provided at the second campus. The rates of prosthodontic treatments (4.3%), and tooth extractions (11.6%) were lower at the first campus compared to the second campus with 6.5% of prosthodontic services and 17.3% of tooth extractions. At the second campus, treatment for endodontics problems was provided for 35.2% of patients compared to 15.9% of patients at the first campus.

**Conclusion:** In the population studied, patients with a moderate/high socio-economic status received dental services that were more orientated towards orthodontic treatment and maintenance of teeth, rather than the treatment of dental caries, replacement of missing teeth, and tooth extractions.

**Keywords:** Uptake, Dental services , Socio-economic status.

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## EADPH 2023 ABSTRACT 179

### Iranian Senior Dental Students' Awareness Regarding Dentists' Roles in Disaster Responses

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**Aims:** The occurrence of natural disasters leads to a sudden increasing need for trained personnel, other than the traditional medical practitioners, including dentists. The aim was to investigate the awareness of senior dental students in Tehran, Iran, regarding their role in disaster responses.

**Methods:** This online cross-sectional survey was approved by the Research Ethics Committee of Tehran University of Medical Sciences. The study recruited a convenience sample of 240 senior dental students from three different dental schools in Tehran. The students were invited to complete an anonymous valid and reliable questionnaire including background information (gender, age, and history of disaster experience), and nine questions on awareness regarding dentists' roles in disaster responses. A score of 0 was given to "no" and "I do not know" answers; a score of 1 was assigned to "somewhat" answers; and a score of 2 was assigned to "yes" answers. Data were analysed using descriptive statistics and the t-test.

**Results:** The mean age of participants was 24.7±2.3 years. The majority 148 (61.7%) were women, and 50 (20.8%) reported a history of disaster experience. The most correct answers were related to "familiarity with triage" and "using the dental records of patients in disasters for identification", which were selected by 143 (59.6%) and 142 (59.2%) of respondents, respectively. The mean score for awareness was 7.1±3.0 (out of 18). There was no significant difference in the responses between men and women ( $p= 0.40$ ) and between those who had disaster experience and those who did not ( $p= 0.27$ ) regarding their awareness score.

**Conclusions:** The awareness of the senior dental students in Iran seems to be deficient in the field of disaster response. Focusing on dental students' knowledge through changes in the curriculum could improve their preparedness to act as team members in response to disasters such as the COVID-19 pandemic.

**Keywords:** Disaster management, Dental students, Knowledge, Pandemic, Awareness

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## EADPH 2023 ABSTRACT 180

### Practices Regarding Fluoride Products among a Group of Dentists from Bucharest, Romania

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**Aim:** This study aimed to assess dentists' recommendations for the use of fluoride products.



**Methods:** A group of 180 Bucharest dentists with a minimum of one year's clinical experience, and who were not university staff members participated in the study. They were recruited as a random sample between October 2022 and April 2023. Their mean age was 36.7±10.0 years. Data were collected using a 16 item online questionnaire. Ethics committee of the Carol Davila University approved the study.

**Results:** Of the 149 (83%) dentists who declared involvement in patients' oral hygiene counselling, only 99 (55%) recommend fluoride-containing products. 1450 ppm fluoride toothpaste was recommended by 105 dentists (58%) for adults and by 47 (26%) for children over 6 years of age. Forty nine (27%) recommended 1000 ppm fluoride toothpaste for 3-6 year-olds and 25 (14%) for 6 months to 2 year-old children. Optimal quantity of toothpaste, up to full length of the tooth-brush was recommended to adults by 83 dentists (46%) and by 43 (24%) to children older than 6 years of age. Pea size was recommended by 82 dentists (46%) to children of 3-6 years of age and grain of rice size by 94 (52%) to children between 6 months and 2 years. One hundred and four dentists (58%) recommended fluoride mouth-rises. In-office topical fluoride applications after professional cleaning were recommended by 31 dentists (17%) and by 103 (57%) to patients with dentinal hypersensitivity. Fifty four (30%) dentists practiced after whitening and 53 (29%) only for high caries risk patients. Eight dentists (5%) reported that they worried about the risks related to: fluoride toothpastes, 31 (17%) to fluoride rinses, 16 (10%) to in-office fluoride applications and 105 (58%) to fluoride tablets.

**Conclusion:** In the group studied, the dentists gave sub-optimal recommendations for the use of fluoride products and demonstrated an inadequate knowledge of side-effects of fluoride products.

**Keywords:** Oral health, Fluoride use, Fluoride products, Caries prevention

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## EADPH 2023 ABSTRACT 181

### Empowering Oral Health: Promoting Dental Education in a Special Needs Adult Group

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**Aim:** The aim of this study was to investigate the prevalence of caries and oral hygiene status in a group of adults with mental disabilities and determine their need for treatment.

**Methods:** In 2022, written consent was sought and obtained from the legal guardians of individuals attending a special institution in Timis County and they were asked to express their consent for dental examinations and treatment. One hundred and four adults aged 18-45 years (mean age 28.3, SD 8.32) with mild mental retardation (IQ 50-70) were investigated. The kappa coefficient for inter-examiner agreement was 0.7. Oral hygiene status was assessed by visual evaluation PI-Index (Sillness and Løe, 1964). Adults were divided into three groups according to age: n1 = 44 adults aged 18-24 years (mean age 20.4, SD 1.9), n2 = 32 adults aged 25-34 years (mean age 29.5, SD 3.4), n3 = 28 adults aged 35-45 years (mean age 39.4, SD 3.1).

**Results:** During the course of the study there were 11 dropouts due to lack of cooperation. In terms of gender distribution 56 (54%) of all participants were male. No differences in caries prevalence between men and women were observed. The mean D<sub>3</sub>MFT of the whole sample was 14.5. The mean D<sub>3</sub>MFT value for group 1 was 13.4. For group 2 the mean D<sub>3</sub>MFT value was 15.1 and the D<sub>3</sub>MFT for group 3 was 17.1. The plaque index averaged 2.4. With advancing age an increase in its mean value was observed. The actual treatment of dental caries was only partially achieved due to the communication difficulties and high degree of anxiety of these patients.

**Conclusions:** These results indicate that in the group studied caries prevalence is high and dental health education should be individualized according to age groups and levels of understanding.

**Keywords:** Mental disabilities, Oral hygiene, PI-Index, DMFT

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## Iranian Senior Dental Students' Motivation for a Career in Dental Public Health

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**Aim:** The aim of four past studies has been to investigate the trend of Iranian senior dental students' motivation for a career in dental public health after graduation.

**Methods:** The studies were approved by Tehran University of Medical Sciences Research Ethics Committee and were performed between 2005 and 2015. A stratified cluster random sampling method, which included six dental schools in Iran, was performed. All final year students were asked to voluntarily participate in the study by completing a self-administered questionnaire. In addition to providing demographic information, the questionnaire asked the students to indicate their willingness to work in each of the nine available sub-specialties of dentistry after graduation, on a scale of 0–5. Scores 4 and 5 were considered as favourable scores. The scores of the sub-specialties related to oral public health i.e.: to work as a dentist in the primary health care system, to work or study in the field of oral public health, or to be a researcher in dentistry, were statistically analysed with the Chi-square test.

**Results:** Altogether a total of 960 (81%) senior dental students participated in 2005, 2008, 2011, and 2015. There was no significant association between genders and parents' job and the students' motivation to work in the field of dental public health. Only 177 (20%) of students awarded favourable scores to working as a dentist in the primary health care system, 177 (19.8%) to working or studying in the field of oral public health and 240 (27.4%) to working as a researcher in dentistry. ( $p < 0.05$ ).

**Conclusions:** The results of the four studies indicate that there is scope for more emphasis on dental public health when revisions of the national dental curriculum in Iran are made. A fifth study, using the same methods, is currently underway and its results will be available in October 2023.

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**Keywords:** Dental public health, Dental education, Dental students, Career choice

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## Lithuanian Dental Assistants' Knowledge of Peculiarities of Working with Children with Autism Spectrum Disorder

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**Aims:** The aim of this study was to investigate dental assistant's knowledge of peculiarities when working with children with Autism Spectrum Disorder (ASD).

**Methods:** The study was conducted from September 2022 to May 2023 in Kaunas, Lithuania. A total of 117 dental assistants were recruited with the help of the Association of Dental Assistants of Lithuania and participated in the study. After giving informed consent they completed an online questionnaire. Descriptive statistics were used to assess the resulting data. Permission to conduct the study was given by the Department of Oral Health at Kauno kolegija Higher Education institution.

**Results:** Fifty three (45%) of dentist assistants reported their knowledge of the work and communication peculiarities with patients with ASD as not bad but claim that they should learn more about it. Thirty five (30%) stated that they knew absolutely nothing about communicating and working with such patients. The majority, 77(66%), reported that they were aware that when working with children with ASD, the same dental team should be involved throughout all procedures, and 76 (65%) that the patient should be familiarised with the clinical environment. Sixty nine (59%) reported that they believed that scheduling appointments on the same days and at the same time is less important when working with these patients. Ninety (77%) mentioned that they knew they needed to speak at a slower pace, with a normal tone of voice and using short sentences when interacting with ASD patients.

**Conclusions:** These results revealed that, in the group studied, the majority of dentist assistants had some knowledge about the peculiarities of working with children with ASD. However, a significant number lacked knowledge about the methods of appointment planning and their importance.

**Keywords:** Dental assistants, Autism Spectrum Disorder

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## EADPH 2023 ABSTRACT 184

### Experts Opinions on Integration of Children's Oral Health Care into Primary Health Care in Iran

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**Aims:** The WHO's Global Oral Health Action Plan 2023–2030, and FDI's Vision 2030 calls for the integration of oral health into Primary Health Care (PHC). This happened in 1996, in Iran. However, several barriers seem to exist, at different levels, to the implementation of the programme. In this qualitative study, the aim was to explore experts' opinions on integration of early childhood oral health care into primary health services in Tehran.

**Methods:** In 2023, using the triangulation approach, a purposeful sampling method was employed to invite the chief officers of oral health, non-communicable disease prevention, and the population and mother and child health departments of the deputy chief officer for health, as well as members from two faculties of a school of dentistry, a community oral health department and one epidemiologist. Information was collected through focus group discussion and three deep interviews and analysed into themes. Ethics approval for the study was granted by the ethics committee of the Tehran University of Medical Sciences.

**Results:** The major reported themes for the strength and opportunities of the programme were regular visits of mothers to health centres, to receive monitoring, vaccination services and the more preventive approach of the newly graduated dentists. The main weakness and threats were: low knowledge and demands of mothers with regard to oral health issues and staff unwillingness to fulfil their oral health care commitments due to multiple barriers.

**Conclusions:** The high level of early childhood caries reflects an insufficiency in the present oral health programmes. The present results may serve as baseline information for planning and formulating a more appropriate programme and overcoming the challenges within the present integrated oral health programme in Iran and countries with developing oral health care systems.

**Keywords:** Early childhood, Primary health care, Oral health, Integration

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## EADPH 2023 ABSTRACT 185

### Development of a Novel Oral Health Tool for Caregivers of Older People

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**Aim:** To develop a comprehensive and standardised tool to evaluate knowledge, attitude and practice (KAP) of caregivers, on oral healthcare, of Hindi speaking, Indian, older people.

**Methods:** A cross-cultural adaptation and psychometric testing study was conducted, between August 2022 and January 2023, among subject experts and caregivers for institutionalised older people, who worked in senior citizen homes in North India. Study tool genesis involved development, validation, pilot testing, cross-cultural adaptation and reliability phases. Sample size for reliability was calculated using the Bonett (2002) formula. A total of 56 subjects were randomly selected. The development phase encompassed literature review, expert review and evaluation. Content validity was assessed through the content validity ratio (CVR) and the content validity index (CVI). A pilot study was conducted on a random sample of 10 caregivers. The tool was translated and cross-culturally adapted into Hindi using Beaton's protocol. Data were collected through interviews, during institutional home visits, with a response rate of 96%. Consent from participants was taken prior to the study. Ethical clearance was obtained from Institute of Medical Education and Research's Ethics Committee. Psychometric properties were evaluated following the Consensus-based Standards for the selection of health status Measurement Instruments (COSMIN) reporting guidelines. Cronbach's alpha was calculated to assess internal consistency reliability.

**Results:** A total of 29 items were developed in three domains. After expert consultations, 11 items were deleted. Two further items were deleted because of poor CVI scores. The final modified questionnaire consisted of 16 items. Content validity revealed that the tool had an excellent Scale-CVI/Ave score of 0.9 for all items. Participants' mean age was  $37.7 \pm 1.4$  years and 30 (54%) were female. The internal consistency reliability was 0.8 for the total scale, indicating good internal consistency.

**Conclusion:** This Hindi version of the newly developed tool had excellent content validity and good reliability to measure the KAP of caregivers' for oral healthcare of older people.

**Keywords:** Psychometrics, Caregivers, Older people, Oral health, Validity, Reliability

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## EADPH 2023 ABSTRACT 186

### Do We Use Fluoride Toothpaste? A Survey in Two European Countries

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**Aim:** To assess the toothpaste type and fluoride concentration used by Latvian and Lithuanian families with children.

**Methods:** A cross-sectional study was conducted between December 2018 and May 2020. The sample consisted of 385 families in each country, selected through stratified cluster sampling, with schools as the smallest sampling unit. A validated questionnaire collected demographic information and toothpaste details for all family members. Ethics approval was obtained from the respective ethics committees. Descriptive statistics were calculated, and data visualisation was performed using the R programming language and Tidyverse™ package.

**Results:** Questionnaires were completed by 1,309 families (557 families from Latvia and 752 families from Lithuania), which included 5,436 family members (2,294 from Latvia and 3,142 from Lithuania). Analysis revealed that 814 (15%) of individuals used fluoride-free toothpaste, and 674 (12%) used toothpaste with suboptimal fluoride concentration (<1000ppmF) (343 (15%) in Latvia, 331 (11%) in Lithuania,  $p < 0.001$ ). Preschool children showed a higher prevalence of use of toothpaste with no or suboptimal fluoride (96 (57%) in Latvia, 92 (47%) in Lithuania,  $p < 0.001$ ), often marketed as "Children's toothpaste", which was more prevalent in Latvia ( $n=451$ ; 20%) than in Lithuania ( $n=232$ ; 7.4%;  $p < 0.001$ ). The study identified 113 different toothpaste brands in Latvia and 116 in Lithuania; 55 (47%) of brands in Lithuania and 46 (41%) in Latvia included at least one fluoride-free toothpaste type, with 37 (32%) in Lithuania and 31 (28%) in Latvia having fluoride-free options.

**Conclusions:** One-third of families in Latvia, a quarter in Lithuania, and half of the preschool children in both countries used no or low fluoride concentration toothpaste. This emphasises the need for targeted oral health education on promoting the use of toothpaste with optimal fluoride concentration among families. By raising awareness about the preventive and therapeutic benefits of appropriate toothpaste use, the incidence of dental caries can be effectively reduced, leading to improved oral health outcomes in these populations.

**Keywords:** Toothpaste, Fluoride concentration, Cross-sectional study, Dental caries, Latvia, Lithuania.

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## EADPH 2023 ABSTRACT 187

### Impacts of Reported Xerostomia Symptoms on Functional Wellbeing among Lithuanian Adults

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**Aims:** To test validity of the SXI-D questionnaire translated into Lithuanian, and to assess impacts of reported xerostomia symptoms on functional wellbeing among adults attending a University dental clinic.

**Methods:** From January-March 2023 a questionnaire survey was conducted among adults aged 50+ years, who were receiving prosthetic treatment in the department of Prosthetic Dentistry of the Lithuanian University of Health Sciences (LUHS). The Centre of Bioethics (LUHS) granted ethics permission to the conduct study. Xerostomia symptoms were evaluated with the SXI-D questionnaire translated into Lithuanian. Responses to its questions were assessed with three answering alternatives: never, sometimes, often, scored from 1 to 3 and summed. Impacts on functional wellbeing were evaluated using the Lithuanian OHIP-14. Statements were assessed on a 5-point scale from „never“ to „very often“ and summed. The self-administered questionnaire covered background information (gender, age), presence of systemic diseases and use of medication. Statistical evaluation was by ANOVA and the Chi-square test.

**Results:** A total of 65 subjects participated, their mean age was 69.6 years, 42 (65%) were women. The standardized Cronbach's alpha value for Lithuanian SXI-D was 0.8, which was considered as excellent. Nine (14%) of respondents didn't experience xerostomia symptoms, of whom more were male, 5 (22%) vs. 4 (10%),  $p=0.018$ . The average sum score of xerostomia symptoms was 584 (mean=9, SD=2.4, range 5-15), higher scores were reported by females (9.6 vs. 7.9,  $p=0.004$ ), those with diabetes (10.9 vs. 8.5,  $p<0.001$ ), with rheumatic disease (11 vs. 8.8,  $p=0.029$ ), and using medication (9.5 vs. 8.1,  $p=0.020$ ). All respondents reported impacts on their functional wellbeing, average sum score was 1926.3 (mean=29.6, SD=9.8, range 15-52). Significantly higher mean scores for impacts were reported by those with more xerostomia symptoms (36.4 vs. 25.4,  $p=0.001$ ).

**Conclusions:** The validity of the Lithuanian SXI-D was sufficient to be used to assess larger samples. Xerostomia symptoms demonstrated strong negative impact on the functional wellbeing of study participants.

**Keywords:** Xerostomia, SXI-D, OHIP-14

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## EADPH 2023 ABSTRACT 190

### Does Insurance Coverage Reduce Dental Service Utilisation Inequality in Children and Adolescents?

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**Aim:** The global oral health status report (World Health Organisation in 2022) reported, oral health services to be poorly distributed and usually inaccessible for disadvantaged people worldwide. Moreover, there is much controversy about the role of insurance coverage on the alleviating oral health utilization inequality. Therefore, the aim of this study was to investigate whether or not insurance coverage reduces dental health service utilisation inequality in children and adolescents.



**Methods:** A literature search was conducted on PubMed, Scopus, and Web of Science databases. All original articles with the keywords “Socioeconomic Factors”, “Social Determinants of Health”, “Socioeconomic Disparities in Health”, “Social Class”, “Insurance”, “Insurance, Dental”, “universal health coverage”, “economic burden”, “Dental expenditure”, “Healthcare Disparities”, “health care inequity”, “Health care inequality”, “decomposition analysis”, “concentration curve”, “concentration index”, “slope index of inequality”, “relative index of inequality”, “utilization”, “access”, “Dental care”, “dental service”, “oral health service”, “oral health care”, “children”, “adolescents” were selected. A modified Joanna Briggs Institute (JBI) checklist was applied as the methodological quality assessment for the included studies.

**Results:** Out of 145 studies identified, 23 full-text reports were screened for eligibility; eight of which were eligible and included. The score of quality of the eligible studies ranged between 5 to 8 according to the JBI tool. Five studies assessed the role of extending public insurance coverage, of which three studies couldn't show a notable effect of expanding health and dental care coverage on reducing inequality. Three studies have evaluated the impact of health/dental health insurance on dental service utilisation inequality. Two of them failed to find any associations.

**Conclusions:** The inefficiency in reducing dental service utilisation inequality may be due to lack of adequate dental service coverage or ineffective selection of eligible people. Dental health insurance systems need extensive revision to be more effective especially regarding targeting vulnerable groups.

**Keywords:** inequality, dental service utilization, insurance, oral health, children, adolescent

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## EADPH 2023 ABSTRACT 191

### Dental Students' Knowledge of Dental Emergencies Management during the COVID-19 Pandemic

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**Aim:** The spread of COVID-19 is mainly through respiratory droplets and the transmission of this virus. It takes place from symptomatic and asymptomatic patients. People, especially medical personnel, dentists and patients referred to medical centres are at risk. Dentists should be aware of dental emergencies that require prompt and timely treatment even during the pandemic situations. Against this background, the aim of this study was to investigate dental students' knowledge of dental emergencies management during the COVID-19 pandemic.

**Methods:** An electronic checklist was designed. It comprised of a list of emergency situations, according to the ADA guidelines and Ministry of Health and Medical Education of Iran, in addition to five clinical scenarios. After validity and reliability checks, in the summer of 2022, the checklist was sent electronically to final year dental students at three dental schools in Tehran. They were asked to complete the checklist and clinical scenarios. After two weeks a reminder was sent. If the completed checklist was received, a pamphlet on the diagnosis and management of dental emergencies was sent to the respondents as an incentive package. Ethical clearance was obtained from Iran National Committee for Ethics in Biomedical Research. Data were entered in SPSS software version 26.0. Descriptive and analytical findings were extracted and reported.

**Results:** Overall, across the three dental schools, 163 (59%) subjects responded. The validity of the questions was tested and those questions with the content validity of 0.7 or less were deleted. The reliability of questions was acceptable (Kappa for all questions was 0.72 and for the emergency ones was 0.84). The respondents' average score for the correct management of emergency cases was 62% and for non-emergency cases, it was 92%. Fifty nine percent of the respondents managed the case scenarios successfully.

**Conclusion:** Students were able to answer non-emergency dental cases well. They had a weaker performance in diagnosing dental emergencies and their performance in managing clinical scenarios was average. There was no significant difference in the total score of respondents from different dental schools.

**Keywords:** Patient management, Dental emergencies, COVID-19

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## Barriers and Facilitators of Primary Oral Health Services: A qualitative study

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**Aim:** To achieve universal health coverage, special attention to oral health care in Primary Health Care (HPC) is of particular importance. For this purpose, mid-level health providers, who had a successful experience in providing Primary Health Care services, were proposed for Primary Oral Health Care delivery. The aim of this study was to investigate barriers to and facilitators of providing primary oral health services based on interviews with the main stakeholders in the PHC system.

**Methods:** This qualitative study was performed in 2022. It was approved by the research ethics committee of the Tehran University of Medical Sciences. It employed a triangulation approach, in which data were collected through semi-structured interviews with ten health care providers, eight dentists, six visitors to the health centres and six heads of centres, all of whom worked for three health networks under the supervision of Tehran University of Medical Sciences. The resulting information was extracted and analysed using MAXQDA software.

**Results:** Reported barriers to primary oral health services delivery were categorized under the following emerging themes: knowledge and awareness of visitors to the health centres and health care workers, monitoring primary oral health care delivery, time limits, prioritising other areas over oral health care, financial problems and limited number of personnel. Suggested facilitators were categorised under three themes: covering a large number of people in the community, timely referral to the dentist, free follow-up and education for visitors to the health centres including children.

**Conclusions:** Despite all the efforts and successes achieved, the plan to provide primary oral health services by health care providers has not been as successful as in other fields of PHC. The findings of this study could have some implications for improvement of oral health services through PHC system, and consequently for better oral public health.

**Keywords:** Primary Health Care, Oral

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## Understanding the Dental Experience of Asylum-seekers and Refugees through Holistic Health Assessments

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**Aims:** This study aimed to describe the access of asylum-seekers and refugees (ASR) to oral health adjuncts and dental care, and their self-reported dental pain; and to explore possible associations between dental, demographic, family and migratory factors within the population screened by RESPOND.

**Methods:** RESPOND offers holistic health assessments to ASR in temporary accommodation within North-Central London (NCL). Dental, demographic, family and migratory data was collected from anonymised patient records of all ASR assessed between July 2021-2022. This project was registered as a service evaluation; no ethical approval was required.

**Results:** Seven-hundred-and-one ASR were included; mean age 28.7-years-old, 523 (74.8%) were male. Sixty-one countries of birth and 27 first languages were reported: most commonly Iran 177 (25.2%) and Iraq 94 (13.4%), and Kurdish 126 (18.0%). Two-hundred-and-twenty-seven (63.9%) were unaccompanied with 121 (17.3%) having family links in the UK (FLUK). Mean travel duration was 797.2 days through 1.7 transit countries; migration reasons included persecution 247 (35.2%) and conflict 149 (23.1%). Despite 606 (86.4%) having a toothbrush, 439 (62.6%) ASR were routinely brushing 241 (34.4%) had not accessed dental care in the previous 36-months and 188 (26.8%) reported dental pain. ASR under 28-years-old ( $p=0.002$ ) and fewer transit countries ( $p=0.005$ ) were less likely to have a toothbrush. More females ( $p=0.0001$ ), those with FLUK ( $p=0.008$ ), and those who travelled by formal routes ( $p=0.010$ ) brushed routinely. Females ( $p=0.027$ ) and those with FLUK ( $p=0.021$ ) were more likely to have accessed dental care in the previous 36-months. ASR without FLUK ( $p=0.011$ ), who travelled through informal routes ( $p=0.037$ ) or with more transit countries ( $p=0.029$ ) were more likely to report dental pain.

**Conclusions:** There is variation in dental experience of ASR, but a significant proportion are failing to perform routine tooth brushing, have limited access to dental care, and are experiencing dental pain. Family and migratory factors may play a role in accessibility of oral health adjuncts, dental care and pain experience.

**Keywords:** Asylum-seekers, Refugees, Dental access, Dental pain, Holistic care

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## EADPH 2023 ABSTRACT 194

### Designing an Integrated Oral Health Care Pathway for Child Patients

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**Aims:** The integration of prevention and treatment in dentistry leads to oral health promotion in a community. Accordingly, it is necessary to have such an approach in dental schools, which are mainly treatment-oriented, to improve the attitude and performance of students, in relation to prevention and to reduce oral diseases in patients. This study aimed to design an integrated oral health care pathway for children referred to the of Tehran University of Medical Sciences School of Dentistry.

**Methods:** The study was conducted in the Paediatric Department of the School of Dentistry, in 2022-2023. It was approved by the research ethic committee of Tehran University of Medical Sciences. To design a care pathway, the NHS dental care pathway template was used and details including risk assessment, related care and follow-up times were entered in the initial model. Qualitative methods such as semi-structured interviews with parents of patients and selected members of the interdisciplinary team (including researchers, experts, and policy makers) were used to assess existing conditions, needs and available facilities, together with the Delphi method, to finalise the care pathway.

**Results:** An integrated care pathway, based on primary prevention of dental caries for children 6 years and older referred to the Paediatric Dentistry Department in the School of Dentistry, was designed and tested.

**Conclusions:** Designing and implementing prevention-based care pathways in dental schools is one of the ways to manage treatment and improve the oral health of patients. This care pathway, which was designed according to the needs and facilities of the Tehran University Medical Sciences School of Dentistry, enables continuous monitoring and can be considered as a suitable initial model for other educational centres.

**Keywords:** Care Pathway; Integrated Pathway; Oral Health Promotion; Prevention

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## EADPH 2023 ABSTRACT 195

### Satisfaction with Dental Care among Patients Attending Private Dental Clinics in Tehran

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**Aims:** Patient satisfaction is a key component for evaluation of health systems' performance in terms of treatment methods, quality assessment, and patient-dentist relationship. The aim of this study was to evaluate dental satisfaction among patients attending private dental clinics in Tehran, Iran in 2022.

**Methods:** This cross-sectional study was conducted in private dental clinics. The study was approved by Ethics Committee of Tehran University of Medical Sciences. Twenty clinics were selected by convenience sampling. Written informed consent was obtained from participants. A Dental Satisfaction Questionnaire (DSQ) was used to evaluate the satisfaction of 200 patients. The questionnaire consists of 19 questions. Answers were assessed using a 5-score Likert scale from completely disagree (0) to completely agree (4). The total scores from each patient (maximum 76) were converted into a percentage. Data on age, gender, marital status, education, time and reason for the last dental visit, and health insurance status were gathered. All analyses were performed by SPSS Version 25. A multivariable regression model was used to evaluate the association between the independent variables and total patient satisfaction score.

**Results:** One hundred and eight (54%) of the participants were females, with a mean age of 38 years ( $\pm 13.5$ ). Eighty-five (42%) of the participants had a bachelor degree and 113 (56%) were married. Only 61 (30%) had complementary health insurance. About one third of the patients reported that 6-12 months had passed since their last dental visit. The most frequent reason for the last dental visit was dental pain or problems. The mean score for satisfaction was 57 ( $\pm 8.9$ ), which was similar between men and women ( $p=0.13$ ). The marriage status, area of residence, and time of the last visit were significantly associated with the total patient satisfaction score.

**Conclusions:** The total patients' satisfaction score was low to moderate in private dental clinics.

**Keywords:** Patient satisfaction, Dental care, Dental clinics

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## EADPH 2023 ABSTRACT 196

### Quality of Life as Reported by Children with Chronic Kidney Disease and their Parents: A Cross-sectional Survey

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**Aim:** The health-related quality of life (HRQOL) in patients with chronic kidney disease (CKD) is significantly affected, regardless of the stage of CKD. The aims of this study were to compare the health related quality of life (HRQoL) scores of a group of Turkish children who have CKD with age-matched healthy controls and to compare the children's' and parent-proxy scores.

**Methods:** The study received ethical approval from the University of Marmara, Faculty Research Ethics Committee.. The study groups consisted of children with CKD and age-matched healthy controls from the University Hospital. Clinical and demographic data were collected. Caries was assessed using the DMFT and dmft indices. Oral hygiene was assessed using the Simplified Oral Hygiene Index (OHI-S), the Debris Index (DI) and the Calculus Index (CI). The Turkish versions of the Kinder Lebensqualität Fragebogen (KINDL(R)) questionnaires and a QoL measure were used. Student's t test, Chi-square test, or the Mann-Whitney U test, depending on data distribution, were applied to compare differences between groups. A  $p<0.05$  value considered statistically significant.

**Results:** A total of 42 children with CKD (20 boys and 22 girls) and 40 children without CKD (20 boys and 20 girls) completed took part in the study. Their mean ages were  $12.53\pm 2.68$  years for children with CKD and  $12.38\pm 2.679$  years for those in the control group. The DMFT score was lower in the children with CKD group in comparison to controls ( $p < 0.05$ ). Children with CKD had lower KINDL(R) scores and subscales in than those in the children without CKD group ( $p<0.05$ ). There was no difference between the children's KINDL(R) scores and those of the parent-proxies ( $p>0.05$ ). Parents evaluated the QoL of their children more positively than did the children in both groups. Age ( $p=0.745$ ); gender ( $p=0.208$ ); DMFT ( $p=0.653$ ); debris Index (DI) ( $p=0.402$ ); calculus Index(CI) ( $p=0.241$ ); OHI-S ( $p=0.254$ ) were not in significant relationship with KINDL(child-self) score.

**Conclusions:** The results suggest that children with CKD have worse HRQOL scores when compared to age-matched healthy controls. Both child and parent versions of the Turkish translations of the KINDL(R) can be used in surveys of community populations.

**Keywords:** Health-related quality of life, Chronic kidney disease

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## The Effectiveness of Educational Interventions on Oral Cancer Prevention in Iran

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**Aims:** Success in prevention of oral cancer is potentially enhanced by delivering health education programmes to the population. The aim of the present study was to evaluate the impact of an educational programme on oral cancer-related behaviours among an Iranian adult population in 2022.

**Methods:** In this randomised controlled trial, 400 healthy individuals were enrolled. The study was implemented in urban health centres in the south of Tehran. The health centres were randomly allocated into two intervention groups. In intervention group A, participants were educated by a 20-minute PowerPoint presentation and a pamphlet and those in intervention group B by WhatsApp messages and pictures. A structured questionnaire was used to collect data at baseline, and at one and three month follow-ups. Outcomes assessed for the preventive behaviours of: cessation of tobacco smoking, fruit and vegetable consumption, and oral self-examination. The Chi-square test was applied for comparing proportions of preventive behaviours reported by participants in each group. The Generalised Estimating Equations (GEE) regression model was used to assess the effect of interventions. All analyses were done using STATA version 17. Written informed consent was obtained from participants before recruitment and ethics approval was granted by the Tehran University of Medical Sciences.

**Results:** Of the total number of participants, 249 (62%) were women. Mean age of the participants was 39.67 (13.80) years. Unlike irregular oral self-examination, frequencies of tobacco smoking and inadequate fruit and vegetable consumption were similar between groups. The results from the GEE model showed no significant differences between groups with regard to preventive behaviours. After three months, both interventions had a statistically significant influence on reducing tobacco smoking (OR=0.56), increasing consumption of fruit and vegetable (OR=5.71), and regular self-examination of mouth (OR=29.95).

**Conclusions:** After three months, both educational interventions were effective in improving preventive behaviours related to oral cancer. Therefore, use of both methods should be considered in the design and implementation of oral cancer prevention programmes.

**Keywords:** Educational models, Mouth neoplasms, Primary prevention

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## Determinants of Primary Dental Care Provision in African Countries

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**Aims:** This ecological study assessed the availability of dental care in primary healthcare (PHC) facilities in African countries as reported in the *Global Oral Health Status Report* (GOHSR) published by the World Health Organization (WHO) in 2022; and the differences in availability by country income level, health care system characteristics and health expenditure.

**Methods:** Data from 54 African countries were extracted from the GOHSR. Countries were classified by income level. The associations between screening to detect oral diseases, urgent dental care and providing basic dental restorative procedures, and health care system characteristics (universal healthcare coverage index and number of dentists per 10,000 population) and per capita expenditure on health (overall and dental) were assessed using chi squared and Mann Whitney U tests. As this was secondary research, no ethical approval was required.

**Results:** Screening for early detection of oral diseases was available in PHC facilities in 25 (46%) of African countries, urgent care to relieve dental pain was provided in 36 (67%) and basic restorative care was provided in 24 (44%) with non-significant differences by income level ( $p > 0.05$ ). The provision of urgent dental care was neither associated with healthcare system characteristics nor health expenditure. Screening and providing restorative care were significantly associated with higher Universal Health Coverage (UHC) index ( $p < 0.05$ ). Providing basic restorative care was significantly associated with higher per capita dental expenditure ( $p = 0.004$ ).

**Conclusions:** The study suggests that countries in Africa seem to focus more on providing urgent dental care than screening or restorative care in PHC facilities. However, the integration of dental care into PHC driven by UHC may increase the availability of screening and restorative care services irrespective of country income-level and dentist to population ratios. Expenditure on dental care seems to be dependent on increasing the per capita health expenditure.

**Keywords:** Africa, Primary healthcare, Dental screening, Restorative care, Urgent care, Universal health coverage, Dental expenditure

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## EADPH 2023 ABSTRACT 199

### A Group of Romanian Dental Students' Opinion on Environmentally Friendly Behaviour in Dentistry

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**Aim:** The purpose of this pilot study was to assess the attitude of dental students regarding environmental awareness in dental practice.

**Methods:** A questionnaire including 27 questions concerning environmentally aspects of dental practice was created and was made available online in May 2023. The questionnaire was completed voluntarily by a non-representative group of 48 dental students at the George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania. The study was approved by the Research Ethics Committee of the university. The resulting data were processed using descriptive and analytical statistics (Chi square test and Mann-Whitney U test).

**Results:** 42 (88%) of the respondents would like to practice in an environmentally conscious way in the dental practice, and 45 (94%) of them try to live in an environmentally conscious way in their household. Most of them, between 47 (98%) and 34 (71%), would selectively collect non-infectious waste and equip the dental office with sensor faucets, would only start sterilisation when the autoclave is full, would repair any broken devices, would recycle product packaging, and would create a green wall in the dental clinic. Statistically significantly more dental students, of those, who would like an environmentally conscious dental practice, would calculate their carbon footprint ( $p = 0.009$ ) and would reuse product packaging ( $p = 0.01$ ). Among these respondents more would pay attention to how environmentally conscious the manufacturers were. However, the difference was not statistically significant. For those for whom the environmental effect was the most important aspect, when choosing a material, the quality of the material was more important. However, the difference was not statistically significant ( $p = 0.28$ ).

**Conclusion:** These results suggest that the dental students, who took part in this study, had a positive attitude towards environmentally conscious dental practice and had a high environmental awareness.

**Keywords:** Environmental awareness, Sustainability, Green dentistry

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## Barriers to Implementing Smoking Cessation Interventions by Oral Health Personnel: A Systematic Review

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The global impact of tobacco smoking on health is significant, with approximately 6 million deaths each year, and while studies suggest that oral health professionals can assist patients in quitting smoking, they encounter various barriers in providing this support.

**Aims:** This systematic review was performed to explore all the reported barriers while giving smoking cessation advice.

**Methods:** Database searching was performed using Embase, Scopus, PubMed, and Web of Science. No time restriction was applied. All types of studies that reported on barriers to implementing smoking cessation by oral health personnel were included. Reported barriers were used as the outcome measure. The quality of evidence was assessed using the National Heart, Lung, and Blood Institute (NHLBI) for the observational study and the Mixed Methods Appraisal Tool (MMAT) Version 2018 for the mixed methods study. This study was registered with PROSPERO, number CRD42022331906.

**Results:** Of the 3022 records identified, 19 were eligible for final analysis, quality of studies ranged from poor to good. Ten barriers were extracted from all the studies. They were resistance from oral health personnel, lack of knowledge, fear of losing a patient, lack of training, lack of infrastructure to support, lack of time, resistance from patients, lack of or inadequate reimbursement, lack of educational material, and poor referral.

**Conclusion:** Understanding the barriers faced by oral health personnel is important to facilitate and improve the smoking cessation service delivered by them. The identified barriers can be categorised into internal and external factors. The result of this review can help stakeholders selectively plan intervention measures so that the most prominent barriers can be uplifted with limited resources available.

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**Keywords:** Smoking cessation, Barriers, Tobacco cessation, Oral health personnel, Systematic review

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## Socio-demographic Factors and Dental Status Associated with Geriatric Oral Health-related Quality of Life in Elderly Iranians

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**Aim:** The aging Iranian population has increasing need for improvement of their health and oral-health-related quality of life (OHRQoL). This study aimed to evaluate the OHRQoL and its explanatory factors among Iranian elders.

**Methods:** This cross-sectional study was conducted in 2021 in Tehran, Iran. Participants were 300 elderly people aged 60 years or more. The subjects were selected from five districts according of Tehran. Approximately 55-65 elders were selected randomly in each district, from elders who attended municipality health centres. Clinical examinations were performed and questionnaires were completed to collect information on the participants' dental status, socio-demographic characteristics, and OHRQoL. The D3MFT index was used to evaluate dental status and General Oral Health Assessment Index (GOHAI) to determine OHRQoL. Participants gave informed consent and the study was approved by the Tehran University Medical School's ethics committee. Data were analysed using SPSS-25 software via multiple linear regression analysis.

**Results:** The mean age of participants was 65.33 years (SD.18) and 240 (80%) were female. The mean GOHAI score and D<sub>3</sub>MFT were 43.18 (SD 9.12) and 21.78 (SD 6.37) respectively. Gender and socio-economic status were related to GOHAI scores. Multiple linear regression analysis showed that participants who were female, living alone, and those with D<sub>3</sub>MFT $\geq$ 20, had worse OHRQoL. Participants who were edentulous and wore complete dentures had better OHRQoL (F=41.33,  $p$ <0.001).

**Conclusion:** The OHRQoL of the elders living in Tehran was moderate to good. The explanatory variables were gender, living status, DMFT, and number of natural teeth. More attention should be paid to dental status and retention of sound teeth to promote a healthy mouth to achieve better OHRQoL.

**Keywords:** Elderly, Dental status, Oral health-related quality of life

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## EADPH 2023 ABSTRACT 202

### Investigating Association between Oral Health Habits and Early Childhood Caries among Iranian Pre-schoolers

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**Aim:** Despite the improvement in dental practice and a decline in the prevalence of dental caries, early childhood caries (ECC) is a serious public health problem in both developing and industrialised countries. A high prevalence of ECC highlights the need to analyse the causes and find reliable determinants. This study aimed to assess the association between prevalence of ECC and oral health behaviour in Iranian pre-schoolers.

**Methods:** This analytical cross-sectional study, was conducted in 2020, in Iran. Participants were 441 rural and urban pre-school children (4 to 6-year-olds) living in four provinces. They were randomly recruited using a three-stage stratified clustered sampling method. Ethics approval was granted by Tehran University of Medical Sciences (ref: IR.TUMS.DENTISTRY.REC.1398.070). After giving their consent, parents answered a questionnaire including questions on socio-demographic characteristics and children's oral health behaviours. The children then underwent clinical examination. The "dmft" index was used as a criterium of ECC. Statistical analysis was performed using the SPSS V25 and Stata V14.2 software packages.

**Results:** Out of 441 pre-schoolers, 215 (49.6%) were girls and 284 (70.6%) lived in urban areas. Prevalence of ECC was 83% and the mean of dmft score was 5.29 (SE 0.32). The subgroup analysis, according to place of residence (urban, rural) and gender (male, female), revealed that, consumption of both sweet drinks and sugary snacks (OR=3.53,  $p$ <001) and eating four meals per day including main meals and snacks (OR=2.35,  $p$ <001) were associated with both prevalence of ECC and mean dmft.

**Conclusions:** In the population studied consumption of sweet drinks and sugary snacks between meals was found to be a major determinant for ECC in the majority of pre-schoolers. Parents' awareness and positive attitudes toward a balanced diet might favour oral health promotion in early childhood.

**Keywords:** Early Childhood Caries, Oral health habits, Preschool Children, Iran

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## The Libyan Oral Health Care System: A Case Study

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**Aim:** This study aims to describe the Libyan oral health care system in terms of its structure, function, workforce, funding, reimbursement and target groups.

**Methods:** A single descriptive case study approach and multiple sources of data collection were used to provide an in-depth understanding of the Libyan oral health care system. A purposeful sample of the key informants (Managers of oral health centres, dentists of various specialities with experience in the field, dentists, nurses, dental technicians, and officials in the affairs of medical insurance) was recruited. The case and its boundaries were guided by the study's aim. Both qualitative and quantitative analyses were conducted. Descriptive statistics were used for quantitative data. Framework analysis, informed by the study objectives, was used to analyse interviews and documents.

**Results:** The analysis showed that oral health services are integrated into medical services. The provision of dental care are mainly treatment in the private sector. The oral health services in the public sector are mainly emergency care and exodontia. The dental workforce included mostly dentists (89% GPs, 11% specialists), with a marked deficiency in dental technicians and nurses. Around 40% of dentists work in both the private and public sectors. The government provides the funding for the public sector but the private sector is self-funded. No specific target group(s) nor clear policies were reported. However, the system is built around primary healthcare as an overarching policy. Dental caries is the most common oral problem among Libyan preschool children affecting 70% and is the most common cause of tooth loss among adults.

**Conclusion:** The oral health care system in Libya is mainly privatised. The public health services are poorly organised and malfunctioning. There is an urgent need to develop policies and plans to improve the oral health care system in Libya.

**Keywords:** Case study, Health care system, Libya, Health services

**Acknowledgement:** The presenter thanks the Borrow Foundation for financial support towards the costs of attending the congress

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## Orthodontic Treatment Need for 12 and 15-year-old Children in Minsk, Belarus

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**Aims:** The aim of the study was to determine the need for orthodontic treatment in 12- and 15-year-old children in a secondary school in Minsk.

**Methods:** The study was conducted in 2021. The determination of the orthodontic treatment need was carried out in 130 children in two groups: 32 boys and 33 girls aged 12 years in group 1 and 32 boys and 33 girls aged 15 years in group 2 using the Index of Orthodontic Treatment Need (IOTN), assessing the dental health component (DHC) and aesthetic component (AC). Descriptive statistics were used. Any statistically significant differences were determined using the  $\chi^2$  test. A correlation analysis was carried out using the Spearman coefficient. The Belarussian State University Ethics Committee approved the study.

**Results:** No statistically significant differences were found in the DHC among boys and girls in either group ( $p>0.05$ ). The proportion who did not need orthodontic care or needed minimal intervention (IOTN value 1 or 2) was 45% in group 1 and 52% in group 2. The proportion with borderline need for orthodontic treatment (IOTN value 3) was 43% in group 1 and 32% in group 2. The proportion who definitely needed orthodontic treatment (IOTN value 4 and 5) in group 1 was 12% and in group 2 it was 15%. According to the AC of the IOTN index, most of those examined, in their opinion, did not need orthodontic treatment (scale value 1-4): 99% of those in group 1 and 97% of those in group 2. When studying the correlation between the dental and aesthetic components of the IOTN index, a direct medium-strength statistically significant correlation was revealed among girls in group 2 ( $\rho=0.43$ ;  $p<0.05$ ) and boys in group 1 ( $\rho=0.35$ ;  $p<0.05$ ).

**Conclusions:** This study has presented the first data on orthodontic treatment needs in a secondary school in Minsk. If its findings are replicated in similar studies elsewhere in Belarus, they can be used to plan orthodontic care for children.

**Keywords:** Orthodontic treatment need, Children

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## EADPH 2023 ABSTRACT 205

### Perception of Adolescent Nigerians about Video as a Training Tool for Promoting Oral Health

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**Aims:** Many adolescents in developing countries have poor oral health. In part this is attributable to the absence of oral health promotion programmes in schools because such programmes remain the responsibility of dentists, who are few in number. Although recent evidence showed that teachers and peers trained by dentists are effective in promoting oral health among adolescents, their training is threatened by further shortage of dentists in the country. It, therefore becomes important to assess the feasibility of training alternatives such as use of pre-recorded videos. The aim of this study was to explore the perceptions of Nigerian adolescents about videos, as a training tool for oral health promotion and to guide the development of the tool.

**Methods:** In 2022, data were collected through focus group discussions among a purposive sample of 201 adolescents aged 13-19 years attending 18 secondary schools in Ibadan. The discussions were audio-recorded and transcribed verbatim. Thematic inductive analysis was performed. The study was approved by the Institutional Ethics Board and parental consent was obtained.

**Results:** All the adolescents were enthusiastic about the use of video as a training tool and would want it to include details of how to care for their teeth. Identified ways of utilising the video for training included: through phones (personal, parents or teachers), television and projection at school. Utilisation of video as a training tool by adolescents could be influenced by availability of android phones, and in school; power supply, inadequate facilities to project the video, lack of an appropriate venue for training and distraction by peers while watching the video.

**Conclusion:** In the population studied insight was gained into the perception of adolescents about the use of video as a training tool for promoting oral health.

**Keywords:** Adolescents, Health promotion, Oral health, Qualitative Study, Video, School

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## EADPH 2023 ABSTRACT 206

### Antimicrobial Efficacy and Cytotoxicity of Aloe-Vera Gel Nano Silver Fluoride

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**Aim:** This study aimed to prepare and investigate the antimicrobial activity and safety of Aloe vera gel-nano silver fluoride (AG-NSF) in comparison to Silver Diamine Fluoride (SDF) and Nano Silver Fluoride (NSF). This new substance could potentially play a significant role in enhancing dental public health, especially for children, due to its non-staining caries arresting effect and improved clinical handling as a gel.

**Methods:** In this in vitro study, silver nanoparticles were synthesized using tannic acid following green synthesis. NSF was formed by adding NaF (fluoride ion concentration of 10,000 ppm) to the silver nanoparticles. This solution was then blended with purified aloe vera gel to create AG-NSF. The antimicrobial efficacy of the compounds was assessed against *S. mutans* using Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) assays via MTT assay. The diameters of inhibition zones for the test groups were measured following the well diffusion agar technique. Cytotoxicity evaluation on the HGF-1 cell line was conducted using the MTT assay to ensure biocompatibility.

**Results:** Silver nanoparticles were characterized, showing a particle size of  $41.96 \pm 1.2$  nm and a zeta potential of  $-23.77 \pm 1.31$  mV. In antimicrobial tests, NSF demonstrated the MIC and MBC of 16 and 32  $\mu\text{g/ml}$ , respectively. For SDF, these values were 37.5 and 50  $\mu\text{g/ml}$ , respectively. Compared to the SDF, NSF demonstrated significantly higher antibacterial effect. The AG-NSF compound exhibited the largest inhibition zone compared to NSF, Aloe Vera and SDF. In terms of cytotoxicity, none of the compounds exhibited cytotoxicity, but AG-NSF was found to have the highest cell viability.

**Conclusion:** NSF and AG-NSF are effective and safe antibacterial agents against *S. mutans*, with NSF showing superior efficacy compared to SDF. Further research is encouraged to assess their efficacy in clinical settings, offering opportunities to enhance oral health outcomes and patient care.

This research was supported by the Isfahan University of Medical Sciences.

**Keywords:** Aloe Vera, Nano Silver Fluoride, Silver Diamine Fluoride, Dental Caries, Minimum Inhibitory Concentration, *Streptococcus mutans*, Cytotoxicity Tests,

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## EADPH 2023 ABSTRACT 207

### The Prevalence of Tooth Wear in Afghan Adults: A Descriptive Cross-sectional Study

*Rohullah Sharafyar<sup>1\*</sup>, Zahra Pouraskari<sup>1</sup>, Zahra Mohebbi<sup>1</sup>, Hossein Hessari<sup>1</sup>*

**Aims:** Numerous studies have focused on the prevalence of and indicators for tooth wear. However, insufficient studies have been conducted with Afghan adults. The aim of the study was to evaluate the prevalence of tooth wear and related indicators among adults in Kabul, Afghanistan, in 2015.

**Methods:** This cross-sectional study was conducted on 847 patients attending to the Outpatient Dental (OPD) department of the stomatology hospital in Kabul. Participants aged 15-60 years were, selected by convenience sampling. They all gave their written consent to taking part in the study. It was approved by the Ministry of Public Health of Afghanistan,. Patients were included in the study if they had at least a natural tooth, had no extensive dental restorations and had not received any treatment for tooth wear. Data were gathered from September 2015, up to March 2016. Type and severity of tooth wear, diet, age, gender, ethnicity, and occupation were recorded using a questionnaire. Clinical examinations were performed by a trained dentist, and type of tooth wear was recorded as attrition, abrasion, and erosion. Frequency of tooth wear was measured and reported in general, and based on the three studied variables. Data analyses were performed using SPSS Version.20.

**Results:** Five hundred and seventy nine (68%) of the participants were women. Almost 500 (60%) of participants were 15-29 year-olds, and 617 (73%) were Tajik. Tooth wear was observed in 593 (70%) of patients and was more frequent among patients aged 15-29 years. Attrition and abrasion were more frequent among 30-44 years patients. Erosion had the highest prevalence in those aged 45-60 years. Women experienced all types of tooth wear more than men. Participants with a government job had the least prevalence of tooth wear. in terms of severity, 115 (57%) of attrition cases and 176 (46%) of erosion cases were mild.

**Conclusions:** In the group studied, Tooth wear was a common problem, which affected more than two thirds of the adults who were examined.

**Keywords:** Tooth wear; Prevalence; Afghanistan; Tooth abrasion; Tooth erosion; Tooth attrition.

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## Access to Dental Care among Older Adults in the Republic of Moldova

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<sup>1</sup>Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Moldova

**Aim:** The study aimed to assess the perceived oral health needs of geriatric patients from the Republic of Moldova and their access to oral health care and treatment.

**Methods:** The research targeted patients aged 65 years and older, who attended either the Dental Faculty of the State University of Medicine and Pharmacy or three centres in Chisinau for the elderly or private clinics in Chisinau. After gaining their consent to participate, 234 patients took part in the survey, which took place from November 2022 to March 2023. Ethics approval was granted by the Ethics Committee of the State University of Medicine and Pharmacy. A self-administered questionnaire enquired about patients' attitudes towards their oral health needs and their actions when seeking oral health care and treatment and barriers to accessing it. Data were analysed using descriptive analysis and the Pearson correlation test.

**Results:** Most of participants (132 -56%) were female. For many (137 -58%) their oral health care and treatment was in private clinics. The same number (137- 58%) reported that their last dental visit was 2-5 years ago. The main reasons for attending for treatment were: toothache (78 - 33%), dental crown fracture (71 – 30%), tooth mobility (62 – 27%), and space(s) due to missing teeth (60 -26%). The majority (186 -80%) reported having fear of dental procedures, and 98 (42%) considered oral care and treatment to have a high cost. There was a statistically significant association between high cost and reluctance to attend for treatment ( $p<0.01$ ). One hundred and seventy (76%) considered that prevention as well as treatment of oral diseases are both important to preserve oral health. Many (129 -54%) would prefer to pay dental fees both by insurance and personal payments.

**Conclusions:** These findings suggest that social support and relevant agencies could help promote oral healthcare by collaborating with other healthcare providers for better oral health outcomes among elderly people.

**Keywords:** Geriatric, Needs, Barriers, Dental assistance

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## Attitude of Belgrade Postgraduate Dental Students towards Patients with Disabilities

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**Aim:** The aim of the survey was to assess, analyse and compare attitudes of dentists, who are postgraduate students, towards patients with disabilities.

**Methods:** This cross-sectional study took place in April 2023 and involved postgraduate dental students who currently attended six university clinics in Belgrade. They were divided into two groups: Group 1 those providing care and treatment for adults and Group 2 those providing care and treatment for children. After giving their consent, participants filled out an online questionnaire which had been translated into Serbian and which was a culturally adapted and validated version of the International Association for Disability and Oral Health (IADH) Toolbox for assessing attitudes and intended behaviour towards persons with disabilities. Three scales were used: 1. Integrity (most favourable score=12, the least favourable score=48), 2. Altruism (most favourable score=24, the least favourable score=6), 3. Healthcare attitudes (most favourable score=28, the least favourable score=7). Descriptive statistical analysis and comparison of medians within groups was performed using nonparametric tests. The ethics committee of the School of Dental Medicine University of Belgrade was approached and advised that ethics approval was not required for this study.

**Results:** A total of 60 dentists participated, of whom 33 (59%) were in Group 2. For integrity, statistically a significantly less favourable attitude ( $p<0.05$ ) was observed in Group 1 ( $p>0.05$ ). (Median=17) than in Group 2 (Median=14). There were no statistically significant differences observed between the groups regarding altruism and healthcare attitudes. Mean Group 1 and Group 2 scores were 16.8±3.5 and 15.2±2.4 for Integrity and 22.1±1.8 and 22.9±1.3 for Altruism and 20.3±2.6 and 19.2±2.9 for Healthcare attitudes respectively.

**Conclusion:** The results of the survey showed differences between groups when testing integrity, but for altruism and healthcare attitudes the scores were similar. Mean score values suggested a potential for improvement of attitudes.

**Keywords:** Special care dentistry, Dental education, Attitudes, Altruism, Integrity

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## EADPH 2023 ABSTRACT 210

### Prenatal Prevention of Oral Disease-A Scoping Review

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**Aim:** In view of the fact that early childhood caries is a preventable chronic disease, pregnancy is the best time to raise awareness about the causes of this disease among future parents, as well as to familiarize them about preventive and prophylactic measures. The aim of proposed study was to perform a scoping review to evaluate effects of prenatal prevention of oral disease.

**Methods:** The review accessed the following scientific databases: MEDLINE-PubMed, Google Scholar and the Web of Science. Papers published in last ten years were included. They were identified using the following MeSH terms: Prenatal Care, Oral Health, Oral care, Child, Early childhood caries. The initial search was performed by a librarian. The papers which met the inclusion criteria were then evaluated by two reviewers.

**Results:** Initial search results identified 343 publications. Finally, 30 publications with relevant titles, abstracts, and full texts were reviewed. The literature suggested that untreated dental caries in mothers is a risk factor for early childhood caries in children, through vertical transmission of cariogenic bacteria and that children are more than three times as likely to have dental caries if their mothers have high levels of active dental caries. A mother's knowledge and attitude are also of great importance for the oral health of children as are a healthy diet and home oral hygiene practices. Previous research also showed a potential association between periodontal diseases, during pregnancy, and adverse birth outcomes.

**Conclusion:** The literature supports the view that integration of oral care into general prenatal care is a necessity and would lead to upgrading of oral health among pregnant women and their children. It should be encouraged at all levels: local, national and global.

**Keywords:** Oral health, Pregnancy, Early childhood caries, Prenatal Care, Oral care

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## Mapping Early Childhood Caries Prevention Programmes in Scotland and South-Eastern Europe

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**Background:** Early Childhood Caries (ECC) is a recognised global public health challenge, and the World Health Organisation (WHO) has set out preventive approaches in an implementation manual. Scotland has an established information-sharing partnership with countries in South-Eastern Europe, where the ECC burden is substantial.

**Aim:** This project aimed to map ECC and preventive programmes in Scotland and South-Eastern Europe against WHO criteria and to facilitate discussion, drawing from recent research and assessment of international consensus, to agree on priority interventions.

**Methods:** A dedicated pro-forma gathered structured information on: population statistics; disease burden; workforce capacity; interventions in dental practice, early years education and the community. A recorded online workshop involved presentations and discussions of policy and practice in relation to current and future ECC prevention plans. Workshop discussions were transcribed and analysed using thematic theory-based implementation frameworks, facilitated by QSR NVivo12.0 software.

**Results:** Data were received from Albania, Bulgaria, Croatia, Romania, Scotland and Serbia. The child population and birth rate are generally declining. In 2019, ECC prevalence among 5–6-year-olds was 80% to 84% in South-Eastern Europe countries, while in Scotland, less than a third (26%) of those children had obvious decay experience in their primary teeth in 2020, compared with more than half (55%) in 2003. A key barrier for implementing ECC prevention is a lack of political prioritisation and funding. Further barriers identified included a lack of integration of public and private preventive programmes, low engagement of professional dental associations, and a lack of population knowledge/awareness of the issue. Implementation might be facilitated through wider universal child health initiatives (e.g. vaccination and maternal health programmes).

**Conclusion:** Mapping disease and oral health prevention activities in Scotland and South-Eastern Europe has allowed for assessment of progress and identified barriers and facilitators for future implementation in line with WHO ECC prevention guidelines.

**Keywords:** Early Childhood Caries, Caries Prevention, Scotland, South-Eastern Europe

**Acknowledgement:** This research project was Funded by the Borrow Foundation, UK.

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## Effects of 10-year Exposure to Fluoridated Water in Adults and Adolescents

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**Aim:** To pragmatically assess the clinical and cost-effectiveness of water fluoridation for preventing the need for dental treatment and improving oral health in a contemporary population of adults and adolescents, using a natural experiment design.

**Methods:** A 10-year retrospective cohort study (2010-2020) was performed using routinely collected NHS dental treatment claims data. Participants included patients aged 12 years and over, attending NHS primary dental care services in England 2010-2020 (n=17.8 million). Approval for the study was given by Health Research Authority Confidentiality Advisory Group and the North-East Tyne and Wear NHS Research Ethics Committee. Based on recorded postal addresses, individuals exposed to drinking water with a fluoride concentration  $\geq 0.7$  mg F/L ('optimally fluoridated') were matched with non-exposed individuals based on individual and contextual characteristics, using propensity scores.

**Results:** Nearest neighbour 1: 3 variable ratio matching resulted in an analytical sample of 6,370,280 adults and adolescents (1,592,570 who lived in optimally fluoridated areas and 4,777,710 who lived in non-optimally fluoridated areas). A negative binomial regression, predicted that the mean number of invasive NHS dental treatments (restorations 'fillings' / extractions) was 3% lower (-0.2) in the optimally fluoridated group (5.4) than in the non-optimally fluoridated group (5.6) (IRR 0.969, 95% CI 0.967, 0.971). Predicted mean DMFT was 2% lower (-0.2) in the optimally fluoridated group (IRR 0.984, 95% CI 0.983, 0.985). There was no difference in the predicted mean number of missing teeth per person (IRR 1.001, 95% CI 0.999, 1.003) and no compelling evidence that water fluoridation reduced social inequalities. Between 2010 and 2020, optimal water fluoridation in England was estimated to cost £10.30 per person (excluding initial set-up costs). NHS dental treatment costs for optimally fluoridated patients 2010-2020 were 5.5% lower, by £22.26 per person (95% CI -£21.43, -£23.09).

**Conclusions:** Existing water fluoridation programmes in England produced a positive return on investment for the public sector between 2010-2020, but the observed health effects were very small and may not be meaningful for individuals. A classic prevention paradox.

**Keywords:** Water fluoridation, Adults, Adolescents, Routinely collected data, Dental treatment

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## EADPH 2023 ABSTRACT 213

### The Global Oral Health Profile of Care Experienced Children and Young People- A Scoping Review

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**Aims:** Children and young people (CYP) in care have poorer physical and mental health than their peers. The aims of this scoping review were to: (i) explore the oral health needs of CYP in care globally; (ii) synthesise evidence on their oral health behaviours; (iii) summarise interventions that have been trialled in this population to improve their oral health.

**Methods:** A comprehensive search of five databases was conducted: Ovid Embase, Ovid MEDLINE, CINAHL, SocINDEX and Dentistry and Oral Sciences Source alongside grey literature sources. Inclusion criteria were articles relating to CYP living in care or care leavers aged 0-25-years-old, published up to January 2023. Articles were excluded if they were only published as abstracts or not published in the English language. Thematic analysis was used to develop the domains for oral health behaviours and interventions.

**Results:** The search yielded 942 articles; 247 duplicates were then excluded. Following review of titles and abstracts 149 studies were identified and 68 were included in the review. Of these, 63 were published articles and five were grey literature. Most papers were published from very high or medium Human Development Index (HDI) countries. CYP in care were found to experience high levels of decay, dental trauma, periodontal diseases and poorer oral health related quality of life. Oral health behaviours included limited self-care behaviours and a lack of oral health-based knowledge. Interventions trialled involved (i) oral health education; (ii) supervised brushing; (iii) treatment or preventative dental care. No articles presented the oral health needs of care leavers or tested an intervention in this group.

**Conclusions:** This review revealed that CYP in care experience significant oral health inequalities. It highlights the scarcity of interventions to improve the oral health of this population and a paucity of evidence surrounding the oral health needs and behaviours of care leavers.

**Keywords:** Scoping review, Looked after children, Global oral health, Oral health inequalities, Paediatrics

**Acknowledgements:** This project was funded by The Borrow Foundation. The authors would like to acknowledge Ms Jane Horrell, Dr Hannah Wheat, Dr Nick Axford, Professor Jill Shawe (University of Plymouth), Dr Urshla Devalia, (Royal National ENT and Eastman Dental Hospital), Dr Janine Doughty, Dr Sarah Kaddour (Pathway Healthcare Charity, University College London Hospitals), Skye Boswell (PPI representative).

**Presenter:** Joelle Booth email [j.booth@qmul.ac.uk](mailto:j.booth@qmul.ac.uk)

## Health Literacy, Oral Disease and Contributing Factors in a Dutch Cohort from the Lifelines Project

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**Aim:** Health literacy (HL) is the ability to deal with information related to one's health. It is a predictor of oral health outcomes. This study aimed to assess whether limited HL is associated with oral health outcomes in the general population when mediated by oral health behaviour and oral healthcare care utilisation.

**Methods:** This longitudinal study analysed data from three assessment waves, 1C for health literacy, 2A for mediators, and 3A for dental-related questions of the Lifelines multi-disciplinary prospective cohort study, which is ongoing in the Northwest region of the Netherlands. The data for oral health outcomes were for edentulism and gingivitis. Structural equation modelling was used to assess HL's direct, indirect, and total effects on oral health outcomes. All participants in the Lifelines project gave prior consent and the Medical Ethics Committee of the University Medical Centre Groningen approved the study.

**Results:** The final sample consisted of 26,983 participants. Adequately health-literate participants had lower chances of having poorer oral health outcomes, namely gingivitis (OR= 0.82), periodontitis (OR=0.69), dry mouth (OR= 0.78) and tooth pain (OR=0.73). Moreover, adequate HL participants had a higher chance of being dentate (OR=1.99) The overall mediation of oral health behaviours indicated 51% of direct mediation between HL and edentulism and 74% between HL and gingivitis. For edentulism, the proportion mediated by dental care utilisation was 34% and was inversely mediated in the case of gingivitis by 13%.

**Conclusion:** In the cohort studied, low HL was associated with edentulism and gingivitis and was mediated by low adherence to oral health behaviour and inadequate dental care utilisation. By improving health literacy and promoting healthy behaviours, individuals can improve oral care management and reduce the risk of developing oral health conditions.

**Keywords:** Health literacy, Mediation analysis, Oral diseases, Oral health behaviour

**Acknowledgement:** The presenter thanks Colgate for financial support towards the costs of attending the congress

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## Dentists' Unconscious Bias Towards Social Subgroups: A Comparative Study Using Situational Judgement Testing

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**Aims:** This survey aimed to explore dentists' attitudes and unconscious bias when facing hypothetical patient cases.

**Methods:** Four cases were developed, each describing a particular obstacle during patient contact. In 2020, they were sent to all dental associations and, as a control group, to all newly-graduated dental students in Flanders, Belgium. When opening the weblink, participants were randomly assigned to group A or B, differing in one single patient factor (manager vs unemployed, compliant vs non-compliant, Belgian vs foreign name, asylum seeker vs employee). After reading the cases, participants scored statements on a scale of 0 to 5. Data were analysed using SPSS V26, comparing answers of groups A and B, including secondary analyses by gender and experience. The research protocol was approved by the Ghent University ethical committee (B670201940544).



**Results:** Two hundred and twenty nine dentists completed the cases, including 107 newly-graduated and 122 experienced dentists (average 23.7 years of experience). One hundred and sixty eight (67%) of the participants were female. Different versions led to significantly different reactions: dentists preferred not to treat unemployed patients 50 (52%) vs. 51 (39%) and disliked non-compliant patients more than compliant ones 58 (60%) vs. 57 (43%). Dentists with the non-compliant patients were more likely to believe that the patient was lying about an overdue payment 68 (70%) vs 65 (49%)  $p<0.001$ ). No relevant differences were found between the case with an African or Belgian family, but in case 4, because of the additional administrative work involved, more dentists would not treat an asylum seeker than an employed patient 31 (32%) vs 14 (11%). The differences between versions A and B were not equally distributed over all participants but were almost exclusively situated in the group of female dentists and in the experienced group. In the male group, no differences could be found between A and B, except for one statement.

**Conclusions:** In the group studied, dentists' judgements were influenced by unconscious bias, particularly in female and experienced dentists.

**Keywords:** Confirmation bias, Dentists, Situational judgement testing

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## EADPH 2023 ABSTRACT 217

### **The Social Impacts of Head and Neck Cancer Treatment: A Systematic Review**

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**Introduction:** Head and neck cancer (HNC) imposes a great physical, psychological and social burden on patients and their carers. However, relatively little is known about the social impacts of the disease or its treatment compared to the physical or biomedical ones.

**Aims:** This systematic review examined the social impacts of treatment and rehabilitation on patients with HNC.

**Methods:** Following a comprehensive search of OVID (Embase, Medline, PubMed, PsycINFO) and Web of Science to identify studies published between 2010-2020, the Mixed Methods Appraisal Tool (MMAT) was used to assess the methodological quality of all included studies. The findings were reported using Preferred Reporting Items of Systematic review and Meta-Analyses (PRISMA) checklist. The search strategy included keywords and MESH headings. From 14,661 papers identified, 46 were eligible for inclusion of which 25 employed quantitative, 14 qualitative and seven mixed methods. Prospective methods accounted for six of the total.

**Results:** Outcomes studied most frequently reported (in 15 studies 33%) concerned eating, swallowing and nutrition. Only four studies (9%) focussed on outcomes of speech or body image or dental care. Qualitative studies revealed a wide range of social impacts which affect patients relating to the cancer, therapeutic education, and the negative impact of treatment side effects over time. The majority of studies (27 -63%,) were from Europe or America. Methodological inadequacies included small sample sizes and short follow-up times.

**Conclusions:** This review suggested that HNC and/or its treatment affects functional activities such as eating and sleeping, interpersonal activities such as interacting with friends, personal identity and the way people see themselves. More large scale prospective quantitative research, as well as further qualitative research, is urgently needed to unpick the social impacts of HNC and its treatment from the various complex and sensitive sociocultural and psychosocial frameworks that they exist within.

**Keywords:** Head and neck cancer, Social impacts, Treatment, Rehabilitation

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## An Investigation into Direct Access to Dental Hygienists' Services and Independent Dental Hygiene Practice

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**Introduction:** Direct access refers to the possibility for dental hygienists to provide services to patients without a prescription from a dentist, perform treatment within the scope of dental hygienists' practice and maintain professional relations with the patients. Independent dental hygiene practice allows establishing and owning a dental hygiene clinic with or without a dentist

**Aim:** The aim was to investigate how many European Dental Hygienist Federation (EDHF) member countries in the European Union (EU) and European Economic Area (EEA) treat patients' with direct access to dental hygienists' services and how many countries allow dental hygienists to open and work in independent practices.

**Methods:** An explanatory communication, online questionnaire and consent form were sent by email to the dental hygienists associations of the 24 member countries of the EDHF up to three times between January and March 2023.

**Results:** Completed questionnaires were received from 20 countries, a response rate of 83%. Fourteen countries reported direct access to dental hygienists' services, while the in the other six a prescription from a dentist is required in order to receive dental hygienists' treatment. Thirteen countries allow dental hygienists to own their clinic/practice.

**Conclusions:** In the population studied most member countries of the EDHF have direct access to dental hygienists' services and most of them also allow a dental hygiene to own their practice/clinic. This investigation did not include EU and EEA countries, who are not members of the EDHF most of which do not have dental hygienists.

**Keywords:** Dental hygienists, Independent practice, Dental Hygiene services

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## Effectiveness of a Web-based Oral Health Education Program Among Pregnant Women in Lithuania

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**Aim:** To evaluate the short-term effectiveness of a web-based education program in improving oral health-related knowledge and behaviours among pregnant women in Lithuania.

**Methods:** This before-and-after study was performed from October 2022 to March 2023. Pregnant women were recruited from a waiting room in a hospital in Kaunas. An interactive web-based oral health education programme was designed and given to the women who agreed to participate in the study. It included four popular scientific articles. A 42 item questionnaire based on previous studies assessed demographic characteristics and before-and-after oral health-related knowledge and behaviours. For statistical analyses R Commander 4.3.0. was used. Oral health-related knowledge and behaviours were assessed by counting correct answers and were compared using the Wilcoxon rank sum and Chi-square tests. The significance threshold was set at  $p < 0.05$ . Vilnius University bioethics committee approved this study, and voluntary participation was based on written consent.

**Results:** Ninety eight pregnant women (52%) of those invited to participate completed the questionnaire. The median before-intervention knowledge score was 17 (interquartile range (IQR) 6) which increased to 21.5 (IQR 11.5) after 6 weeks of intervention ( $p < 0.001$ ). Participants' knowledge improved on: causes of erosions (correct answers before-intervention 20 (20%), after-intervention 57 (58%),  $p < 0.001$ ), symptoms of dental caries (before 28 (29%), after 44 (45%),  $p = 0.017$ ) and periodontitis (before 13 (13%), after 41 (42%),  $p < 0.001$ ), pregnancy and oral diseases relationship (before 20 (20%), after 44 (45%),  $p < 0.001$ ) and usage of toothpaste containing 1450 ppm fluoride (before 32 (33%), after 61 (62%),  $p < 0.001$ ). Oral health-related behaviours also improved: a higher proportion of participants reported using fluoridated toothpaste (before 56 (57%), after 78 (80%),  $p < 0.001$ ) and interdental brushes (before 23 (24%), after 38 (39%),  $p = 0.02$ ). Participants read a median of 3 (IQR 2) out of 4 articles on the website.

**Conclusions:** This web-based oral health education programme improved oral health-related knowledge and behaviours in the short-term among pregnant women in Lithuania. There is a need to evaluate the retention of improvement after web-based interventions in the long-term.

**Keywords:** Public Dental Health, Oral Health Knowledge

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## EADPH 2023 ABSTRACT 220

### Young Adults Achieve Satisfying Oral Health by Coping with Socio-economic Challenges

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**Aim:** Despite having a low socio-economic status, some individuals can maintain health. The aim of this qualitative study was to explore salutogenic factors (health promoting) among healthy caries-free young adults with low socio-economic status.

**Methods:** Data were collected by purposively sampling of 17 participants (11 women), 19-23 years of age, who were caries-free and with a low socio-economic status. The participants were identified from patient records of the National Dental Care Skåne organisation and socio-economic data from Statistics Sweden. Ethical approval and informed consent were obtained prior to starting the study. The participants were interviewed in-depth during 2021-2022 and encouraged to describe their experience in their own words. The interviews were transcribed verbatim followed by a Qualitative Content Analysis with an inductive approach.

**Results:** The theme revealed was “A salutogenic foundation built on trust and transfer of responsibility from parent to child through childhood to maturity” comprising three categories; (i) a basis for health, (ii) creating own path by testing wings, (iii) developing resources for health. A feeling of trust was expressed, participants having confidence in the unconditional support from their caregivers and caregivers having trust in participants being able to take control over their own oral health.

**Conclusions:** In the population studied, the findings indicated that health promoting factors were established, not only during a healthy basis in upbringing, but also in a guided adolescence period, enabling young adults to develop resources and assets to independently take control over their own health.

**Acknowledgements:** The study was funded by Eklund Foundation, Odontologisk Forskning i Region Skåne and the Patent Revenue Fund for Research in Preventive Odontology. We thank Carlsson P, Ericson D, Hedenbjörk-Lager A, and Jansson H for their contributions as collaborators in the project.

**Keywords:** Salutogenesis, Family Support, Psychology, Health Promotion

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## EADPH 2023 ABSTRACT 221

### Preventive Measures and Perceived Challenges in Delivering Oral Health Care for the Norwegian Elderly

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**Aims:** This study aimed to gain knowledge of general oral health preventive measures with a specific focus on root caries preventive measures for patients  $\geq 65$  years old, performed by Norwegian dental hygienists working in both public and private dental health services. A secondary aim was to investigate differences and challenges in prevention practices between public and private dental hygienists.

**Methods:** In 2022, a questionnaire-based electronic survey was conducted among dental hygienists working in both public and private dental services in Norway. Chi-square tests were used to analyse the differences between dental hygienists working in both private and public dental services regarding preventive measures and perceived challenges. The study was approved by the Norwegian Centre for Research Data.

**Results:** There was a response from 365 dental hygienists and a response rate of 53%. The most frequently reported general oral health preventive measures were oral hygiene instruction and professional tooth cleaning performed respectively by 348 (95%) and 345 (94%) of dental hygienists. Oral hygiene instruction and application of fluoride varnish were the most performed root caries preventive measures, performed respectively by 359 (98%) and 324 (86%) of dental hygienists. Reduced manual dexterity in patients was the most perceived challenge, experienced by the patients of 308 (84%) of the dental hygienists. Public dental hygienists perceived challenges to a greater extent than private dental hygienists, particularly those related to patients' reduced mobility and ergonomic difficulties.

**Conclusion:** The results indicate that dental care for older people is challenging. To meet the future oral health needs of the ageing population, more resources and interdisciplinary collaboration are required in the dental services.

**Keywords:** Preventive measures, Oral health, Root caries, Elderly patients, Dental hygienists

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## EADPH 2023 ABSTRACT 222

### Patient Satisfaction with Dental Care during the Finnish Student Health Service Reform

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**Aims:** The aim of this study was to analyse the dental care satisfaction of patients before and after the reform of Finnish Student Health Service (FSHS) in 2021 and the experience of the FSHS dental personnel in the changing work environment.

**Methods:** The study was conducted among higher education students and dental personnel in the FSHS Oulu. A dental satisfaction questionnaire (DSQ) was used to collect information on patient satisfaction while authors designed a separate questionnaire for dental personnel. Patients were asked to fill an electronic form by dental personnel during their visit to a dental clinic. Descriptive statistics were presented as proportions, means and standard deviations. The Chi-square test was used to assess the difference in proportions. Permission for conducting the study was obtained from the FSHS committee, ethical permission was not required.

**Results:** Of the patients who visited FSHS Oulu, 51 (5%) took part in the before survey and 200 (10%) in the after survey. The mean (SD) dental satisfaction scores before and after reform were 3.88 and 4.04 out of 5, respectively. No difference in DSQ mean scores were found between the surveys. The highest satisfaction scores were found for items related to quality of care and the lowest in the items related to continuity. No differences were found in dental personnel's responses to questions on FSHS workload before and after reform. However, after expansion, dental personnel felt that they had enough time to complete their work and were also satisfied with their job and pay.

**Conclusions:** In the population studied, high patient satisfaction and no differences were found before and after the reform. The reform of the FSHS services do not seem to have influenced the patient experience of dental care and employees remained satisfied with their jobs.

**Keywords:** Patient satisfaction, Health care reform, Survey study

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## Socio-economic Gradients in Caries Experience in Norwegian Adults, HUNT4 Oral Health Study

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**Aims:** To investigate the extent of socio-economic inequality in caries experience among Norwegian adults ( $\geq 25$  years) and assess if oral health related behaviours could explain potential inequalities.

**Methods:** Data were collected as part of a larger health survey and a random sub-sample of 7,347 individuals ( $\geq 19$  years) were invited to participate in the HUNT4 Oral Health Study, a cross-sectional study conducted from September 2017-February 2019. Approval from Regional Ethics Committee for SE-Norway and written informed consent from participants were obtained. Data collection was performed by nineteen trained and calibrated examiners, using self-administered questionnaires and standardised clinical and radiographic examinations. Caries experience was measured as numbers of decayed, missing and filled teeth (DMFT-index), socio-economic level denoted by education and household income, and behaviours designated by frequency of dental visits, tooth brushing and smoking. Negative binomial regression models (NBR) were used to estimate associations between socio-economic level and caries experience.

**Results:** In total, 4913 individuals agreed to participate (response rate 67%). The present study included 4549 dentate participants aged  $\geq 25$  years. Lower levels of education or household income were associated with higher caries experience, particularly pronounced for MT (missing teeth). The socio-economic gradients were similar for both household income and education and were apparent from young adulthood, but most evident in the middle-aged and older. A high level of education was associated with a 50% (IRR 0.50 (95%CI 0.43-0.57)) lower mean number of MT and high income level with a 24% (IRR 0.76 (95%CI 0.67-0.87)) lower mean number of DT and a 15% (IRR 1.15 (95%CI 1.09-1.20)) higher mean number of FT compared to individuals with a low socio-economic status. When adjusting for mediators, the association between levels of education or income and caries experience decreased, but remained significant, except for DT.

**Conclusions:** In the population studied, socio-economic gradients for caries experience were observed, particularly pronounced for MT. Socio-economic differences in DT were largely explained by oral health related behaviours.

**Keywords:** Oral health inequalities, Dental caries, Adults

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## Skill-mix and Electronic Dental Record Adoption by European Oral Care Providers

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**Aim:** The aim of this study is to evaluate the current skill-mix and electronic dental record usage of oral care providers in six European countries informing needs-based modelling for oral health.

**Methods:** This study is a cross-sectional online survey in Ireland, the Netherlands, Hungary, Denmark, Estonia, and the United Kingdom. The target population comprises oral care providers including dentists, dental hygienists, dental therapists, dental nurses, and dental assistants. The study sample will be drawn using professional mailing lists of oral care provider associations in each country. Informed consent will be explicitly required at the start of the anonymous online survey. Ethical approval will be acquired prior to data collection from each participating university's local ethical committee. The expected overall response rate is 50% with dentists presenting the highest rate. Kobo Toolbox will be used for online data collection. Statistical analysis of quantitative data will be performed using R software and qualitative data using MAXQDA. The findings of this study will provide empirical evidence to the development of needs-based models for oral health workforce planning, which is a component of the EU-funded PRUDENT project.



**Acknowledgements:** This project has received funding from the European Union's Horizon Europe research and innovation program under grant agreement 101094366: <https://cordis.europa.eu/project/id/101094366>.

**Keywords:** Oral health, Workforce, Skill-mix, Electronic Health records, Europe.

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## EADPH 2023 ABSTRACT 225

### Open your Mouth and I Will Tell you about your Education?

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**Aims:** Aim of this study was to investigate associations between a high burden of oral disease and professional education level utilising claims data from a national health insurance company's database.

**Methods:** Data were obtained from the claims database of a national health insurance company covering 8,900,000 (at least 10%) of the German population between 2012 and 2021. The study population consisted of two cohorts, with 689,736 aged between 25 and 34 years (younger) and 1,124,077 aged between 45 and 54 years in 2012 (older), who were employed, had oral insurance cover provided by the company and needed prosthetic treatment including crowns, within the ten-year period of time. The burden of oral disease was assessed using the cost of insurance payments for prosthetic treatment over ten years as a surrogate parameter. This reimbursement for prosthetic treatment is based on a fixed subsidy system related to individual clinical findings, independent from the treatment carried out (e. g. fixed or removable). Only subjects within the 90%-percentile of prosthetic payments were included. Professional education levels were obtained from the insurance records (without professional education or with professional education at bachelor or diploma or masters or, doctorate level). Descriptive methods were used to test the potential associations of education with payments for prosthetic treatment at a ( $p < 0.05$ ) level and a linear regression model was calculated. As this was secondary research and there was total patient anonymity, ethics approval was not required.

**Results:** A significant linear association between a higher professional education level and a lower amount of insurance payments for prosthetic treatment was revealed ( $p < 0.0001$ ). Costs for younger subjects without education were 12% (men) and 18% (women) above the mean value while costs for subjects with education were all below. Costs for older subjects without education were 11% (men) and 13% (women) above the mean value while costs for subjects with education were all below.

**Conclusions:** Especially in patients with a high usage of dental services, the risk of suffering from a high burden of oral disease seems to be the higher than for those without professional education.

**Acknowledgements:** This study was partially supported by the BARMER, a German national health insurance company.

**Keywords:** Claims data, Professional education, Burden of oral disease, Prosthetic treatment

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## EADPH 2023 ABSTRACT 226

### A Pilot Study to Investigate the Oral Health Status of a Group of Adult Romanian Drug Users

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**Introduction:** The consumption of prohibited substances especially among young people is an alarming reality. In many countries, including Romania, the number of drug users has increased and more powerful drugs are being taken. Methods of administration vary and include: smoking and via nasal, intravenous and oral routes.

**Aim:** To assess the oral health status of a group of Romanian adults who are chronic current or former users of narcotics.

**Methods:** The study was performed in May and June 2023 in Bucharest at the Saint Stelian Rehabilitation Centre for the assessment and treatment of drug addicts. Patients' consent was obtained and the Centre's ethics committee approved the study. Twelve patients, who had sought emergency dental care and were aged between 25 and 40 years participated. Apart from an oral examination, their medical history and details of the reason why they had sought dental treatment and the method and duration of their drug consumption were ascertained.

**Results:** The patients had been intravenous heroin users for 9-10 years. It was found that during their hospitalisation they had been treated with Methadone. This may well have exacerbated existing chronic conditions such as pulpitis' and apical periodontitis and caused them to seek emergency care. Oral examination typically revealed advanced caries in anterior teeth and retained roots and tooth loss in the posterior region of their dental arches. Patients also had generalised gingivitis and periodontitis due to a lack of interest in oral hygiene. They reported high consumption of sugar. They had halitosis and xerostomia possibly as a consequence treatment with methadone.

**Conclusions:** The oral health status of the small group of current or past heroin users was very poor. It is suggested that when drug users are first admitted to rehabilitation centres, to minimise the risk of need for emergency dental treatment, they should be offered oral health advice and an oral examination, followed by any necessary treatment.

**Keywords:** Drugs, Severe caries, Irretrievable roots, Periodontal diseases, Xerostomia

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## EADPH 2023 ABSTRACT 227

### Mouth Dryness Measures in Patients with Sjogren's Syndrome versus Other Chronic Conditions

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**Aims:** The aim of the study was to compare the objective salivary flow and subjective severity of xerostomia in patients with Sjogren's syndrome versus patients suffering from other chronic health conditions.

**Methods:** This study was performed during the period from November 2020 to December 2022 and included 56 dry mouth patients. The Sjogren's syndrome group consisted of 28 (50%) participants recruited from Vilnius University Hospital Zalgiris Clinic, where they were referred due to their condition. Other chronic conditions group also consisted of 28 (50%) participants who were recruited at prolonged care hospitals due to their underlying disease. Participants completed the WHO Questionnaire for Adults and Xerostomia Inventory (XI) questionnaire, and unstimulated whole sialometry (UWF) was measured. The Mann-Whitney U test, Independent samples T-test, and multivariable linear regression analyses were used to examine associations between, salivary flow, xerostomia severity and being in one of the study groups. The Lithuanian Bioethical Committee approved the study and an individual informed consent was obtained for each subject.

**Results:** The median salivary flow in Sjogren's syndrome group was higher than in patients with other chronic conditions group, 2 ml/15 min (IQR 2.8) versus 1ml/15min (IQR 1.8),  $p=0.02$ ). Xerostomia was more severe in Sjogren's syndrome group (median XI value 36 (IQR 9) versus 29 (IQR 9),  $p=0.004$ ). After the adjustment for age and gender, the XI values associated with Sjogren's syndrome (OR 7.0, 95% CI 0.3-13.6), and salivary flow negatively associated with older age (OR-0.1 95% CI-0.1; 0.0).

**Conclusions:** In the population studied, the results suggest that patients with complaints of dry mouth and underlying chronic conditions may experience similar severity of subjective and objective mouth dryness, regardless of the underlying condition.

**Keywords:** Dry mouth, Sjogren's syndrome, Salivary flow, Chronic diseases.

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## Simulation Workshop to Test STAR: a Home-based Toothbrushing Intervention within Childsmile

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In Scotland, where socio-economic inequalities in child tooth decay persist, Childsmile's community-based Dental Health Support Workers (DHSWs) deliver tailored interventions to families in need of additional support in the home setting, including the promotion of supervised toothbrushing in the early years.

**Aims:** The aim of this study was to test the feasibility and acceptability of the STAR toothbrushing tool with DHSWs and families in a simulated setting to support implementation of supervised toothbrushing in the home.

**Methods:** In August 2022, the STAR tool was developed/co-designed with DHSWs. It aims to help families to identify barriers to toothbrushing and provide strategies to overcome these barriers. A two day simulation workshop, was held in Glasgow Dental School. It was attended by four DHSWs, two parents and two simulated parents, who tested the acceptability and feasibility of the tool. The simulated interactions between DHSWs and parents were video recorded and analysed using the Function Resonance Analysis Method (FRAM) - a novel approach in this area. Exit interviews with participants were audio recorded and analysed using Framework analysis and the modified Consolidated Framework for Implementation Research (CFIR). Full NHS ethical approval and participant consent were obtained.

**Results:** DHSWs and parents responded positively to the use of the STAR tool and reported it was easy to use and adaptable to families with different barriers to toothbrushing. Six weeks follow-up found that parents had been able to use the strategies given to them to make beneficial changes to their toothbrushing routines. FRAM analysis showed that the STAR tool can be used flexibly by DHSWs to provide tailored toothbrushing advice to families.

**Conclusions:** In this simulation study, use of the STAR tool was feasible and acceptable to DHSWs and parents and allowed families to make improvements to their toothbrushing routines. The STAR tool is currently being rolled out and evaluated across the 14 NHS Scotland Health Boards.

**Acknowledgements:** This study was part of a PhD funded by Haleon

**Keywords:** Toothbrushing, Home-based, Simulation

**Presenter:** Emma Fletcher email e.fletcher.1@research.gla.ac.uk

## Oral Health, Dental Care and Health Behaviour of Inpatients Receiving Physical Medicine and Rehabilitation

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**Aims:** The aim of this study was to assess the aetiological factors having an impact on the prevalence of dental caries, missing or filled teeth, in a subsample of a single-centre cross-sectional study conducted among inpatients, who were receiving physical medicine and rehabilitation.

**Methods:** The study took place at the National Institute of Medical Rehabilitation in Hungary between 5 April 2016 and 20 January 2018, it was approved by the Medical Research Council of Hungary. Participants provided written consent to take part. Exclusion criteria included communication difficulties derived from a patient's history. Two examiners were calibrated and achieved a Kappa score of 0.81. The clinical examination followed the WHO (2013) methods. A total of 608 inpatients were given a dental examination. The resulting D3MFT and restorative index (RI) scores and demographic characteristics, dental care, self-reported smoking, alcohol consumption and eating habits were recorded. Statistical analysis was performed using R software, the resulting descriptive data are presented as frequency, mean (SD) and median.

**Results:** Out of the 608 inpatients 310 (51%) were male, 298 (49%) female, their mean age was 59 years. The mean  $\pm$ SD D<sub>3</sub>MF-T score in the study sample was 19.4 $\pm$ 7.5, the mean RI was 67.4%. Four hundred and thirteen patients (69.4%) did not report tooth pain in the past 12 months. The last dental visit exceeded 24 months or more for 202 (33.8%) of the patients. The mean D<sub>3</sub>MF-T score in patients who consumed high carbohydrate products five times per day, or more frequently, was 20.6.

**Conclusions:** In the population studied, the main factors which influenced D<sub>3</sub>MF-T were age, frequency of dental visits and frequency of tooth brushing. It was apparent that patients undergoing rehabilitation had less favourable oral health, with frequent occurrence of dental caries and missing teeth. Based on the results of the current study, a new, targeted prevention and intervention policy can be developed.

**Keywords:** Special needs patients, Dental caries, Oral hygiene, Health behaviour, Epidemiology

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## EADPH 2023 ABSTRACT 230

### Patient and Public Involvement - Exploring Oral Health with Autistic Young People

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**Aims:** Autistic young people (AYP) have poorer oral health than their peers. The aim of this patient and public involvement (PPI) activity was to inform the development of a qualitative research project exploring the oral health behaviours, dental experience and access to mainstream dental services of AYP.

**Methods:** In 2021, a researcher (JE) and an artist (LP) with experience of working with AYP, ran a series of 6 workshops with members of a youth club for AYP in Plymouth, UK. The objective of the sessions was to obtain the AYP's input on the approaches to be used in the research. Fun and creative interactive activities were used to obtain the YP's thoughts on how to explore the experiences of autistic YP in relation to oral health and dental care. Ethical approval for this study was given by the Research Ethics Committee of the University of Plymouth.

**Results:** The AYP attending the workshops decided on a project name and logo. The interactive activities opened up opportunities for group and one-to-one discussions with AYP exploring their thoughts and experiences in relation to their oral health. The workshops highlighted the importance of clarity in communication with AYP and of engaging them in research through individual interests utilising a range of approaches including those involving physical activity. Researchers need to be flexible, willing to adapt activities to group dynamics and able to read autistic YP's non-verbal signals.

**Conclusions:** The workshops informed the subsequent research in relation to engaging and communicating with AYP around oral health. The views shared by the AYP and observations of staff and volunteer interactions with the AYP in their care provided an important learning opportunity for JE and LP. These insights were invaluable to the development of the subsequent research process and offers learning for future research.

**Acknowledgements:** The authors would like to acknowledge the important contribution of the YP, staff and volunteers at 4Me&MyFriends who were so generous with their time and energy.

**Keywords:** Children, Young People, Oral Health, Autism, PPI

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## Poor Oral Health and School Absences: A Population Wide Data Linkage Study

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**Aims:** The aim of this study was to examine the effect of poor oral health on school absence levels among children in Scotland taking into account socio-economic deprivation.

**Methods:** Four population-wide datasets were linked and stored in the secure National Safe Haven: the Pupil Census for school absence, the National Dental Inspection Programme for oral health, the Scottish Morbidity Record (SMR01) for Dental General Anaesthesia (DGA), and the Child Health Surveillance Programme (6-8week) for date of birth and sex. The outcome was part-days absence in the first year of primary school for six academic years (2008/09, 2009/10, 2010/11, 2012/13, 2014/15 and 2016/17). The main exposure was poor oral health measured by three different metrics: Caries Experience, Urgent Need of Dental Treatment (UNDT) and DGA. The Scottish Index of Multiple Deprivation (SIMD) was used to measure area-based socio-economic deprivation. General Linear Models with a gamma distribution and identity link were produced. Approval to access the four databases was obtained. As this was secondary research and no child was identified, ethics approval was not required.

**Results:** The records of 263,597 children (approximately 5-years-old) were included. The distribution of poor oral health for each metric was: 85,976 (32.6%) with Caries Experience and a median of 16 part-days lost at school; 23,865 (9.1%) with UNDT and median of 19 part-days lost; and 5,221 (2.0%) with DGA and median of 20 part-days lost at school. Models adjusted by SIMD, sex, age, and academic year showed that children with caries experience had on average 5.0 (95%CI 4.9, 5.2) part-day absences more than children without caries; those with UNDT had 6.2 (95%CI 5.9, 6.5) more part-days absences than children without UNDT; and children who had DGA the number of part-days missed was 6.5 (95% CI 5.8, 7.1) more compared to those that did not have DGA.

**Conclusion:** In the population studied, the three measures of poor child oral health were associated with higher school absence over and above socio-economic deprivation.

**Keywords:** Socioeconomic Inequalities, Child Oral Health, School Absence

**Presenter:** Mariel de Aquino Goulart email [Mariel.Goulart@glasgow.ac.uk](mailto:Mariel.Goulart@glasgow.ac.uk)

## Health Literacy and Oral Health in a Young Population – A Longitudinal Study

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**Aim:** This study aimed to assess health literacy in a young Norwegian population and explore the relation between health literacy and oral health status, oral health behaviour and socio-economic position.

**Methods:** Fit Future is a longitudinal cohort study from Norway. Pupils who attended their first year of secondary education in two municipalities in 2010-11 were invited to participate (n = 1102). The participation rate was 1038 (94.2%) at baseline and 705 (64.0%) at follow up ten years later. Oral health status was assessed by self-reported oral health status, DMFT, and bleeding on probing. Oral health behaviour was assessed by brushing frequency. Health literacy was assessed using the Health Literacy Scale HLS-Q12. The Regional Committee for Medical and Health Research Ethics in Norway reviewed and approved the study.

**Results:** In the population studied, both bivariate and multivariate analysis indicated associations between health literacy and gender, socio-economic position, brushing frequency and self-reported oral health status. Mean DMFT had increased by 2.5 from baseline to follow-up. There was a significant change in bleeding on probing (F (6,573) = 5.05.  $p < 0.001$ ) and no change in DMFT for 145 (24.5%) of the participants. Among those that had an increase above the mean DMFT from baseline to follow-up, 112 (52.3%) had limited health literacy. Participants who reported tooth brushing twice a day and considered their oral health status to be good at follow-up, were found to have adequate levels of health literacy ( $p < 0.05$ ).



**Conclusion:** In conclusion, this study found an association between health literacy and oral health status and oral health behaviour in young Norwegians. The results indicated that health literacy is a protective factor for oral health. Targeted interventions and oral health promotion strategies should consider emphasis on health literacy for more sustainable dental health services.

**Keywords:** Health literacy, Oral health, DMF index, Health behaviour, Longitudinal study

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### EADPH 2023 ABSTRACT 233

## Proposed Oral Health Promotion and Disease Prevention Communication Protocol

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**Introduction:** Communication training in dental schools usually focuses on describing clinical conditions or treatments to patients.

**Aim:** This exploratory qualitative study aimed to reach consensus among dental faculty on the main content elements of an innovative communication protocol, which is under development, to guide dental student-clinicians in talking with patients to promote disease prevention behaviours. This protocol will present a student-clinician with questions to ask and suggest responses, that are tailored to patients' needs.

**Methods:** In July 2023, six dental school faculties (in the USA, Greece, Canada, and the Netherlands) were convened to discuss the main aspects/axons of this protocol. The experts answered an online survey with open-ended questions about the challenges and potential of effective oral health promotion and disease prevention communication, and about the optimal content and properties of an innovative communication protocol. Data were analysed using the content analysis qualitative technique.

**Results:** According to the panel, the main challenges in student-clinician/patient communication are the lack of time, patients' health literacy, lack of clinicians' willingness to focus on preventive behaviours, limited cultural awareness, and absence of training for communication techniques. They reported that the most needed content elements are caries prevention measures (fluoridation included), nutrition and oral hygiene counselling, HPV anticipatory guidance, and proper use of a "dental home". Also, the properties of this protocol need to incorporate an understanding of health literacy and cultural factors, communication techniques (active listening, etc.), technology components (online risk assessment tools, apps, etc.), and follow-up techniques.

**Conclusions:** This exploratory qualitative study revealed the need for developing an innovative oral health promotion and disease prevention communication protocol, to be adopted by dental students and clinicians, with a special focus on cultural, health literacy and socio-emotional factors, as well as on technology utilisation.

**Keywords:** Patients, Communication, Protocol, Disease, Prevention

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### EADPH 2023 ABSTRACT 234

## Using Experienced Based Co-Design for Quality Improvement in Dentistry

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**Aim:** The aim of this project was to investigate if the development of patient information resources through co-design with patients, staff and students could improve patient understanding of proposed treatment and aid the process of obtaining informed consent.

**Methods:** A questionnaire was designed using the health literacy universal precautions (HLUP) toolkit and the General Dental Councils Standards for Valid Consent to gain patient, dental student and staff perspectives on current patient information leaflets (PILs). This was piloted with staff to ensure the language was understandable. Participants, (n=30) from DDH&RS participated in Structured Mini Interviews (SMIs), using the questionnaire to gain feedback on current PILs. Qualitative data were organised into key themes and the PIL redesigned accordingly. SMI's provided participant (n=30) feedback on the new leaflet prior to publication. A Standard Operating Procedure (SOP) produced detailed the method used to update the PIL. Ethical approval was not required for this study as participants were recruited when attending for routine appointments, information collected was anonymous and no patient information gathered. Verbal consent was sought from participants.

**Results:** Themes for improvement were identified. Following updating the PIL, 30 (100%) of participants understood what the procedure would involve, the risks, benefits and alternative treatments. 5 (17%) reported the PIL was too long so this was adjusted. Jargon was removed and a contact email address provided. A QR code allows online access.

**Conclusions:** In the study population, understanding of proposed treatment and the process of obtaining informed consent was improved by using experience-based co-design to allow successful identification of themes for improvement, which were enacted in the new patient information resources, with emphasis on patient centred care. The SOP will be used as an evidence-based framework going forwards. This ensures the project is sustainable for team members who wish to improve patient information resources.

**Keywords:** Realistic Medicine, Informed Consent, Patient Information Resources, Co-design

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## EADPH 2023 ABSTRACT 235

### Effectiveness of a Dental Education Programme for Children with Special Needs

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**Aims:** The aim of this research project was to devise a personalised educational programme tailored specifically for children with special needs. By focusing on the enhancement of their cooperative abilities, the intent was to optimise the efficacy of dental interventions and foster improved oral hygiene practices.

**Methods:** After obtaining ethical approval, 16 participants with special needs, who returned the consent form signed by their guardians, were voluntarily selected from the Pethő Institute. Prior to a 16-week programme, dental screening was conducted by two dentists. Dental parameters, including the debris index (DI-S), calculus index (CI-S), simplified oral hygiene index (OHI-S), were assessed. The children's cooperation skills were evaluated using the Frankl scale before and after the programme. A single-use dental mirror and dental probe were utilised. The programme consisted of weekly 60-minute educational sessions held by two dentists, a dental student, and a specialized teacher. The curriculum encompassed the anatomy of oral cavity, pathological changes, treatment and prevention strategies, toothbrushing techniques, and introduction to dental specialties. The children were educated about dental instruments, their functions, dental materials and each step of the treatment, which they were receiving. The dental screening was repeated at the end of the eight week programme and again, after an 8-week intervention-free period, at week-16. The analysis of data was performed using the statistical software R.

**Results:** Only preliminary descriptive statistical analysis has been performed thus far. The initial (baseline) DI-S score was  $1.5 \pm 0.4$  (mean $\pm$ SD), the CI-S score was  $1 \pm 0.6$  and the OHI-S score was  $2.4 \pm 0.8$ . At week 16, the DI-S score was  $0.6 \pm 0.4$ , the CI-S score was  $0.4 \pm 0.3$  and the OHI-S score was  $1 \pm 0.6$ . Progress was noted in cooperation skills, with the Frankl scale value increasing from  $3.2 \pm 0.7$  to  $3.8 \pm 0.5$ .

**Conclusion:** In the population studied it was evident that children with special needs exhibited suboptimal oral hygiene practices, underscoring the imperative for an oral preventive programme encompassing parental and caregiver education.

**Keywords:** Dental education program, Special needs children, Oral hygiene

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## Experienced Children and Young People's Access to Dental Care- A Scoping Review

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**Aims:** This scoping review aimed to explore three research questions: 1. What is the dental care access of children and young people (CYP) in care and care leavers? 2. What factors influence CYP in care and care leavers' access to dental care? 3. What pathways have been developed to improve access to oral health care for CYP in care and care leavers.

**Methods:** Five databases (Ovid MEDLINE, Ovid Embase, CINAHL, SocINDEX and Dentistry and Oral Sciences Source) and grey literature sources were systematically searched. Articles relating to CYP in care or care leavers aged 0-25-years-old, published up to January 2023 were included. Abstracts, posters and publications not in the English language were excluded. The data relating to dental care access was analysed using thematic analysis.

**Results:** The search identified 942 articles of which 247 were excluded as duplicates. A review of the titles and abstracts yielded 149 studies. Thirty-eight were eligible for inclusion in the review. They were 33 peer reviewed articles, one PhD thesis and four grey literature sources. All papers were published from very high (n=35) or medium (n= 3) Human Development Index countries.

The studies indicate that despite having higher treatments needs, CYP in care and care leavers experience greater difficulty in accessing dental services than those not care experienced. Organisational, psycho-social and logistical factors influence their access to dental care. Their experience of dental care may be impacted by adverse childhood events. Pathways to dental care have been developed but little is known of their impact on access. There are very few studies that include care leavers. The voice of care experienced CYP is missing from dental access research.

**Conclusions:** Care experienced CYP are disadvantaged in their access to dental care and there are significant barriers to their treatment needs being met.

**Acknowledgements:** This project is funded by The Borrow Foundation. We would like to acknowledge the contributions of the wider research team.

**Keywords:** Care experienced, Children, Young People, Access, Dental Care, Review

**Presenter:** Robert Wilton email robert.wilton@plymouth.ac.uk

## Mixed Methods Evaluation of an Integrated Dental Model for Adults Experiencing Homelessness

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**Aims:** To examine the perceived barriers and enablers of an integrated dental care pathway designed for adults experiencing homelessness in Exeter and present data on their oral health needs.

**Methods:** A dental care pathway has been established in Exeter, with referrals made from local GP homelessness services. The service model provides dental care from a salaried practitioner. Anonymised data were collected for all patients referred between 1 December 2021 and 1 December 2022. Data are presented as descriptive statistics for demographics, oral health related behaviours, baseline oral health needs, treatment provided and clinic attendance. Semi-structured interviews with service users, providers, and support staff were undertaken between February and May 2023 to gain insight into their experience of the service. Ethical approval for the study was granted by University of Plymouth.

**Results:** There were 76 patients referred to the service. Fifty (66%) were male, and 50 (66%) attended at least one appointment. Patients were 42 years old on average and 31 (62%) lived in transient accommodation. The following oral health risk factors were identified; 42 (84%) of patients were smokers, 18 (36%) did not brush their teeth, 34 (68%) hadn't visited a dentist in over a year. There were on average 7.6 decayed teeth per person, compared to the national average of 2.7. The most common treatments performed were extractions (131, 33%) and fillings (103, 26%). Dentures were made for 24 (48%) patients, and 396 individual items of treatment delivered. Qualitative interviews uncovered themes surrounding perceptions of the homeless population and healthcare, previous staff experience, relationship building and the clinic environment as both barriers and enablers to providing care to this population group.

**Conclusion:** Preliminary data indicate significant unmet need. The referral pathway shows promise with acceptable attendance rates. The identified key enablers are incorporated into future service design and barriers addressed to optimise the care pathway for individual and service outcomes.

**Keywords:** Integrated dental, homelessness

**Presenter:** Afsha Musa email afsha.musa@plymouth.ac.uk

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## EADPH 2023 ABSTRACT 238

### Exploring Childsmile's Role in Reaching Children with Co-existing Caries and Obesity

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**Aims:** To explore whether children with co-existing dental caries and obesity are being reached by the Childsmile programme, Scotland's national child oral health improvement programme, to address common risk factors.

**Methods:** This was a cohort study (n=97,916) linking four population-level administrative health databases (school years 2015/16-2017/18) retrospectively comparing the reach of various components of Childsmile to children with co-existing conditions, using modified Poisson regression models, accounting for area-based socio-economic deprivation, sex, year, and age. Information governance granted by the National Health Service Scotland. Ethical approval obtained from University of Glasgow Ethics Committee

**Results:** Children with co-existing caries and obesity were less likely to have attended primary dental-care than their peers, and in those who had attended, they were less likely to have received prevention (fluoride varnish, toothbrushing instruction, or dietary advice). Children with co-existing conditions were more likely to have been referred to a Childsmile Dental Health Support Worker, but less likely to have received the support. In interventions which focus on improving diet, children with co-existing conditions were less likely to have received dietary advice interventions in the dental practice, but more likely to have received dietary advice from a Dental Health Support Worker. Children with co-existing conditions were also less likely to have been linked to food/diet related community/voluntary organisations than their peers with neither condition.

**Conclusions:** Although low, the prevalence of children with co-existing conditions (3.4%) in Scotland has not improved and socioeconomic inequalities are widening. The ability of the Childsmile programme to mitigate these inequalities by addressing common risk factors depends on its ability to reach this vulnerable group. Future developments of the Childsmile programme needs to understand wider social, commercial, and structural barriers to engagement, with preventive services for these families, to improve prevention pathways for children at greater risk of dental caries and obesity.

**Keywords:** Caries, Obesity, Co-existing, Child health, Interventions

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## Oral Surgery Waiting Times in NHS Secondary Dental Care in England: A Five-year Review

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**Aims:** To report the oral surgery referral to treatment (RTT) waiting times in hospitals in England and to identify any trends in the percentage of patients seen within 18 weeks.

**Methods:** A five-year retrospective data analysis of oral surgery RTT waiting times in England was carried out. Data were collected using online monthly published figures from the NHS statistics team between 2016-2020.

**Results:** Pre-COVID-19, the best performing month was February 2016, with 130,402/142,579 (91.5%) of patients seen within 18 weeks. The worst performing month was September 2019, with 134,823/169,946 (79.3%) of patients seen within 18 weeks. Oral surgery was the worst performing speciality for 8% of months (4/50). Post-COVID-19, oral surgery was the worst performing speciality for 70% of months (7/10). In July 2020, the percentage of patients seen within 18 weeks of an oral surgery referral dropped to 24%.

**Conclusions:** In the population studied, between 2016-2020, there has been a steady decline in the number of patients who have been seen within 18 weeks of their oral surgery referral. There has also been an increase in oral surgery referrals to secondary care which needs to be addressed. Improvements to undergraduate and postgraduate training, combined with enhanced commissioning of primary care services, are required to improve patient access.

**Keywords:** Oral Surgery access. Waiting times.

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## Oral Health Status and Behaviour of Socially Vulnerable Individuals in Flanders, Belgium

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**Aim:** To assess the oral health status and oral health behaviour among socially vulnerable individuals in Belgium.

**Methods:** Data collection took place from 2016 until 2023. Socially vulnerable individuals cared for by 60 poverty and welfare organisations in 31 communities in Flanders, Belgium were selected by using a convenience sampling design. They were invited to sign up for a free oral examination, regardless of age, gender or insurance status. An oral questionnaire was administered to record their oral health behaviour. Their oral health status was recorded by trained dentists and dental hygienists. No dental treatments were performed. A secure online registration platform was used for both the interview and clinical examination. Ethics approval for the study was given by the Medical Ethics Committee of Ghent University Hospital. Every participant signed an informed consent form.

**Results:** Between 2016 and 2023, a total of 3,701 individuals participated in the study, comprising 1,824 (53.5%) females and 1,586 (46.5%) males, with a mean age of 26 years (SD:20.4). The dental examination conducted on each participant revealed an average of 1.1 teeth affected by dental caries (SD:2.5). Individuals who brushed their teeth less than once a day had a significantly higher number of decayed teeth (mean:2.3; SD:3.6) compared to those who brushed once or more daily (mean:1.1; SD:2.4) ( $p<0.001$ ). Approximately 815 (22%) participants reported experiencing oral pain and 907 (24.5%) reported having bleeding gums within the last four months. Participants who had not made a dental visit in the last twelve months had significantly more decayed teeth (mean:1.5; SD:2.8) than those who had made a dental visit within the past twelve months (mean:1.0; SD:2.1) ( $p<0.001$ ).

**Conclusions:** In the population studied, the findings underscored the oral health challenges faced by socially vulnerable individuals in Flanders, Belgium and highlight the importance of oral health promotion in improving the oral health status and behaviour. By continuing to focus on oral health education and preventive measures, it is hoped that oral health outcomes improve among socially vulnerable individuals.

**Keywords:** Oral health status, Oral health behaviour, Oral health inequalities

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## Evaluating Non-attendance Rates at a Dental Hospital Using a Quality Improvement Approach

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**Aims:** Patient non-attendance for appointments increases waiting list times, delays care and can impact training delivery. The aim of this project was to analyse did not attend (DNA) rates in the Restorative Department at Dundee Dental Hospital and generate ideas to reduce these using a quality improvement-based approach.

**Methods:** Non-attendance rate reports for the Restorative Department, between 1 January and 31 October 2022, were generated using the dental hospital appointments system and analysed. Twenty one randomly selected patients took part in a telephone and online survey, to explore reasons for non-attendance. Survey results were used alongside quality improvement tools (fishbone diagram and forcefield analysis) to generate ideas for the reduction of the Did Not Attend (DNA) rate. The survey was approved as a quality improvement project by the Restorative Department. The hospital trust's information governance team approval was gained and the project was registered with the quality improvement lead.

**Results:** Student clinics were the worst affected by non-attendance, with DNA rates of up to 17%. Fifty one patients were called, of these 23 patients answered the call and 21 agreed to respond to the survey. Seventeen responded by telephone and 4 online. Survey results showed some patients were not receiving notice of appointments and patients would appreciate reminders/discussion about appointment times and days prior to booking. The Fishbone diagram highlighted several areas for possible change including calling patients prior to appointments and updating the dental hospital's letter format to make it clearer.

**Conclusions:** In the dental hospital department studied, it was concluded that reducing DNA rates will improve patient access to care and maximise clinical exposure required for adequate training of students. Implementing a new letter format and effective reminders is achievable. Improved patient engagement and wider collaboration across the dental hospital will enable effective changes.

**Keywords:** Non-attendance, Quality improvement, Accessing care

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## International Dental Students Perspectives and Experiences at One London University

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**Aim:** Internationalisation of dental education is increasingly common; however, little is known about the experience of international students studying abroad. Thus, the aim of this study was to explore international dental students' experiences of applying to, and studying at, one London university.

**Methods:** This study adopted a novel collaborative research design with undergraduate dental students and academic staff collaborating throughout the research process to deliver this study. A topic guide with core and follow-up questions, informed by the literature, was developed to guide the interviews, whilst facilitating a natural, flexible interview structure with exploratory follow-up questions as appropriate. Semi-structured interviews, undertaken by trained student researchers, explored international students' motivation for choosing to study abroad, practical aspects of applying for courses and moving country, academic and pastoral support, mental health and wellbeing, social integration and isolation, racial diversity and discrimination, and their future career plans. The study was approved by King's College London Research Ethics Approval (HR/DP-20/21-23946). Interviews, conducted on Microsoft Teams were transcribed, checked and analysed thematically.

**Results:** Thirteen students participated in this study, nine of whom were female; seven undergraduate and six post-graduate students. Most had experience of international secondary education and were motivated for international study supported by family, friends and scholarships. They reported that they faced financial, practical and emotional challenges. However, their academic experience was positive. Mental health and well-being were affected by the isolation involved with the COVID-19 pandemic, including an inability to travel and family separation. Students generally reported positive experiences in a diverse context whilst several reported discrimination externally. Greater access to information and additional support at the beginning and end of their programmes to facilitate smooth transitions would be welcome, together with dedicated pastoral support.

**Conclusions:** International students welcome the opportunity to study abroad but highlighted their need for additional support.

**Keywords:** Workforce, Internationalisation, Wellbeing, Discrimination, Pandemic

**Presenter:** Jenny Gallagher email jenny.gallagher@kcl.ac.uk

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## EADPH 2023 ABSTRACT 243

### Applying Last-birthday Respondent Selection Method to an Oral Health Telephone Survey

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**Aim:** To apply the Last-Birthday method, as a within-household random selection, for the first time in an oral health telephone survey in Iran.

**Methods:** This cross-sectional telephone survey was performed as a part of a larger study which aimed to compare the self-perceived oral health of adults with the findings of a clinical dental examination. The final sample of adults who had fixed-line telephones and who lived in Mashhad, was selected using an online random selection system. They were each interviewed, using the last-birthday method, by one of seven experienced interviewers during a five day period. The questions involved personal and social background, demographic data and the person's oral health-related behaviours as well as their perceived oral and dental health status. Ethics approval for the study was granted by the Mashhad University of Medical Science Ethics Committee.

**Results:** Out of a possible 6745 with landline telephones, 710 individuals were randomly selected to take part in the study and 294 agreed to do so. The minimum response rate American Association for Public Opinion Research (AAPOR) Response Rate 1) for the interview was 13.0% and the AAPOR Response Rate 3 was 39.6%. The demographic characteristics of survey respondents were compared with those of the city's total population, in this comparison, being employment had the same weight for those in the sample as for the city's population ( $p=0.488$ ). Other variables such as gender ( $p < 0.0001$ ), age ( $p < 0.0001$ ), education ( $p < 0.0001$ ), and household size ( $p < 0.0001$ ) showed significant difference from the total population.

**Conclusions:** The last birthday technique, as a sample selection method in telephone surveys, was respondent-friendly and provided a reasonably representative sample, and it can be applied in oral health science.

**Acknowledgement:** Supported by Deputy of Research and Technology, Mashhad University of Medical Sciences, Mashhad, Iran. Research Grant: 990442

**Keywords:** Telephone survey, Last-birthday, Oral Health

**Acknowledgement:** The presenter thanks the Borrow Foundation for financial support towards the costs of attending the congress

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## Machine Learning-Based Automated Detection of Submandibular Sialoliths on Panoramic Radiographs

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**Aims:** This study aimed to develop and test an automated model using machine learning algorithms for the detection of submandibular sialoliths from panoramic radiographs.

**Methods:** In total 814 panoramic radiographs of patients with a diagnosis of submandibular salivary gland sialolithiasis (ICD codes K11.2 and K11.5) who visited Vilnius University Hospital Žalgiris Clinic from 2012 to 2022 were used for model development. One examiner (intra-observer agreement of 83.6% using the IoU metric) labelled all panoramic radiographs; 327 (40.17%) which demonstrated the presence of sialoliths, while the remaining 487 (59.83%) served as the control group. Salivary gland sialoliths were identified using semantic segmentation methodology. A machine-learning algorithm was created in Python 3.8 to recognize and segment the sialoliths. A subset of 82 panoramic radiographic images was selected for testing, with 33 (40.24%) showing sialoliths. The model's performance was evaluated using the Intersection over Union (IoU) metric and a Confusion Matrix. Overall diagnostic accuracy was also calculated to assess the effectiveness of the model in detecting submandibular sialoliths.

**Results:** Based on the efficient net-b2 architecture, the deep neural network demonstrated a precision of 80.36% in segmenting sialoliths using the IoU metric. Additionally, the model demonstrated an overall diagnostic accuracy of 90.24% in correctly identifying the presence or absence of sialoliths in the images. The Confusion Matrix results were as follows: True Positives - 49 (59.76%), True Negatives - 25 (30.49%), False Positives - 0 (0%), and False Negatives - 8 (9.76%).

**Conclusions:** This initial model demonstrated promising results, suggesting the potential for improved diagnostic accuracy and precision in detecting submandibular sialolithiasis through the appropriate application of artificial intelligence technologies. To enhance the development of the model, it is recommended to include a larger number of panoramic radiographs containing submandibular salivary gland sialoliths.

**Keywords:** Submandibular Salivary Gland, Artificial Intelligence, Sialoliths, Sialolithiasis.

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## Teledentistry in Oral Medicine among Homeless People in Hungary: A Study Protocol

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**Aims:** The aim of this study is to investigate if teledentistry tools could help in the differential diagnosis of oral lesions among homeless people in Hungary. The availability of reliable and up-to-date data regarding the status of oral mucosa among homeless individuals is currently limited. They often exhibit a higher prevalence of risk factors, such as smoking and alcohol consumption, which further compounds the challenges to their oral health. Additionally, invariably they do not have regular dental check-ups, which significantly increases the likelihood of undiagnosed oral potentially malignant diseases.

**Methods:** Trained health workers will conduct oral examinations of homeless people living in daytime warming centres of the Hungarian Charity Service of the Order of Malta. During an oral examination, a standardised set of photographs will be taken, using a professional camera, and transferred as electronic images to oral medicine specialists, who will check for oral lesions and search for potentially malignant lesions. For each patient, a detailed questionnaire, which contains medical background and risk factors, will be completed and transferred to the specialist with the photographs. The specialist will decide if a lesion needs further examination or treatment-if yes, the patient is contacted and advised to make a face-to-face visit to the specialist. Health workers can also assess if the patient has no lesion, or a non-malignant or premalignant lesion and compare their conclusions with the specialist's opinion. Ethical approval has been obtained for the study from the regional ethical committee, socio-economic data of participants will be collected. Inter-rater reliability between health workers and specialists will be assessed.

**Conclusions:** Findings from this study should enable the oral mucosa and future observation and treatment needs of Hungarian homeless people to be assessed. The study will also map and organise the patient journey of this specific population and contribute to a better understanding of the overall prevalence of oral cancer in the Hungarian population.

**Keywords:** Teledentistry, Homeless, Oral lesion

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## EADPH 2023 ABSTRACT 247

### Community Water Fluoridation and the Benefits for Adults

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**Aim(s):** To review the evidence of the effect of Community Water Fluoridation (CWF) on caries in adults and discuss the implications for oral health policy. Studies of the effect of CWF on caries in adults are challenging to undertake as epidemiological (population) studies of adults are difficult and expensive to conduct. Accessing representative samples of adults for epidemiological examination is challenging, as is assessing individuals' lifetime fluoride exposure. There have therefore been fewer studies on the benefits of CWF for adults than for children.

**Methods:** Published reviews of the evidence on the effect of CWF on caries that included studies of adults were searched and the reported outcomes tabulated. Reviews were confined to those published online in the English language. Medline, the Cochrane database and international public health body websites were searched using the terms fluoridation, fluoride and oral health and fluoride and dental health.

**Results:** Six authoritative reviews of the evidence were identified, excluding previous versions of updated reviews. The general conclusion of these was that CWF confers dental health benefits for adults. One review of CWF reported no evidence on effectiveness for adults as the inclusion criteria were more restrictive. Individual studies including longitudinal studies have identified dental health benefit for adults. There is little available evidence on older adults, who are increasingly a group of concern.

**Conclusions:** In the reviews identified, the balance of evidence currently available supports the view that CWF benefits adults as well as children and adolescents. Further well-conducted studies, accepting the practical limitations, would greatly add to the evidence base.

**Keywords:** Community water fluoridation, Adults, Dental health

**Presenter:** Colwyn Jones email colwyn.jones@hotmail.com

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## EADPH 2023 ABSTRACT 249

### Oral Health Status of Post-stroke Inpatients Undergoing Rehabilitation

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**Aims:** The aim of this study was to assess the oral health status of post-stroke patients and also to explore the factors that may influence it.

**Methods:** This cross-sectional study was organised at National Institute for Medical Rehabilitation in Hungary. The Medical Research Council approved the study and all patients provided written consent for participation. Four hundred and ten patients (174 female, 236 male), whose primary diagnosis was haemorrhagic or ischemic stroke were included in the study. Personal medical history and functional assessment were obtained from the final medical reports of the patients. The oral examination and data collection carried out by trained and calibrated dentist examiners and conducted according to the WHO (2013) criteria. Socio-demographic background and behaviours related to oral health were assessed using a questionnaire based on recommendations of WHO oral health surveys: basic methods - 5th edition. Dental status was assessed in terms of the number of Decayed, Missing and Filled Teeth (DMFT). The association of socio-demographic factors, stroke type, risk factors and functional assessment with oral health status was evaluated. The analysis of data was performed using the statistical software R, version 4.0.2. The level of significance was set at  $p < 0.05$ .

**Results:** Mean age of stroke patients was 59.21±14.74 years. Mean DMFT score was 20.13±8.08. Low socio-demographic status, cerebral infarction and risk factors for stroke were associated with poor oral health status. Significant correlation was found between the Functional Independence Measure and oral health-related behaviours with patients brushing their teeth once a month showing the lowest value.

**Conclusions:** In the population studied factors that influenced the oral health status were socio-demographic status, residual dysfunctions, type and risk factors for stroke. The available data strongly suggest the necessity for implementing a series of comprehensive changes to address the special attention and care required for oral health in post-stroke patients.

**Keywords:** Oral health status, Post-stroke inpatients, Rehabilitation

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## EADPH 2023 ABSTRACT 250

### Anatomic Differences of the Elongated Styloid Process in Panoramic Radiographs

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**Background:** The styloid process (SP) of the temporal bone is a highly variable formation, exceeding 30 mm in total length. According to Langlais' classification, there are three types of ESP: Type I, Type II, and Type III. Eagle's syndrome is often undiagnosed, therefore deeper knowledge regarding styloid processes is needed.

**Aim:** This study aimed to investigate the anatomical variations of the SPs within panoramic radiographs of patients, who attended the Vilnius University Hospital Zalgiris Clinic from 2014 to 2016.

**Methods:** Six thousand panoramic radiographs of patients who visited Vilnius University Hospital Zalgiris Clinic from 2014 to 2016 were examined. Those with Elongated Styloid Processes (ESPs) were categorised according to Langlais' classification and gender-related differences were assessed. The data were analysed using Romexis Planmeca Viewer software. SPSS version 27.0 software, the Mann-Whitney U, and Chi-Square tests were used to analyse study variables, with a significance level set at  $p=0.05$ . The study protocol was approved by the Vilnius Regional Biomedical Research Ethics Committee.

**Results:** SPs longer than 30 mm were detected in 480 images (8%). For females, ESP type I was observed in 100 (61%), type II in 51 (31%), and type III in 14 (8%) radiographs on the right side. For males, type I ESPs were found in 170 (65%), type II in 83 (32%), and type III in 8 (3%) panoramic images, respectively, with  $p=0.047$ . On the left for females, type I ESPs were observed in 121 (76%), type II in 32 (20%), and type III in 7 (4%) radiographs. For males, ESPs classified as type I were identified on the left side in 175 (76%), type II in 47 (20%), and type III in 8 (4%) panoramic radiographs,  $p=0.901$ .

**Conclusions:** Type I pattern of SP elongation was observed most frequently. There were statistically significant differences in the gender-related anatomical variations of ESP on the left side, with type III ESP being more prevalent in the female group. Further studies are needed to investigate the possible relationships between ESP type III and clinical symptoms.

**Keywords:** Elongated styloid process, Temporal bone, Radiography

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## EADPH 2023 ABSTRACT 251

### Spanish Oral Health Policies: An Overview

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**Introduction:** Spain, a European country with 17 autonomous communities, faces limited oral health coverage in its public health system.



**Aims:** This study aimed to analyse existing legislation on oral health in Spain and assess its alignment with the principles of “Health in all Policies” and “Health Policy.” Additionally, it sought to provide updates on the Spanish Common Portfolio of Oral Health Services.

**Methods:** To achieve these aims, a comprehensive online search of relevant national and regional databases was conducted to identify relevant legislation pertaining to oral health policies in Spain. The identified regulations were reviewed and analysed to determine their impact and alignment with the study’s objectives.

**Results:** Spain follows a decentralized healthcare model, granting authority to each autonomous community in health matters. Although there is no specific national law on “Health in all Policies,” efforts are being made to integrate health considerations across various policy areas. The General Law on Health establishes the framework for health policy, including oral health, while the National Oral Health Strategy guides both national and regional oral health policies. These policies primarily focus on promoting oral health, preventing oral diseases, and ensuring access to oral healthcare services. Each autonomous community has its own regulations addressing oral health, encompassing provisions for oral healthcare services, prevention programmes, and public health campaigns. Spain’s oral health services feature a Common Portfolio of Oral Health Services, reflecting ongoing efforts to enhance accessibility and quality.

**Conclusion:** Integrating oral health into broader policies is crucial, as exemplified by the “Health in all Policies” approach. Spain demonstrates a strong commitment to oral health through specific measures at both national and regional levels. However, continuous evaluation and improvement of policies and their implementation are necessary to ensure optimal oral health outcomes for the population.

**Keywords:** Spanish oral health policies, Health in all Policies, Health Policy, National Oral Health Strategy, Decentralised healthcare model, Common Portfolio of Oral Health Services

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## EADPH 2023 ABSTRACT 252

### **Attitude and Adherence of Gynaecologists to Oral Health Promotion for Iranian Pregnant Mothers**

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**Aim:** Gynaecologists are among the first people to be in frequent contact with mothers during pregnancy. The present study was conducted to evaluate the attitude and practice of gynaecologists with regards to the oral health of pregnant mothers.

**Methods:** This cross-sectional study was performed in 2021 and 2022 on a random sample of gynaecologists working in private and public practice in Tehran. The addresses and telephone numbers of participants’ work place including offices, hospitals and clinics were obtained from the Association of Obstetricians and Gynaecologists. Ethics approval was granted by Tehran University of Medical Sciences. After giving their consent, a total of 146 gynaecologists (response rate 70%) were evaluated either in person or online using a validated questionnaire containing 11 practice, 8 attitude and 7 background questions. Data analysis was performed by linear regression modelling in SPSS 26 software. A *p* value > 0.05 was considered as significant.

**Results:** The mean age of the participants was 41.8 (± 10.5 years) and 140 (96%) were women. The mean practice score of participants was 3.3 (± 1.7) out of a maximum achievable of 11. The mean score of attitude was 23.2 (± 6.2) out of a maximum achievable of 32. Gynaecologists’ practice was not significantly related to any of their backgrounds, but their attitude was directly associated with the number of patients visited each day.

**Conclusions:** Among gynaecologists who took part in this study, their knowledge of oral health practices for their patients was poor and their attitude level was unsatisfactory. The fact that they are in close contact with pregnant women highlights the importance of reinforcing oral health care topics in their curriculum and increasing training courses and programmes for them to support a multidisciplinary approach to oral health promotion.

**Keywords:** Pregnant women, Gynaecologists, Oral health, Practice, Attitude

**Acknowledgement:** The presenter thanks the Borrow Foundation for financial support towards the costs of attending the congress

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## The COVID- 19 pandemic: Another threat for the dental profession in Cyprus?

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**Aim:** This study aimed to capture the financial as well as the psychosocial impact of the COVID-19 pandemic on the dental profession in Cyprus during the years 2020-2021 and compare it with the consequences of the 2013-2014 economic crisis.

**Methods:** An anonymous questionnaire consisting of 54 questions was sent to all 1008 registered Cypriot dentists via email during April 2022. The design of the questionnaire was similar to the one used in 2014 to examine the effects of the financial crisis on the dental profession in Cyprus. The study was approved by the Cyprus Bioethical Committee and included informed consent.

**Results:** Responses were received from 145 dentists and were statistically analysed. Their characteristics were similar to the overall study population. Forty seven (40%) of the private dentists, who responded, stated that the number of their patients decreased in 2020. This was a lower percentage than the 48% of private dentists, who stated the same in 2014, due to the economic crisis. Twenty three (89%) of dentists in the public sector stated that their number of patients decreased in 2020. This was a far higher percentage than for private dentists ( $p<0.001$ ). Seventy (59%) of the private dentists stated that their income decreased in 2020 compared to 82% in 2014, while 74 (61%) of private dentists stated that they felt stress due to the pandemic's effects on their income compared with 72% in 2014. Only 5 (19%) of the public sector dentists ( $p<0.001$ ) stated that they felt some form of stress compared to 75% in 2014.

**Conclusions:** Amongst those dentists who completed the questionnaire, the pandemic and the resulting restrictive measures have had different impacts on those working in the public and private sectors. However, the extent of the consequences of the pandemic in the dental profession was not equivalent to that of the previous economic crisis. Nevertheless, it appears that the dental profession is vulnerable and exposed to crisis factors that affect both dentists and patients.

**Keywords:** Dental profession, COVID-19, Cyprus

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## Determinants of Early Childhood Caries in Socially Disadvantaged Egyptian Preschool Children: A Case-control Study

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**Aim:** Early childhood caries (ECC) is still a critical problem, especially in developing countries, such as Egypt which has a prevalence of 74% of ECC. The aim of this research was to assess the association between socio-demographic factors, oral hygiene behaviours, dietary habits and ECC.

**Methods:** A case-control study was carried out on 186 preschool children (93 cases, 93 controls), in 5 nurseries in rural, deprived areas in Alexandria, Egypt, between October 2020 and January 2021. A validated questionnaire was used to collect socio-demographic data including age, sex, number of siblings, mother's education, oral health practices including toothbrushing frequency, pattern of dental visits and frequency of sugary snacks per day. A trained and calibrated dentist assessed caries status clinically, according to the WHO criteria, using the dmft Index and oral hygiene status using Plaque Index. Ethical approval was obtained from Dental Research Ethics Committee at the Faculty of Dentistry, Alexandria University, and parents provided written informed consent before study commencement. The Chi-squared test, followed by multivariable logistic regression were performed.

**Results:** The significant risk factors for ECC presence were age (OR= 4.7, 95% CI 2.7, 7.8), mother's education (illiterate vs university educated, OR= 28.3, 95% CI 8.5, 112.9, and secondary educated or less vs university educated, OR= 2.7, 95% CI 0.8, 9.4), frequency of daily sugary snacks (once vs three or more, OR= 0.14, 95% CI 0.1, 0.3, and twice vs three or more, OR= 0.3, 95% CI 0.1, 0.7), and Plaque index (OR= 37.7, 95% CI 8.3, 116.5). Sex, number of siblings and toothbrushing frequency were not significantly associated with ECC.

**Conclusions:** Age, maternal education, sugary snacks frequency, and Plaque index were found to be significant risk factors for ECC presence. Hence, assessment of socio-demographic data, dietary habits coupled with measurement of oral hygiene status may identify ECC risk among preschool children.

**Keywords:** Early childhood caries, dmft, maternal education, snacking frequency, Egypt

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## EADPH 2023 ABSTRACT 257

### A Cluster Randomized Trial of Supervised Toothbrushing in Kindergartens in Riyadh, Saudi Arabia

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**Aims:** The aim of this two year study is to evaluate the effectiveness of a supervised toothbrushing programme in Riyadh's kindergartens, Saudi Arabia. It has just completed its first year.

**Methods:** A cluster randomized controlled trial, is running for two academic years in 20 kindergartens that were randomly selected. Ten schools were randomly allocated to supervised toothbrushing and ten to treatment as usual, which is an annual oral health awareness visit. The primary endpoint will be worsening of obvious decay experience as measured by  $d_{3mft}$  from baseline to the second year of follow-up. The secondary endpoint will be the increase in the number of teeth affected. A priori subgroups of region, school type, sex, and prior decay (yes/no) at baseline will be analysed. We require 244 evaluable endpoints to meet the sample size requirement. All analyses will be carried out using the software package SAS version 9.4. In addition, process monitoring, and cost analysis surveys are taking place. Study enrolment began in September 2022, and data collection will be completed in June 2024. Ethics approval for this study was given by the King Fahad medical city institutional review board in the Saudi Ministry of Health. The data analysis has been approved by The University of Glasgow research ethical committee.

**Results:** The baseline (blinded) results have been recorded and analysed. Of the 526 children that have been examined, 251 (48%) were female and 275 (52) were male. Also, 239 (45%) are from the east region of Riyadh, while 287 (55%) are from the north. The average age at baseline was 4.3 years old (SD=0.3) and 277 (52%) of the children had decay (i.e.,  $d_{3mft} \geq 1$ ).

**Conclusions:** In the population studied, at baseline more than half of the sample were affected by caries. This project aims for the first time, to evaluate the effectiveness of a supervised toothbrushing programme as a preventive health policy in Riyadh's kindergartens, Saudi Arabia. Final results will be available in July 2024.

**Keywords:** Caries, Children, Kindergarten, Trial.

**Presenter:** Budur Almutairi email 2170410a@student.gla.ac.uk

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## EADPH 2023 ABSTRACT 258

### Artificial Intelligence in Preventive Dentistry and Dental Public Health: a Scoping Review

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**Aim:** While research on Artificial Intelligence (AI) in dentistry has grown in recent years, a comprehensive review of the literature is needed to assess the current state of the field and identify research gaps. In this scoping review we aimed to assess usage of AI in preventive dentistry and dental public health.

**Methods:** Multiple databases were searched, including PubMed, Scopus, Web of Science databases and Google scholar with related keywords including "artificial intelligence", "preventive dentistry", "dental public health". The dates of publication were not restricted. We included studies that used AI techniques, such as machine learning, deep learning and artificial neural network (ANN) to address preventive dentistry or dental public health issues.

**Results:** We identified 24 relevant studies that mentioned AI application in preventive dentistry and public health. Four studies specifically conducted reviews of the dental public health field. Other studies covered a range of topics, including caries and periodontal diseases risk assessment, oral hygiene education and surveillance, dental trauma prediction, which might be attributed as aspects of preventive dentistry. The majority of studies used machine learning algorithms to analyse patient data and identify patterns.

**Conclusion:** AI has the potential to transform preventive dentistry and public health by enabling the analysis of large amounts of data to identify patterns and predict outcomes and by enabling personalised treatment plans and targeted preventive care. However, further research is needed to develop and validate AI algorithms for use in clinical settings and decision making involving several disciplines.

**Keywords:** Artificial intelligence, Preventive dentistry, Dental Public Health

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## EADPH 2023 ABSTRACT 259

### **Dental Staff & Student Awareness and Confidence in Managing Suicide Risk**

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Suicide is a significant public health concern and reduction in rates is an indicator for the WHO Mental Health Action Plan. In 2019, in 38 European countries, 16 per 100,000 people died by suicide. Globally, there are over 700,000 deaths by suicide every year. Suicide risk is higher in individuals who have experienced trauma, Post Traumatic Stress Disorder and physical pain. Patients attending hospital dental clinics may be at increased risk.

**Aim:** This study aimed to improve standards of care and well-being for patients and staff by: establishing whether staff feel able to ask about suicide risk, ascertaining staffs' response to disclosure of suicidal thoughts, ensuring adequate training and support is available, enabling dental teams to identify those at possible risk of suicide, to help prevent deaths.

**Methods:** An online survey of all clinical staff, post-graduate students and final year undergraduate students at The Royal London Dental Hospital, was performed between January and April 2023. Ethical approval was not required.

**Results:** 104 responses were recorded, 28 (27%) who completed the survey were dental nurses, 29 (28%) were from the restorative dental department. 86 (83%) have never undertaken any form of Suicide Awareness Training, 78 (75%) would welcome further suicide prevention training, 81 (78%) disagreed with the statement suicide prevention isn't their responsibility, 48 (46%) did not feel comfortable assessing someone for suicide risk, 49 (47%) wouldn't know what to do if a patient disclosed suicidal thoughts, 80 (77%) reported that they thought the dental team have a role to play in identifying suicidal individuals, 50 (48%) believed barriers prevent them carrying out mental health/suicide risk screening.

**Conclusion:** The study highlighted that this cohort agree suicide prevention is the dental team's responsibility and part of their role. Development of adequate resources and training is required to ensure staff are able to prevent deaths by suicide. Suicide prevention training was implemented at a Dental Hospital audit day, further suicide prevention training and support will be developed.

**Keywords:** Dental public health, Public health, Mental health, Suicide risk, Suicide prevention, Mental health

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## Harnessing Behavioural Economics to Change Dietary Habits: A Scoping Review

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**Aim:** Behavioural economics provides a perspective on how individuals make decisions. It has been implemented in the context of public health. The aim of the present study was to identify the potential of behavioural economics in changing dietary habits, which serve as a common risk factor for multiple non-communicable diseases and lifestyle-related conditions, including oral health problems.

**Methods:** The search terms used to identify relevant publication were: behavioural economics, nudging, diet, healthy diet, dietary habits, healthy food, nutrition, oral health, prevention, behaviour change, incentives, non-communicable disease, lifestyle, and their equivalents. A comprehensive search of three databases (Google Scholar, Medline through PubMed and Scopus) was performed. The search was restricted to articles published in English from January 2010 to April 2023. The retrieved articles were screened and reviewed by two reviewers.

**Results:** The search yielded 352 articles. Duplicated articles, irrelevant ones, and those not in English language were excluded, and finally 17 articles were reviewed. Among these, six studies focused on the relationship between healthy diet and obesity, while five studies examined the association between type 2 diabetes, healthy diet, and behavioural economics with oral health. A limited number of studies existed on the use of behavioural economics in oral health. None had directly addressed the impact of employing behavioural economics to improve nutrition for promoting oral health.

**Conclusion:** Although dietary habits are a common risk factor for oral disease, obesity and diabetes, there appears to be a gap in the existing literature with regard to studies that focus specifically on the intersection of healthy eating habits, oral health and behavioural economics theory.

**Keywords:** Behavioural economics, Dietary habits, Common risk factors, Non-communicable diseases, Lifestyle, Oral Health

**Acknowledgement:** The presenter thanks the Borrow Foundation for financial support towards the costs of attending the congress

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## Planning and Budgeting Public Dental Health Care for Pregnant Women in Spain

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**Aim:** To assess the provision of public oral health care for pregnant women across the 19 autonomous communities (AC) of Spain, and develop an equitable and improved oral health plan.

**Methods:** The Health Ministry established an Oral Health Working Group (OHWG) comprising delegates from regional health ministries, representatives from invited scientific societies (Spanish Society of Epidemiology and Oral Public Health-SESPO and Spanish Society of Paediatric Dentistry-SEOP), and a representative of the Spanish Dentists General Professional Council. The OHWG conducted a survey titled “Diagnosis of the situation on Oral Health Care in Spain (2020)”. Among the five subgroups, one specifically focused on health care for pregnant women. This subgroup collected data on the number of births per AC from Statistics National Institute, and used the survey findings.



**Results:** The survey analysed treatments with a preventive approach including dental reviews, risk factor assessments, topical fluoride applications and scaling. Due to a lack of financial data on the expense for these activities and unavailability of data from ACs, the group decided to allocate the same work time (15 min) to each activity. Each of these activities was assigned 25% of the total per capita cost allocated to pregnant women, estimated to be 40% of the average cost per person. Spain records 358,747 births annually. The proposed plan's estimated cost is 686,332 euros, assuming a coverage rate of 70% of the target population, as this was the highest recorded coverage rate in some ACs. Finally, they submitted a public health care for pregnant women programme proposal in accordance with the WHO guidelines. The proposal was approved in June 2022, with a planned implementation before the end of 2022. The OHWG also proposed several criteria for evaluating and monitoring the plan.

**Conclusions:** The oral health programme for pregnant women in Spain aligns with WHO recommendations, offering a preventive approach and inclusive care within the primary health care system.

**Keywords:** Oral health, Pregnant women, Oral health inequalities, Primary care

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## EADPH 2023 ABSTRACT 262

### Periodontal Status and Oral Health Related Behaviour in Latvian Adolescents, 2023

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**Aims:** To assess the periodontal status of 12- and 15-year-old children in Latvia.

**Methods:** This cross-sectional, nationally representative study of 12 – 15-year-old Latvian children took place between September 2022 and May 2023. It involved multi-stage cluster sampling of 1600 pupils each from sixth and ninth grades in general education schools, excluding special needs institutions. Ten calibrated dentists ( $\kappa > 0.7$ ) performed a periodontal examination and assessed Basic Periodontal Examination (BPE) and visible plaque scores. Demographic information and oral health-related habits were recorded. Descriptive data analysis was performed. Ethics approval for the study was given by Riga Stradins University's Research Ethics Committee.

**Results:** The study involved 3,129 children (response rate 60%), with 1,557 aged 12 and 1,572 aged 15 years, 48% female and 52% male. The BPE periodontal assessment showed that 857 (27.4%) of the children had healthy a periodontium (28.0% in 12-year-olds and 26.0% in 15-year-olds) and 2269 (72.5%) showed signs of gingivitis. Bleeding gingiva were found in 1171 (37.4%) and supragingival calculus in 1098 (35.1%). Only 3 (0.04%) of children showed signs of periodontitis with pockets 4-5 mm in 2 and pockets  $\geq 6$  mm in one. Less than half (37.9%) of the 12-year-olds and 51.3% of the 15-year-olds reported brushing their teeth twice daily; 46.5% of children had visible plaque (49.8% of 12-year-olds and 41.5% of 15-year-olds); smoking was rare in 12-year olds (0.9%), but more prevalent in 15-year olds (12.4%)  $p < 0.001$ .

**Conclusions:** The concerning high prevalence of periodontal symptoms, together with disease-related oral health behaviour in 12 and 15-year-old children in Latvia, indicates that preventive measures and oral health education initiatives must begin at an early stage. New strategies are urgently needed, through collaboration between oral health professionals, schools, parents, public authorities and policymakers.

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**Keywords:** Basic periodontal examination, Adolescents, Epidemiology, Latvia

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## Caries Prevalence and Severity in 12 and 15-Year-Old Latvian Children in 2023

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**Aims:** To assess the prevalence and severity of dental caries among Latvia's 12- and 15-year-old children, using a national representative sample to provide epidemiological data to inform and enhance national oral health policies.

**Methods:** This cross-sectional, nationally representative study of 12 – 15-year-old Latvian children took place between September 2022 and May 2023. It involved multi-stage cluster sampling of 1600 pupils each from sixth and ninth grades in general education schools, excluding special needs institutions. Ten calibrated dentists (kappa 0.674-0.799 for enamel caries scores) conducted dental examinations, employing merged ICDAS criteria. In addition, demographic information such as gender, age, and residential location (city/region) was registered. The primary outcomes were the prevalence and severity of dental caries. Data analysed using R programming language. Descriptive statistics were employed to provide a basic understanding of the data. Generalised regression models were used to understand regional differences, adjusted for gender to ensure valid comparisons. Ethics approval for the study was given by Riga Stradins University's Research Ethics Committee.

**Results:** The study included 3,129 children, with 1,557 aged 12 and 1,572 aged 15, comprising 1,506 females (48%) and 1,623 males (52%). The response rate was 60%. The overall caries prevalence was 89.7% (D<sub>1</sub>MFT), 74.9% (D<sub>3</sub>MFT), and 66.0% (D<sub>5</sub>MFT). Prevalence was higher in 15-year-olds (93.3% D<sub>1</sub>MFT, 83.5% D<sub>3</sub>MFT, 76.3% D<sub>5</sub>MFT) than 12-year-olds (86.1% D<sub>1</sub>MFT, 66.3% D<sub>3</sub>MFT, 55.6% D<sub>5</sub>MFT). Latgale and Zemgale regions had the highest prevalence (94.6% and 94.8% D<sub>1</sub>MFT) and severity (9.8 and 9.2 D<sub>1</sub>MFT), differing significantly from Rīga ( $p<0.001$ ). Children living outside Riga and the region around the capital had significantly higher caries severity ( $p<0.001$ ).

**Conclusions:** In the population studied the high prevalence and severity of dental caries is concerning. These results highlight Latvia's pressing need for improved oral health policies and interventions, especially in regions outside the capital.

**Acknowledgements:** The project was financed by The Centre for Disease Prevention and Control, contract No SPKC2020/15.

**Keywords:** Caries prevalence; Epidemiology; Latvia; Oral health

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## User attitudes towards sustainable dentistry: A descriptive study in Chile

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**Aim:** This study aimed to describe the attitudes of patients in Talca Chile, about sustainable dentistry.

**Methods:** It was a descriptive observational study, which included patients who received dental care in the public and private clinics in Talca-Chile, between 1 August and 7 September 2023. All patients who attended and were older than 18 years were invited to participate and complete the Baird et al. (2022) questionnaire on attitudes towards sustainable dentistry. Answers to the questions were on a scale of from 1 to 5. The variables were attitudes towards sustainable dentistry, gender, age, educational level, employment, last visit to the dentist, and self-perception of oral health. The resulting data underwent univariate, and bivariate analyses. Ethics approval for the study was given by the Scientific Ethical Committee, Health Sciences Faculty, University of Talca.

**Results:** In total 187 participants participated in the study, 137 (74%) of whom were female. Their mean age was 38 years (range 17 – 75 years). One hundred (54%) had received secondary education. Most of the participants (159 - 86%) had public health insurance. Seventy four (40%) perceived their oral health as good. Regarding attitudes, participants showed positive attitudes toward sustainable dentistry, and were willing to commit to it. However, they did not commit to sustainable dentistry if the treatment involved the aesthetic appearance of anterior teeth.

**Conclusion:** This was the first research project on sustainable dentistry in Chile. The results showed a positive attitude towards sustainable dentistry. Further studies will be required before guidelines, promoting sustainable practices, and evaluating which areas to focus on can be formulated..

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**Keywords:** Dentistry, Sustainable Development, Attitudes

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