



Abstracts Presented on 4th October 2024 during 28th Annual European Association of Dental Public Health (EADPH) Congress, held in Heraklion, Crete

Introduction

One hundred and fifty nine abstracts were presented at the 2024 EADPH annual congress, of which 109 were presented in person and 50 were presented online.

Seventy eight abstracts were submitted by postgraduate students, post docs, dental public health trainees and general dentists and were considered for the two Haleon Research Prizes for graduates.

The first Haleon Research Award for graduates of 2,000 Euros was won by Kyle Cousins, who is studying for a PhD at Glasgow University. The second Haleon Research Prize for graduates of 1,000 Euros was won by Una McAuliffe, a PhD student at University College Cork.

Twenty Two abstracts were presented by undergraduates. The Haleon Research Prize for undergraduates of 500 Euros was won by Laura Vlitervo, who is studying at the University of Oulo.

All the abstracts which were presented appear in the following pages. The ones presented by undergraduates are grouped together after the other abstracts.

EADPH 2024 ABSTRACT 268

Dental Service Accessibility Among Lithuanian Schoolchildren in 2009 and 2022

Jurgita Andruskiene*¹, Neringa Tarvydiene^{1,2}, Monika Steponkiene²

¹Klaipeda University, Lithuania; ²Klaipeda District Municipality Public Health Bureau, Lithuania

Aim: The aim of the study was to assess the dental service accessibility among schoolchildren, living in the Klaipeda district of Lithuania, in 2009 and 2022.

Methods: In 2022, Parents' Behaviour Questionnaires (PBQ) were distributed to all parents of schoolchildren in all schools in the Klaipeda district. The same PBQ had been distributed in 2009. The study was approved by the Klaipeda 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 <0.05 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, as well as in 2022, the greater part of 10-12-year-old children, as compared to 14-17-year-olds, were on a waiting list for dental services at their nearest publicly funded dental clinic. respectively 41.8%, n=41 vs 24.5%, n=24, p<0.05 in 2009 and 39.1%, n=140 vs 24.0%, n=86 in 2022, p<0.001. In 2009, there was no significant difference in parents' ability to pay for private dental services between 10-12-year-old children (30.1%, n=25) and 14-17-year-olds (27.7%, n=23), p>0.05. In 2022, the greater part of the parents of 10-12-year-old children (38.1%, n=141), as compared with 14-17-year-olds (24.3%, n=90), reported that they could pay for the private dental services, p<0.001.

Conclusions: In the population studied, both in 2009 and 2022, 10-12-year-old children were more likely to be on waiting lists for free dental services than 14-17-year-olds. Parents of 10 – 12-year-old children were more likely to claim to be able to pay for the dental services than those of 14 – 17-year-olds.

Keywords: Accessibility, Dental Services, Schoolchildren

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Jurgita Andruskiene email: jurgita.andruskiene@gmail.com

Psychological Stress Influence on Oral Health Changes in a Group of Romanian Undergraduate Students

Florina Silvia Nica^{1*}, Serban Irina²

¹Administration of Hospitals and Medical Services, Bucharest, Romania; ²University of Medicine and Pharmacy Carol Davila, Bucharest, Romania

Aims: The aim of this study was to analyse a possible connection link between perceived psychological stress and oral health among a group of Romanian undergraduate students.

Methods: This study was designed as observational study. Ethics approval for the study was given by University of Medicine Carol Davila. Subjects were randomly recruited. The first evaluation was done in March 2024, and the second evaluation was done during examinations period in June-July 2024. Students with general medical conditions and those who were taking anxiolytics and other medication were excluded. Participation in the study was voluntary and anonymous. The Perceived Stress Scale questionnaire was translated to Romanian and adapted. The independent variables on oral health, collected via intraoral examination were: DMFT index, Plaque index (PI), and dietary habits. Both baseline data and data collected after follow up were collected by two dentists who were trained.

Results: The sample consisted of 45 females and 15 males, their average age was 22.5 years. Perceived stress scores were higher during examination period than at the beginning of the semester (39 points vs 15 points, respectively). The results showed that during examinations period compared to the baseline students consumed more coffee (86.7% vs 36.7%, respectively), more sugary/energy drinks (26.7% vs 16.7%, respectively), more sweets (83.3% vs 46.7%). Moreover, the results showed higher PI and DMFT score during examinations period vs baseline (1.2 vs 0.8, respectively) (21,5% vs 14,2%, respectively).

Conclusions: Amongst the students who took part in this study, perceived stress was higher during examinations, compared to less demanding periods. Moreover, during examinations, students' oral health was worse when compared to other less demanding times. There is need to improve oral health awareness in patients under psychological stress. Moreover, better collaboration between dentists and mental health professionals is suggested.

Keywords: Psychological Stress, Plaque Index, DMFT, Oral Health

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Florina Silvia Nica email: silvianica22@gmail.com

Determinants of Oral Health Status among Adults in Iran: An Ecological Study

Bahareh Tahani^{*1}, Alireza Akbarzadeh Baghban², Ali Kazemian²

¹Department of Oral Public Health, Dental Research Centre, Dental Research Institute, Dental School, Isfahan University of Medical Sciences, Isfahan, Iran; ²Proteomics Research Centre, Department of Biostatistics, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ³Department of Community Oral Health, Faculty of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran.

Aims: The aim of this ecological study was to assess the association between determinant factors and caries experience in 35- to 44-year-old adults in Iran at provincial level.

Methods: The data from the 2011 Iranian Oral Health Survey were obtained from all 31 provinces across Iran. Oral health status was measured as the number of decayed (DT), missing (MT) and filled (FT) teeth and the percentage of the population who were edentulous. Percentage of smokers, per capita consumption of free sugars, concentration of fluoride in the drinking water, number of dentists per 10,000 people, mean years of schooling of adults, expected years of schooling of children, life expectancy at birth and Gross National Income were also obtained at provincial level. The data were analysed using simple and multiple linear regression.

Results: Mean DMFT was positively associated with percentage of smokers ($B = 0.01$ 95%CI 0.01-0.14), and negatively with fluoride concentration ($B = -2.6$ 95%CI -4.3- -0.96). The percentage for edentulousness was positively associated with smoking ($B = 0.2$ (with 95%CI: 0.07-0.37) and negatively with mean years of education ($B = -1.08$ (with 95%CI: -2.04- -0.12). DT was associated with expected years of schooling ($B = 0.6$ (with 95%CI: -1.07- -0.17). MT was negatively associated with life expectancy ($B = -0.5$ (with 95%CI: -1.1- -0.007), fluoride concentration ($B = -3.4$ (with 95%CI: -4.5- -1.5) and number of dentists per 10000 people ($B = -0.4$ (with 95%CI: -0.8- -0.01). Mean years of schooling ($B = 0.5$ (with 95%CI: 0.2 -0.8) and number of dentists per 10000 people ($B = -0.62$ (with 95%CI: 0.51-0.48) were associated with FT.

Conclusions: Differences in oral health status between provinces could be better explained by the Human Development Index and the income level of provinces than by environmental factors.

Keywords: Ecological Study, Oral Health, Social Determinants of Health, Epidemiologic Factors, Iran

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Bahareh Tanhani email: tahani@dnt.mui.ac.ir

EADPH 2024 ABSTRACT 271

The Need for Interdisciplinary Care and Treatment- A Case Report

Asya D. Poltorak^{1}, Elena V. Yergesheva²*

¹Belaya Raduga, Moscow, Russia; ²Russian State Social University, Moscow, Russia

Background: The need for an interdisciplinary approach and treatment is becoming increasingly clear. This case report details how multidisciplinary care was provided for a 25-year-old woman who had missing upper lateral incisors, erupted third molars, and temporomandibular joint (TMJ) pain.

Aim: The goal of treatment for this patient was to improve the aesthetics of her teeth and smile overall, and address the TMJ problem using a multidisciplinary approach.

Case Details: Between 8% and 16.5% of the population may have missing upper lateral incisors, lower second premolars, third molars, or lower lateral incisors. The patient whose treatment is described in this review had good general health, no comorbidities, good alveolar bone volume, and a treatable TMJ problem. Initial treatment was to ensure a high level of oral hygiene. This was achieved through an initial visit to a dental hygienist, followed by follow-up visits at 3-month intervals. Then orthodontic treatment began, carried out by an orthodontist. During this treatment, an oral surgeon removed the third molars. After an MRI scan of the TMJ performed by a radiologist, a dental technician used CAD/CAM technology to create a mouth guard. The position of the lower jaw was stabilised by correction of the position of the articular disc by a gnathologist. Subsequently, the decision was made to remove the two lower second premolars and straighten the lower teeth. Upon completion of active treatment, the patient now wears a lingual retainer.

Conclusion: From a public health perspective, this case demonstrates the need for interdisciplinary care and treatment.

Keywords: Interdisciplinary, Care and Treatment, Missing teeth, Case report

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Asya Poltorak email: asyapoltorak@gmail.com

EADPH 2024 ABSTRACT 272

The Dental Profession and the Commercial Determinants of Oral Health

Ali Kazemian^{1}, Alexander Holden²*

¹President of Iranian Association of Community Oral Health Assistant Professor, Department of Community Oral Health, Faculty of Dentistry, Mashhad University of Medical Sciences Mashhad, Iran; ²Head of Specialist Services Sydney Dental Hospital & Oral Health Services Clinical Professor - University of Sydney School of Dentistry

In this presentation, private dentistry is accused of being trapped in a treatment-oriented cycle, which depends upon the continual creation of consumers through elective and cosmetically-driven intervention. Commercial interests may promote consumer choices in dental practice, which do not promote oral health and may in fact damage health through destructive procedures, which value aesthetics above the integrity of tooth structure. Dental professionals justify these procedures citing a respect for patient (or consumer) autonomy, neglecting their inescapable role of promoting oral health at all levels within society. At a broader level, a consumerist and cosmetic orientation may also represent a cultural and social iatrogenesis, where the dental profession contributes to the perverse association of a straight, white smile as being the entirety of oral health. Issues of affordability and a global lack of investment in oral health mean that dentists and their teams cannot provide access to the most needy in society, who shoulder the greatest burden of oral disease. Where dental professionals contribute to the selling of services and the creation of dental consumers, we suggest that within this paradigm the dental profession itself becomes a commercial determinant of health, fundamentally breaching the profession's obligations to improve the health of the public.

Keywords: Dental Profession, Commercial Determinants of Oral Health

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Ali Kazemian email: kazemiana@mums.ac.ir

EADPH 2024 ABSTRACT 273

Reliability of Using Gingival Crevicular Blood to Screen for Diabetes: A Systematic Review

Omid Fakheran^{1}, Bulcsu Bencze², Daniel Vegh², Michael Payer³*

¹Social Dental Medicine Working Group, Department of Dental Medicine and Oral Health, Medical University of Graz, Austria; ²Department of Prosthodontics, Semmelweis University, Hungary; ³Department of Dental Medicine and Oral Health, Medical University of Graz, Austria

Aims: There are 500 million patients living with diabetes mellitus worldwide and 50% of them remain undiagnosed. Routine periodontal probing provides gingival crevicular blood in patients with gingivitis. Gingival blood may be useful for diabetes screening without the need for any expensive, painful or time-consuming method by using convenient glucometers. Therefore, the objective of this systematic review and meta-analysis is to answer the question to “is there a difference in glucose or HbA1c levels (O) in patients with positive gingival bleeding (P) measured on gingival crevicular blood (GCB) (I) compared to finger prick capillary blood (CB) (C).

Methods: The authors finalised an electronic search of six databases (MEDLINE, Cochrane Library, PsycINFO, Web of Science, Google Scholar and Scopus) using identical MeSH phrases in July, 2023. Only human clinical studies written in English without limitations on the year of publication were considered. Data extraction was done by using standardised data collection sheets. Risk of bias assessment was conducted using QUADAS-2 and QUADAS-C. Meta-analyses were carried out with the random effects model to aggregate the correlation coefficients and the difference between the means between gingival and capillary blood reading, using 95% confidence intervals.

Results: The database and manual search yielded 268 articles, from which the selection procedure provided 36 articles for full-text screening, and the final pool of eligible articles composed of 23 studies with 1680 patients. Meta-analysis results on glycemic levels showed differences between the GCB and CB procedures in patients with and without diabetes with values of -6.80 [-17.35; 3.76] and -4.36 [-9.89; 1.18], respectively. Statistically significant correlations were found ($p=0.001$) between GCB and CB measurements in patients with (0.97 [0.927; 0.987]) and without diabetes (0.927[0.873; 0.958]).

Conclusions: It was found that gingival crevicular blood could be used to measure blood glucose levels to identify patients with undiagnosed diabetes, if the necessary amount of uncontaminated gingival blood is present for a correct reading.

Keywords: Diabetes Mellitus, Diagnostic Screening Programs, Gingival Crevicular Blood

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Omid Fakheran email: omid.fakheran@gmail.com

EADPH 2024 ABSTRACT 274

Initial Study of Quality of Life and Risk Factors for Tooth Wear in Macedonians

Julijana Nikolovska, Vlatko Kokolanski, Kushtrim Dakaj*

School of Dentistry, University Saints. Cyril and Methodius, Skopje, North Macedonia

Aims: The aims of this study were to gain knowledge about the prevalence of tooth wear in different age groups in North Macedonia, to determine potential risk factors, the extent of dental lesions and the possibility of their prediction and to evaluate their association with the quality of life.

Methods: One hundred respondents of both sexes, aged 20-65 years, were included in the study They were patients of the University Dental Clinic Centre in Skopje and came from all over North Macedonia. Tooth wear was determined based on clinical examinations and recording the BEWE index. The study was approved by the Ethics Committee of School of Dentistry. Respondents completed questionnaires related to basic awareness of tooth wear damage, oral hygiene, the presence of possible digestive disorders and bruxism and answered questions from the OHIP-MAC14 instrument. Statistical analysis was performed using the following tests: descriptive analysis, chi-square test, one-way analysis of variance and post-hoc test and binomial regression.

Results: A BEWE score 2 was found in 62 respondents and BEWE 3 in 26. The highest degree of tooth wear (BEWE 3) was most prevalent in the oldest age group. Significantly more women than men in the oldest age category had BEWE scores of 3. The oldest category of respondents visited the dentist the least often, and the majority reported that they performed oral hygiene twice a day. The majority of patients with BEWE scores 2 or 3 used a hard toothbrush.

Conclusion: In the population studied, a BEWE score of 2 could be predicted based on two factors (age and reported bruxism), while a BEWE score of 3 could be predicted based on reported bruxism and hard brush use. Both categories could not be predicted based on reflux, dietary habits, and gender. People with BEWE3 from the age category 50-65 years had the lowest level quality of life, while people from the youngest age category, with BEWE1, had the highest level.

Keywords: Non-Carious Dental Damage, Risk Factors, Quality of Life, North Macedonia

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Julijana Nikolovska email: julijananikolovsk2@gmail.com

EADPH 2024 ABSTRACT 275

Risk Factors and Associated Pathway for Unmet Dental Restorative Needs in 12-year-olds

Abhinav Singh^{1}, Bharathi M Purohit², Abhishek Purohit³*

¹Department of Dentistry, All India Institute of Medical Sciences, Bhopal, India; ²Division of Public Health Dentistry, Centre of Dental Education & Research, WHO Collaborating Centre for Oral Health Promotion, All India Institute of Medical Sciences, New Delhi, India; ³Advanced Centre for Evidence Based Child Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Aims: This study was undertaken to evaluate the risk factors and associated pathways for unmet dental restorative needs among 12-year-olds in Central India.

Methods: The sample for this cross-sectional survey involved randomly selected 12 year old children from urban and rural regions of Madhya Pradesh, India. Informed consent and Institutional Ethics Committee clearance (EF0070, 18th Dec, 2017) was obtained. Oral examinations and interviews were conducted in households. The independent variables included gender, parental education, type of family, number of siblings, frequency of cleaning teeth, and frequency of sugar and tobacco consumption. Past dental caries experience (recorded as DMFT), periodontal status, and malocclusion were both the dependent and independent variables. Unmet dental restorative needs were the outcome variable. Structural Equation Modelling was used to examine the relationship between variables. Path coefficients were calculated for all variables with 95% confidence interval. Goodness of fit of the model was assessed.

Results: The sample size involved 10,758 12-year-olds (40.3% from urban and 59.7% from rural regions). Higher frequency of dental caries and unmet dental restorative needs were observed in rural settings (43.8% and 94.4%, respectively; $p < 0.02$). The results showed that increase of dental services utilisation was associated with dental restorative needs reduction (PC= -0.02, 0.001). Moreover, higher DMFT was associated with higher dental services utilisation (PC= 0.15, 0.001). Also, DMFT increase was positively associated with male gender, parental education, nuclear family, frequency of sugar consumption, malocclusion and negatively with the frequency of cleaning teeth and tobacco consumption.

Conclusions: Unmet dental restorative needs in the proposed pathway model were associated with low utilisation of dental services, dental caries, malocclusion, and other socio-demographic factors. Inequalities were noted in the prevalence of dental caries between urban and rural areas.

Keywords: Dental Caries, Access to Health Care, Risk Factors, Oral Health Disparities

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Abhinav Singh email: drabhinav.singh@gmail.com

Evolving Oral Health Trajectories in Flemish Nursing Home Residents Receiving Mobile Care

Lynne Janssens^{1*}, Mirko Petrovic², Roos Colman³, Barbara Janssens¹

¹ELOHA (Equal Lifelong Oral Health for All) research group, Gerodontology, Oral Health Sciences, Ghent University, Ghent, Belgium; ²Section of Geriatrics, Department of Internal Medicine and Pediatrics, Ghent University, Ghent, Belgium; ³Biostatistics Unit, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium.

Aims: Gerodent is a comprehensive, long-term (12 years) oral healthcare programme in Flanders (Belgium), incorporating biannual professional care provided through a mobile dental clinic. This study aimed to evaluate how the oral health of new nursing home residents attending the mobile clinic has evolved over a decade long timeframe (2010-2012 vs. 2021-2023).

Methods: The present study compared two distinct cross-sectional samples. The initial sample (S1: 2010-2012) was described in 2017. For the subsequent sample, data of all first-time mobile clinic patients were collected (S2: 2021-2023) after informed consent. Generalised estimating equations were used to compare the oral status between both samples (S1: n=1226; S2: n=775). Results were adjusted for age, sex, increased reimbursement for healthcare costs, number of medications and care-dependency. The difference in oral health outcomes between S2 and S1 was decomposed in a component explained by the explanatory variables, and an unexplained component using the Blinder–Oaxaca Decomposition analysis. The ethics committee of Ghent University Hospital approved the study (B670202000924).

Results: There were considerably lower edentulousness rates in S2 (S1:4% versus S2:3%; OR 1.82; 95%CI:1.34-2.47). Among dentate residents, S2 had a lower prevalence of caries and root remnants (S1:70% versus S2:53%; OR=0.55; 95%CI:0.44-0.69) and a higher mean number of restored teeth (S1:1.54 versus S2:2.8; RR=1.82; 95%CI:1.58-2.09). Only 13.2% (BCa 95%CI:-0.6%-30.6%) of the total risk difference for edentulousness could be accounted for by the explanatory variables, for untreated dental caries in the dentate group this was 5.8% (BCa 95%CI:-20.1-31.1).

Conclusions: The decomposition analysis showed that the changes in socio-demographic and general health profile of the residents attributed little to the observed shift in dental status, thus implying a substantial cohort effect. The measured trends in dental status of care-dependent older adults confirm the continued need for accessible dental service provision, including prevention, for nursing home residents.

Keywords: Nursing Home, Dental Care Provision, Oral Status, Domiciliary Care

Presenter: Lynne Janssens email: lynne.janssens@ugent.be

Something to Smile about: Improving Oral Health Outcomes in Rural Australia

Virginia Dickson-Swift^{1*}, Stacey Bracksley-O'Grady¹, Dorothy McLaren², Hamid Ghaderi²

¹Violet Vines Marshman Centre for Rural Health Research, La Trobe University, Australia; ²West Wimmera Health Service

Aims: The aim of this presentation is to provide a systematic overview of a range of community-based projects being undertaken in rural Australia through the Violet Vines Marshman Centre for Rural Health Research (VVMCRHR) based at La Trobe University that aim to address the inequities in oral health.

Methods: Ethics approval was provided by the La Trobe University (HEC 23254). Working in partnership with community health service providers local oral health profiles (OHP) were developed for 9 communities within the Western rural region. The local OHPs were produced using surveillance data collected by Dental Health Services Victoria. Community members were then engaged in an annual priority setting activity where they were asked to prioritise the top things that they would like to see to improve oral health in their community. These were used to inform the development of an online cross-sectional survey to explore oral health knowledge, behaviour and attitudes. Survey data were analysed using descriptive statistics and the responses to the open-ended questions were analysed thematically.

Results: The key results from the community oral health profiles (n=9) demonstrated poor oral health status. Results of the community-based priority setting activity involving 70 community members identified more dental services and development of community-based oral health promotion programs as key areas for action. The cross-sectional survey (n=140) demonstrated a lack of knowledge and understanding in key areas including water fluoridation status, tooth brushing, and dental visiting.

Conclusions: Working in partnership with health service providers and local communities and involving them in research activities can enable a better understanding of community knowledge and behaviours and identify gaps. This knowledge can be used to develop oral health promotion strategies that meet the needs of rural people and address current oral health inequities.

Keywords: Rural Health, Oral Health Promotion, Community Partnership

Presenter: Virginia Dickson-Swift email: V.Dickson-Swift@latrobe.edu.au

EADPH 2024 ABSTRACT 279

Dental Caries Prevalence in Children and Older Adults – Systematic Review and Meta-analysis

Roberta Borg-Bartolo^{1}, Ana Vukovic², Anastasia Maklennan¹, Andrea Rocuzzo¹, Guglielmo Campus¹*
¹Department of Restorative, Preventive and Paediatric Dentistry, School of Dental Medicine, University of Bern, Switzerland; ²Clinic for Paediatric and Preventive Dentistry, School of Dental Medicine, University of Belgrade, Serbia

Aim: To describe and analyse data from studies conducted worldwide on the prevalence of dental caries in children <6 years, 12-year-old children, and adults ≥65 years and the association of dental caries with macroeconomic indicators, specifically Gross National Income (GNI).

Methods: Four systematic reviews were performed on dental caries prevalence in children <6 years (early childhood caries, ECC), 12-year-olds, and adults ≥65 years (dental caries, root caries). The electronic databases PubMed, Embase, and Scopus as well as grey literature and free hand searches, including national oral health surveys, were searched for relevant literature. Studies were included if the participants were aged <6 years, 12 years, ≥65 years, respectively, and were community dwellers. Studies with participants living in long-term care facilities were excluded. After title and abstract review, and full-text review, the relevant studies were identified and data extraction was carried out. The quality of the studies was assessed using The National Heart, Lung, and Blood Institute for Observational Cohort and Cross-sectional studies. Meta-analyses were performed using the random effects model with a 95% confidence interval.

Results: 100 studies (ECC), 35 studies (12-year-olds), 86 studies (dental caries), and 91 studies (root caries) were included in each of the systematic reviews. The overall pooled dental caries prevalence in Europe was 36% (ECC), 56% (12-year-old), 17% (dental caries), and 39% (root caries). A trend was reported that dental caries is more prevalent in countries with low GNI.

Conclusion: The studies show that dental caries is still very prevalent in different age groups. Macroeconomic indicators (GNI) demonstrate the importance of having economic resources to improve population health.

Keywords: Dental Caries, Prevalence, Systematic Review, Meta-Analysis.

Acknowledgments: Additional co-authors: Maria Cagetti, Paolo Castiglia, Fabio Cocco, Javier Cortes, Marcela Esteves-Oliveira, Rodrigo Giacaman, Riccardo Monterubbianesi, Maria Raabe, Jordan Rainer, Claudia Salerno, Ruxandra Sava-Rosianu, Kian Schmutz, Richard Wierichs, Thomas Wolf

Presenter: Roberta Borg-Bartolo email: roberta.borg-bartolo@unibe.ch

EADPH 2024 ABSTRACT 280

Assessment of Albanian Teachers' Knowledge of Management of Dental Trauma in the School Environment

Dorjan Hysi, Ana Selimaj, Etleva Droboniku, Celjana Toti, Gerta Kacani, Ama Mino*
University of Medicine Tirana, Faculty of Dental Medicine, Tirana, Albania

Dental trauma is an important public health issue among schoolchildren. Since teachers are, the first point of contact their knowledge about immediate management and appropriate referral can play a significant role in the prognosis for traumatized teeth.

Aim: The aim of the study was to evaluate Albanian primary school teachers' knowledge and management skills regarding dental trauma.

Methods: In 2023, a cross-sectional study was conducted, in a sample of n=496 teachers, in 17 elementary schools located in three main areas of Albania. The response rate was 78% (n=386). The study was approved by the University of Medicine Tirana, Faculty of Dental Medicine, Department of Conservative Dentistry, Tirana, Albania. Permission was obtained from the Ministry of Education and the school authorities. Participants completed a questionnaire voluntarily and anonymously. The first part asked for demographic information about the teachers, including their age, gender, education level, work experience, and participation in first-aid training courses. The second part was focused on assessing the teachers' knowledge of dental injuries and the third part included questions about the teachers' skills in managing these dental injuries. Descriptive statistics, the Chi-square test, and Fischer's exact test were used.

Results: First aid training was reported as completed by 259 (67%) of the participants and 220 (85%) of them indicated a lack of specific dental trauma training. Experience of dental trauma in the school environment was recorded by 173 (45%) of the teachers. There was a significant relationship between coping with dental trauma and the teaching cycle at $p < 0.05$. Also, a significant relationship was found between participation in first aid training and soft tissue injury management ($p < 0.05$). The main method identified for preserving the avulsed teeth was wrapping them in paper/plastic. It was mentioned by 139 (33 %) of teachers.

Conclusions: This study highlighted a concerning deficiency in primary school teachers' knowledge of dental trauma management, emphasizing the necessity for comprehensive training initiatives.

Keywords: Dental Trauma, Assessment of Dental Trauma, Teachers' Knowledge

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Dorjan Hysi email: dorjan.hysi@umed.edu.al

EADPH 2024 ABSTRACT 281

Development and Validation of Machine Learning Models for Predicting Dental Caries in the Adult Population

Elina Väyrynen^{1}, Otso Tirkkonen¹, Henna Tiensuu², Saujanya Karki¹*

¹Research Unit of Population Health, Faculty of Medicine, University of Oulu, Finland; ²Biomimetics and Intelligent Systems, Faculty of Information Technology and Electrical Engineering, University of Oulu, Finland

Aims: The aim of this study was to develop and validate machine learning (ML) models in predicting dental caries.

Methods: This study utilised data from 3-waves of the National Health and Nutrition Examination Survey (NHANES) of the US (2013-2014, 2015-2016, 2017-2020). Adults aged 18-70-years were included in this study (n=23639). Dental caries was considered as an outcome variable. Age, gender, education, poverty index, oral health-related habits, daily added sugar intake, dental visit frequency, dental fear, dental pain, filled and missing teeth were explanatory variables. NHANES data are publicly available open access repository, therefore a separate ethical permission is not required. Data from all waves were extracted from the NHANES repositories and collated using R version 4.3.1. Four machine learning algorithms namely random forest, decision tree, logistic regression and extreme gradient boost (XGBoost) were tested. Data was split into 80:20 for training models and testing purpose. Area under the curve (AUC), accuracy, no information rate (NIR), sensitivity, specificity, positive predictive values (PPV), and negative predictive values (NPV) were computed for each model. Additionally, Shapley Additive exPlanations (SHAP) values for the best-predictive model were computed to interpret the contribution of each explanatory variable in predicting dental caries.

Results: The AUC for predicting dental caries were 75% for random forest, 68% decision tree, 70% logistic regression and 79% for XGBoost, respectively. Among all the ML models, XGboost model exhibited the best performance with accuracy 79% (75% - 78%) no information rate 71%, sensitivity 39%, specificity 92%, PPV 68% and NPV 78%. The most important explanatory variables for predicting dental caries in the current study were missing teeth (SHAP value 0.54) followed by dental visit frequency (0.42), age (0.27) and poverty index (0.21).

Conclusions: In the population studied the performance of ML models was good in predicting dental caries.

Keywords: Machine learning, Predictive modelling, Dental caries, Caries management

Presenter: Elina Väyrynen email: Elina.Vayrynen@oulu.fi

Oral Health Predictors for Dietary Diversity among Adult Tobacco Users- A Comparative Study

Bharathi M Purohit^{1}, Harsh Priya¹, Anika Daing², Ritu Duggal³, Nilima Nilima⁴, Swapna Chaturvedi⁵*
¹Division of Public Health Dentistry, Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi India; ²Division of Periodontics, Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, India; ³Division of Orthodontics and Dentofacial Deformities, Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, India; ⁴Department of Biostatistics, All India Institute of Medical Sciences, New Delhi, India; ⁵Department of Dietetics, All India Institute of Medical Sciences, New Delhi, India

Aims: To evaluate oral health predictors and associated pathways for dietary diversity among adult tobacco users through a conceptualised model.

Methods: Cross sectional study was approved by the Institutional Ethics Committee (IEC-188/11.04.2023). Socio-demographic factors, oral health behaviour, caries experience (DMFT), periodontal disease (CPI index), wasting diseases (attrition, abrasion, erosion) and oral potentially malignant disorders (OPMD) were recorded by a single calibrated examiner. Sample size was based on pilot study with 80% power, $p < 5\%$, for detecting a true mean difference of 3.4 units between the two groups. Dietary Diversity (DD) scores were assessed to capture the frequency of eight food groups consumed, using a 7-day diet recall method on 4-point Likert scale (min=0, max=7). Structural Equation Modelling (SEM) was used to examine direct and indirect predictors for dietary diversity.

Results: Total of 130 individuals were study subjects (65 tobacco users and 65 non users). Mean age (\pm SD) of the sample subjects was 41.8 ± 12.1 years and mean duration of tobacco usage was 7.8 ± 11.3 years among tobacco users. Mean dietary diversity scores (\pm SD) were 19.97 ± 6.5 (range: 9-37) with more than half of tobacco users having scores less than mean value. Dietary diversity of food groups consumed by tobacco users was significantly ($p < 0.05$) lower compared to nonusers (18.30 ± 5.81 and 21.72 ± 6.91 , respectively). Mean DMFT scores in tobacco users and non-users were 2.61 ± 3.89 and 2.18 ± 2.47 respectively ($p > 0.05$); Mean CPI scores (\pm SD) were significantly higher in tobacco users compared to non-users ($p < 0.05$; 1.51 ± 0.60 and 1.24 ± 0.49 respectively). Presence of wasting diseases and OPMD were significantly associated with DD scores ($p < 0.001$). With every unit increase in tobacco use, dietary diversity decreased by 0.08 units.

Conclusions: Tobacco consumption and poor oral health were associated with lower dietary diversity in the proposed model. Results show that tobacco non-users had better dietary diversity than tobacco users; Health care providers should address tobacco use in the context of dietary factors and develop effective strategies for better health outcomes.

Keywords: Dietary Diversity, Tobacco Use, Oral Health, SEM

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Bharathi M. Purohit email: bharathipurohit@gmail.com

The European Union-funded Joint International Master of Oral Public Health Programme

Maha El Tantawi^{1}, Jorma I. Virtanen², Nicolas Giraudeau³, Moréniké Oluwátóyìn Foláyan⁴*
¹Alexandria University, Egypt; ²University of Bergen, Norway; ³University of Montpellier, France; ⁴Obafemi Awolowo University, Nigeria

A new paradigm for oral public health is needed to address the global burden of oral diseases and the challenges of oral public health practice in the 21st century. A novel, competency-based, innovative Joint International Master of Oral Public Health (JIM-OPH) programme was developed based on the guidelines of four European organisations, four American organisations, and two international organisations. The two-year programme consists of 120 European Credit Transfer Scheme (ECTS) credits in four semesters. The JIM-OPH addresses oral problems of public health importance intending to train Oral Public Health (OPH) specialists to practice internationally. The curriculum aims to develop basic OPH skills that are included in 10 mandatory courses equivalent to 32 ECTS credits. Learning experiences are tailored to student's preferences and needs using elective courses (11 courses, 51 ECTS credits). The programme also exposes students to different cultures through mandated student physical mobility between two countries, including at least one European country and through inviting international experts to contribute physically

or online to course delivery. Half of the ECTS credits provide exposure to real-life challenges through field experience or community placement in health facilities. Through four thesis courses (50 ECTS credits), students acquire research skills to solve community problems and provide evidence to guide policy development. Data collection for the thesis project is conducted in one of the two non-European countries in the consortium to introduce students to oral health problems and practices in low- and middle-income countries and promote de-colonisation of the curriculum and oral public health. The curriculum is structured in five domains: Assessment of oral health status of the population and need for care, Oral health promotion and preventive healthcare, Oral health policy and the service system, Administration and management, and Managing and developing own work. The domains include 18 competencies which are further subdivided into 65 sub-competencies.

Keywords: Curriculum, Education, Oral Public Health, Digital Transformation, Intercultural Dialogue, Universal Health Coverage

Acknowledgements: Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them. The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Maha El Tantawi email: maha.tantawy@alexu.edu.eg

EADPH 2024 ABSTRACT 286

Distribution of the D₃MFT Index among 15-year-old North Macedonian Children of Different Ethnicities

Vesna Ambarkova^{1*}, Mira Jankulovska¹, Gordana Todorovska², Aneta Lazarova², Katerina Sibinoska¹
¹Department for Paediatric and Preventive Dentistry, Faculty of Dental Medicine, University Saints Cyril and Methodius, Skopje, Republic of North Macedonia; ²Public Health Organization Health Centre Skopje; ³Private Dental Office DI-AN

Aim: The aim of this study was to determine the difference in the DMFT index among 15-year-old North Macedonian children from different ethnicities.

Methods: Caries status was evaluated using the 2013 World Health Organization caries diagnostic criteria for Decayed, Missing and Filled Teeth (D₃MFT) by two calibrated examiners. Data obtained during the survey was stored in a database and statistical analysis with SPSS 20.0 for Windows was performed. Using the Kruskal-Wallis ANOVA -test, the data were tested for possible statistically significant differences. A *p* value < 0.05 was considered statistically significant. This cross-sectional study was conducted during 2018 with secondary school children from three different regions of the Republic of North Macedonia. The oral examinations were conducted in local state dental clinics. Parental consent was obtained for each child and ethics approval was given by the ethics committee of the Faculty of Dental Medicine, University of Saints Cyril and Methodius.

Results: The total number of children (n = 632) in the sample comprised of 565 Macedonians, 15 Turkish, 9 Roma, 1 Serbian and 7 Bosnian. The mean D₃MFT index among the Macedonian children was 5,25 ± 3,95, 4,86 ± 2,85 among Albanian children, 3,6 ± 3,98 among Turkish children, 3,33 ± 5,02 among Roma children, 8,0 ± 4,89 among Bosnian children and 6,0 ± 0,0 among Serbian children.

Conclusions: Of those examined in this study, the D₃MFT index score of the permanent teeth among 15-year-old children did not depend significantly on the ethnicity (*p* = 0.059). The mean D₃MFT score was highest in the group of children of Bosnian nationality and lowest in the group of children with Roma ethnicity. However, only a small number of children of non-North Macedonian ethnicity were examined and they may not have been representative of their ethnic groups.

Keywords: Public Health, D₃MFT index, Epidemiology, Ethnicity

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Vesna Ambarkova email: vesna.ambarkova@gmail.com

Periodontal Bone Loss and Rosacea in the 1966 Northern Finland Birth Cohort

Larissa Tursas^{1*}, Merja Ylipalosaari¹, Suvi-Päivikki Sinikumpu², Pekka Ylöstalo^{1,2}, Anna-Maija Syrjälä¹
¹Research Unit of Population Health, Faculty of Medicine, University of Oulu, Oulu, Finland; ²Department of Dermatology, University Hospital of Oulu, Oulu, Finland and Medical Research Centre, Research Unit of Clinical Medicine, University of Oulu, Oulu, Finland.

Aim: To investigate whether periodontal bone loss is associated with rosacea in the Northern Finland 1966 Birth Cohort.

Methods: The study was part of a cross-sectional 46-year follow-up survey of the 1966 Northern Finland Birth Cohort Study for which cohort members living within 100 km from Oulu (n=3150) were invited to take part. Some 1859, males and 1006 females took part (response rate 59%). Data from skin examinations performed at the Faculty of Medicine, University of Oulu were accessed, together with panoramic radiographs that had been taken at the Research Unit of Oral Health Sciences, Faculty of Medicine, University of Oulu and mailed health questionnaires. The data were collected between April 2012 and May 2013. Participation was voluntary and based on informed consent. The data were handled with anonymity. The full cohort study and the present study were conducted according to the Declaration of Helsinki and were approved by the Ethical Committee of the Northern Ostrobothnia Hospital District (74/2011) (227/2012). The study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines. Erythematotelangiectatic rosacea (ETR) was classified as one group, whereas other types such as papulopustular (PPR), phymatous, and ocular rosacea were combined for the analyses. The radiographic alveolar bone levels, (≥ 5 mm), were measured from 1867 panoramic radiographs. Education, smoking and high-sensitivity CRP were used as other variables, together with diabetes mellitus, inflammatory bowel diseases, lung, and rheumatic diseases. Prevalence rate ratios (PRR) and 95% confidence intervals (95% CI) were estimated using Poisson regression models with robust error variance.

Results: The prevalence of ETR was 12.9% (n=239). The prevalence of PPR, phymatous, and ocular rosacea was 2.6% (n=48). There was strongest association between periodontal bone loss and other types of rosacea among men. The results were not statistically significant at $p < 0.05$.

Conclusions: In the population studied the association between periodontal bone loss and rosacea varied according to different rosacea sub-types but did not reach statistical significance.

Keywords: Periodontal Bone Loss, Rosacea, Birth Cohort

Presenter: Larissa Tursas email: larissa.tursas@oulu.fi

Revolutionising Preschool Oral Health: Development of Electronic Oral Health Surveillance

Hams Hamed Abdelrahman^{1*}, Maha Hamaza¹, Wafaa Essam¹, May Adham¹, Mohamed Baniode²
¹Department of Paediatric Dentistry and Dental Public Health, Faculty of Dentistry, Alexandria University, Alexandria 21527, Egypt; ²Health Information Systems Programme (HISP), Middle East and North Africa (MENA), Amman, Jordan

Aims: The study describes developing different modalities of electronic oral health surveillance system (EOHSS) for preschool children using the District Health Information System (DHIS2) along with its Android App and assessing its feasibility in data acquisition.

Methods: After ethical approval (#0724-7/2023), the study was conducted in the paediatric dental clinic in the Faculty of Dentistry, Alexandria University, Egypt between November 2023 and February 2024. The DHIS2 Server was configured for the DHIS2 Tracker Android Capture App. EOHSS indicators such as assessing dental health status, fluoride exposure and dental visits were selected in line with the WHO Action Plan 2030. Two modalities for the EOHSS were developed based on clinical data capture: face-to-face using tablets and tele/asynchronous using smartphones for intraoral photo capturing. Eight trained and calibrated dentists collected data from 214 children after obtaining parental consent. The feasibility of workflow was assessed over 14 days, including 48 hours of observation. Independent t-test was used to compare the time needed for different steps between the two modalities.

Results: Workflow adaptations were made to prioritise surveillance tasks by collecting data from caregivers before acquiring clinical data from children to improve work efficiency. Shorter data capture time was required during face-to-face modality (4.2±0.7 min) compared to telemodality (5.1±0.9 min), $p < 0.001$). The acquisition of clinical data accounted for 16.9% and 21.1% of the time needed for both modalities respectively.

Conclusions: In the population studied, the DHIS2 provided a feasible solution for developing electronic oral health surveillance systems. The one-minute difference in capture time in telemodality modality compared to face-to-face indicates that despite being slightly more time-consuming, telemodality still shows promise for remote oral health assessments that is particularly valuable in areas with limited access to dental professionals.

Keywords: DHIS2, Health Systems, Oral Health Surveillance, Tele Surveillance, Mobile Technology, M-Oral Health

Acknowledgment: This paper is based upon work supported by the Science, Technology & Innovation Funding Authority (STDF) under grant 47235. The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Hams Hamed Abdelrahman email: Hamshamed14@gmail.com

EADPH 2024 ABSTRACT 290

Acceptability of Intraoral Cameras and Smartphones in Children: A Clinical Trial

Nourhan Mostafa Aly^{1}, Mona K. El Kashlan¹, Nicolas Giraudeau², Randa Yassin¹, Maha El Tantawi¹*
¹Department of Paediatric Dentistry and Dental Public Health, Faculty of Dentistry, Alexandria University, Alexandria, Egypt; ²Research Centre for Political and Social Sciences) and National Centre of Scientific Research, University of Montpellier, France

Aims: This trial assessed children's acceptance of two teledentistry methods, intraoral cameras and smartphones, used for caries detection in rural settings.

Methods: This randomized controlled clinical trial was conducted in nurseries in rural Egypt between December 2023 and May 2024. Ethical approvals and parental consents were secured before the study. The study included 400 children younger than six years who lived in villages. They were equally randomized into two groups: intraoral cameras and smartphones to detect caries. The child's behaviour was observed when using the two methods and evaluated on a 5-point Likert scale to assess fear of the device, tendency to bite the device, difficulty in keeping the mouth open, and cooperation. The time of examination was measured in minutes. Comparisons between the groups were performed using Mann-Whitney test and significance was set at 5%.

Results: The study included 400 children, mean (SD) age= 4.4 (1.1) years, 207 (51.8%) boys. The intraoral camera was slightly more feared than the smartphone (mean (SD)= 1.4 (0.8) and 1.3 (0.9), $p=0.04$), triggered more tendency to be bitten (mean (SD)= 1.7 (1.2) and 1.3 (0.7), $p<0.001$), and was associated with greater difficulty to keep the mouth open (mean (SD)= 2.2 (1.2) and 2.0 (1.3), $p=0.006$). Cooperation levels were similar between the two devices (mean (SD)= 3.5 (1.3) and 3.6 (1.4), $p=0.47$). The intraoral camera took 1.4 minute less to complete the photography process compared to smartphone (mean (SD)= 3.6 (1.5) and 5.0 (2.6), $p< 0.001$).

Conclusions: Both methods were acceptable to children with no clinically significant differences in fear of the device, tendency to bite, difficulty keeping the mouth open or cooperation. Less time was needed to complete the photography using the intraoral camera compared to the smartphone. Future studies should explore accuracy and caregiver perspectives.

Acknowledgments: Work supported by the Science, Technology & Innovation Funding Authority (STDF), Egypt, grant #47235.

Keywords: Teledentistry, Intraoral Camera, Smartphone, Acceptability, Children

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Nourhan Mousafa Aly email: nourhan.moustafa@alexu.edu.eg

Reported Symptoms According to Socio-demographic Determinants among Iranian Patients with Dental Caries

Hossein Hessari^{1*}, Minoos Taheri Dezfouli²

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; and Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran; ²International Campus, School of Dentistry, Tehran University of Medical Sciences

Aim: Many people have dental caries and usually report their dental problems with different expressions. The aim of this study was to evaluate the reported symptoms according to socio-demographic determinants among patients referred to the School of Dentistry, Tehran University of Medical Sciences (TUMS), in 2023 with a diagnosis of dental caries.

Methods: The present descriptive analytical study involved patients who were diagnosed with carious teeth and who had been referred to dental clinic of Tehran University Medical School (TUMS) in 2023. Ethical approval for the study was by TUMS ethics committee (ref: IR.Tums.dentistry.rec.1402.037). Each patient's socio-demographic determinants (gender, education level (low, medium and high) and income status (low, medium and high)), and nine dental symptoms (odour, bitterness, bleeding, sensitivity, sharp pain, dull pain, dark spot, cavity and white spot) were recorded. The sum of symptoms (ranged from one to nine) was calculated and reported. The ANOVA test was used for comparing means.

Results: In total, 121 women and 52 men were diagnosed with dental caries. One hundred and fourteen (66%) had a low level of education, 47 (27%) medium and 12 (7%) high. Most (n=159) of the subjects had a low income, and only one had a high income. Twenty-eight (16%) reported no symptoms, 58 (33%) one or two symptoms and 87 (51%) three or more. The mean number of reported symptoms was 2.9 (+2.2). They were related to gender ($p<0.001$), education level ($p=0.010$), and income ($p=0.014$). Women had a higher ($p<0.001$) number of symptoms ($=3.3+2.2$, vs $2.0+2.0$ for men). Those with a low income had a higher ($p=0.010$) number of symptoms ($3.0+2.3$) than those with medium income ($1.2+1.2$).

Conclusions: In the group studied patient reported symptoms of dental caries was higher among women and those with lower socio-economic status.

Keywords: Dental Caries, Symptoms, Socio-demographic Determinants

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Hossein Hessari email: h-hessari@tums.ac.ir

Assessment of Oral Health Literacy and Oral Health Behaviours among Industrial Workers

Diptajit Das^{1*}, Mansi Atri²

¹Department of Public Health Dentistry, Dental College, RIMS, Imphal, India; ²Department of Public Health Dentistry, ESIC Dental College and Hospital, New Delhi, India

Aims: To investigate the oral health literacy (OHL) levels and oral health behaviours of industrial workers in a tertiary hospital in New Delhi, India and to explore the association between OHL and oral health behaviours.

Methods: A cross-sectional study was conducted in a tertiary hospital in New Delhi among randomly chosen industrial workers referred to Out Patient Department of tertiary hospital. Ethical clearance was obtained from the Ethics Committee of ESIC Dental College & Hospital. Consent from participants was taken prior to the study. OHL was assessed using a Hindi translated version of short-form Health Literacy in Dentistry-14 (HeLD-14) questionnaire (min score=00, max score=56). OHL scores were categorised as following: ≤ 35 =low, 36-46= medium, and ≥ 47 = high. Socio-demographics and oral health behaviours were assessed using a specially designed questionnaire by the authors. The subjects' response rate was 97%. Independent sample t-test, One-way ANOVA, and multivariable regression were used.

Results: A total number of 442 industrial workers participated in the survey, with a mean OHL(\pm SD) =34.7(\pm 10.5), 22.8% (n=101) were categorised as high, 35.1% (n=155) medium and 42.2% (n=186) low oral health literacy. Statistically significant scores ($p<0.05$) were found for work experience, marital status, monthly household income and self-rated oral health status. Tooth brushing time, use of fluoride toothpaste and regular oral examination were significantly associated with OHL scores.

Conclusions: The results of this survey showed that overall OHL of the industrial workers in this sample was at a moderate to low level. These findings can help target oral health education interventions to improve OHL amongst industrial workers, especially those with poor self-assessed oral health.

Keywords: Oral Health Literacy, Oral Health Behaviour, Oral Health, Education, Workers

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Diptajit Das email: diptajit.das@gmail.com

EADPH 2024 ABSTRACT 293

Parents' Perspectives on Oral Hygiene Knowledge and Behaviour of their Young Children

Rasa Tamulienė, Yvonne Andrea Bernadette Buunk-Werkhoven, Daiva Mačiulienė*
Oral Health Department / Faculty of Medicine / Kauno Kolegija Higher Education Institution, Kaunas, Lithuania

Aims: To assess the oral health knowledge (OHK) and oral hygiene behaviour (OHB) from parents' perspective towards their pre- and primary school children.

Methods: From January to May 2024 the study, approved by the Applied Scientific Research Ethics Compliance Committee of Kaunas Kolegija HEI (No.13-14) was conducted in collaboration with the Kaunas Public Health Bureau in Lithuania. An invitation to participate in the study was sent to public health specialists working in Kaunas schools that implement pre- and primary education programs. In turn these specialists shared the invitation, including a survey-link through internal communication channels used in the schools, with all parents of 5-12 years old children. 532 parents completed the questionnaire, which consisted of 62 questions on parent's perspectives of children's dental hygiene skills, measured by adapted versions of the index for OHB and OHK (Buunk-Werkhoven, et. al., 2011), their children's dietary habits, and some demographic questions. After reviewing the completed questionnaires, those from 420 parents with a mean age of 37.3 years (SD = 4.6, ranging 24-55) were deemed suitable for analysis. The data analysis methods included descriptive statistics and ANOVA tests.

Results: 395 (94%) of the parents were female and 355 (84.5%) had higher education. Observed from histograms the OHK and OHB scores were approximately normally distributed, OHB was positively ($r=0.16$, $p=0.001$) associated with OHK, and there was a significant effect of education level on OHK ($p<0.001$), but not on OHB ($p=0.16$); not surprisingly, higher educated parents perceive more OHK from their children, but not more adequate OHB. No differences ($p=0.31$, $p=0.11$) were found in children age groups: 243 (57.9%) 5-7 years, 152 (36.2%) 8-10 years and 25 (6%) 11-12 years.

Conclusions: In the population studied, sufficient OHK is apparently not a strong predictor of optimal OHB. Focus on attitude and social norms are needed for interventions.

Keywords: Oral Health Promotion, Oral Health Knowledge, Oral Hygiene Behaviour, Pre- And Primary School Children, Lithuania

Presenter: Rasa Tamulienė email: rasa.tamulienė@go.kauko.lt

EADPH 2024 ABSTRACT 294

Knowledge Assessment of Healthcare Providers Regarding Oral Health

Farid Farrokhi^{1,2}, Mohammad Reza Khami^{1,2}, Simin Zahra Mohebbi^{1,2}*
¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Community Oral Health Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aim: Healthcare providers play a crucial role in primary healthcare implementation. Oral health is integral to achieving Universal Health Coverage (UHC), yet it often receives insufficient attention among healthcare professionals. This study aimed to assess the knowledge of healthcare providers regarding oral health in primary health care centres in Iran.

Method: A cross-sectional study was conducted in 2022 among healthcare providers, randomly selected from three comprehensive health networks under the supervision of Tehran University of Medical Sciences. Data were collected using a structured questionnaire that included demographic information and 14 questions related to oral health knowledge. The knowledge score was calculated and descriptive statistics and multiple linear regression were employed for data analysis. Ethical approval and participant consent were obtained prior to data collection.

Results: Out of 208 participants, 105 were aged 40 years or younger. The majority were female 181 (87%) and had 10 years of work experience or more, 127 (61%). Participants' knowledge regarding the age range for the eruption of the first primary tooth was high, with 200 participants (96%) answering correctly. Similarly, 196 participants (94%) correctly answered a question about whether the presence of microbial plaque on teeth increases the likelihood of future dental caries. However, the knowledge score was low concerning the possibility of transmitting caries-causing bacteria from mother to child, with only 65 participants (31%) answering correctly. None of the independent variables significantly influenced the knowledge score ($p > 0.05$), though the number of children visited per week in the governmental sector showed a trend towards significance ($p = .081$).

Conclusion: Despite their critical role in primary healthcare, healthcare providers exhibited notable gaps in oral health knowledge. Strengthening their understanding of oral health concepts is crucial to ensure comprehensive healthcare delivery and advance towards UHC goals.

Keywords: Healthcare Providers, Oral Health, Knowledge Assessment, Primary Healthcare

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Farid Farrokhi email: f-farrokhi@razi.tums.ac.ir

EADPH 2024 ABSTRACT 295

Intake of Fluorides in One Year Old Children in the Metropolitan Region of Chile in 2022

I Yévenes, Marco Cornejo-Ovalle, A Muñoz, M Díaz, M Neira*
Faculty of Dentistry, University of Chile

Aims: To determine the concentrations of fluorides in foods in the diet of Chilean children <1 year old, estimating the average daily intake, and its alignment to Food and Agriculture Organization of the United Nations (FAO) and Chilean Ministry of Health.

Methods: Research was approved by the Ethics Committee of the North Metropolitan Health Service before the survey. Study was designed as non-experimental, transactional, descriptive field study. Sample involved food specimens from 1-year-olds or younger children's menu in public kindergartens (PK). A total of 180 food samples (breakfast, lunch and snack) from 6 randomly chosen PK was collected during one week. Monthly breast milk samples were collected from lactating mothers (4 or 5 days after delivery for the first month). Laboratory techniques included calibration curves and microdiffusion analysis.

Results: The food group that had the highest value in fluoride concentration was "Fish and shellfish" (1,679+2,376) followed by "Colorful Vegetables" (1,085+1,369), "Legumes" (0,615+0,791) in mg/Kg, and "drinking water" (0,613+0,046 mg/L). Among the groups with the lowest concentration of fluoride was the breast milk as well as starter and continuation formula (0,049+0,057 mg/L, 0,053+0,047, and 0,055+0,026 mg/Kg, respectively). When ingesting any food or food mixture, the most likely finding would be 0.178 mg F-/kg of food.

Conclusions: The results of this study showed that levels of fluoride ingestion in Chilean children <1 year old do not present a risk due to the low concentration of fluoride levels in the analysed food specimens.

Keywords: Fluoride, Infant, Intake, Diet, Chile

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Marco Cornejo-Ovalle email: mcornejo@odontologia.uchile.cl

Tele-Screening Method for Diagnosis of Dental Caries Through Photographs Captured by Iranian Mothers

*Zahra Ghorbani**, Parastoo Iranparvar, Mohsen Shirazi, Sajjad Zandie, Serli Hartoonian
School of Dentistry, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Aims: This study aimed to evaluate the diagnostic accuracy of a group of Iranian mothers and healthcare providers in children's dental caries detection using smartphone-based photography.

Methods: Sixty mothers having a 3-6-year-old child were included. After standardised virtual training, the mothers performed dental caries screening and obtained dental photographs of their children's teeth. Two calibrated dentists evaluated the children's dental caries status using the photographs acquired and sent by the mothers. After two weeks, an in-person examination was performed by the dentists (gold standard). The sensitivity and specificity of the two diagnostic methods were compared with the gold standard. Inter-examiner agreement was assessed with the interclass correlation coefficient (ICC) for caries-affected teeth and the Kappa coefficient for caries-free cases. Written informed consent was obtained from all mothers involved in the study, and the study was approved by Ethics Committee at the School of Dentistry, Shahid Beheshti University of Medical Sciences. The paired t-test and Wilcoxon signed-rank test compared the mean number of caries-affected teeth detected by dentists and mothers, depending on data distribution ($\alpha < 0.05$).

Results: The mothers' diagnosis and the dentists' teledental diagnosis had an inter-class agreement of 0.959 and 0.988 with the gold standard ($p < 0.001$). Both methods had a sensitivity and specificity of 100% in detection of caries-free cases.

Conclusions: In the population studied, despite the lower accuracy of tele-dentistry compared to direct clinical examinations, mother-assisted teledental screening offered acceptable reliability for the initial diagnosis of caries in children.

Keywords: Dental Caries Screening, Tele-Dentistry, Dental Photographs, Primary Teeth

Acknowledgements: Supported by Academy of Medical Sciences, Tehran, Iran. The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Zahra Ghorbani email: dryaszgh@yahoo.com and zahrghorbani@sbm.ac.ir

Traumatic Dental Injuries in Children from the Dental Clinic University of Banja Luka; Bosnia and Herzegovina

*Olivera Dolic**, Marija Obradovic, Zeljka Kojic, Natasa Knezevic, Natasa Trtic
Faculty of Medicine, University of Banja Luka, Bosnia and Herzegovina

Aim: Traumatic dental injuries are highly prevalent from infancy to adolescence, as approximately 50% of children experience a dental injury before the age of 18. The aim of this study was to investigate the epidemiology of dental trauma in a public dental clinic in Banja Luka, Bosnia and Herzegovina, from 2019 to 2024.

Methods: The Ethical Committee of the Faculty of Medicine, University of Banja Luka approved this retrospective cross-sectional study. Data from traumatic dental injury records of paediatric patients (less than 15 years) who attended the Dental Clinic, University of Banjaluka were analysed from April 2019 to April 2024. The data were analysed to obtain the distribution of gender, age, etiological factors, types and places of traumatic dental injuries, type of dentition (primary, mixed, and permanent), visiting date and time, the time interval between the accident and treatment, classification of injuries, trauma complication and the time interval between the accident and complication, association with maxillofacial injuries and brain injuries.

Results: The review of the dental records revealed 73 patients (49 boys and 24 girls) with traumatic dental injuries, involving 55 deciduous and 64 permanent teeth. An accidental fall was the leading cause of injury (74%). The upper central permanent incisors were the most commonly injured teeth (24%). Enamel fracture was the most prevalent traumatic dental injury (18%). The highest rate of injuries occurred in the spring (35%), followed by winter (27%). Complications of tooth injury occurred in 24 teeth (20%), the most common being necrosis.

Conclusions: It is necessary to promote the importance of regular check-ups in case of traumatic injuries because 73% of dental injury patients did not come for regular check-ups.

Keywords: Traumatic Dental Injuries, Retrospective Study, Children And Adolescents

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Olivera Doli email: olivera.dolic@med.unibl.org

EADPH 2024 ABSTRACT 302

Dental Caries and Oral Health Practices: A Life Course Perspective in Egypt

Nourhan M. Aly, Randa Yassin, Enas B. Abdellatif, Maryam Quritum, Maha El Tantawi*
Department of Paediatric Dentistry and Dental Public Health, Faculty of Dentistry, Alexandria University, Egypt

Aims: A life course approach may explain how age and oral health practices interact to affect caries risk. This study assessed the association between untreated decay and children's oral health practices, and how age modified this relationship.

Methods: A cross-sectional household survey of 823 children was conducted in rural Egypt, 2019-2022. Age groups were categorized as: 0-<3, 3-<6, 6-<12, and 12-<18 years-old. Negative binomial regression assessed the relationship between dependent (number of decayed teeth per the World Health Organization criteria), and explanatory variables: daily toothbrushing, daily consumption of ≥ 2 types of sugary foods/drinks, and dental visits last year. Confounders were village of residence, child's sex, and mother's education. Interaction by age was assessed by calculating *p*-values. Adjusted means and effect sizes were calculated. The ethics committee of the Faculty of Dentistry, Alexandria University approved the study.

Results: Toothbrushing and dental visits were associated with significantly higher number of decayed teeth (*B*= 0.1 and 0.3). Age significantly modified the association between practices and the number of decayed teeth. There were no significant differences in the number of decayed teeth between children who brushed daily and those who did not and children who consumed ≥ 2 types of sugars and those who did not with effect sizes indicating different magnitude and direct of impact of toothbrushing (effect sizes= -0.2, 0.1, 0.3 and 0.5) and sugar consumption (effect sizes= -0.1, 0.1, 0.2 and -0.5). Also, there were no significant differences between children who visited the dentist and those who did not except in the 3-<6 years old group (effect sizes= 0.6, 0.3, 0.2 and 0.4).

Conclusions: The magnitude and direction of the association between oral health practices and decay differed by age, and was strongest in 12-18-year-olds, except for dental visits, which had the greatest impact in 3-<6-year-old children. Recognising this influence is vital for designing tailored interventions across life stages.

Keywords: Dental Caries, Toothbrushing, Dental Visits, Life Course

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Randa Yassin email: randayassin94@gmail.com

EADPH 2024 ABSTRACT 306

Dental Caries among Iranian Children and Adolescents: An Ecological Study

Javad Dadgar¹, Hedyeh Toutouni^{2}, Alireza Akbarzadeh³, Mohammad Dadgar⁴, Fariborz Bayat⁵*
¹School of Dentistry, Mashhad University of Medical Sciences, Iran; ²Community Oral Health Dept., School of Dentistry, Mashhad University of Medical Sciences, Iran; ³Department of Biostatistics, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Iran; ⁴Senior expert in regional planning, manager of sustainable development affairs of Jamab Company, Tehran, Iran; ⁵Dental Caries Research Centre, School of Dentistry, Shahid Beheshti University of Medical Sciences, Iran

Aims: The aim of this study was to illustrate the trend of prevalence and severity of dental caries among 6- and 12-year-olds (y.o.) from 1998 to 2016 in Iran and to assess its relationship with socio-economic determinants.

Methods: Data were gathered from national oral health surveys (1998, 2004, 2012, and 2016) and from the Iranian Statistical Centre national censuses. The relationship between oral health (DMFT/dmft, fluoridated dentifrice usage), socio-economic (Gini, employment, income-to-cost, annual cost on added sugars, literacy, household size) and geographical determinants were conducted using SPSS24, Excel2016, Joinpoint5.0.2, R4.3, and Arc GIS10.3 software.

Results: DMFT/dmft trend in both groups was upward from 1998 to 2016. Lorenz curves' coefficient of the dental caries distribution decreased in both groups. Furthermore, equity in increasing dmft/DMFT was mirrored by the Lorenz curves of the dental caries distribution with Gini coefficient changes from 0.164 to 0.162, 0.32 to 0.251, and 0.124 to 0.0711 for 12y.o. DMFT, 6y.o. DMFT, and 6y.o. dmft, respectively at the provincial level. Annual cost spent on added sugars showed a relationship with DMFT [B=0.001, CI(0.00-0.001)] and D [B=0.001, CI(0.000-0.001)] in 12.y.o. Fluoridated dentifrice usage was associated with decreased d [B=-0.008, CI(-0.015- -0.001)] and D [B=-0.007, CI(-0.013 -0.000)] in both age groups. Income-to-cost ratio was associated with dmft [B=1.623, CI(1.675-1.712)], DMFT [B=0.25, CI(0.117- 0.384)] in 6y.o. and DMFT [B= 0.666, CI(0.478-0.854)] in 12y.o. Household size showed reverse relationship with dmft [B=-1.312, CI(-1.538- -1.087)] and DMFT [B=-0.06, CI(-0.109- -0.012)] in 6 y.o. Employment had reverse relationship with DMFT in 6 and 12 y.o. ([B=-0.007, CI(-0.007- -0.006)] and [B=-0.013, CI(-0.021- -0.004)] respectively). Literacy showed reverse relationships with dmft [B=-0.055, CI(-0.057- -0.052)], DMFT [B=-0.011, CI(-0.019- -0.002)] in 6y.o. and DMFT [B=-0.072, CI(-0.0119- -0.025)] in 12y.o.

Conclusions: Results emphasizes a need of multidisciplinary approach and upstream strategies to control commercial determinants in risk groups.

Keywords: Children, Commercial Determinants, Dental Caries, Epidemiology, Caries Risk, Social Determinants.

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Hediyehtoutouni email: hediyehtoutouni@gmail.com

EADPH 2024 ABSTRACT 309

Empowering Visually Impaired People for Good Oral Health- An Interventional Study

Charu Khurana, Shourya Tandon*

Department of Public Health Dentistry, Faculty of Dental Sciences, SGT University, Gurugram, Haryana, India

Aims: The aim of this study was to develop customized braille embossed oral healthcare products and evaluate the effectiveness of this novel oral healthcare kit on the oral health status of visually impaired individuals.

Methods: Ethical clearance was obtained by the ethics committee of the SGT University. Consent from a legal guardian was taken prior to the study. Various Oral hygiene aids regardless of brand (toothbrush, toothpaste, dental floss, fluoride mouthwash) were modified with description in braille and tactile graphics based on Braille Authority of North America (BANA) Guidelines. A prospective nonrandomized before and after comparison trial without any control group was conducted, between August 2023 and January 2024, among 165 students aged 18 years and above in one of the Blind Institutes, Delhi. A validated 15-item questionnaire was used to record the existing oral health knowledge and practices. All the participating students' ability was assessed to identify oral hygiene aids and skills to utilize before and after the distribution of customized oral healthcare kits. Clinical oral health examinations using plaque index (PI) and gingival index (GI) were evaluated at baseline, 30 days, and 90 days interval. Data were analysed using descriptive statistics, Chi-square and Paired t test on SPSS 20.0.

Results: Participants' mean age (\pm SD) was 23.7 \pm 1.4 years and 113 (68.4%) were male. Among completely blind students, the mean difference of PI and GI from baseline to the last evaluation was found to be 0.56 and 0.28, whereas among partially blind students, it was found to be 0.58 and 0.25, respectively. All the above values were statistically significant ($p < 0.001$).

Conclusions: Visually impaired people irrespective of the degree of blindness could maintain an acceptable level of oral hygiene independently using customized Oral Healthcare kit. The oral health education and description on oral healthcare products should be modified to accommodate their handicap.

Keywords: Braille, Oral Health, Tactile Perception, Visually Impaired

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Charu Khurana email: drcharukhurana@gmail.com

Oral Health Promotion Programmes for High School Students in Tehran, Study Protocol

Mohamad Reza Khami¹, Katayon Sargeran², Fatemesadat Seyedzadeghomi^{2*}

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Department of Community Oral Health, School of dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aim: To design and to evaluate oral health promotion programmes for high school students in non-affluent areas of Tehran province.

Methods: A comprehensive literature review suggested a multi-level intervention based on the PRECEDE-PROCEED multi-dimensional model at the level of individual and school, focusing on oral health and smoking behaviour of students aged 13 to 15 years. Multi-stage random sampling included girls and boys from the grade-school clusters and a sample size of 436 students grade 7th to 9th was selected from 18 schools. Oral health knowledge, attitude and practice were considered as primary outcome, and plaque and Caries Assessment Spectrum and Treatment (CAST) indices as secondary outcomes, to be assessed through examination and self-administered questionnaire before, 3 and 12 months after interventions. The sample was divided randomly into three groups. comprehensive intervention (CI) group (teaching students and teachers through group motivational interviewing about oral health (hygiene and tobacco), providing free toothbrush and toothpaste, educating parents through social media, routine oral hygiene assessment of students by the peer group (health agent) and brushing teeth under their supervision monthly, uploading educational video in school LMS (learning management system), and group interaction), less comprehensive intervention (LCI) group (similar to CI but without supervised tooth brushing), and a control group receiving routine oral care. The data will be analysed in SPSS software, the groups are compared, and the effectiveness of the designed model is evaluated. The proposal has been approved by the research ethics committees of School of Dentistry, Tehran University of Medical Sciences. Informed consent has been obtained from students and parents. Baseline data from 16 schools have been collected. clusters were two grades seventh and eighth of each school instead of schools so in 18 schools we had 36 clusters of grade-schools.

Results: Data for 532 students have been collected, girls comprised 296 (52.9%). 304 (54.3%) students were 13 years old and 45.7% were 14 years. Distribution of the dental health status of the permanent molars average based on CAST index codes was as followed: healthy (0-2): 248.25 (58.75%), pre-morbidity (3): 103 (18.4), morbidity (4-5): 105 (18.8%), serious morbidity (6-7): 15 (2.72%), and mortality: 4.5 (0.8%).

Conclusion: The findings of the trial have implications for embedding oral health interventions into school curricula guidance at national level.

Keywords: Health Promotion, Oral Health, Adolescents, School

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Fatemesadat Seyedzadeghomi email: fatemehseyedzadeh93@gmail.com

Evaluation of Oral Health Status in Elderly Patients from the Republic of Moldova

Tatiana Porosencova*, Diana Uncuta, Egor Porosencov
Nicolae Testemitanu State University of Medicine and Pharmacy, Republic of Moldova

Aim: The study aimed to assess the oral health related quality of life in geriatric patients from Republic of Moldova, using the geriatric oral health assessment index (GOHAI).

Methods: The research targeted patients aged 65+ years old. After providing their consent for participation, 384 patients took part in the survey, which took place between January and May 2024. Ethical approval was granted by the Ethics Committee of the Nicolae Testemitanu State University of Medicine and Pharmacy. The GOHAI questionnaire was used to determine the perceived oral health-related quality of life of the participants. Subjects were assigned into four groups based on age: 65-70 years, 71-74 years, 75-80 years and 80 years or older. Data were analysed using descriptive analysis and the Pearson correlation test.

Results: The 384 subjects recruited included 235 (68%) patients aged 65-70 years, 97 (28%) patients aged 71-74, 37 (10%) patients aged 75-79 and 15 (4%) were 80 years or older. Several physical, physiological, and psychological aspects of the GOHAI differed significantly among these three groups, with overall OHRQoL decreasing with age ($p<0.05$).

Conclusions: In the population studied, oral diseases and disorders that are associated with aging lead to an increased need for preventive, restorative and periodontal care programmes. Social support and relevant agencies can help promote oral healthcare by collaborating with other healthcare providers for better oral health outcomes among elderly people.

Keywords: Elderly, GOHAI, Oral Health Status

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Tatiana Porosencova email: tatiana.porosencova@usmf.md

EADPH 2024 ABSTRACT 316

Stress Impact on Salivary Antioxidants and pH in Dental Students

*Octavia Balean**, Ramona Dumitrescu, Roxana Oancea, Atena Galuscan, Ruxandra Sava-Rosianu
Department of Preventive, Community Dentistry and Oral Health, University of Medicine and Pharmacy
"Victor Babes", 2 Eftimie Murgu Sq., 300041 Timisoara, Romania

Aims: This study aimed to evaluate the total antioxidant capacity (TAC) and pH levels in the saliva of dental students under different stress conditions and explore correlations between these factors.

Methods: Conducted at the University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania, this cross-sectional study involved 80 dental students, males (n=26, 33%) and females (n=54, 67%), mean age 23.62 ± 4.19 years. Saliva samples were collected during non-stressful (before a course) and stressful periods (before an examination) between December 2022 and February 2023. Ethical approval and informed consent were obtained. Saliva pH was measured using indicator paper strips, and TAC was assessed using a commercial assay kit. Data on health status, smoking habits, and anxiety levels (State-Trait Anxiety Inventory) were recorded. Statistical analysis included descriptive statistics, Student's t-test, and Pearson's correlation coefficient.

Results: Out of 80 students, 18 (23%) reported acute or chronic health conditions, and 41(51%) were smokers. The mean salivary pH was 6.7 during non-stressful periods and 6.6 during stressful periods. During the non-stressful period, the obtained values ranged between 0.84 to 7.24 mmol Trolox Equiv./ μ L. During the stressful period, the values fell within the range of 1.32 and 6.52 mmol Trolox Equiv./ μ L indicating increased oxidative stress under examination conditions. Significant negative correlations were found between STAI scores and TAC during non-stress periods (Rho=-0.02, $p<0.01$). Additionally, the presence of acute or chronic illness was positively correlated with salivary pH during stress (Rho=0.03, $p<0.01$). Significant correlations were also observed between tobacco consumption and total STAI scores during non-stressful periods (Rho=0.03, $p<0.05$).

Conclusions: Stress significantly impacted the antioxidant capacity of saliva. Non-smokers and those with lower anxiety levels showed higher TAC. These findings highlight saliva's potential as a diagnostic tool for stress-related health monitoring in the given sample.

Acknowledgements: The authors express gratitude to the Faculty of Dental Medicine staff and the participating students.

Keywords: Total Antioxidant Capacity, Saliva, pH, Stress

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Octavia Balean email: balean.octavia@umft.ro

Association Between Periodontal Disease, Smoking, and Systemic Health in Romanian Adults

Ramona Dumitrescu*, Ruxandra Sava-Rosianu, Vanessa Bolchis, Roxana Oancea, Atena Galuscan
Department of Preventive, Community Dentistry and Oral Health, University of Medicine and Pharmacy
"Victor Babes", Eftimie Murgu Sq. no 2, 300041 Timisoara, Romania

Aims: This study aimed to evaluate the oral health status of adults with periodontal disease in Western Romania and assess the association between periodontal disease stages and systemic conditions, also examining the influence of smoking.

Methods: The Ethics Committee of the University approved the study protocol (Approval Number 34/2018), and all participants provided written, informed consent. The cross-sectional study was conducted between 2021 and 2022 at the Department of Oral Health, Timisoara. The sample comprised 242 patients, following exclusion of 21 from an initial cohort of 263. Data collection involved a self-reported questionnaire on demographic data, general health, and smoking habits. A comprehensive periodontal examination was performed on all patients by three examiners who underwent calibration process before examinations to ensure consistency and accuracy, and data were analysed using SPSS statistical software with nonparametric Spearman Rho correlations and ANOVA with a significance level set at $p < 0.05$.

Results: The sample included 109(45.04%) males and 133(54.95%) females, with a mean age of 44.5 years (± 12.19). Smoking habits varied: 125(51.65%) non-smokers, 13(5.37%) former smokers, 32(13.22%) smoked 20 cigarettes/day. Significant positive correlations were found between age and probing depth ($Rho=0.18$, $p<0.01$), diagnosis severity ($Rho=0.36$, $p<0.001$), and systemic diseases ($Rho=0.44$, $p<0.001$). Higher probing depths and periodontal severity correlated with older age and systemic conditions. Non-smokers had significantly lower diagnostic severity compared to heavy smokers ($Mdif = -0.81$, $p = 0.01$, Cohen's $d = 0.73$).

Conclusions: In the studied population, aging and smoking significantly contribute to periodontal disease severity and systemic health issues. This highlights the need for interdisciplinary collaboration in managing periodontal and systemic health. Further large-scale, randomized trials are necessary to explore these associations comprehensively.

Acknowledgements: We thank the Faculty of Dental Medicine staff, University of Medicine and Pharmacy "Victor Babes", Timisoara, and the participating patients.

Keywords: Periodontal Disease, Systemic Diseases, Smoking, Oral Health Tobacco

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Ramona Dumitrescu email: dumitrescu.ramona@umft.ro

The Use of Roleplay as Undergraduate Learning Method in Special Care Dentistry. A Systematic Review

Julijana Jovanovic^{1*}, Branislav Karadzic¹, Olja Jovanović², Ana Vuković¹
¹School of Dental Medicine, University of Belgrade, Serbia; ²Faculty of Philosophy, University of Belgrade, Serbia

Aim The aim of the study was to analyse, by reviewing the literature, undergraduate dental education using psychological training.

Methods: The systematic review involved a search of the studies related to special care dental education using role play or any psychological method, published in PubMed over the period of ten years 2013-2023. The search used the Medical Subject Headings (MeSH): "Dental Care for Disabled", "Dental Care", "Handicapped"[Mesh], "Disabled Persons", "People with Disability", "Special Education", Dental Education, "Graduate Dental Education" and "Special Care Dentistry" and the Boolean search operators (AND and OR). The exclusion criteria were papers that were not possible to retrieve, non-English language papers, care reports involving subjects with special care needs, and non-dental special care education.

Results: The search found a total of 100 papers. The first round involved title screening and excluded 49 papers that did not meet inclusion criteria. After abstract reading 12 more papers were eliminated. Final analysis involved 21 papers performed on 4604 undergraduate dental students in 11 countries. Most of the studies ($n=15$, 72%) were performed in high income countries. More than half of the studies were cross-sectional ($n=11$, 52%). There were 9 (43%) psychological studies All studies' main findings involved improved knowledge and skills following both clinical and psychological educational activities.

Conclusion: The results of the research showed better learning outcomes in special care dentistry where active methods of learning such as roleplay and psychological methods were used.

Keywords: Special Care Dentistry, Education, Roleplay, Undergraduate

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Julijana Jovanovic email: julijana.jovanovic1992@gmail.com

EADPH 2024 ABSTRACT 321

Developing A Basic Oral Health Services Package in Iran: The First Phase

*Mohammad Reza Khami**, *Mahsa Eshrati*, *Mahsa Karimi*, *Mohammad Javad Kharazifard*, *Hossein Hessari*
Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences

Aims: This abstract describes a four-phase project to develop a basic oral health care package (BOHCP) for population groups in Iran, and the initial findings of its first phase. The aim of the first phase was to define the acceptable level of oral and dental health and its criteria in target groups in Iran.

Methods: The study was approved by the Ethics Committee in Biomedical Research of Tehran University of Medical Sciences (IR.TUMS.DENTISTRY.REC.1402.065). First, a comprehensive search of databases including PubMed, Scopus, and Google Scholar; as well websites of relevant organisations such as WHO, ADA, and FDI; and national sources such as the Ministry of Health and Medical Education websites and publications was performed. Then a primary model encompassing all potential domains and sub-domains of oral and dental health, along with their specific definitions was developed. Feedback on the model was sought and provided by Community Oral Health experts and the primary categorisation of the oral and dental health model was refined. Then two sets of questionnaires were developed: one to gather input from stakeholders, general dentists, and dental specialists (distributed through a purposive sampling method); and one to explore public viewpoints (to be distributed through a convenience sampling method on social media platforms). The collected data will be used to define criteria for acceptable oral and dental health in each age group and target population.

Results: The primary model comprised three main domains: physiological function, psychosocial function, and lack of disease. The details of each domain, and the extracted criteria to define model cases will be presented and discussed.

Conclusion: To define BOHCP for population groups various domains should be taken into account. Moreover, the viewpoint of all stakeholders should be integrated in order to create a real picture of the population demands.

Keywords: Basic Oral Health Package, Iran, Phase One

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Mohammad Reza Khami email: mkhami@tums.ac.ir

EADPH 2024 ABSTRACT 323

Using the Internet for Oral Health Promotion in Children: A Scoping Review

Niusha Daryabeigi^{1,2}*, *Simin Z. Mohebbi^{1,2}*, *Hossein Hessari^{1,2}*

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Community Oral Health Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: Due to the fact that the use of social media, smartphones and other virtual measures have become widespread in today's societies, this scoping review aimed to investigate the association between using internet based media and oral health promotion in children.

Methods: A comprehensive search was conducted in three electronic databases (PubMed, Scopus, and Google Scholar) for relevant articles published between 2019 and 2024. The articles were limited to the full text published literature, which included cross sectional, interventional, and observational study. Inclusion criteria for studies were use or assess the association of every type of social media, smart phone application and internet game for improving oral health children or their parents. Studies on children with any systemic problems were excluded. Ethical clearance was granted by ethics committee, Tehran University of Medical Sciences.

Results: A total of 28 studies were included. Studies were from, Australia, Brazil, Bulgaria, China, Egypt (3), Germany (2), India, Indonesia, Iran (3), Jordan, Korea, Malaysia, Netherland, Senegal, Saudi Arabia, Taiwan, Turkey, UK and USA (4). All studies concluded that social media (9), smart phone application (16), internet, Web-base and Websites (8), Chat bot (1) and Smartphone camera (1), can have a positive effect on children's oral health and increase parent's awareness.

Conclusions: In the population studied in this scoping review, children's and their parents' motivation to use internet and virtual media for health information was evident. It is important for those who provide paediatric health care to both understand and accommodate this permanent shift from traditional oral health care to that facilitated by social media, smartphone and virtual games when working with parents who are seeking health information for their children.

Keywords: Children, health promotion, Social media, Internet

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Niusha Daryabeigi email: niushdarya1373@gmail.com

EADPH 2024 ABSTRACT 324

Psychosocial Experiences of Parents with Newborns Having Cleft Lip/Palate

Delaram Alinezhad¹, Farnoosh Mohammadi², Mohammad Javad Kharazifard³, Mahdia Gholami⁴, Sarvin Sarmadi⁵, Samaneh Razeghi^{4}*

¹School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran; ²Craniofacial Research Centre, Tehran University of Medical Sciences, Tehran, Iran; ³Dental Research Centre, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ⁴Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ⁵Department of Orthodontics, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: This study investigated the psychosocial experiences of Iranian parents raising children with cleft lip/palate to provide insights for better support from authorities.

Methods: A qualitative approach was used, involving in-depth, semi-structured interviews with parents of children with cleft lip/palate. Participants were recruited through purposive sampling from the Department of Oral and Maxillofacial Surgery at the Children's Medical Centre in Tehran, Iran. Thematic content analysis was employed to interpret the data and identify key themes and subthemes.

Results: From 20 interviews, four main themes emerged. The "Initial Reaction" theme highlighted parents' extreme distress, siblings' discomfort, and additional medical concerns. The "Societal Pressure" theme revealed negative family reactions, societal acceptance worries, potential ridicule, and efforts to hide the child's condition. The "Guilt and Blame" theme showed that some mothers blamed themselves due to stress during pregnancy, while others attributed the condition to genetics or God's will and did not self-blame. The "Couples' Relationship" theme indicated that the experience often strengthened the parents' relationship as they collaborated on child care. Fathers' involvement in daily care was beneficial.

Conclusions: Parents of infants with cleft lip/palate felt unsupported by medical staff and suggested a program to empower staff and advocate for psychological support for parents. Establishing a parent-led community for sharing experiences is also recommended.

Keywords: Qualitative Study, Cleft Lip, Cleft Palate, Psychology, Parents

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Samaneh Razeghi email: s-razeghi@tums.ac.ir

Genome-Sequencing and Phylogenetics-based Study for Identifying Nicotine-degrading Bacteria in the Mouths of Tobacco-chewers

Nishant Nishant^{1*}, Arpit Gupta¹, Richa Shrivastava¹, Vikas Gautam², Ashima Goyal³, Hemant Goyal³
¹Oral Health Sciences Centre, Post Graduate Institute of Medical Education and Research, Chandigarh, India;
²Department of Medical Microbiology, Post Graduate Institute of Medical Education and Research, Chandigarh, India; ³Oral Health Sciences Centre, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Introduction: Existing pharmacological aids for smokeless tobacco cessation offer low quit rates. The oral cavity of tobacco chewers might harbour nicotine-degrading microorganisms, which may be utilised for developing a future alternative tobacco cessation therapy and benefit public health as well as individual patients.

Aim: Identification of nicotine-degrading bacteria from the mouths of tobacco chewers by 16S gene sequencing and gaining further insights into the genetic pathways involved in nicotine degradation.

Methods: Ethical approval was obtained from the PGIMER ethics committee. Snowball sampling was used to identify eight adult tobacco chewers and unstimulated saliva samples were obtained after taking written consent. Samples were inoculated in a nicotine inorganic medium (NIM), with nicotine as sole energy source to know the presence of nicotine-consuming bacterial species in salivary samples. The matrix-assisted laser desorption ionisation time-of-flight mass spectrometry (MALDI-TOF MS) and 16S genome sequencing of DNA extracted from the salivary samples were carried out to identify bacterial species that could grow in NIM. The genetic pathway used by identified species was elucidated using whole genome sequencing and sequence aligning with the available genome sequences at the NCBI database.

Results: All eight participants were males, and the mean age of the participants was 28±10.9 years. The duration of tobacco use was 98.9±92.1 months, and the frequency of tobacco use per day was 5.5±3.2. From the inoculated samples, only a single nicotine-degrading bacterial species was able to grow on the NIM and was identified as *Arthrobacter globiformis* using MALDI-TOF MS and 16S genome sequencing. The potential nicotine degradation pathway used by the identified bacteria was found to be the pyridine pathway.

Conclusions: This study for the first time identified definitive nicotine-degrading bacteria from oral cavity of tobacco users. Further research will be carried out to determine specific genes and intermediate metabolites involved in nicotine degradation to pave way for the development of a new tobacco cessation modality.

Keywords: Nicotine-Degrading Bacteria, Smokeless Tobacco, Tobacco Cessation, Genome Sequencing, Nicotine Inorganic Medium.

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Nishant Nishant email: docnishantmehta@gmail.com

Association of Sweet Taste Perception and Dental Caries among Adolescents of the Belagavi District

Roopali Manohar Sankeshwari^{*}, Anil Ankola
Department of Public Health Dentistry KLEVK Institute of Dental Sciences KLE Academy of Higher Education and Research Belagavi, India

Aims: To study the association of sweet taste perception with the dental caries among 13–15-year-old school children of Belagavi district. Secondly, the association of gender with sweet taste perception and dental caries was determined.

Methods: Ethical clearance and required permissions were obtained from Academy of Higher Education and Research Belagavi. Estimated sample size was 1300. A cross-sectional observational study comprising 1300 schoolchildren aged 13–15 years from Belagavi district, was conducted from August 2023 to January 2024. Two stage random sampling was utilized: -first stage Out of 10 subdivisions, 5 were randomly chosen and four schools from each subdivision were randomly chosen. Details regarding socio demographic dental caries and sweet taste perception of the children were recorded. The sweet taste perception level was determined as sweet taste threshold (TT) and sweet taste preference (TP) using self-designed questionnaire and technique by Furquim et al. Children were grouped into low (1.63–12.84 gm/L), medium (25.67 to 102.69 gm/L), and high (205.38–821.52 gm/L), according to their sweet taste perception level. The International Caries Detection and Assessment System (ICDAS) and DMFS were used to diagnose caries. SPSS software was used to analyse data. Descriptive Statistics, Chi square test and Spearman's rank correlation between Sugar preference and threshold with DMFS was performed.

Results: Among the total, 625(48.1%) were males. Mean age of males was 13.6 ± 0.76 yrs and females 13.5 ± 0.78 yrs. Gender showed significant association with TP (chi square= 24.32, df 2, $p < 0.01$). Mean ST (\pm SD) was 3.65 ± 1.087 , and mean TP (\pm SD) was 6.51 ± 1.55 . Weak correlation was observed between caries experience and sweet perception ($p > 0.05$).

Conclusions: The present study showed weak relation between sweet perception and dental caries and sweet perception differed significantly between either gender.

Keywords: Sweet Taste Perception, Sweet Preference, Dental Caries, Adolescents

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Roopali Manohar Sankeshwari email: drroopali@kledental-bgm.edu.in

EADPH 2024 ABSTRACT 327

Practices Regarding Oral Health among a Group of Romanians Living in Urban versus Rural Areas

Mariana Caramida^{1*}, Ruxandra Sfeatcu¹, Loredana Cristina Dumitraşcu¹, Andreea Drugescu¹, Roxana Oancea², Mihaela Adina Dumitrache¹

¹Oral Health and Community Dentistry Department, Faculty of Dentistry, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania; ²Preventive, Community Dentistry and Oral Health Department, "Victor Babeş" University of Medicine and Pharmacy, Timisoara, Romania

Aim: This study aimed to assess practices related to oral health among Romanians living in urban vs rural areas.

Methods: The cross-sectional pilot study was conducted on a group of 100 Romanian adults, 50 living in urban area (mean age 29.3 ± 8.57) years and 50 in rural areas (mean age 33.5 ± 12.9) years in Argeş County, Romania. They were recruited as convenience sample in January 2023. The Ethics committee of the Carol Davila University approved the study.

Results: Twice daily toothbrushing was performed by 37 (74%) of urban inhabitants and 18 (36%) of rural inhabitants. Dental floss was used in urban area by 28 (56%) of participants with a frequency of 6.3 ± 3.7 time/week, while in rural area by 8 (16%) of participants with a frequency of 5.3 ± 4.1 times/week. Non-alcoholic beverages were consumed at least once a day by 10 (20%) of urban inhabitants and 28 (56%) of rural inhabitants. Both in urban and rural area 19 (38%) of participants smoked daily. Regarding the dental attendance, while in urban area 28 (58%) of participants went to the dentist for regular check-ups and 13 (26%) for dental emergencies, in rural area only 7 (14%) went for regular check-up and 28 (56%) for dental emergencies.

Conclusion: In the group studied, practices regarding oral health were less favourable among rural inhabitants compared to urban inhabitants.

Keywords: Oral Health, Dental Hygiene, Diet, Dental Visits, Social Determinants

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Mariana Caramida email: mariana.caramida@umfcd.ro

EADPH 2024 ABSTRACT 328

From Policy to Plate: A Comparative Study of School Nutrition Policies in Iran and Selected Countries

Mahsa Malekmohammadi*

Community Oral Health Department, School of Dentistry, Kerman University of Medical Sciences, Iran

Aim: Good nutrition in schools is crucial for promoting children's oral health and overall well-being. However, the influence of commercial determinants of health, such as the food and beverage industry, can undermine efforts to implement effective school nutrition policies. School nutrition policies play a pivotal role in shaping the food environment and influencing the dietary behaviours of students. This study aimed to conduct a comparative review of school nutrition policies in four diverse countries: Iran, the United States, the United Kingdom, and Brazil.

Methods: This study utilised a desk-based review of publicly available policy documents and government regulations related to school nutrition programs in the four selected countries. The researchers systematically searched for and compiled relevant policy materials from official government websites, public health organizations, and academic databases. The comparative policy analysis focused on identifying the key similarities, differences, and influential factors shaping the school-based nutrition interventions and guidelines implemented in these national contexts.

Results: The findings revealed significant variations in the policy frameworks, nutritional guidelines, and priorities of school nutrition programs across the four countries. While some nations had centralised, comprehensive approaches, others exhibited more fragmented, decentralised initiatives. The study also highlighted the influential role of the food and beverage industry in shaping school nutrition policies, as well as the importance of aligning these policies with broader health and nutrition strategies.

Conclusion: The comparative analysis of school nutrition policies provides valuable insights for policymakers, public health professionals, and education stakeholders working to improve the nutritional environment and overall health of students in school settings. The research underscores the need for evidence-based, contextually relevant, and multi-sectoral approaches to school nutrition policies to ensure the well-being of schoolchildren across different national and cultural contexts.

Keywords: School Nutrition Policy, Comparative Analysis, Public Health, Commercial Determinants Of Health

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Mahsa Malekmohammadi email: mahsamalek.92@gmail.com

EADPH 2024 ABSTRACT 332

The Importance of Equal Access to Dental Special Care for Sustainable Dentistry

Nataša Pejčić, Ana Vuković, Sara Lukić, Jovana Kuzmanović Pfcifer, Vanja Petrovic
School of Dental Medicine, University of Belgrade, Serbia*

Aim: The aim of this study was to analyse the factors posing challenges from the perspective of sustainable dentistry in patients with special needs undergoing treatment under general anaesthesia (GA).

Methods: This retrospective survey using data from dental records was conducted at the Centre for Special Care Dentistry in the Clinic of Preventive and Paediatric Dentistry, School of Dental Medicine, University of Belgrade, Serbia. No ethics approval was needed as anonymised retrospective data were collected. The participants were patients up to 18 years of age who, due to the nature of disease and cooperation difficulties were treated under GA during 2023. Data were collected on duration of waiting for dental treatment, the distance patients had to travel to the clinic and frequencies of dental visits for regular check-ups.

Results: The study included 117 patients. The average waiting time from the initial dental examination, indicating the need for rehabilitation under GA to the intervention date, was 5.42 ± 2.72 months. Patients travelled an average round trip distance of 149.63 km (minimum 4km, maximum 1086km) for dental treatment under GA. The travel costs averaged 40.00 EUR. The total carbon emissions produced during this travel amounted to 7 tons. More than half of the patients (n=64, 55%) had never received preventive advice, and more than half of the patients (n=62, 53.0%) did not have a dentist caring for their oral health at a health centre.

Conclusion: To ensure sustainable dentistry, it is crucial to emphasise equal accessibility and quality of dental healthcare for individuals with special needs. Providing equitable access to dental services ensures that all members of society, regardless of their abilities or disabilities, can maintain optimal oral health.

Keywords: Special Care Dentistry, Sustainable Dentistry, General Anaesthesia, Oral Health, Dental Care

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Natasa Pejicic email: natasadpejic@yahoo.com

SMILE4LIFE: Attitudes of Serbian Dental Students towards an NHS Oral Health Campaign

Jovana Kuzmanovic Pficer^{1*}, Irena Aleksic-Hajdukovic², Tina Jovancevic², Biljana Milicic³, Ana Vukovic²
¹Department for Medical Statistics and Informatics, School of Dental Medicine, University of Belgrade, Serbia; ²School of Dental Medicine, University of Belgrade, Serbia; ³Department for Medical Statistics and Informatics, School of Dental Medicine, University of Belgrade, Serbia

The Smile4Life campaign was designed in the United Kingdom within the NHS health-promotional campaign Change4Life, to improve the dental health of marginalised socio-economic groups.

Aim: The aim of this pilot study was to examine the attitudes of Serbian dental students towards the *Smile4Life* campaign, which represents an example of good practice and focuses on oral health of the homeless.

Methods: The data were obtained from a random sample of 50 second and 50 fifth-year students at the School of Dental Medicine, University of Belgrade. Students were asked to anonymously complete a specially designed questionnaire with 26 questions. The data were collected by closed and Likert-scale type questions (Cronbach's Alfa = 0.752) and were analysed quantitatively based on the gender and year of study, using the Chi-square and Mann-Whitney tests. As no invasive procedures were performed and the questionnaire was anonymous, it was deemed unnecessary to seek ethics approval for this pilot study.

Results: The respondents were 23 (23%) male and 77 (77%) female students with an average age of 21.9±1.7 years. They showed interest in participating in similar campaigns (86 (86%)). However, they expressed doubt about the adaptation and implementation of similar campaigns in Serbia (not sure: 46 (46%), no: 14 (14%)). The campaign techniques were highly rated by participants (61, 80% of female respondents) and 17, 71% of male respondents) ($p=0.024$). It was found that 27 (54%) of 5th-year dental students were aware of the significance of education and providing oral hygiene products as individual components of the campaign, whereas 35 (70%) of 2nd-year students believed a comprehensive approach was required ($p=0.004$). Both 2nd- and 5th-year dental students (42 (84%) and 41 (82%), respectively) believed a similar campaign should be implemented in Serbia.

Conclusions: The respondents showed a predominantly positive attitude towards the *Smile4Life* campaign and were willing to contribute to society by helping this highly marginalised population group. Nevertheless, the respondents expressed doubts about the implementation of similar campaigns in Serbia and the sustainability of any long-term measures.

Keywords: Campaign, Dental Students, Oral Hygiene, Smile4Life

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate.

Presenter: Jovana Kuzmanovic Pficer email: jovana.kuzmanovic@stomf.bg.ac.rs

Dental Erosion as a Growing Public Health Concern – A Scoping Review

Vanja Petrović*, Nataša Pejčić
School of Dental Medicine, University of Belgrade, Serbia

Aim: Dental erosion, the progressive loss of hard dental tissues caused by acid without bacterial involvement, has emerged as a significant public health issue worldwide. This condition, often driven by dietary acids, gastroesophageal reflux disease, and certain medications, leads to the irreversible destruction of enamel and dentine. The prevalence of dental erosion has increased markedly, particularly among children and adolescents, correlating with modern dietary habits and lifestyle changes. This scoping review aimed to explore the aetiology, prevalence, and preventive strategies associated with dental erosion.

Methods: The scoping review, were performed by accessing papers via the: MEDLINE-PubMed, Google Scholar and the Web of Science databases. They were identified using the following MeSH terms: Dental erosion, Public health, Dietary acids, Enamel, Oral Health. The papers which met the inclusion criteria were evaluated by two reviewers. A total of 24 papers were included.

Results: The review found that the prevalence of erosion in children has been reported as ranging from 10% to over 80%. It highlighted the critical role of dietary acids, such as those found in soft drinks, fruit juices, and sports drinks, in exacerbating dental erosion. Furthermore, it examined the impact of intrinsic factors like acid reflux and vomiting disorders. In the literature, the diagnostic criteria, clinical manifestations, and progression of dental erosion were discussed, emphasising the need for early detection and intervention. Preventive measures, including dietary modifications, the use of remineralising agents, and dental care to protect teeth, are crucial in decreasing the prevalence of dental erosion. Public health initiatives focused on education and awareness can play a significant role in reducing the incidence of this condition.

Conclusions: Given the rising prevalence of dental erosion it is imperative to address this issue through comprehensive public health strategies and individualised patient care. Future research should aim to develop more effective preventive and therapeutic approaches to combat dental erosion and its associated complications.

Keywords: Dental Erosion, Public Health, Dietary Acids, Enamel, Dentine, Prevention, Oral Health

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Vanja Petrović email: vanja.petrovic@stomf.bg.ac.rs

EADPH 2024 ABSTRACT 337

Dental Status and Associated Factors in Two Birth Cohorts Born 20 Years Apart

Otso Tirkkonen^{1,2}, Ville Vuollo¹, Marja-Liisa Laitala^{1,2,3}, Saujanya Karki^{1*}

¹Research Unit of Population Health, University of Oulu, Oulu, Finland; ²The Wellbeing Services County of North Ostrobothnia, Oulu, Finland; ³Medical Research Centre Oulu and Oulu University Hospital, Oulu, Finland

Aim: This study aimed to compare dental status and associated factors in two birth cohorts born 20 years apart.

Methods: The study utilised the data from two birth cohorts from the two northernmost provinces of Finland, the Northern Finland Birth Cohort 1966 (NFBC1966) and the Northern Finland Birth Cohort 1986 (NFBC1986). Clinical oral examination was conducted when NFBC1966 were 45–46-year-olds (n = 1964), and NFBC1986 were 33–35-year-olds (n=1807). Participants in both cohorts were asked to complete an oral health-related questionnaire before clinical examination. Caries lesions were registered using the International Caries Detection and Assessment System (ICDAS) criteria. Any caries lesions with a score of 4 or more were considered as absolute need of restorative treatment and it was considered as an outcome variable. The explanatory variables included socio-economic status, added sugar consumption, oral health-related behaviours, and previous dental visit. Negative binomial regression analyses were performed to explore the association between outcome and explanatory variables and prevalence rate ratio (PRR) were computed. The NFBC1966 and NFBC1986 study protocols were approved by the Northern Ostrobothnia Hospital District Ethics Committee.

Results: Mean DT and FT were 0.98 and 13.33 for NFBC1966 while the respective figures for NFBC1986 were 1.80 and 6.63. Lower educational background, less frequent toothbrushing and current smoking habits were risks for dental caries experience in both cohorts. However, household income and added sugar consumption were not associated with higher dental caries experience in both cohorts. Not visiting dental services (PRR:1.46; 95% CI 1.22-1.73) in the past year was a risk factor for restorative treatment needs only for the older cohort.

Conclusion: The results of this study highlight higher DT among younger cohorts compared to older cohorts. As both cohorts share similar risks despite being born 20 years apart. An oral health promotion programme must still be prioritised for these patients.

Keywords: Dental Caries, Oral Health, Oral Health-Behaviours, Socioeconomic Status

Acknowledgement: We thank all cohort members and researchers who have participated in the study. We also wish to acknowledge the work of the NFBC project centre. The NFBC1966 46y follow-up study received financial support from University of Oulu Grant no. 24000692, Oulu University Hospital Grant no. 24301140, ERDF European Regional Development Fund Grant no. 539/2010 A31592. The NFBC1986 33-35y follow-up study received financial support from University of Oulu (Strategic funding from donations) and Oulu University Hospital (K65760). The oral health study was supported in part by the Research Council of Finland (former Academy of Finland, Grant no. 326189).

Presenter: Saujanya Karki email: saujanya.karki@oulu.fi

Oral Health Perspectives of Primary Health Care Workers- A Qualitative Study

Marjan Hosseini, Afsaneh Pakdaman*
Tehran University of Medical Sciences, Tehran, Iran

Aims The aim of this study was to assess the perspectives of Primary Health Care (PHC) care workers, regarding oral health in rural areas of Kordkooy, Golestan province, Iran.

Methods After obtaining informed consent, focus group discussions took place in health centres with PHC personnel. Two independent researchers coordinated focus group discussions (2 groups of 7 and 2 groups of 6 participants) on oral health delivery in PHC centres. The discussions continued until saturation was obtained. In order to perform content analysis, the content of the discussions was recorded and transcribed verbatim. Codes were extracted by two researchers independently, sub-themes and themes were then extracted.

Results Overall, 26 PHC workers (18 female, 8 male) took part in the study with the mean work experience of 13 years. Less than half of the participants were 34 years and under. The main themes extracted regarding delivery of dental care were; resource limitation, workload, lack of awareness of PHC workers regarding oral health, access, economic barriers. Regarding the challenges regarding oral health prevention, the main themes were; poor knowledge of patients, limited oral health related knowledge of health care workers and human resources.

Conclusion The results of this study suggest that after appropriate training PHC health care workers can deliver oral health advice in remote areas, with emphasis on the role of schools, mothers and patient education.

Keywords: Primary Health Care Worker, Oral Health, Qualitative.

Acknowledgement: We appreciate the cooperation of PHC health care workers in Kordkooy, Golestan province, Iran.

Presenter: Afsaneh Pakdaman email: pakdaman@sina.tums.ac.ir

Parents' Perceptions of the Consent Arrangements for Dental Public Health Programmes in North London: A Qualitative Investigation

Charlotte Jeavons^{1*}, Charitini Stavropoulou², Nicholas Drey²
¹University of Greenwich, Greenwich, United Kingdom; ²City University, London, United Kingdom

Background: School based caries prevention programmes to apply fluoride varnish (FV) to children's teeth operate in many areas in the United Kingdom. Parents must be enabled to provide informed autonomous decision making *prior* to any treatment. Non-response is more common in deprived areas creating inequality. The reason for this is unknown.

Aim: To investigate parents' views, understanding and experience of the FV programme taking place in their child's school.

Methods: Schools participating in the FV programme operating in North London were recruited. Twenty two schools were invited to participate. Nine schools agreed to participate. Parents with children in nursery, reception, or year one, were invited to participate via semi structured interviews and one of four focus groups. Ethical approval was provided by the research ethics committee at City University, London. NHS ethical approval was not required because this was considered an 'audit' of existing provision. Thematic analysis was conducted.

Results: Forty parents were recruited from eight schools. Six themes were identified; protecting children from harm is viewed as a parents' role, parents often lack confidence, parents welcome shared responsibility for oral health with the State, existing social networks strongly influences consent decisions, official dental information is not communicated effectively, information delivered via a letter does not have a strong influence. The global theme of trust was identified as the strongest influence on parental responses.

Conclusions: Parents' understanding of 'evidence' is different from dental professionals. Parents are more likely to respond if they trust the person providing information. Scientific 'evidence based' information sent to parents in a letter has little influence. Parental decision making is relational, and the consent process should be adapted to reflect this. The current system that has a deontology view of decision making at its core, impoverishes parental autonomy and may, ultimately, increase dental inequalities as a result.

Keywords: Consent, Autonomy, Decision-Making, Fluoride Varnish, Inequalities

Presenter: Charlotte Jeavons email: C.Jeavons@gre.ac.uk

Self-Reported Oral Health Status among Immigrant Seniors Living in Norway

Wegdan Hamed Nasser Hasha^{1,2*}, Manal Mustafa¹, Stein Atle Lie³

¹Oral Health Centre of Expertise in Western Norway, Bergen, Norway; ²Faculty of Medicine, Department of Biomedicine, University of Bergen, Norway; ³Faculty of Medicine, Department of Dentistry, University of Bergen, Norway

Aims: To evaluate the self-reported oral health status among senior adults with immigrant backgrounds living in Norway and to investigate the socio-demographic variations related to their oral hygiene and dietary habits.

Methods: The study was approved from Assessment of processing of personal data (517864) and the Regional Ethical Committee (REC/592684). Study participants involved all senior adults with immigrant background living in Bergen, randomly recruited through non-governmental, local immigrant organization, and/or Bergen municipality. Participants responded to the questionnaire self-assessing their oral health and hygiene/dietary habits. Logistic regression and cross tabulation were used to analyse data in SPSS.

Results: Totally 129 senior immigrants participated in this survey (age range=50-70 years, the mean age(±SD)=60.4(±7.2) years. Most of the participants had background from East European (n=64, 49.6%), followed by Asian (n=31, 24%), and African countries (n=26, 20.2%). The study cohort included 89 (68.9%) women, and more than half of them (n=62) have been living in Norway for > 8 years. Smokers involved 22(17.1%) participants. Two thirds of subjects (n=75, 60%) reported missing several or all teeth, while almost one third had halitosis (n=36, 27.9%), and xerostomia (n=42, 32.6%). More than half participants (n=72, 55.8%) described their oral health status as poor. The social network was associated significantly (p<0.03) with the self-reported oral health. High sugar intake associated with poor self-reported oral health (p<0.04). Regular use of dental floss was associated with good self-reported oral health (p<0.04). Logistic regression analysis indicated that more missing teeth were significantly associated with male gender (OR 3.2), shorter residence in Norway (OR 10.0) and restricted social network (OR 2.9).

Conclusions: Shorter residence and a limited social network were identified as indicators of poor self-reported oral health in senior immigrants living in Norway. The findings indicate a critical need to address oral health challenges to mitigate disparities within this population.

Keywords: Immigrant, Oral Health, Missing Teeth

Presenter: Wegdan Hamed Nasser Hasha email: wegdan.hamed.nasser.hasha@vlfk.no

A Case Study for Universal (Oral) Health Coverage: The “100% Santé” Reform Implemented in France in 2019

Laetitia Benezet¹, Stéphanie Tubert-Jeannin^{1,2*}

¹Hospital Research Unit (DRCI), CHU de Clermont-Ferrand, France; ²CROC Research Group, University Clermont Auvergne, Clermont-Ferrand, France

Aim: The aim of this study was to explore if the reform achieved its goal « improving access to dental care for all, by removing financial barriers to prosthetic care”. The objectives are to evaluate the impact of the “100% santé” measures on the number of dental visits, the use of removable dentures, preventive care and periodontal treatments for diabetic patients.

Methods: This study is a case study and is part of the “PRUDENT” EU-funded project. The study period includes the years before and after the “100% santé” reform with an observation of oral health services utilization between 2015 and 2023. The study is based on the analysis of dental claims data of public health funds gathered within the National Health Data System (SNDS). Analyses are descriptive and conducted taking into account the periods impacted by the COVID pandemic.

Results: In France, healthcare coverage is ensured through public health funds, for the entire population. More than 85% of dentists work independently and there is no dental hygienists nor therapists. The dental care payment system is based on a fee per item list, but for some dental treatments, dentists are allowed to set freely their fees which generates high patients out-of-pocket, apart for patients who have adequate supplementary health insurances. Within this context, the “100% santé” reform was implemented in 2019. Since then, all patients are offered prosthetic solutions with no out-of-pocket (RAC0) or with limited out-of-pocket (RAC modéré). The improvement in the level of coverage has been ensured with the implementation of price ceilings for the dentists associated with a better coverage from private voluntary health insurances. The 100% santé also included a rise of the fixed fees namely for prophylaxis or restorative treatments. Moreover, coverage for periodontal treatments was implemented for diabetic patients. Our results indicate that the “100% santé” reform has had an impact on the level of use of dental care with changes in the level and trend of use for prosthetic or prophylaxis treatments.

Conclusion: The “100% santé” reform has had a significant impact on the use of dental care between 2019 and 2023 but further studies are needed to explore if the “100% santé” measures have allowed to lower unmet oral health needs.

Keywords: Universal Health Coverage, Dental Care, Utilisation,

Presenter: Stéphanie Tubert-Jeannin email: stephanie.tubert@uca.fr

EADPH 2024 ABSTRACT 342

Tooth Wear and Periodontal Status in 35-44-year-old Northern Greeks

Charis Theodoridis^{1}, Georgios Menexes², Vasiliki Topitsoglou¹, Sotirios Kalfas¹*

¹Department of Preventive Dentistry, Periodontology, Implant Biology, Faculty of Dentistry, School of Health Sciences, Aristotle University Thessaloniki, 54124 Thessaloniki, Greece; ²Laboratory of Agronomy, School of Agriculture, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

Aims: This observational study aimed to investigate the prevalence of tooth wear (TW) in a cluster of Northern Greek adults aged 35–44 years and additionally, to assess any associations between TW, periodontal condition and sociodemographic factors.

Methods: After ethics approval from the Greek Health Ministry, a cross-sectional study of a sample of 531 individuals, selected by stratified cluster sampling, was conducted. The participants provided informed consent and were clinically examined, according to the WHO (2013) guidelines for national pathfinder surveys, by three calibrated dentists-examiners in different urban and rural areas of Northern Greece. The simplified Tooth Wear Index (TWI) was the primary outcome variable, while Community Periodontal Index (CPI), Attachment Loss (AL) and simplified Oral Hygiene Index (OHI-S), in terms of plaque index (DI) and calculus index (CI), were recorded and calculated for each individual. Statistical analyses were performed with the IBM SPSS statistics v.23.0 and the significance level was set at $\alpha=0.05$ ($p\leq 0.05$).

Results: Of the 531 dentate individuals, who were examined, in seven urban and four rural areas, 265 (49.9%) were males, and 266 (50.1%) were females. Although patient-level TW was found to be nearly universal, 25,579 (91%) tooth surfaces, out of 28,096 surfaces, presented with “absence of TW” or “enamel TW only”. All the aforementioned periodontal indices (CPI, AL, DI, CI) were correlated significantly with TW ($p<0.001$). The age of an individual was also correlated significantly ($p<0.001$) with TWI. Moreover, statistically significant associations ($p<0.001$) in TWI scores were detected regarding educational level and population type.

Conclusions: In the population of 35-44-year-old Greeks studied, the findings were consistent with high TW prevalence. Increased age, male gender, low education and rurality were some socio-demographic factors indicative of greater wear. Additionally, at a patient level, a positive interrelation was identified between TW and periodontal status.

Keywords: Tooth Wear, Tooth Wear Index, Periodontal Index Attachment Loss, Oral Hygiene, Adults 35–44 Years, Periodontal Status, Socio-Demographic Factors

Presenter: Charis Theodoridis email: ht_auth.dent@yahoo.com

Starch Intake and Changes in Dental Caries among Finnish Adults

Fariah Hanif Jangda^{1}, Anna Lisa Suominen², Satu Männistö, Ali Golkari¹, Eduardo Bernabé¹*
¹Institute of Dentistry, Queen Mary University of London, London, United Kingdom; ²Institute of Dentistry, University of Eastern Finland, Kuopio, Finland; ³National Institute for Health and Welfare, Helsinki, Finland

Aims: To evaluate the association between baseline starch intake and changes in dental caries among adults over 11 years.

Methods: The Ethics Committee at the Hospital District of Helsinki and Uusimaa approved each survey and written informed consent was obtained from all participants. We pooled data from adults aged 30 years and over who participated in the national Health 2000 survey in Finland and at least one out of two follow-up surveys (2004/05 Follow-Up Study on Finnish Adults' Oral Health and Health 2011). Participants completed a validated semi-structured 128-item food frequency questionnaire at baseline, from which total starch intake (g/day and percent of energy intake) and the intake (g/day) of seven food groups high in starch (potatoes, fried potatoes, roots and tubers, refined grains, wholegrains, pasta and legumes) were estimated. Dental caries was assessed during clinical examinations carried out in mobile examination centres in every survey and summarised using the DMFT score. The association between baseline starch intake and the 11-year-change in DMFT score (treated as a repeated outcome) was tested in linear mixed-effects models adjusting for sociodemographic factors, behaviours and health status.

Results: Of 1890 dentate adults, aged between 30 to 79 years, with data on dental caries at baseline and at least one follow-up survey, 1679 adults (88.8%) were included in the analysis. The mean DMFT score was 21.9 (95% CI: 21.6, 22.2) in 2000, increasing by 0.47 (95% CI: 0.38, 0.56) in 2004/05 and additionally by 0.33 (95% CI: 0.20, 0.45) in 2011. Baseline starch intake was not associated with the change in DMFT score. Of all food groups evaluated, only the intake of pasta was inversely associated with the DMFT score at baseline, but not with the change in DMFT over time.

Conclusions: Neither the amount nor the type of starch intake was associated with changes in dental caries over 11 years among Finnish adults.

Keywords: Dental Caries, Starch, Adults

Presenter: Fariah Hanif Jangda email: f.jangda@qmul.ac.uk

Sugar-Sweetened Beverages Tax as a Policy to Reduce Caries in Italy. A Modelling Study

Demetrio Lamloum^{1}, Marco Dettori², Antonella Arghittu², Maria Grazia Cagetti³, Paolo Castiglia²,
Guglielmo Campus¹*

*¹Department of Restorative, Paediatric and Preventive Dentistry, University of Bern, Bern, Switzerland;
²Department of Medicine, Surgery and Pharmacy, University of Sassari, 07100 Sassari, Italy; ³Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy*

Introduction: Many studies have documented the negative health effects of excess sugar consumption, including obesity, diabetes, and dental caries. Public health experts are exploring ways to reduce peoples' sugar consumption. Sugar-Sweetened Beverages (SSB) taxes have emerged as a policy tool. From July 2025, The Italian government will introduce a SSB tax.

Aim: This study investigated the impact of a SSB tax on caries prevalence among 12-year-old children in Italy. It examined historical epidemiological data and projected the effects of a hypothetical tax implemented in 2008, as well as the tax scheduled for 2025.

Methods: The study used an open cohort Markov chain to evaluate the health and economic outcomes of a 20% ad valorem SSB tax. Two scenarios were compared using data from Italian oral health national epidemiological surveys of 2007 and 2017. Scenario 1 was from 2008 to 2017 and Scenario 2 from 2025 to 2034. The models considered the prevalence of caries experience as DMFT and direct, and indirect costs. It assumed a 100% pass-on rate to consumers. A 3% annual discount rate was applied for costs. Analyses include regional variations for Italy and projected the tax's impact on caries reduction and cost savings. A probabilistic sensitivity analysis using Monte Carlo simulation was performed with 1000 iterations to test model robustness, estimating means and 95% uncertainty intervals.

Results: The results indicated that implementing a SSB tax in Italy in 2007 would have reduced DMFT by 0.03 and saved €16.7 million in costs. While, the future projection estimated a reduction in caries by 0.04 and cost saving of €22 million over ten years. Southern Italy showed a significant reductions in both DMFT and costs.

Conclusion: The implementation of a SSB tax can reduce caries and healthcare costs, especially in socio-economically disadvantaged areas. The study emphasises the need for policymakers to integrate a SSB Tax with other preventive measures to maximise health benefits.

Keywords: Caries, Sugar-Sweetened Beverage, Tax, Oral Health, Italy, DMFT, Children

Presenter: Demetrio Lamoum email: demetrio.lamoum@students.unibe.ch

EADPH 2024 ABSTRACT 345

Publication Rate of Abstracts Presented in EADPH Congresses Held between 2013 and 2019: A Bibliometric Study

Hannu Vähänikkilä*, Pentti Nieminen

Northern Finland Birth Cohorts, Arctic Biobank, Infrastructure for Population Studies, Faculty of Medicine, University of Oulu, Oulu, Finland

Aims: The presentation of congress abstracts is important because abstracts provide information on research trends and priorities. The publication of research results in a scientific journal after the meeting will increase the dissemination of new knowledge to a wider audience. The aim of this study was to investigate the publication rates of the abstracts presented at EADPH congresses between 2013-2019 and determine the factors associated with publication rates.

Methods: The abstracts presented at seven EADPH congresses held between 2013-2019 were evaluated for study design, number of authors, if artificial intelligence (AI) predictive methods were used, if *p*-values or confidence intervals were presented and the country of the corresponding author's institution. When the abstract was confirmed as subsequently published, time to publication, the journal in which the abstract was published and changes in number of authors after publication were determined. Data were statistically analysed by chi-square tests.

Results: Two hundred and sixty of 651 presented abstracts were published with a publication rate of 39.9%. The lowest publication rate was in 2013; 29.3% and highest publication rate was in 2018; 47.2%. Nevertheless, there was no statistically significant differences between years ($p=0.086$). The journals most frequently published in were *Acta Odontologica Scandinavica* ($n=19$), *BMC Oral Health* ($n=18$) and *Community Dental Health* ($n=13$). The mean duration of time to publication was 1.9 years. Background factors had no predictive value for the publication rate of abstract types.

Conclusions: Only 40% of the abstracts were published. The visibility of the studies presented in the congresses and their dissemination to the scientific community should be improved.

Keywords: Bibliometrics, Abstracts, Publication Rate

Acknowledgement: Supported by Finnish Dental Society Apollonia.

Presenter: Hannu Vähänikkilä email: hannu.vahanikkila@oulu.fi

EADPH 2024 ABSTRACT 346

Tooth Shame: Understanding and Addressing Shame in Odontology

Louise Folker^{1,2}, Astrid Pernille Jespersen², Esben Boeskov Øzhayat²

¹Copenhagen Centre for Health Research in the Humanities (CoRe), Saxo Institute, Faculty of Humanities, University of Copenhagen, Denmark; ²Section of Community Dentistry, Department of Odontology, Faculty of Health and Medical Sciences, University of Copenhagen, Denmark

Aim: The aim of this study was to investigate oral health-related shame in older persons in vulnerable situations.

Methods: The study took place in two municipalities in the Copenhagen region of Denmark from September 2021 to June 2022. A qualitative approach was used to investigate tooth shame in older persons receiving municipal care in care homes or their own homes. The fieldwork consisted of 23 in-depth semi-structured interviews with older persons and 8 with relatives, 14 focus group interviews with care workers, dental care workers, and managers, and 35 days of participant observations. All informants were recruited by convenience sampling from two municipalities, and all provided consent before the interviews. The study was approved by the ethics committee at University of Copenhagen (504-0241/21-5000).

Results: Tooth shame was found to be both a consequence and a determinant of oral health problems. As a consequence oral health issues caused shame, which had psychological and social implications in the older persons' lives. Shame made the older persons adapt to the oral health issues by avoiding social interactions. Further, tooth shame was found to be a socio-economically distributed phenomenon drawing care workers and relatives into shame situations. It was a determinant because it acted as a barrier to both daily oral care and the use of the oral care system. Tooth shame in this regard interfered with daily oral care practices, professional oral care, and led to ethical dilemmas.

Conclusions: The duality of tooth shame can turn into a self-reinforcing spiral, where shame about oral health issues can lead to poor oral health behaviours, which can intensify oral health issues, leading to more shame. As social class issues and low personal income contribute to tooth shame, it is particularly crucial to address tooth shame regarding oral health disparities, to promote oral health equity.

Keywords: Oral Health, Shame, Older Persons, Elderly Care, Qualitative Methods

Acknowledgement: Supported by Velux Foundation (00040212)

Presenter: Esben Boeskov Øzhayat email: eboz@sund.ku.dk

EADPH 2024 ABSTRACT 347

Dental sessions of disabled patients under general anaesthesia during COVID-19 pandemic

*Aikaterini Dimitriou**, *Flora Zervou-Valvi*, *Ioannis Fandridis*, *Angeliki Giannopoulou*
Dental Department – Unit of Adults with Special Needs, “Asklepieion Voula’s General Hospital”, Athens, Greece

Aims: The Aim of this study was to investigate the impact of the Covid-19 pandemic on service provision under general anaesthesia (G.A.) at the Asklepieion Voulas' Hospital Dental Department.

Methods: Retrospective analysis of patient records for the three-year period of the pandemic (1/3/2020-28/2/2023) and the three year period before the pandemic (1/3/2017-29/2/2020) was performed for the following variables: number of dental sessions performed under G.A., number of sessions involving first time patients versus those of recall patients, number of procedures by service group and number of sessions of patients with no decay versus those with decay. All patients with disabilities treated under GA were included. The findings were analysed using descriptive statistics.

Results: In the 3 years before the pandemic 476 sessions were performed, while in the 3 year pandemic period 377 were performed. A reduction of 20.8% of the number of surgery sessions. Male patients' attendances were higher than those of females before and during the pandemic. (before the pandemic 292 male/184 female and during the pandemic 239 male/138 female.) The decrease of male patients' admission in the pandemic was 18.15% while for female patients it was 25.00%. First time patients' services decreased by 13.88% (209 before-180 during the pandemic), while recall patients' services decreased by 26.22% (267 before-197 during the pandemic). The decrease in procedures for the tooth decay patients' group was only 15.98% (403 before -339 during the pandemic) compared to the no decay patients' group that reached 47.95% (73 before-38 during the pandemic). Before the pandemic 1391 fillings, 1275 extractions and 51 root canal therapies were carried out. During the pandemic 1055 fillings, 958 extractions and 44 root canal therapies were carried out.

Conclusions: The decrease of the total number of dental procedures for patients with disabilities during the pandemic in “Asklepieio Voulas” Hospital was due to special measures in order to free up health staff to be available for managing COVID-19 cases more effectively. More male than female patients were treated since the Unit was established and more research is needed to understand the causes of this discrepancy and identify any possible gender gap in service provision. A portion of the decrease of recall patients, as well as the lower number of cases admitted without decay, can be attributed to the fear of contracting Covid during hospitalisation. Hence only the most severe/urgent cases sought hospital treatment.

During this difficult pandemic period the dental department of “Asklepieio Voulas” maintained the bulk of its services and fulfilled its significant social role as a last resort service provider to one of the most vulnerable groups of disabled adults.

Keywords: disabled patients, COVID-19, special care dentistry, dental treatment, general anaesthesia.

Presenter: Aikaterini Dimitriou, email: katdim1@hotmail.com

Dental Care Problems for Children with Disabilities after the Greek Financial Crisis – A Qualitative Study

Evangelos Liappis, Chrysi Papadeli, Adamantia Filippou, Sotirios Kalfas*
School of Dentistry, Aristotle University of Thessaloniki, Greece

Aims: According to the World Health Organization, there are more than a billion children with disabilities worldwide. In 2017, all member states of the European Union reported that the children of families with net annual income of less than 60% of the mean per capita income for their state had unfulfilled medical and dental needs. The present study aimed to examine parents' and guardians' experience regarding dental problems of disabled children during period after the financial crisis in Greece.

Methods: The parents and guardians of disabled children who attended four special-needs schools in Thessaloniki (2 junior & 2 senior high schools) were invited to be interviewed. Twenty agreed to be interviewed. After obtaining approval from the School of Medicine at the Aristotle University of Thessaloniki and parental consent, the interviews were audio recorded, transcribed and assessed by all the authors of this abstract. After member checking of the abstracts by the interviewed parents or guardians, a response analysis was carried out with thematic analysis.

Results: The analysis of the interviews found that: first and foremost, the diagnosis of a child's disability is a shocking turning point in parents' and guardians' lives. Also, erosion of family unity is a possible outcome, along with difficulties in managing bureaucracy regarding the access of disabled people in public health care. Financial difficulties, as well as the parents' or guardians' inability to detect an oral pathology directly affect the child's oral health. Unfortunately, they usually suffer a psychological burden and expressed their need for an individualised approach based on their children's type and severity of disability.

Conclusions: In the group studied, parents and guardians seemed to be worried about their disabled children's future. They felt that they were being treated unfairly and faced financial difficulties and bureaucratic and accessibility obstacles. More efforts needed to take place in order to improve disabled children's lives and their dental care. A specially designed public dental care programme has to be established to address these problems.

Keywords: Dental Care, Disabled Children, Greece, Financial Crisis

Presenter: Evangelos Liappis email: evaggelosliappis@gmail.com

Effects of Dietary Intervention on Dietary Behaviours: A Randomized Controlled Trial

Annie Guo, Ulla Wide, Magnus Hakeberg*

Department of Behavioural and Community Dentistry, Institute of Odontology, Sahlgrenska Academy, University of Gothenburg, Sweden

Aims: This randomized controlled trial (RCT) aimed to improve the overall diet in young adults with high caries activity with a novel dietary intervention provided by a dietitian in a dental care setting; more specifically, to improve the quality of the diet and reduce the intake of sugary drinks and snacks.

Methods: The study was approved by the Swedish Ethical Review Authority (reg. no. 185-16; reg. no. T860-18). All participants provided written informed consent to participate. The study included 73 participants recruited from a public dental clinic (2021), aged 18-30 years and with \geq two decayed tooth surfaces. While the participants randomly allocated to the intervention ($n = 37$) received a patient-centred dietary intervention provided by a dietitian, the control group ($n = 36$) received standard care. Data on diet quality measured by the Healthy Dietary Adherence Score (HDAS) and intake of sugary drinks and snacks were collected at baseline and at the 13-week follow-up. Intention-to-treat and per protocol analyses were performed and the CONSORT principles were followed. To assess the difference between the intervention and the control group and the effect between baseline and follow-up, the Mann-Whitney test, the Wilcoxon Signed Rank test, and the General Linear Model were applied.

Results: The intervention group improved their diet quality (HDAS score increased from 19.6 at baseline to 22.4 at follow-up ($p=0.05$)), and reduced intake of sugary drinks between baseline and follow-up, from 15.7 servings/week to 11.3 servings/week ($p = 0.002$). There was no significant difference between the groups over time. No significant difference was found regarding snacks.

Conclusions: A novel patient-centred dietary intervention provided by a dietitian within the dental care setting significantly improved the overall diet quality and reduced the intake of sugary drinks at the 13-week follow-up among young adults with high caries activity.

Keywords: Behaviour intervention, young adults, dietitian, randomized controlled trial, dental caries

Presenter: Ulla Wide email: ulla.wide@gu.se

EADPH 2024 ABSTRACT 351

Behavioural Pathway Between Social Support and Network, and Edentulism

Fatimah Alobaidi, Ellie Heidari, Wael Sabbah*
King's College London, London UK

Aims: To assess how behaviours cluster together and examine the relationship among these clusters, social support and network, socioeconomic factors and edentulism.

Methods: Data on social factors (Wave 3), behaviours (Wave 5), and edentulism (Wave 7) were extracted from the English Longitudinal Study of Ageing (ELSA) database. ELSA is based on respondents from the Health Survey for England (HSE). The survey uses multi-stage stratified sampling, dividing the population into strata and randomly selecting with computer-generated techniques for comprehensive representation. Baseline demographics (gender, ethnicity, age) were included. The response rate at the baseline was 73%. Latent class analysis (LCA) was conducted on four behaviours (smoking, alcohol intake, fruit and vegetable consumption, physical activity). Confirmatory factor analysis was used to create social support and network, and socioeconomic status latent variables. Two models of structural equation modelling (SEM) were constructed to assess the direct and indirect effect of latent variables on edentulism. ELSA Ethical approval was granted by the Multicentre Research and Ethics Committee. The survey is publicly available and ethical approval from King's was not required.

Results: A total of 3,087 participants were included. In LCA, two-class model was chosen as class 1 (risky) and class 2 (healthy). In SEM model, social support and network was not linked directly to edentulism, but higher social support and network predicted being dentate indirectly through cluster of behaviours (Standardized coefficient (SC)= 0.1). The second model accounting for socioeconomic status showed that social support and network were not associated with edentulism, but higher socioeconomic status predicted directly (SC= 0.2) and indirectly (SC= 0.1) being dentate. In both models, behaviour clusters were associated with edentulism.

Conclusions: The result showed that cluster of behaviours mediate the relationship between social support and socioeconomic status, and edentulism. Actions to improve socioeconomic conditions might affect changing behaviours and improved oral health.

Keywords: Aging, Dentition, Health Behaviour, Latent Class Analysis, Structural Equation Modelling, Social Factors, Socioeconomic Factors

Presenter: Fatimah Alobaidi email: fatimah.alobaidi@kcl.ac.uk

EADPH 2024 ABSTRACT 352

Commercial Determinants and Sugar Consumption Patterns in Chile: A Systems Thinking Approach

Yanela Aravena-Rivas^{1}, Richard Watt¹, Anja Heilmann¹, Tom Broomhead², Georgios Tsakos¹*
¹Department of Epidemiology & Public Health, University College London, UK

Aim: To determine the role of commercial determinants of health in shaping population sugar consumption patterns in Chile.

Methods: A causal loop diagram was created based on 14 semi-structured interviews with selected stakeholders (government, civil society, international organisations and researchers) and documents from different sources (Congress, newspapers and private actors) that covered key areas of decision-making and implementation of policies shaping sugar consumption patterns in Chile between 2007 and 2022. A rapid qualitative methodology employing a systems thinking framework was used to extract and triangulate the data to construct the causal loop diagram. The UCL Research Ethics Committee granted ethical approval and interviewees provided informed consent.

Results: High-in-sugar food industries attempted to influence sugar consumption patterns through five mechanisms: manufacturing processes; corporate social responsibility; marketing; political coalitions; and funding of research. The presence of reinforcing feedback loops further increased the industry influence over purchasing decisions at the population level, the social acceptability of their brands and products, their political influence in public health policymaking, and reduced their perceived responsibility in sugar-related health conditions. Diversity within the food industry also increased their social and political presence in the country and the difficulty of regulatory efforts. The discrepancy in the speed of industry's innovation efforts and the updating of regulatory policies aiming to decrease sugar consumption reduced policy effectiveness and created opportunities to strengthen commercial interests through the mechanisms identified.

Conclusions: In the population studied, actions of the high-in-sugar food industries aimed to create a social and political environment that promotes purchasing of high-in-sugar products which lead to excessive sugar consumption, highlighting the relevance of commercial determinants. Considering the mechanisms and reinforcing loops in place, a diverse range of upstream policies are necessary to balance industry influence and promote healthier eating patterns in Chile.

Keywords: Sugar, Commercial Determinants of Health, Systems Thinking, Chile

Acknowledgements: ANID - Becas Chile PhD Scholarship ID-72210219.

Presenter: Yanela Aravena-Rivas email: yanela.aravena@ucl.ac.uk

EADPH 2024 ABSTRACT 353

Guidelines for Reporting Oral Epidemiologic Studies to Inform Burden Estimation (GROESBE)

Eduardo Bernabé¹, Candy Salomón^{1}, Wagner Marcenes²*

¹Queen Mary University of London, London, United Kingdom; ²Affordable Health Initiative

Aims: To conduct a Delphi study to produce recommendations for reporting descriptive studies on untreated caries, severe periodontitis and edentulism.

Methods: The Research Ethics Committee of Queen Mary University of London (QMERC23.155) approved the protocol. An electronic search of existing standards for reporting descriptive studies, quality assessment tools and core outcome sets was initially conducted to identify potential items and their rationale for inclusion. Thereafter, 27 panellists with experience in conducting, analysing and/or utilising oral health surveys for research and/or policy were recruited from both academic and non-academic backgrounds. Panellists provided informed consent before participation. They completed two rounds of anonymized online questionnaires, ranking potential items in terms of relevance (9-point scale) and providing suggestions for revisions and relevant resources. Data were collected between February and May 2024. Scores were summarised quantitatively (mean, standard deviation, median, and interquartile range). Open-ended responses were summarised qualitatively, and items were revised accordingly. Consensus was reached when at least 14 (51%) of the panellists agreed on the item inclusion. Two online group discussions addressed areas of residual dissent and agreed on the items' final version.

Results: Twenty-seven out of 56 individuals invited (48%) expressed interest in participating. The panel was geographically diverse (26 countries across the 6 World Health Organization regions). Fourteen panellists (52%) were female, 23 (85%) from academic institutions and 6 (22%) from the Global Burden of Disease (GBD) collaborators network. Of the 27 panellists, 23 completed both surveys. A high level of agreement was achieved, with between 14 (61%) and 22 (96%) panellists giving scores of 8 or 9 to all items.

Conclusions: The GROESBE guidelines added 14 specific recommendations to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines, which will facilitate the clear and transparent reporting of emerging prevalence and incidence data on common oral conditions.

Keywords: Dental Caries; Periodontal Diseases; Tooth Loss; Mouth, Edentulous; Prevalence; Incidence; Guideline; Burden of Disease; Epidemiology.

Acknowledgement: Medical Research Council [grant: MR/X011208/1].

Presenter: Candy Salomón email: c.salomon@qmul.ac.uk

Enamel Defects in Children with Celiac Disease: A Systematic Review

Aikaterini Iliana Georgiadou¹, Nikoleta Kagioglou², Menelaos Anastasopoulos², Konstantinos Arapostathis¹, Vasiliki Boka¹

¹School of Dentistry, Department of Paediatric Dentistry, Aristotle University, Thessaloniki, Greece; ²School of Dentistry, Aristotle University, Thessaloniki, Greece

Aim: Celiac disease (CD) is a chronic autoimmune enteropathy triggered by gluten ingestion, which affects 1% of the global population. Oral manifestations, including enamel defects (ED), are common and may serve as early diagnostic criteria. This systematic review aims to analyze the prevalence of ED in children with CD, compared to healthy controls, highlighting the public health importance of early detection by dental professionals.

Materials and Methods: Following the PRISMA guidelines, a comprehensive search was conducted across 13 electronic databases (PubMed, Scopus, ScienceDirect, Google Scholar, Web of Science, Ovid, BMJ evidence-based medicine, proQuest, Grey-lit.org, Ethos, Lillivo, Clinical trials gov, Meta register of controlled trials) to identify relevant studies according to specific eligibility criteria. The PECO question was formulated as follows: Population: human subjects ≤18 years old; Exposure: diagnosed with CD; Comparison: healthy controls; Outcome: prevalence of ED. Two independent reviewers screened and selected studies, performed data extraction, and assessed the risk of bias using the MINORS tool. This review primarily utilized a qualitative approach to synthesize the findings from the selected studies. Rather than performing statistical analyses, the focus was on describing and interpreting the patterns and trends observed in the prevalence of ED among children with CD as reported across different studies.

Results: The initial search yielded 2374 articles and after screening 20 studies met all the eligibility criteria. The findings from these studies consistently indicated a higher prevalence of ED in children with CD compared to healthy controls, based on the qualitative synthesis of the reported data. However, without statistical analysis or p-value calculations in this review, we emphasize the descriptive and thematic insights gathered from the literature, which point to a consistent association between CD and ED in the pediatric population. The MINORS tool indicates generally moderate to high methodological quality across the included studies.

Conclusions: Children with CD have statistically significant higher possibility of exhibiting ED in their teeth, compared to healthy children. Pediatric dentists play a crucial role in early detection, aiding in the early diagnosis of CD. This study shows the importance of integrating dental health checks into public health strategies to address the burden of celiac disease.

Keywords: celiac disease, coeliac disease, enamel defects, dental defects, oral manifestations

Presenter: Aikaterini Iliana Georgiadou email: kellygeorgiadou@yahoo.gr

Associations Between Caries-Related Diet Knowledge and Sugar Consumption in Parents and Children

Indre Stankeviciene^{1*}, Lina Dziaugyte¹, Gabriele Simenaite¹, Kotryna Cekuolyte², Egle Lastauskiene²
¹Institute of Dentistry, Faculty of Medicine, Vilnius University, Vilnius, Lithuania; ²Institute of Biosciences, Life Sciences Centre, Vilnius University, Vilnius, Lithuania

Aims: This study aimed to investigate the relationship between parents' knowledge about caries-related diet and their and their children's sugar consumption levels.

Methods: The approval for the study was obtained from the Vilnius regional bioethics committee, and all participants signed informed consent forms. This cross-sectional study utilized a convenience sample of 457 (response rate 58.2%) parents of seven-year-old children attending 11 primary schools in Lithuania. The data were collected in 2022-2023 via questionnaires designed by the authors used to calculate the Knowledge of Caries Related Diet Score (KCRDS). Data on consumption frequency of nine food types rich in sugar (biscuits, buns, jams and different types of sugary drinks) were used to calculate parental Sugar Consumption Frequency Score (SCFSp) and SCFSc for children. Parents were categorised in age groups by dividing the age range into three almost equal groups: younger, middle, and older. Data were analysed using IBM SPSS 27.0 package, the Kruskal-Wallis test and Pearson's correlation coefficient were applied. Results were considered statistically significant when $p < 0.05$.

Results: After exclusion of cases with missing answers, 367 (80.3%) questionnaires were included. The majority of parents were females (n=333, 90.7%), from urban areas (n=239, 65.1%), with a mean age(\pm SD)=36 \pm 5.0 years. The mean KCRDS(\pm SD) was 3.8(\pm 1.8). The mean SCFSp(\pm SD) was 12.5(\pm 6.6) and SCFSc(\pm SD)=13.4(\pm 5.2). The KCRDS statistically significantly differed in parental age groups: the median scores in the younger age group were 4.0, middle=4.0, and older=2.2 ($p<0.01$). SCFSp was highest in younger (13.4), followed by middle (11.8), and lowest in the older age group (8.9) ($p<0.05$). There was a positive correlation between SCFSp and SCFSc ($\rho = 0.45$, $p<0.01$), but no significant relation between KCRDS and SCFSp or SCFSc.

Conclusions: Although younger participants had higher caries-related-diet knowledge, older consumed less sugar. Sugar consumption was positively correlated between parents and children, but not with knowledge levels.

Keywords: Dental Caries, Sugar, Knowledge, Children, Adults

Presenter: Indre Stankeviciene email: indre.stankeviciene@mf.vu.lt

Supported by The Borrow Foundation and Vilnius University.

EADPH 2024 ABSTRACT 356

Assessing Oral Health Knowledge of Paediatricians, Physiotherapists, Nurses, Midwives and Speech Therapists

Bossouf Abid¹, Sabourin Céline¹, Giraudeau Nicolas¹, Inquimbert Camille^{1,2}*

¹Department of Public Health, Dental School, University of Montpellier, France; ²Institut Desbrest d'Epidémiologie et de Santé Publique, IDESP UMR UA11 INSERM, Université de Montpellier, France

The link between oral health and general health is well established. Today, healthcare professionals play a central role in the prevention and promotion of oral health. Several surveys have been carried out to assess the oral health knowledge of healthcare professionals in France.

Aims: The aim was to assess the state of knowledge and clinical attitudes of healthcare professionals regarding oral health. Secondary, to propose and implement measures to improve literacy.

Methods: The approval of the institution's ethics committee was obtained on 20 October 2022. These studies are based on a questionnaire comprising a common section: socio-demographic data, knowledge between oral health and general health, prevention, prophylaxis and nutrition. And a section specific to each profession: mouth breathing, sleep apnoea, paediatric tongue tie, obstetric complications during pregnancy. The data collected during 2023 and 2024, relates to the socio-demographic characteristics of the participants, their initial training in oral health and preferences for actions to develop to educate professionals and patients (video, online training, round table, etc.) about oral health.

Results: The rate of correct answers to questions on oral/general health was 87.6% for physiotherapists, 85.7% for paediatricians, 84.6% for speech therapists, 75.8% for midwives and 72.4% for nurses. It was observed low level of correct answers regarding importance of fluorides in oral hygiene from early childhood (average of correct answers: 44.9%). The links between oral health and general pathologies (diabetes, cardiovascular disease, etc.) are not always well understood. Only 54.1% of nurses and 47.9% of midwives were aware that oral bacteria can reach the amniotic fluid and cause infections in pregnant women. Regarding children's respiratory problems and the impact on facial growth, the results were varied: 33.2% of nurses; 56.9% of midwives; 94% of physiotherapists; 97% of speech therapists; and 94.7% of paediatricians had the right answer.

Conclusions: As a result of these findings, measures will be put in place to improve the literacy levels of healthcare professionals. And actions to promote oral health will continue in the field and through digital media.

Keywords: Oral Health; Public Health; Knowledge; Attitude; Interprofessional

Presenter: Camille Inquimbert email: Camille.inquimbert@umontpellier.fr

Overall Patient Satisfaction with Posterior Monolithic Zirconia Crowns After Five-Years in Function

Aikaterini Mikeli^{1,2*}, Vadim Kopzon¹, Stefanie Anke Rau^{1,3}, Michael H. Walter¹, Michael Raedel¹
¹Department of Prosthodontics, Medical Faculty, University Clinic Carl Gustav Carus, Technical University of Dresden (UKD), Dresden, Germany; ²Department of Prosthodontics, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece (NKUA), Athens, Greece; ³Faculty of Medicine and Dentistry, School of Dentistry, University of Alberta, Edmonton, Canada

Aims: Monolithic zirconia for manufacturing single crowns is already widely used in clinical practice, because it combines the advantages of minimal tooth reduction with good aesthetics. Long-term clinical studies focusing on patient satisfaction of posterior monolithic zirconia single crowns (MZSC) on natural dentition are rare. The aim of this prospective study was to evaluate the Oral Health-related Quality of Life (OHRQoL) and patient satisfaction of posterior MZSC on natural teeth after 5 years in function.

Methods: Patients from the Prosthetic Department of the University of Dresden's Dental school, who had received at least one posterior MZSC, (CERCON ht: DeguDent GmbH, Hanau, Germany) since 2018, were recruited for the study. Ethical approval was obtained from the responsible ethics board (EK 104042012). The clinical performance of the crowns was evaluated at follow-up appointments 1, 2, 3, 4 and 5 years after insertion. The overall patient satisfaction was measured using a visual analogue scale (VAS). The OHRQoL was measured using the validated German version of the Oral Health Impact Profile 14 (OHIP-G14). Descriptive statistical methods were applied. Mean values were calculated and compared using a paired t-test ($p < 0.05$).

Results: Thirty patients had received a MZSC (14 (46.6%) premolars, 16 (53.3%) molars). Five years after insertion, 16 (53.3%) patients could be examined, and their crowns were still in function. The 5-year survival and success rate was 94.7% (CI=85.2%-100%). The OHRQoL measured by the OHIP-14 had not changed significantly from baseline to the 5-year follow-up ($p = 0.810$). After insertion a distinct improvement in patient satisfaction was constantly measured up to 5 years ($p = 0.191$).

Conclusions: In the population studied, in this prospective cohort study, posterior MZSCs lead to an enhanced patient satisfaction up to 5 years after insertion, demonstrating a good long-term success and offering an alternative to conventional metal ceramic crowns. This finding should inform clinicians' clinical decision making.

Keywords: Single Crowns, All-Ceramic Restorations, Monolithic Zirconia, Prospective Cohort Study, Patient Satisfaction

Presenter: Aikaterini Mikeli email: amikeli@dent.uoa.gr

Differences in Waiting Time to Receive Dental Care from the Finnish Public Dental Service

Jari Linden*
Finnish Consulting Group Ltd., Helsinki, Finland

Aim: In Finland, the care guarantee legislation came into force in 2005. It obliges the Public Dental Service (PDS) to begin a person's treatment inside a given time-limit, which is within six months from initial contact with the clinic. This study aimed to survey differences in waiting time to care between five PDS units after the reform.

Methods: Using people's unique identifiers, data on patients, their date of initial contact and date of dental visits were collected from the municipal databases in five PDS-units, which had treated a total of about 320,000 inhabitants, between 2005 and 2013. The National Institute for Health and Welfare gave ethical approval. Permission to use local data was received from the directors of the PDS units. All patients that had at least one initial contact and following visits were included. The annual mean waiting time to acute care and non-urgent care was calculated.

Results: There were 135,820 patients who made 624,549 initial contacts followed by a visit during 2005-2013. In the first contact 13% (78,386) patients were assessed to need acute care and 87% (546,167) need non-urgent care. The mean waiting time for acute care varied from 0.8 to 10.7 days and there was no observable trend. In non-urgent care the mean waiting times varied from 5.6 to 55.5 days in 2005, the longest waiting times were in 2011; from 79.5 to 328.1 days.

Conclusions: There were great differences between PDS-units in patients' waiting time to acute and non-urgent care. Four of the PDS-units managed the care guarantee, but one unit didn't meet the obligations in four years.

Keywords: Dental Care, Waiting Time, Register Study

Presenter: Jari Linden email: jari.linden@gmail.com

EADPH 2024 ABSTRACT 360

Validity and Reliability of the Greek Version of Child's Perception Questionnaire for 8-10-year-olds

Lambrou Panayioulou, Arapostathis Konstantinos, Kotsanos Nikolaos, Boka Vasiliki, Arhakis Aristidis*
Department of Paediatric Dentistry, Aristotle University of Thessaloniki, Greece

Aims: To develop the Greek version of the child's perception questionnaire 8-10-year-olds (CPQ-GR₈₋₁₀) and test its validity and reliability.

Methods: Ethical approval was granted by the bioethics committee of Aristotle University of Thessaloniki (AUTH) and consent was given by legal guardians. From the English CPQ₈₋₁₀ with 25-items and two global rating questions using the forward and back translation technique, CPQ-GR₈₋₁₀ was developed. The participants were fluent Greek-speaking patients of the Department of Paediatric Dentistry AUTH. To establish comprehension a pilot study with 20 children was conducted and 150 participants were recruited for the main study from which some children completed the questionnaire again after two weeks to examine test-retest reliability. Construct validity and internal consistency were assessed with Spearman correlation coefficient and Cronbach's alpha, respectively. Completion of the questionnaire was followed by a clinical examination from an examiner blinded to the answers. The correlation between CPQ8-10 scores and the Community Periodontal Index (CPI), Oral hygiene simplified Index (OHIS), caries (DMFT/dmft) and Molar Incisor Hypominerlisation (MIH) was assessed.

Results: In the main study, 77 (51.3%) boys and 73 (48.7%) girls were included. Distribution by age was 50 (33.3%) 8-year-olds, 50 (33.3%) 9-year-olds and 50 (33.3%) 10-year-olds. Test-retest reliability was done on 56 (37,3%) subjects and the coefficient values ranged from 0.97 to 1. When assessing construct validity Spearman correlation coefficient ranged from 0.83 to 0.92. Cronbach's alpha value evaluating internal consistency was 0.98. Total CPQ-GR₈₋₁₀ scores were positively and strongly correlated with OHIS and dmft while correlation with CPI and DMFT was positive and moderate. Children with severe MIH had higher CPQ-GR₈₋₁₀ scores compared to children without severe MIH and these differences were statistically significant ($p < 0.05$).

Conclusions: The CPQ-GR₈₋₁₀ is valid and reliable; therefore, it can be utilised among 8-10-year-old Greek-speaking children.

Keywords: CPQ, Child's Perception Questionnaire 8-10-Year-Olds Greek Version, CPQ8-10

Presenter: Lambrou Panayioulou email: yioula@live.com

EADPH 2024 ABSTRACT 361

Survey of Caries and Fluorosis in Six- and 12-Year-Old Children in Malawi

Peter Chimimba¹, Alex D McMahon^{2}, Martha Chipanda³, Lisa Taylor², Lorna Macpherson²*
¹Kamuzu University of Health Sciences, Blantyre, Malawi; ²University of Glasgow Dental School, Glasgow, UK; ³Malawi Government Ministry of Health, Lilongwe, Malawi

An increase in the prevalence of caries has been reported in many low- and middle-income countries. However, limited data are available in Sub-Saharan Africa.

Aims: The aims were to conduct a national oral health survey in six- and 12-year-old schoolchildren in Malawi, to determine the burden of disease and any history of toothache, and to collect behavioural information from the children, together with current health promoting practices within schools.

Methods: Ethical approval was granted by Malawi's National Health Sciences Research Committee. The survey was undertaken by nine Malawian dental therapists and three UK dentists, in 24 schools. Stratified cluster sampling ensured that the children were representative of Malawi's three regions. Dental caries (into dentine), fluorosis, oral hygiene and PUFA index data were collected via a dental examination. The WHO pathfinder methodology and BASCD criteria were followed for caries. Questionnaires were completed by each child with support when needed, and by the Head Teacher from each school.

Results: A total of 1,330 six-year-old and 1,611 12-year-old children were examined, evenly split between the sexes. Dental caries was identified in 629 (47%) of six-year-olds and 367 (23%) of 12-year-olds. None of the children examined had filled teeth. The mean dmft/DMFT for children with caries experience was 3.0 for six-year-olds and 1.8 for 12-year-olds. Dental fluorosis was recorded for 37 (3%) six-year-olds and 109 (7%) for 12-year-olds. A history of toothache was reported by 391 (29%) of six-year-olds and 690 (42%) 12-year-olds. A lack of PUFA signs was recorded in 1252 (94%) of six-year-olds and 1570 (97%) of 12-year-olds.

Conclusions: In the population studied, the prevalence of caries and absence of signs of past clinical care highlight the need to implement activities identified in Malawi's National Oral Health Policy around the provision of appropriate preventive and treatment services for children.

Keywords: Pathfinder Survey, Children, Oral Health, Dental Caries, Fluorosis, Oral Hygiene, Malawi

Presenter: Alex D McMahon email: alex.mcmahon@glasgow.ac.uk

EADPH 2024 ABSTRACT 362

Supervised Toothbrushing Interventions in Early Childhood Educational Settings: A Scoping Review

Sogoli Rafiei^{1,2*}, Simin Z Mohebbi^{1,2}, Mahdia Gholami^{1,2}

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: Supervised toothbrushing programs in early childhood settings can enhance the oral health of young children by plaque removal, regular exposure to fluoride, the development of good brushing technique and good oral hygiene habits formation. As part of a broader project aimed at oral health promotion in kindergartens in non-affluent areas in Tehran city, this review aimed to ascertain what research had been undertaken on supervised toothbrushing in early childhood setting.

Methods: In order to provide a summary of the research available, the Arksey and O'Malley's; (2005) six stage scoping review framework was used. The search terms: supervised, toothbrush, toothpaste, parent, oral health, cleaning, kindergarten, nursery and preschool were utilised to identify programmes from three databases which were: PubMed, Scopus, and Web of Science. Papers published in English between January 2010 and June 2024 were reviewed. Exclusion criteria included: studies involving systemic fluorides and those on special needs children. The study was approved by research council of Tehran (40113431001).

Results: Twenty two supervised toothbrushing intervention studies were identified in 13 different countries (Australia, USA, England, Scotland, Kuwait, Canada, India, Germany, Israel, Palestine, Malaysia, Brazil and Thailand). Not all interventions included specific detail about evaluation or effectiveness. Two key exceptions were the Childsmile and the Smiles for Miles Programs which have both undergone extensive evaluation and have been shown to improve children's oral health status and to be cost effective.

Conclusions: The results of the present literature review provided critical information to be considered when establishing and implementing supervised toothbrushing programs in educational settings. The need for parental cooperation was outlined in most studies and provision of education for parents was suggested.

Keywords: Supervised Toothbrushing, Preschool, Kindergarten, Early Childhood Caries

Presenter: Sogoli Rafiei email: sogolirafiei@gmail.com

EADPH 2024 ABSTRACT 364

Role of Salivary MMP-8 in Early Periodontitis Diagnosis and Prevention: A Systematic Review and Meta-analysis

Fanni Simon, Orsolya Németh, Eszter Uhrin*

Department of Public Dental Health, Semmelweis University, Budapest, Hungary

Aim: Periodontitis is a significant public dental health issue as it is an irreversible destructive process of the periodontium and a leading cause of tooth loss among adults worldwide. Early diagnosis of periodontitis is crucial to prevent irreversible damage. Salivary matrix metalloproteinase-8 (MMP-8) has emerged as a promising biomarker for early-stage periodontitis. However, systematic evaluations are necessary to validate the reliability of MMP-8 level measurements before integrating this biomarker into routine dental practice.

Methods: A systematic review of studies comparing various salivary laboratory measurement techniques for MMP-8 levels in individuals with periodontitis, gingivitis, and healthy controls was performed. Fifteen search terms, relevant to the topic of the systematic review were employed. Inclusion criteria were studies which compared patients aged over 18 years with gingivitis or periodontitis to healthy patients and assessed salivary MMP-8 levels and studies which reported the correlation between salivary MMP-8 and clinical attachment loss, bleeding on probing and periodontal pocket depth. Additionally, the correlation coefficients between MMP-8 values and other clinical periodontal parameters was investigated. Pooled mean differences (MD) with 95% confidence intervals (CIs) were calculated between the studied groups.

Results: Analysis of 20 eligible studies revealed that patients with periodontitis had significantly higher MMP-8 levels (MD=271.3 ng/ml, CI: 194.4-352.1). Similarly, patients with gingivitis exhibited higher salivary MMP-8 levels compared to healthy individuals (MD=122.8 ng/ml, CI: 64.2-181.5). Moreover, MMP-8 levels were notably higher in periodontitis cases compared to gingivitis (MD=112.0 ng/ml, CI: 56.2-167.9). Correlation assessment indicated a strong association between salivary MMP-8 and probing pocket depth (PPD), bleeding on probing (BOP), and clinical attachment loss (CAL).

Conclusion: Measuring salivary MMP-8 levels is a reliable method for differentiating between periodontal health and disease. Implementing salivary MMP-8 measurement in routine dental check-ups could revolutionise periodontitis prevention, treatment, and follow-up, ultimately enhancing public dental health outcomes. This novel biomarker holds the potential to facilitate early diagnosis and timely intervention, reducing the prevalence of severe periodontitis and its associated tooth loss.

Keywords: MMP-8, Dental Prevention, Oral Health, Periodontal Diagnostics, Public Dental Health

Presenter: Eszter Uhrin email: uhrin.eszter@semmelweis.hu

EADPH 2024 ABSTRACT 365

Prevention for Special Needs: A Proposed Oral Health Education Programme for Physically Disabled, Institutionalised Patients

Mercedész Orsós, Noémi Szathmári-Mészáros, Benedek Kaposi, Orsolya Németh
Department of Public Dental Health, Semmelweis University, Budapest, Hungary*

Aims: Special needs patients usually receive inadequate oral hygiene care, and caregiver healthcare professionals lack both theoretical and practical knowledge of oral hygiene and diseases. This research focuses on the oral health needs of physically disabled inhabitants of a Hungarian institution. The programme's goal is to provide healthcare professionals with preventive education training about the oral health of special needs patients. The investigators will examine how the education programme affects patients' oral hygiene. Creating an individualised oral hygiene programme for institutionalised patients is based on their residual abilities and motivation. The efficacy of the caregivers' educational programme and changes in their attitude toward dental prevention will be assessed. Comparing the changes in oral hygiene advocated solely by educated caregivers with the combined effect of an individualised oral hygiene routine and the assistance of educated caregivers is also important to provide the necessary oral health care for the patients in the study.

Methods: The consent of the appropriate ethical committee (Medical Research Council, Hungary, ETT TUKEB BM/12974-1/2024) has been obtained prior to start of the study. Caregiver oral care knowledge assessment will be performed using KBAS (Knowledge, Behaviour Attitudes, Self-Efficacy) and Kirkpatrick model (Reaction, Behaviour, Learning, Results). Caregiver oral care education for special needs patients. Patient surveys and other assessments will include SIDD (The Social Impacts of Dental Disease), OHIP-H-49 (Oral Health Impact Profile), OHRQoL (Oral Health Related Quality of Life), EQ-5D (EuroQol 5 dimension 5 levels), BOB (Bleeding on Brushing), OHI-S (Oral Hygiene Index- Simplified), and PSR (Periodontal Screening and Recording). The intervention will be professional oral hygiene treatment and individualised education for the patients at a specific point in the study. Every outcome will be reassessed at intervals of 3 months, 6 months, 12 months, 24 months.

Expected Outcomes: An oral health database for residential care patients with physical disabilities will result from this study, along with educational materials and prevention recommendations for institutional caregivers and residents. It is hoped that there will be an Improvement in patients' oral health.

Keywords: Prevention, Oral Health, Education, Physical Disability

Presenter: Mercédesz Orsós email: orsos.mercedesz@semmelweis.hu

Facilitating Communication Between Preschool Staff and Parents about Child Oral Health

Dalil Alshammari^{1,2}, Nia Coupe¹, Joanna Goldthorpe¹, Sarah Peters¹*

¹University of Manchester, School of Health Sciences, Division of Psychology & Mental Health, Manchester, the United Kingdom; ²University of Ha'il, Collage of Dentistry, Preventive Dentistry Department, Ha'il , Saudi Arabia

Aims: To design an evidence-based and theory-informed intervention to facilitate child oral health-related discussions between preschool staff and parents to improve child oral health.

Methods: The behaviour change wheel approach (BCW) to intervention design was followed to develop the intervention, which involves three stages: understanding the behaviour, identifying intervention options, and identifying content and implementation options. The first stage was informed by the qualitative research method (interviews with 14 parents and 11 staff), which used both inductive (reflexive thematic analysis) and deductive (COM-B analysis of qualitative data) approaches.

Results: The primary target behaviour is to increase the frequency and quality of oral health-related discussions initiated by staff. Key barriers identified include the perceived difficulty of oral health conversations, the need for specific skills, time limitations, and workload pressures. The COM-B analysis identified that changes were required to psychological capability, physical and social opportunity and reflective motivation. Two linked practical interventions were developed aimed at enhancing oral health discussions between staff and parents. The first intervention is a comprehensive booklet that guides staff on effectively initiating and conducting oral health conversations. The second intervention is an action plan sheet, which serves as an interactive tool for parents to set and review oral health goals with the assistance of staff. The booklet includes detailed instructions on how to perform the behaviour, providing staff with the necessary skills and confidence to initiate conversations. The action plan sheet facilitates action planning, enabling parents and staff to set and review goals collaboratively.

Conclusions: The BCW approach has provided a systematic approach to developing an evidence-based oral health intervention for a new context. The next steps involve conducting a feasibility study and process evaluation of the developed intervention in preschool settings.

Keywords: Oral Health, Preschools, Parents, Behaviour Change Wheel Approach

Presenter: Dalil Alshammari email: dalil.alshammari@postgrad.manchester.ac.uk

Use of Dental Services in the United States among Individuals with Severe Depression

Nabiela Rahardia, Rolla Mira, Wael Sabbah*

Faculty of Dentistry, Oral & Craniofacial Sciences. King's College London, UK

Aim: To assess the use of dental services among individuals with severe depression and whether it is independent of the need for dental care.

Methods: Data were captured from the National Health and Nutrition Examination Survey (NHANES) (2017-2020), a cross-sectional, nationally representative survey of American adults. As these data are available in the public domain; ethical approval was not required for this analysis. Depression status was assessed using the Patient Health Questionnaire-9 (PHQ-9), and the Depression Screener Questionnaire (DPQ) in NHANES. Dental visits and routine dental visits within the previous year were assessed through self-reported questionnaires. Dental caries was assessed by licensed dentists using WHO (2013) criteria. Two regression models were used to test the association between use of dental services and severe depression.

Results: The analysis included 6,565 participants with complete datasets. Participants with severe depression had lower odds for visiting the dentist in the previous year (Odds Ratio (OR) 0.72, 95% Confidence Interval (CI): 0.57, 0.91), and lower odds for routine dental visits (OR 0.66, 95%CI: 0.50, 0.86) than those without depression in models adjusting for gender, age, race, number of decayed teeth, and dental care recommendation. After additionally adjusting for smoking status, education level, and income, the relationships lost significance in both models.

Conclusions: In the population studied, individuals with severe depression were less likely to visit a dentist despite needing dental treatment but the relationship disappeared after accounting for socio-economic factors. Adverse socio-economic conditions appear to be an additional barrier to dental visits among those with severe depression.

Keywords: Adult, Cross-Sectional, Dental Care, Depression, Socioeconomic Factors

Presenter: Rolla Mira e -mail Rolla.Mira@kcl.ac.uk

EADPH 2024 ABSTRACT 368

The Validity and Reliability of a Questionnaire Based on the Theory of Planned Behaviour in the Field of Oral Cancer Prevention

Anoosheh Ghasemian^{1*}, Katayoun Sargeran², Mohammad Raza Khami²

¹Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran; ²Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran and Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: No valid and reliable questionnaire based on the theory of planned behaviour (TPB) exists for oral cancer prevention. The aim of the present study was to develop a structured questionnaire and evaluate its validity and reliability.

Methods: In 2022, a two-section questionnaire was designed in accordance with the scientific literature and concepts of a standardised TPB questionnaire. The first part comprised of nine questions on sociodemographic variables. The second part comprised of 11 questions on oral cancer-related knowledge, seven on preventive behaviours, and 12 on the TPB constructs including behavioural intention, attitude, subjective norm, and perceived behavioural control. The content validity including necessity, relevance, simplicity, and clarity of questions was evaluated by a team of eight subject experts using content validity ratio (CVR) and content validity index (CVI). The face validity was evaluated by the same experts. The reliability, in terms of internal consistency, was evaluated in a pilot study involving 40 individuals from two health centres, which were not included in the main study, using Cronbach's alpha coefficient and in terms of test-retest through intra-class correlation coefficient (ICC). Ethics approval for the study was granted by Tehran University of Medical Sciences.

Results: The CVRs for knowledge, behaviour, behavioural intention, attitude, subjective norm, and perceived behavioural control were 0.89, 1, 1, 0.83, 0.83, and 0.83, respectively. The CVI for all measures was 1. The Cronbach's alpha coefficients for knowledge, behavioural intention, attitude, subjective norm, and perceived behavioural control were 0.82, 0.80, 0.77, 0.77, and 0.74, respectively. The ICCs for the measures were 0.95, 0.99, 1, 0.98, and 0.99, respectively.

Conclusions: The structured questionnaire showed high level of validity and reliability. Thus, it could be translated into other languages and used in different oral cancer prevention studies.

Keywords: Validity, Reliability, Surveys, Questionnaires, Theory of Planned Behaviour, Mouth Neoplasms

Presenter: Anoosheh Ghasemian email: anoosheh.ghasemian@gmail.com

EADPH 2024 ABSTRACT 369

The Impact of Nicotine Pouches on Oral Health

Sintija Miļuna-Meldere*

Department of Prosthetic Dentistry, Riga Stradins University, LV-1007 Riga, Latvia

Aims: The aim of the present study was to compare the presence of periodontal pathogens in the saliva of nicotine pouch users, electronic cigarette users, and conventional cigarette users, with their presence in the saliva of individuals who do not use tobacco or nicotine products. Another aim was to evaluate oral mucosal changes due to nicotine pouch usage.

Methods: Based on the questionnaire, participants (n=31) were divided into four groups: respondents using nicotine pouches (n=13), electronic cigarettes (n=9), conventional cigarettes (n=4), and a control group of non-tobacco users (n=5). Each participant had an oral examination. The oral mucosa was inspected, and any unusual lesions were photographed, soft tissue excision was performed, stained with haematoxylin and eosin, and examined under a microscope (at 40x, 100x, and 600x magnification). Saliva samples (5ml) were collected and the polymerase chain reaction was used to identify clinical isolates of the following periodontal bacteria: *Porphyromonas gingivalis*, *Tannerella forsythia*, *Prevotella intermedia*, *Fusobacterium nucleatum*, *Fusobacterium periodonticum*, *Porphyromonas endodontalis*, and *Rothia mucilaginosa*. This study was approved by the Ethics Committee of Riga Stradins University.

Results: *Tannerella forsythia* were present in saliva samples taken from users of nicotine pouches (n=11), electronic cigarettes (n=5), conventional cigarettes (n=4). Oral mucosal changes were detected only in the nicotine pouch users group (n=5).

Conclusions: Positive presence of periodontopathogenic bacteria in the saliva of nicotine pouch users could alter the oral microbiome. Histopathological analyses of oral mucosal lesions revealed intraepithelial and connective tissue oedema, parakeratosis with acanthotic epithelium, and chronic inflammatory infiltration with lymphocytes and macrophages. Those commissioning oral health services should be aware of the impact of nicotine patches on oral health when planning campaigns to prevent oral cancer.

Keywords: Nicotine Pouches, Oral Health, Periodontal Pathogens, Oral Lesions

Presenter: Sintija Miļuna-Meldere email: sintijamiluna@gmail.com

EADPH 2024 ABSTRACT 370

A Scoping Review of Oral Health Promotion in London Care Homes: Facilitators and Barriers

Frances Robinson^{1}, Nicola Pearson¹, Rakhee Patel²*

¹Kent Community Health NHS Foundation Trust, Manford Way, Ilford, Chigwell, UK; ²NHS England, 133-155 Waterloo Rd, London, UK

Commissioned Oral health promotion (OHP) services operating in care homes in the United Kingdom often incur barriers to providing an effective and efficient service.

Aim: To investigate the methods of commissioned oral health promotion in care homes, explore facilitators and barriers and develop a delivery framework that is feasible and acceptable.

Methods: After reviewing relevant literature a topic guide was developed and used in semi structured interviews with Community Dental Service OHP leads in London. The leads received verbal and written participant information. 5 (100%) consented to be interviewed. Contemporaneous field notes were taken throughout the interviews. The resulting data were thematically analysed and facilitators and barriers identified. As a quality improvement project, not involving patients, ethical approval was not required.

Results: Key system level challenges were reported to include the focus of commissioned OHP being children, with no standardised approach for older people. Some key local challenges focused on relatively few care homes engaging with oral health services and high staff turnover in the residential homes. Poor understanding of the importance of oral health, accompanied by an observed lack of comprehension of oral health related guidance was noted in care providers. As the OHP workforce is small, there is considerable administrative pressure to engage with care homes. Facilitators were reported as including “in person” individual oral health training in care homes, which although time consuming was felt to result in more effective learning. Online training was deemed to be useful for update sessions for multiple settings, managers or oral health champions and provided the opportunity to cover large geographical areas. Local level engagement was felt key in building contacts and trust with care providers.

Conclusions: This review suggests; low engagement hampers the provision of care home OHP and there is a need for a standardised approach which is scalable based on local need. This could make it easier to commission and deliver, regionally and nationally. Reportedly a hybrid model of both in person and online training is preferred. Engaging with external stakeholders to increase joined up, systems-based working is crucial to utilising OHP services and insuring effective outcomes.

Keywords: Care Homes, Oral Health Promotion, Facilitators, Barriers

Presenter: Frances Robinson email: frances.robinson5@nhs.net

EADPH 2024 ABSTRACT 371

Dental Anxiety in Blind and Visually Impaired Individuals in Croatia

Jelena Dumančić^{1}, Ivana Savić Pavičin¹, Božana Lončar Brzak¹, Ivana Čuković-Bagić¹, Tara Kurpez²*
¹School of Dental Medicine, University of Zagreb, Zagreb, Croatia; ²Centre for Special Care Dentistry, Amsterdam, the Netherlands

Aims: The study investigated dental anxiety levels in correlation with DMFT and self-reported oral health-related habits and quality of life in a sample of blind and visually impaired persons from Croatia.

Methods: The research was a part of the “Project for oral health promotion in blind and visually impaired persons” conducted from 2014 till 2018 at the University of Zagreb School of Dental Medicine, with the approval of the Ethics Committee. Inclusion criteria involved visually impaired or blind persons who voluntarily applied and consented to participate in the Project. Exclusion criteria involved conjoint intellectual, psychological or physical disability. Two uncooperative and dependent persons were excluded. Dental anxiety levels were determined using a modified dental anxiety scale (MDAS). WHO methodology for recording dental status and questionnaire on oral health were used. Kruskal-Wallis ANOVA and Kendall’s Tau correlation were applied to analyse data.

Results: The final sample consisted of 85 adults: 42 (49%) females, 50 (59%) blind and 35 (41%) visually impaired, (age range=18-98). Median MDAS was 8 (range=5-20). Females had higher levels of MDAS ($p=0.01$), while there was nonsignificant difference between blind and visually impaired. Negative correlation between MDAS and number of filled teeth was found (median=6, $p=0.046$). MDAS score was correlated with feelings of embarrassment with the teeth appearance ($p=0.005$), feeling tense about teeth problems ($p=0.025$) and avoiding smiling because of teeth appearance ($p=0.008$). MDAS score didn’t correlate with age, frequency of tooth brushing, time since last dental visit, smoking or education level.

Conclusions: In the studied sample of blind and visually impaired individuals, low levels of dental anxiety were found. It is probable that individuals who have clinically relevant dental anxiety did not enrol in the Project. Further investigation with improved sampling is necessary.

Keywords: Visually Impaired, Blind, Dental Anxiety, MDAS, DMFT, Oral Health, Habits, Croatia

Acknowledgement: The Project gained financial support of the City of Zagreb.

Presenter: Jelena Dumančić email: dumancic@sfzg.unizg.hr

EADPH 2024 ABSTRACT 372

Assessing the Impact of Snus Use on Oral Health among Young Athletes

Orsolya Németh^{1}, Noémi Szathmári-Mészáros¹, Levente Sipos², Dóra Iványi¹*

¹Department of Public Dental Health, Semmelweis University, Budapest, Hungary; ²University of Pécs, Hungary

Aims: This study aimed to investigate the relationship between snus use and oral health among young athletes, particularly focusing on the consumption habits and motivational factors. The goal was to develop an effective primary prevention strategy for this high-risk group by increasing awareness and understanding, as well as tailoring a specialised educational program.

Methods: The study involved 248 adolescent ice hockey and football players from Hungary, aged 12-20 years. Data were collected through a self-certified questionnaire and oral health status screenings during summer sport camps. The participants and their legal guardians provided consent, and the study was approved by the Medical Research Council. Frequencies and percentages were calculated and tested using Pearson’s Chi-squared or Fisher’s exact tests for sparse data. The level for statistical significance was set at $p<0.05$.

Results: The results showed that 20 (8.1%) individuals were frequent snus users, 36 (15%) occasionally used it, and 192 (77%) had never tried it. Most habitual snus users became addicted between 14 and 16-years-old and used it for 1–2 years. Nine (45%) used snus multiple times a day, for 10–30 minutes. Only 15 (27%) snus users knew its risks. Conversely, half of non-snus users knew its hazards. Forty adolescents (15.8%) reported brushing just once daily. Regular snus users were more likely to experience gingival bleeding, and combining snus consumption with poor oral hygiene practices exacerbated the negative effects on oral health. Gingival bleeding was significantly associated with snus use ($p = 0.040$).

Conclusions: The study highlights the significant association between snus use and gingival bleeding in young athletes. Combining snus consumption with poor oral hygiene practices worsens the negative effects on oral health. Raising awareness (especially by teachers, sport managers and others directly involved with adolescents) at a young age and education are crucial for minimising snus use and promoting oral health.

Keywords: Smokeless Tobacco, Sportspersons, Oral Lesion, Dental Prevention

Presenter: Orsolya Németh email: nemeth.orsolya@semmelweis.hu

Comparison of Undergraduate Education in Geriatric Dentistry in the UK, Europe, and Japan

Takamasa Komiyama^{1,2*}, Rakhee Patel¹, Ellie Heidari¹, Richard Foxton¹, Jennifer E. Gallagher¹
¹Faculty of Dentistry, Oral and Craniofacial Sciences, King's College London, London, United Kingdom;
²Division of Aging and Geriatric Dentistry, Tohoku University Graduate School of Dentistry, Sendai, Japan

Aims: The ageing population, including dementia patients, is expected to increase worldwide. The aim of this study was to compare the learning outcomes of geriatric dentistry for undergraduate dental students in the UK, Europe, and Japan through a scoping review.

Methods: The relevant electronic databases such as PubMed, CINAHL, Web of Science, the General Dental Council, the Association for Dental Education in Europe, and the Ministry of Education, Culture, Sports, Science and Technology in Japan were searched in 2024. All documents were examined to identify gaps and similarities.

Results: Four documents were detected; they were “The Safe Practitioner” for dentist (UK), “Graduating European Dentist Curriculum” and “Undergraduate curriculum guidelines in Gerodontology” (Europe), and “Model Core Curriculum for Dental Education” in Japan (Japan). The number of learning outcomes related to geriatric dentistry, including fundamental knowledge and skill as a dentist in the UK, Europe, and Japan, were 9, 61, and 32, respectively. All four documents mentioned communication such as collaborating with all members of the health care team, and knowledge for treatment, including identifying signs of abuse. There were specific sections regarding geriatric dentistry in the European and Japanese documents. On the other hand, there was no specific section regarding geriatric dentistry in the UK document.

Conclusions: Gaps and similarities between the UK, Europe, and Japan in undergraduate education of geriatric dentistry could be identified, which might be helpful if these documents are revised, taking into consideration each region's social and cultural background.

Keywords: Review, Educational Research, Geriatric Dentistry, International Comparison

Presenter: Takamasa Komiyama email: t.komiyama0514@gmail.com

National Health Policies Directed towards Commercial Determinants Affecting Oral Health in Serbia

Maja Milošević Marković^{1*}, Jelena Milašin², Miloš Lazarević², Milica Jakšić Karišik², Svetlana Jovanović¹
¹Department of Public Health, School of Dental Medicine, University of Belgrade, Belgrade, Serbia;
²Department of Genetics, School of Dental Medicine, University of Belgrade, Belgrade, Serbia

Aim: The aim of this study was to investigate which public health policies in the Republic of Serbia, aim to suppress harmful commercial influences on oral health.

Methods: During the May 2024 a review of relevant health policies, strategies and other documents in the Republic of Serbia, related to health, was undertaken.

Results: It was found that the greatest number of selected policies are directed towards the prevention and suppression of noncommunicable diseases, including oral diseases. Among the recognised commercial determinants are sugar-sweetened beverages, tobacco and alcohol. The National Programme of Preventive Dental Health Care indicates the need for proper nutrition, endogenous and exogenous fluoride prophylaxis and prevention of alcohol and tobacco consumption. The national programme for the prevention of obesity in children and adults recognises the importance of promoting proper nutrition, especially reducing sugar intake, points to the need to improve cooperation with food manufacturers and calls for an initiative to create and implement legislation to limit the advertising of sugar-sweetened foodstuffs. However, in Serbia there is no tax on sugar-sweetened beverages. The Food Safety Law prescribes the rules for marking, declaring and advertising food. Also, there are laws and strategies and special taxes aimed at the prevention of the harmful effects of tobacco and alcohol, as key factors for the development of oral cancer.

Conclusions: Although partially recognised, there is still a need for further enhancements of fiscal and other measures aimed at commercial determinants, better cooperation is needed with the private sector together with special emphasis on oral health in health policies.

This research was supported by the Science Fund of the Republic of Serbia, GRANT No 7750038. Oral Cancer – New Approaches in Prevention, Control and Post-Operative Regeneration – an *In Vivo* Study – ORCA-PCR.

Keywords: Commercial Determinants, Oral Health, Law, Strategies, Programmes

Presenter: Maja Milošević Marković email maja.milosevic@stomf.bg.ac.rs

EADPH 2024 ABSTRACT 378

Situational Analysis of International Oral Health Policymaking for Quality Improvement

Shaila Akter^{1,2}, Valeska Fehrer¹, Michael Lorenz¹, Patrick Jeurissen³, Stefan Listl^{1,2}*

¹Heidelberg Institute of Global Health, Section for Oral Healthcare, Heidelberg University Hospital, Heidelberg University, Heidelberg, Germany; ²Radboud University Medical Centre, Radboud Institute of Health Sciences (RIHS), Department of Dentistry - Quality and Safety of Oral Healthcare, Nijmegen, the Netherlands; ³IQ Healthcare, Radboud University Medical Centre, Nijmegen, The Netherlands

Aims: The purpose of this study was to describe the current situation of European and global policymaking efforts for improving the quality of oral healthcare (OH).

Methods: Drawing from qualitative methodology comprising desk research and semi-structured interviews, a situational analysis was conducted between March 21 and April 14, 2023, with thirteen international oral health policy experts, who were recorded, transcribed and analysed inductively and iteratively. Participants were recruited through purposive and snowball sampling. The Medical Faculty of Heidelberg Ethics Committee approved the study and consent was obtained from the participants.

Results: The interviews provided diverse insights into policymaking for improving the quality of OH. Thematic analyses identified four main themes: a) perception and understanding of quality improvement (QI) in OH policymaking, b) prioritisation of QI, c) efforts and actions for QI, and d) stakeholder engagement. Three maps were also generated: a situational map, a social world map, and a positional map. Participants acknowledged several facilitators and barriers and provided QI ideas, but also expressed concerns. They said that QI was underserved and not properly prioritised. Competing goals and financial limitations were considered major barriers for QI. Some organisations described that they are involved in OH QI and took various initiatives to improve quality, while others acknowledged that QI efforts could be expanded. Participants expressed a necessity for better coordination among stakeholders and joint action on QI to enhance the overall OH of the population in European Union and globally.

Conclusions: The study findings suggest that there is substantial room for improvement in European and global policymaking concerning the QI of OH. While stakeholders seem to recognise the relevance of OH QI, competing priorities and limited resources seem to be perceived as barriers to scaling up QI efforts. The potential of international synergies in QI for OH is emphasised.

Keywords: Dental Care, Healthcare Quality, Access and Evaluation, Healthcare Disparities, Health Services Needs and Demand Policy, Europe, International, Qualitative Research

Presenter: Shaila Akter email: shaila.akter@med.uni-heidelberg.de

EADPH 2024 ABSTRACT 380

Factors Associated with Dental Service Utilisation among Children under Six in Tehran, Iran

Elaheh Amirian^{1,2}, Simin Z Mohebbi^{1,2}, Samaneh Razeghi^{1,2}, Ahmad R Shamshiri^{1,2}*

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: The vision of the global strategy on oral health is to improve oral health in the context of universal health coverage (UHC) by 2023. This study aimed to evaluate the factors associated with dental service utilization in pre-school children.

Methods: A telephone-based cross-section study of a representative sample of children under six (n=424) in 22 districts of Tehran in 2023, Iran, was conducted after verbal consent from parents. This study was approved by Tehran University of Medical Science ethical committee (Code: IR.TUMS.DENTISTRY.REC.1401.094). Based on Andersen's behavioural model, a validated and reliable questionnaire obtained information about dental service utilization in the past year and associated factors (predisposing, enabling, and need) from children's parent. Predisposing factors included age, child's gender, head of household's education, size of household, tooth brushing, fluoridated toothpaste, using snacks, and the history of dental visit before age one. Income, residence district, house status (own or rent), and dental insurance were enabling factors. Parent-reported oral health problems, parent-reported oral health status, and parent-reported decayed and missed teeth (dmt). We conducted the binary logistic regression analysis using SPSS version 26.

Results: Of 424 children, 50.2% (n=213) were boys, and their mean age was 3.7 (SD=1.8). Thirty-three percent (n=143) of children used dental service in the past year. Age (OR=1.5, $p<0.001$), tooth brushing (OR=1.5, $p=0.064$), the history of dental visit before age one (OR=13.2, $p<0.01$), parent-reported oral health problems (OR=3.5, $p<0.001$), parent-reported oral health status (OR=1.3, $p=0.033$), and parent-reported dmt (OR=2.40, $p<0.01$) predicted oral health service utilization in the past year significantly.

Conclusions: Predisposing and enabling factors such as age, tooth brushing, the history of dental visit before age one, parent-reported oral health problems, parent-reported oral health status, and parent-reported dm were prominent predictors of dental service utilization in children under six most of which may be enhanced by health education.

Keywords: Dental Health Service, Child, Preschool, Andersen Behavioural Model

Presenter: Elaheh Amirian email: elaheh.amirian91@gmail.com

EADPH 2024 ABSTRACT 381

Oral Health Policy within Sports Clubs in Flanders, Belgium

Martijn Lambert, Marie Callens, Anduriña De Rouck, Ruth Sederel*

ELOHA (Equal Lifelong Oral Health for All), Oral Health Sciences, Ghent University, Ghent, Belgium

Aim: This study aimed to gain insight into the existing oral health policies at sports clubs in Flanders, Belgium.

Methods: After obtaining ethical approval (THE-2023-0458), a questionnaire was developed and distributed electronically among all Dutch-speaking sports clubs in Belgium, categorised into contact sports, endurance sports, strength sports, or a combination of all three. The questionnaire had one part for socio-demographic data and another for (oral) health policies based on education, environmental interventions, agreements and rules, and care and referral. Data collection was followed by statistical analyses using SPSS Statistics 29. Chi-square or Kruskal-Wallis tests were used for categorical variables. Continuous variables were analysed using the Kruskal-Wallis test and the Mann-Whitney U-test.

Results: After sending the questionnaire to 18,747 unique email addresses, 923 sports clubs participated. Of these, 15.9% represented 'Contact Sports' (n=147), 28.1% 'Endurance Sports' (n=259), 6.3% 'Strength Sports' (n=58), and 49.7% a combination of all three (n=459). The roles of respondents were 'Board Member' 84.0% (n=755), 'Trainer/Coach' 13.2% (n=122), or 'Member' 1.3% (n=12). The size of the sports clubs ranged from 4 to 2850, with an average of 200 members. Most sports clubs involved both children and adults (66.0%, n=609). More than three-quarters (75.9%, n=701) were solely amateur sports clubs. Only 5.3% of the clubs provided information on oral health. Although 17.3% had written regulations for general health, only 0.9% had written regulations for oral health. Significant differences in policies were found based on sport category, respondent's role within the club, performance level, size of the club, and age categories of the athletes.

Conclusions: The results indicated very little policy regarding oral health at sports clubs in Flanders and the Brussels-Capital Region. When policies exist, they are mainly in contact sports clubs, professional sports clubs, and clubs focused solely on adults. Greater awareness and action are needed to support athletes' oral health.

Keywords: Oral Health Policy, Sports Clubs

Presenter: Martijn Lambert email: martijn.lambert@UGent.be

Influencing the Political Determinants of Oral Health: Analysis of International Case-Studies

Stefan Serban^{1*}, Sandra Perdomo², Aida Borges-Yanez³, Carol C Guarnizo-Herreno⁴, David Conway¹
¹School of Medicine, Dentistry and Nursing, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, UK; ²Genomic Epidemiology Branch, International Agency for Research on Cancer, World Health Organisation, Lyon, France; ³Facultad de Odontología, Universidad Nacional Autónoma de México. Coyoacán CDMX, México; ⁴Departamento de Salud Colectiva, Universidad Nacional de Colombia, Bogotá, Colombia

The political and commercial determinants of health are interconnected yet different; while the latter is focusing on the impact of industry activities, the former is focused on the broader policy/legislative processes and frameworks with direct and/or indirect impact on population health.

Aim: To review national policy development processes targeting oral health.

Methods: Using Kingdon's Multiple Streams Model describing problem, policy, politics, and policy champion, six case-studies from the published literature in four countries were critically reviewed. This was followed by an evidence synthesis on shared lessons, barriers, and facilitators.

Results: The case studies presented the policy development processes involved in establishing national prevention programmes and the taxation of harmful products for oral health. Each case study presented a different problem, policy and political context yet there were some common lessons. Facilitators were: 1) Robust scientific evidence supported by options appraisal and cost-effectiveness modelling, presented in an accessible manner; 2) Cross-party support enabling continuity of political support and funding even after government changes; 3) A strong civil service supporting operational delivery; 4) Monitoring and evaluation; 5) Intersectoral collaboration between healthcare and public health organisations, academia, and civil society. Barriers were: 1) Evidential landscaping by industry to create confusion and minimise the impact of harmful products on health; 2) Use of legal challenges to delay implementation; 3) Lobbying politicians directly or indirectly through industry funded organisations; 4) Media campaigns to create confusion and influence public opinion; 5) Libertarian ideology portraying government intervention as "nanny state" and loss of freedom while ignoring the loss of freedom of individuals for a long healthy life, free from disability.

Conclusions: The policy development landscape is complex, influenced by various competing interests and priorities. Public health experts have a professional responsibility to actively advocate for evidence-based policies, countering the influence of industry interests on policymaking.

Keywords: Political Determinants of Oral Health, Policy Development, Upstream Interventions, Inequalities

Presenter: Stefan Serban email: stefan.serban@glasgow.ac.uk

Acknowledgment: The authors wish to express their gratitude for the valuable contributions to this work of: Finbarr Allen, University College Cork; Maria Kamila Navarro-Ramirez, Universidad Nacional de Colombia; Lois K Cohen, Lois K. Cohen and Associates LLC; Georgios Tsakos, University College London; Sarah Baker, University of Sheffield.

Poverty, Deprivation and Childhood Dental caries: A Longitudinal Data Linkage Study

Kyle Cousins^{1*}, Andrea Sherriff¹, David Conway¹, Paul Bradshaw²

¹College of Medical, Veterinary and Life Sciences, University of Glasgow, UK; ²Scottish Centre for Social Research, UK

Aims: To investigate the impact of longitudinal changes in area-based and individual-level socio-economic factors on dental caries in childhood.

Methods: Longitudinal socioeconomic data from the nationally representative Growing Up in Scotland (GUS:2005/6-2009/10) cohort study were linked to caries experience data (at 5-years) from the annual population-wide National Dental Inspection Programme dental epidemiology survey. Latent Class Analysis produced longitudinal trajectories (between birth and 5-years of age at 4/5 discrete time points) for household poverty (household income < 60% of the national median), and area-based socio-economic deprivation. Cumulative exposure scores were also calculated. Modified Poisson regression assessed the association between caries experience and the socio-economic trajectories in 2,893 children. Analyses were undertaken within Scotland's National Safe Haven.

Results: Compared to children never in poverty in their first 5 years, those consistently in poverty were at greatest risk of caries experience (Adjusted Risk Ratio (aRR)=2.2; 95% Confidence Interval (CI) = [1.9, 2.5]); and there was an increased risk of caries experience for those falling into poverty (aRR=1.4; 95% CI=[1.1, 1.8]) and escaping poverty (aRR=1.6; 95% CI=[1.3, 2.1]). The risk of caries experience increased cumulatively with years in poverty. Children whose families moved into more deprived areas in their first 5 years were at a higher risk of caries experience than those who never lived in deprived areas (aRR=1.6; 95% CI=[1.2, 2.2]). Those who moved out of more deprived areas in their first 5 years had similar caries experience to those who had never lived in deprived areas (aRR=1.1; 95% CI=[0.8, 1.7]).

Conclusions: In the population studied, unstable poverty trajectories and area-based downward socio-economic mobility were associated with a higher risk of caries experience. These findings underscore the importance of considering the duration and persistence of socio-economic disadvantage in relation to oral health outcomes and should inform policies to address these, particularly in the early years.

Keywords: Child Dental Caries, Epidemiology, Longitudinal Studies, Socio-Economic Factors

Presenter: Kyle Cousins email: 2842639C@student.gla.ac.uk

EADPH 2024 ABSTRACT 385

Overcoming Geographic Barriers to Dentistry: A Systematic Review Relating to Dental Deserts

James W Edwards^{1,2}, Birke Bogale^{1,2}, Jennifer E Gallagher^{1,2*}

¹Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, UK; ²Dental Hospital, King's College Hospital NHS Foundation Trust, London, UK

Aim: To review the evidence on addressing geographic barriers to dental care (dental deserts) and make recommendations for health policy and future research.

Methods: A systematic review was conducted across three databases (Embase, Medline, Global Health) through OVID. Following deduplication, a two-stage screening process, first of titles and abstracts, and second of full texts against eligibility criteria, was conducted. Subsequently, a backwards/forwards citation searching of references within selected papers was conducted. Data extraction was performed, with initiatives and themes identified and categorised accordingly against the Lancet's High-Quality Health Systems Framework. Methodological quality was assessed using the checklists as appropriate.

Results: The search produced 6,704 papers of which 37 papers met the inclusion criteria and reported on 14 initiatives from 27 countries (16 high-income, five upper-middle income, four lower-middle income and one low-income). The findings can be summarised under the following headings: 1. *Workforce initiatives* – harnessing dental and non-dental team skill mix, rural recruitment, and rural retention initiatives. 2. *Outreach initiatives* - teledentistry, mobile clinics, outreach camps, and school-based clinics improved access to dental care in their respective studies. Establishing new community clinics improved access in multi-interventional studies which included community engagement. 3. *In-reach initiatives* - dental school clinics increased access to care, and rural employment rates increased among students who undertook rural clinical placements. 4. *Auxiliary access initiatives* - community engagement, cost-effectiveness and affordability were critical for effective service delivery and deciding to seek care. Clinician remuneration and financial incentives were important for workforce provision. All papers addressed one or more aspects of the 'foundations' domain (predominantly 'workforce' and 'platforms'), 30 addressed 'quality impacts' and 15 addressed 'processes of care'.

Conclusions: Improving access to dental care requires multifaceted approaches across the range of interventions explored within the literature. Further high-quality research is needed in this field.

Keywords: Dental, Workforce, Access, Geographic, Primary Care, Systematic Review

Acknowledgements: The authors wish to acknowledge the contribution of Urmil Popat who contributed to a pilot for this scoping review and King's Library Services.

Presenter: Jennifer E Gallagher email: jenny.gallagher@kcl.ac.uk

Are Fluoride Interventions for Older Adults Residing in Care Homes Feasible?

*Rakhee Patel**, Nigel Pitts, Jennifer E. Gallagher
Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, UK

Older adults living in care homes have fewer teeth and significantly higher levels of dental caries than their community dwelling peers. There is strong evidence linking dose dependent fluoride use and caries reduction, yet there is little research on fluoride interventions in older people in care.

Aim: To establish the practicability; acceptability and compliance of fluoride interventions to prevent dental caries in older adults residing in care homes.

Methods: A randomised controlled, assessor blind, parallel group feasibility trial was conducted in six care homes in London, UK. Randomisation was at care home level, with one residential and one nursing home per arm. Study arms were, Control (usual care), 2800ppm fluoride toothpaste prescription and 3 monthly fluoride varnish application over 12 months. A mixed methods approach assessed outcome measures. NHS ethical approval was granted (IRAS 202190) and the trial was registered (EudraCT 2017-002248-34) before study commencement.

Results: All six homes recruited received staff training and access to dental care was facilitated. A total of 202 (77%) residents met the inclusion criteria and 118 (58%) were recruited. The mean sample age was 85.9 years (range 65-99), 68% (n=77) were female and 59% (n=69) lacked mental capacity. Fifty-nine (50%) participants completed the trial with death the primary reason for loss. In terms of compliance, 82% (n=96) of participants permitted complete examinations at baseline. One in five (20%) were fully dentate, with a mean 15.7 (9.4) teeth, of which, on average, 5.8 (5.8) had at least one exposed root surface. Forty two percent (n=40) of participants examined had active or arrested caries. Qualitative findings evidenced that the programme was needed and valued by care home and dental teams.

Conclusions: With a broad approach to engagement, it is feasible to undertake clinical research in care homes. Despite the impact of Covid-19, recruitment and retention in the study was good, and interventions were deliverable and acceptable. Future preventative intervention programmes should be embedded within care homes and include training of staff and facilitating access to dental services.

Keywords: Prevention, Older Adults, Care Homes, Fluoride

Presenter: Rakhee Patel email: rakhee.patel@kcl.ac.uk

Automated Detection and Segmentation of Teeth and Dental Procedures from Orthopantomograms

Ivana Savić Pavičič¹, Ajla Zymber Česhko², Denis Milošević³, Marko Subašić³, Marin Vodanović¹*
¹University of Zagreb, School of Dental Medicine; University Hospital Centre Zagreb, Croatia; ²Alma Mater Europaea Campus College "Rezonanca", Prishtine, Kosovo; ³University of Zagreb, Faculty of Electrical Engineering and Computing, Zagreb, Croatia

Aim: Convolutional neural networks (CNN) could be a useful tool in clinical practice for dental diagnostic procedures and in forensic dentistry to facilitate identification procedures. The aim of this study was to develop and test CNN models for the detection of teeth and segmentation of dental procedures from OPG images.

Methods: CNN models for teeth recognition and segmentation of dental procedures, including caries lesions, were divided into two categories, pre-trained models and models trained from the scratch. One thousand four hundred OPGs were accessed from the Department of Dental Anthropology, School of Dentistry, Zagreb of which 75% (1,050) were used for training and 25% (350) for testing of the models. The input data were different according to image size, from 256px to 1,820px. The University of Zagreb School of Dental Medicine Ethics Committee approved the study.

Results: The most successful model for teeth detection was YOLOv5x6 (trained from the scratch) with mean precision (mAP) of 98% vs YOLOv5m6 (pre-trained) with mAP of 97.9%. Using the YOLOv5x6 model, detection for teeth in upper jaw mAP was 96.4%, while for the lower jaw was 99.8%. In the segmentation of caries, crowns, tooth filling and root canal filling, the most successful model was Unet Big used on solo teeth from an OPG, with Sørensen–Dice coefficients of 0.59; 0.88; 0.85 and 0.79 respectively.

Conclusion: In all cases, the larger the image resolution, the more successful the detection model was. The lowest values refer to resolution 256x256px (the lowest value is 68.4% for mAP when training from scratch). For larger images, the values were higher than 90%, which is an excellent indicator of the success of the models used. It is recommended that images larger than 640px should be used, regardless for successful tooth recognition and dental procedures segmentation. Dental Public Health specialists should be aware of the development and potential application of these automated detection procedures in their field.

Keywords: Convolutional Neural Networks, Artificial Intelligence, Dentistry, Dental Status

Presenter: Ivana Savić Pavičin email: savic@sfzg.unizg.hr

EADPH 2024 ABSTRACT 391

Inclusivity in Oral Care: A Comprehensive Dental Prevention Approach for Enhanced Cooperation and Oral Hygiene in Children with Special Needs

*Dalma Tábi*¹, Orsolya Németh¹, Bálint Zsombor Sárαι¹, Tímea Vissy², Ibolya Túri²*

¹Department of Public Dental Health, Semmelweis University, Budapest, Hungary; ²András Pető Faculty, Semmelweis University, Budapest, Hungary

Aims: The aim of this study was to evaluate the effectiveness of an 8-week specialized dental prevention programme on oral health outcomes and cooperation during dental treatments in children with special needs.

Methods: The study (approved by the hungarian Medical Research Council -TUKEB- IV/3957- 3 /2022/EKU) targeted 97 children from András Pető Conductive Practical Primary School. After obtaining parental consent and meeting health eligibility criteria, 16 children participated in the programme which consisted of 8 weeks of education sessions focusing on oral hygiene practices and dental cooperation strategies. Dental assessments were conducted at baseline, week 8, and week 16, using WHO protocols to measure indices such as DF-T, OHI-S, BOP, and BOB. Cooperation was assessed using the Frankl Scale. Statistical analyses were performed to calculate mean differences (MD) with 95% Confidence Intervals (CI).

Results: The study included 16 children (8 girls, 8 boys; mean age 13.21±2.04 years). The baseline DF-T index remained stable throughout the study. OHI-S scores significantly decreased from baseline to week 8 (MD = -1.63, 95% CI: -2.35 to -0.91, $p = 0.0007849$) but showed no significant change between weeks 8 and 16 (MD = 1.84, 95% CI: -1.92 to 5.60, $p = 0.2969$). BOP significantly decreased post-intervention (MD = -33.02, 95% CI: -45.78 to -20.26) but slightly increased by week 16 (MD = 3.89, 95% CI: -6.79 to 14.57, $p = 0.4311$). BOB decreased from 89.17±13.25 at baseline to 37.5±13.25 by week 8, then increased to 54.69±23.66 by week 16. Cooperation levels significantly improved (baseline M = 3.2±0.67; week 8 M = 3.9±0.31; week 16 M = 3.75±0.45).

Conclusion: The specialised prevention programme significantly improved oral health outcomes and cooperation among children with special needs. These findings emphasise the importance of early intervention and tailored prevention strategies in promoting oral health and positive dental behaviours in children with special needs.

Keywords: special needs, oral health, children, cooperation, preventive education

Presenter: Dalma Tabi email: tabi.dalma@semmelweis.hu

EADPH 2024 ABSTRACT 392

Investigating the Efficacy of Calcineurin Inhibitor Therapy on Oral Lichen Planus

Sárαι Bálint Zsombor, Dalma Tábi, Eszter Uhrin, Orsolya Németh*

Department of Dental Public Health, Semmelweis University, Budapest, Hungary

Aims: Oral Lichen Planus is a chronic inflammatory and potentially malignant disorder of the oral mucosa. Increased sensitivity, severe pain, and constant tension can decrease a patient's quality of life, along with the risk of malignant transformation (1-4.5%). This study aimed to investigate the possibility of replacing the gold-standard treatment, steroids, due to their potential for drug tolerance development and numerous topical or systemic side effects.

Methods: To achieve this, a systematic search was conducted in four databases (MEDLINE, Embase, Central, and Clarivate). Randomized controlled trials (RCTs) were selected for analysis if they compared topically used calcineurin inhibitors, steroids, or placebo. The outcomes measured were pain severity, oral mucosa morphology, and safety (adverse effects). Odds ratios (ORs) and mean differences (MDs) with a random-effects model were calculated in the quantitative synthesis and interpreted with 95% confidence intervals (CIs).

Results: A total of ten RCTs were selected and included in the quantitative analysis, with data on 465 subjects. The chosen outcome measures were the Visual Analog Scale (pain, 0-10), Clinical Score (morphology, 0-5), and Transient Burning (side effect, dichotomous). Topically applied steroids decreased pain more effectively after four weeks of treatment (MD: -0.23, 95% CI: -2.53 to 2.08) and promoted mucosal healing better (MD: -0.08, 95% CI: -0.74 to 0.57) than calcineurin inhibitors. Transient burning occurred more frequently in the calcineurin inhibitor group (OR: 2.45, 95% CI: 0.55 to 10.85).

Conclusion: Notwithstanding these results, topically applied calcineurin inhibitors have the same effect as steroids. The data indicated a higher side-effect rate during the first two days of the treatment period; however, the burning sensation lasts for just two days. Calcineurin inhibitors present a good opportunity to replace steroids because they are equally effective while avoiding the side effects and drug habituation tendency associated with steroids. Commissioners of oral health care services, as well as clinicians, should bear this in mind.

Keywords: Oral Lichen Planus, Calcineurin, Steroids, Topical Treatment, Pain, Adverse Effects, Systematic Review, Network Meta-Analysis.

Presenter: Bálint Zsombor Sárαι email: sarai.balint.zsombor@semmelweis.hu

EADPH 2024 ABSTRACT 394

Evaluation of Oral Health Training (Online and In-person) for Trainee Addiction Workers

Christopher Mackie, Niall Mc Goldrick
Department of Dental Public Health, University of Dundee, Dundee, Scotland*

Aims: To evaluate an oral health promotion (OHP) training session for Trainee Addiction Workers (TAWs) utilising Theoretical Domains Framework (TDF) methodology.

Methods: University of Dundee Research Ethics Committee provided approval. Formal consent was received from participants. Two groups of TAWs were taught principles of OHP for “people with experience of drugs” (in-person in February 2020 and online in April 2021). Pre/post-intervention five-point Likert Scale questionnaires measured agreement with twenty statements derived from TDF domains. Descriptive statistics (mean and standard deviation (SD)) were calculated with 1 representing the most negative and 5 most positive responses. Domains were mapped to capability, opportunity, motivation, (COM-B) components.

Results: The in-person group (n=10, response rate 100%) saw mean score increases in 18/20 TDF statements, but greatest increases in knowledge, physical skills and beliefs about capabilities. The group pre-intervention mean was 3.4 (SD 0.92), and post-intervention was 4.2 (SD 0.29). The online group (n=18, response rate 83%) saw mean score increases across all TDF statements, but greatest increases in knowledge and emotion. The group pre-intervention mean was 2.9 (SD 0.23) and post-intervention was 3.8 (SD 0.29), with more uniform improvement observed. Regarding physical skills, 67% of the online group agreed an improvement compared with 100% in-person. Psychological capability saw overall mean increases of 1.5 in-person and 1.0 online, physical capability increased by 2.3 in-person and 1.1 online. Mean increases for reflective motivation were 0.6 in-person and 0.9 online, and automatic motivation 0.3 in-person and 0.7 online. Social opportunities increased by 0.4 in-person and 0.6 online.

Conclusions: Both groups exhibited similar overall mean score increases (0.8 in-person, 0.9 online). Less deviation was observed with online training, but physical capability appears negatively impacted. This intervention shows promise at improving TAW capability and motivation to deliver OHP activity. Future research refining this intervention with a larger sample size and in varied contexts would improve generalisability.

Keywords: Oral Health Promotion, Training, Capability, Opportunity, Motivation, Behaviour Change

Presenter: Christopher Mackie email: christopher.mackie2@nhs.scot

Interdisciplinary Collaborative Patient-Care in Oral Health and Diabetes Management in Resource-Limited Settings.

*Promise Ucheka**

Faculty of Art, Science and Technology, The University of Northampton, England, United Kingdom

Aims: The research aimed to examine the practice of behavioural intervention and interdisciplinary collaboration between medical and dental practitioners in type 2 diabetes patient management. The general objective of the research was to propose a patient-centred behavioural intervention-based collaborative patient care for medical and dental clinicians using the common risk factors approach.

Methods: The study employed a quantitative research methodology while Pearson's chi-square test of association was used to measure the relationship between clinicians' demographic characteristics and their practice of behavioural intervention and inter-clinical referral between medical and dental clinics. The participants were a convenience sample of 111 clinicians made up of 41 (36.9%) diabetes clinicians and 70 (63.1%) dental clinicians from two tertiary hospitals in Eastern Nigeria in 2021. Ethical approval was obtained from the hospitals' research ethics committees and the University of Sunderland's research ethics committee. Each participant signed an informed consent before participation.

Results: The study found that medical clinicians are statistically more likely than dental practitioners to use behavioural intervention in patient management ($p=0.015$). With interdisciplinary collaborative patient care, dental professionals are statistically more likely to refer their dental patients to diabetes clinics than medical clinicians referring their diabetes patients to dental clinics ($p<0.001$). The study also found that clinicians' age was the most important demographic factor that had a significant association with both referral and behavioural intervention use.

Conclusion: In the population studied, clinicians with more years of clinical experience and higher levels of education, were more likely to practice both behavioural intervention and interdisciplinary collaborative patient care as part of their clinical practice activities. These findings undoubtedly warrant the development of a stepwise approach to the practice of behavioural intervention and interdisciplinary collaboration between medical and dental clinicians in resource-limited settings to optimise diabetes and dental clinical care.

Keywords: Type 2 Diabetes, Oral Health, Behavioural Interventions, Interdisciplinary Collaboration

Presenter: Promise Ucheka email: promiseucheka@yahoo.com

Effectiveness of Nationwide Dental Pain Management and Substance Use Disorders Project ECHO

Richie Kohli^{1}, Karan Replogle², Andrea Gough-Goldman³, Barry Taylor⁴, Brandon Maughan⁵, Harjit Singh Sehgal⁶, Megan C. Herink⁷, Rosemarie Hemmings¹, Sean Mahoney⁸, Margaret McLain McDonnell⁹, Eli Schwarz¹*

¹Department of Community Dentistry, School of Dentistry, Oregon Health & Science University, Portland, Oregon, USA; ²Office of Clinical Affairs, School of Dentistry, Oregon Health & Science University, Portland, Oregon, USA; ³CODA Treatment Recovery (CODA Inc.), Portland, Oregon, USA; ⁴Oregon Dental Association, Wilsonville, Oregon, USA; ⁵Department of Emergency Medicine, School of Medicine, Oregon Health & Science University, Portland, Oregon, USA; ⁶Department of Periodontics, School of Dentistry, Oregon Health & Science University, Portland, Oregon, USA; ⁷College of Pharmacy, Oregon State University/Oregon Health & Science University, Portland, Oregon, USA; ⁸Mental Health and Addiction Association of Oregon, Portland, Oregon, USA; ⁹Oregon ECHO Network, Oregon Rural Practice-Based Research Network, Oregon Health & Science University, Portland, Oregon, USA

Aim: To test the effectiveness of an innovative, interactive, multidisciplinary, and participant-focused tele mentoring initiative, "Pain Management and Substance Use Disorders (SUD) Dental ECHO (Extension for Community Healthcare Outcomes)" at the national level in the United States.

Method: A panel of experts from medicine, pharmacy, social work, and dentistry led this programme for dental care providers from all over the United States. Five cohorts (2021-2023) participated in six 1-hour Zoom sessions, featuring expert presentations and participant case discussions. Pre- and post-programme surveys evaluated change in the rate of participant perception of their level of competency in 16 areas of safe dental pain management for patients with SUD. Respondents rated their level of competency on a 10-point Likert-like scale ranging from 0 (absent) and 1 (extremely weak) to 7 (good), 8 (very good), 9 (excellent), and 10 (outstanding). The study was reviewed and exempted by the Oregon Health & Science University Institutional Review Board (Study 00020289).

Results: All the 51 participants reported significant increases in their perceived competency levels for all 16 parameters tested, with 75% or more scoring good or above on most of the variables ($p<0.05$). The lowest pre-programme score (3.88) was related to the administration of the Screening, Brief Intervention, and Referral to Treatment (SBIRT) tool. Around 20% of the participants reported their pre-programme competency as good or better increasing to 55% after the programme. Lower pre-programme scores (below 5) were in the competencies around direct patient-related corrective actions, such as referring patients to SUD resources, promoting harm reduction, discussing with patients about proper storage and disposal of medications, and serving as a resource to their colleagues. 42 (83.7%) of participants agreed/strongly agreed that participation in the ECHO program was an effective way to enhance their expertise.

Conclusion: Dental care providers viewed the Project ECHO model as highly beneficial for the optimal management of dental pain and the recognition and treatment of substance use disorders.

Keywords: Pain Management, Substance Use Disorders, Project ECHO, Dental Pain

Presenter: Richie Kohli email: kohli@ohsu.edu

EADPH 2024 ABSTRACT 399

Dental Service Utilisation among Primary School Children in Tehran, Iran

Simin Z. Mohebbi^{1,2*}, Elaheh Amirian^{1,2}, Samaneh Razeghi^{1,2}, Ahmad Reza Shamshiri^{1,2}

¹Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran; ²Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aims: The global strategy on oral health, which aims to enhance oral health within the framework of universal health coverage (UHC) by 2023, is the cornerstone of our study. This study evaluated the factors associated with dental service utilisation in primary school children.

Methods: The study was approved by the Ethical Committee of the Tehran University of Medical Science (Code: IR.TUMS.DENTISTRY.REC.1401.094). In this telephone-based cross-sectional study data of 462 school children was obtained from 22 districts of Tehran, Iran, in 2023. After verbal consent, we asked the child's parents about dental service utilization in the past year and the associated factors using a standard questionnaire based on the Andersen behavioural model. The associated factors included: Predisposing (age, gender, head of household's education, size of household, tooth brushing, fluoridated toothpaste, using snacks, and the history of dental visits before age one), enabling factors (income, residence district, house status (own or rent), and dental insurance), and need factors (Parent-reported oral health problems, parent-reported oral health status, and parent-reported decayed and missed teeth (dmt)). Binary logistic regression analysis using SPSS version 26 served for statistical analysis.

Results: Among the children, 49.4% (n=228) were boys and 51.1% (n=236) had dental visit during the last year. The mean age of children was 9.4 (SD=1.7) years. Higher educated head of household (OR=1.3, $p=0.021$), higher child's tooth brushing frequency (OR=1.4, $p=0.046$), history of dental visits before age one (OR=6.7, $p=0.032$), higher developed residence district (OR=1.5, $p=0.003$), having dental insurance (OR=2.7, $p<0.001$), higher parent-reported dmt (OR=1.4, $p=0.042$), and presence of parent-reported oral health problem (OR=2.4, $p<0.001$) were associated with more frequent dental service utilisation.

Conclusions: The study's findings highlight the significant role of enabling and perceived need factors in dental service utilization among school children. Authorities must take action to empower the most vulnerable groups, thereby reducing inequalities in dental service utilisation.

Keywords: Dental Service, Utilisation, School Children, Andersen Behavioural Model

Presenter: Simin Z. Mohebbi email: smohebbi@tums.ac.ir

Development of Educational Storytelling, an Innovative Interdisciplinary Training Programme against Child Abuse and Neglect Part 1

Frida Kathrine Sofie Mathisen^{1*}, Tone Grøttjord-Glenne², Karin Goplerud Berge¹, Ingfrid Vaksdal Brattabø¹
¹Oral Health Centre of Expertise in Western Norway, Bergen, Norway; ²Sant & Usant AS, Norway

Background: Child abuse is a global challenge to public health with far-reaching negative effects on psychological and physical well-being and health. To uphold children's right to protection, in many countries dental health personnel (DHP) are required by law to report any suspected child abuse or neglect to child welfare services. However, previous studies indicate challenges related to reporting, and under-reporting is a serious and well-documented issue.

Aims: There is a need for innovative interdisciplinary programs to create readiness and willingness to act when facing suspicion of child abuse and neglect. The aim of this presentation is to set the scene for the two presentations (abstracts 402 and 408) which follow.

Methods: Documentaries and personal narratives have the potential to bring people into unknown situations, promoting dialogue and inspiring action. This presentation describes how a full-length documentary was used in an e-learning training programme. The programme, developed in collaboration between dental health researchers, experts in dentistry, psychologists, documentary film experts, and a child sexual abuse survivor, was designed and tailored for DHP, including dentists, dental hygienists, and dental secretaries. It combines true story elements with research-based learning activities, expert interviews, and group reflections delivered in a one-day seminar aiming to increase awareness and competence related to prevention, detection, follow-up, and care of children exposed to violence, abuse, and neglect, to increase knowledge about trauma and how it may be expressed, to increase confidence, when dealing with children with known and unknown traumatic experiences, to reduce development of odontophobia, and to increase fulfilment of the legal obligation to report suspected cases of child abuse and neglect. Multidisciplinary collaboration, piloting, adaptations to adhere to cultural and contextual factors in the implementation, evaluation of its effectiveness, and focusing on scalability and sustainability for continued implementation were all important elements of the innovative development.

Conclusion: The presentation explores strategies to empower DHP in preventing child abuse and neglect and how true story elements and active learning can drive knowledge and behaviour change.

Keywords: Child Abuse, Innovation, Prevention, Child Protection, E-Learning

Acknowledgements: The study is part of the Children at Risk and Oral Health research project, funded by the Research Council of Norway.

Presenter: Frida Kathrine Sofie Mathisen email: frida.mathisen@vlfk.no

Expanding the Philosophy of Green Dentistry, an Urgent Need for Environmental Health

Maryam Fazli^{1*}, Saba Kavandi², Narges Kavandi³

¹Department of Community Oral Health, School of Dentistry, Zanjan University of Medical Sciences, Zanjan, Iran; ²South Tehran Health Centre, Deputy of Health, Tehran University of Medical Sciences, Tehran, Iran; ³School of Dentistry, Islamic Azad University, Tehran, Iran

Aims: In today's world dentistry as a technology-based profession has a large impact on the environment due to waste generated by various procedures along with excessive use of electricity, water and production of carbon dioxide. Green dentistry is an innovative solution in dental practice which could be environment friendly and simultaneously money and time conservers by reducing waste, decreasing pollution, conserving energy with the eco-friendly techniques and procedures. The purpose of this study is to determine and identify the views of dentists about green dentistry structures and their willingness toward use of them.

Methods: This cross sectional pilot study was done among 417 random selected dentists who signed informed consent using researcher - made questionnaire in two related structures in 2023 in northwest of Iran. The philosophy of sustainability, prevention, precaution, and a minimally invasive patient and global-centric treatment was the first study structure. The second area planned on the 4 R's model (rethink, reduce, recycle and reuse) in green dentistry. The data was described statistically.

Results: Study dentists showed low level of knowledge and understanding the philosophy of green dentistry and its domains. Only 12%, 10%, and 7% of the participants respectively had information about the concepts of minimally invasive dentistry, precaution and prevention, and sustainability, respectively. Most of the participants (87%) had no ideas about 4 R's model.

Conclusions: It seems that dentists are probably far from applying dentistry environmental health concepts. Basic efforts toward the green dentistry philosophy penetration in dental sciences are inevitable important priorities, especially in dental education and retraining.

Keywords: Green dentistry, Environmental health, Eco-friendly

Presenter: Maryam Fazli email: mary_fa_44@yahoo.com

EADPH 2024 ABSTRACT 402

Evaluation of the Effectiveness of Educational Storytelling, an Innovative Interdisciplinary Training Programme against Child Abuse and Neglect - Part 2

Ingfrid Vaksdal Brattabø, Knut Helge Jensen, Karin Goplerud Berge
Oral Health Centre of Expertise in Western Norway, Bergen, Norway*

Background: Underreporting of child abuse and neglect is a significant issue among dental personnel, affecting vulnerable children's lives worldwide, hence there is a pressing need for effective research-based training programs.

Aims: The aim of the study was to evaluate if Educational storytelling, a novel research-based training program against child abuse, influences dental health personnels' attitude, knowledge and behaviour with regard to detecting and reporting suspected cases of child abuse.

Methods: The study was performed in Norway from February to September 2022. It used a cluster randomised controlled trial (C-RCT) approach. All public dental health clinics in the Vestland county participated. Two dental clinics were part of a pilot study, while the remaining 51 clinics were included in the C-RCT. These clinics were randomly assigned to either the test group (where employees received the one-day training programme) or the control group (where no training was provided during the same period). Employees (including dental secretaries, dental hygienists, and dentists) in both groups completed three questionnaires assessing their attitude, knowledge, and behaviour related to detecting, reporting, and treating suspected child maltreatment. Questionnaires were sent via email three weeks before the training day, one week after, and six months after the training. Participation was voluntary. To assess reporting behaviour, number of reports sent from the dental clinics to the child welfare service was registered. The study was approved by Norwegian Agency for Shared Services in Education and Research (SIKT) and the ombudsman of Vestland county.

Results: The response rates for the three questionnaires were 86.2% (363 of 421), 79.7% (302 of 379) and 67.9% (256 of 377). The results from the C-RCT, shows that the Educational storytelling program significant and positively influence dental health personnel's attitude, knowledge, and behaviour related to detecting and reporting child abuse and neglect.

Conclusion: In the population studied the educational storytelling programme proved to be an effective tool, enhancing the role of dental health personnel as mandated reporters.

Keywords: Innovation, Child Abuse, Protection, Training, Interdisciplinary Collaboration

Acknowledgement: The study is part of the Children at risk and oral health research project, funded by the Research Council of Norway.

Presenter: Ingfrid Vaksdal Brattabø email: ingfrid.vaksdal.brattabo@vlfk.no

The Development of a Game-based Oral Health Intervention for Different Settings

Laure D'Aes^{1,2*}, Ellen Palmers^{1,2}, Jasmijn Roekaerts^{1,3}, Karen Godfrin^{1,2}

¹Department of Oral Health Sciences, Research Group Population Studies in Oral Health, Catholic University of Leuven, Belgium; ²Gezonde Mond, Flemish Institute for Oral Health, Flemish Agency for Care and Health; ³Department of Oral Health Sciences, University of Gent, Belgium

Aims: The aim is to develop a school based oral health intervention for school-aged children and older persons in residential care organisations in Flanders, Belgium.

Methods: The intervention mapping protocol was used to develop a theory and practice-based methodology. A different literature review was conducted for each target group (elementary school, high school and older persons in residential care organisations) with focus on their own health related determinants. Behavioural change techniques were matched with specific determinants relating to their needs and environment: knowledge, attitude, self-efficacy and skills; additionally for children in high school social influence, intention, action planning and coping planning; for older persons social influence was also included.

Results: The literature review resulted in a board game that uses the same board for each target population, but with different cards per group, focusing on changing group-specific determinants. The game consists of questions in three categories: quiz questions, tasks, and trivia. Players may move forward if the card is answered correctly and move backward in case of mistakes. An extra category is added for adolescents (16-18 yr) and older persons where questions to promote discussion on several oral health topics, this focusses on the determinant of social influence. The first version of the game is now being evaluated by game-developing experts and will be piloted in November 2024. The game will be released on World Oral Health day, be freely available and continuously improved based on feedback. Based on the results of the version for schools and nursing homes, a version for adults and persons with disabilities will be developed.

Conclusions: In the population studied, there is a need for oral health intervention that are fun and are easy to use. The next step will be to develop a protocol for pilot testing the game.

Keywords: Oral health promotion, children, elderly, gamification

Presenter: Laure D'Aes email: laure.daes@gezondemond.be

Corporate Political Activities of the Sugar Industry in Colombia

Yanela Aravena-Rivas¹, Michelle Stennett¹, Carol Guarnizo-Herreño², Regina Mutave³,
Richard G Watt^{1*}

¹Department of Epidemiology and Public Health, University College London, United Kingdom; ²Facultad de Odontología, Universidad Nacional de Colombia, Bogotá, Colombia; ³Department of Dental Sciences, University of Nairobi, Kenya

Corporate political activities (CPAs) are actions undertaken by industry to influence policy decisions (directly or indirectly).

Aim: To identify and describe the CPAs of the ultra-processed food and drinks industry in relation to public health in Colombia.

Methods: An existing robust methodology and framework used to monitor CPA undertaken by the food industry was modified to gather a range of CPAs in Colombia including lobbying, providing financial incentives, supporting corporate social responsibility activities, and taking legal measures (Mialon et al, 2015). Firstly, the study initially identified major global and local ultra-processed food and drinks actors. Step two involved systematically identifying publicly available information sources including websites for the food industry, universities, professional associations, University of California San Francisco Industry library and relevant international organisations. Steps three and four involved data collection and analysis using a thematic iterative process. Finally, step five involved reporting the results using a narrative synthesis of the analysed data.

Results: Most CPA information was gathered from industry websites including Postobón (local company), PepsiCo Colombia, Coca Cola Fomento Economico Mexicano Sociedad Autonoma (bottling company), Nestle and industry organisations including the International Life Sciences Institute, National Association of Businessmen in Colombia and International Food and Beverage Alliance, UCSF Tobacco and Food Industry Library, and industry social media accounts. CPA identified from these diverse sources included making the case for self-regulation of industry, a range of social responsibility activities promoted by industry foundations such the Coca Cola Foundation, support for national sports teams, financial donations to various charities and opposition to sugar sweetened beverage taxes and front-of-package labelling.

Conclusions: This study found that the ultra-processed food and drinks industry utilise a complex array of CPAs in Colombia to influence public health policy in their favour.

Keywords: Commercial Determinants of Health, Ultra-Processed Food and Drinks, Corporate Political Activity, Colombia

Presenter: Richard Watt email: r.watt@ucl.ac.uk

EADPH 2024 ABSTRACT 405

Artificial Intelligence in Dental Public Health: Does it Have the Answers?

Eleftherios G. Kaklamanos^{1,2,3}, Panagiotis Karakostas^{1}, Sotirios Kalfas¹*

¹Aristotle University of Thessaloniki, Greece; ²European University Cyprus, Cyprus; ³Mohammed Bin Rashid University of Medicine and Health Sciences, United Arab Emirates

Aim: To comparatively evaluate responses from three Large Language Models (LLMs), ChatGPT 4o, Microsoft Copilot and Google Gemini, to questions related to dental public health.

Methods: Ten open-type questions were posed to the LLMS, and the responses were graded on a 0 to 10 scale by two evaluators, against conventionally gathered scientific evidence. Data analysis involved Friedman's and Wilcoxon's tests.

Results: No statistically significant differences were observed between the scores given by the two evaluators, thus an average score for each LLM was computed. Overall, Microsoft Google Gemini received the highest average score (6.8), followed by ChatGPT 4o (6.5), and Microsoft Copilot (6.0), but no statistically significant differences were noted. Although, the performance of the models in some questions was excellent, all provided occasionally weak answers, lacking comprehensiveness, scientific accuracy, clarity, and relevance.

Conclusions: While LLMS could prove to be promising in supporting evidence-based practice, their existing limitations suggest potential risk of incorrect decisions if not used cautiously. These tools should complement, not replace, the critical thinking and profound understanding of scientific evidence.

Keywords: Artificial Intelligence, Dental Public Health, Large Language Models

Presenter: Panagiotis Karakostas email: karako.dent@gmail.com

EADPH 2024 ABSTRACT 406

Radiographic Calcifications in Healthy Adults vs. those with Osteoporosis and Osteopenia

*Saulė Skinkytė, Indrė Stankevičienė, Daniel Kuleš, Alina Pūrienė**

Institute of Dentistry, Faculty of Medicine, Vilnius University, Vilnius, Lithuania

The calcifications investigated in the panoramic radiographs include carotid artery calcifications, phleboliths, calcified lymph nodes, tonsiloliths, sialoliths, and calcified elongated styloid ligament.

Aim: The study aimed to investigate the prevalence of calcifications in panoramic radiographs and to compare the results between healthy patients and individuals suffering from osteoporosis and osteopenia.

Methods: The panoramic radiographs of 120 older patients referred from the Vilnius National Osteoporosis Centre for this purpose, during 2023, were reviewed. Diagnoses were made based on the patient's medical records. The Vilnius Regional Bioethical Committee approved the study protocol, and individual consent was obtained from each participant. For statistical analysis, the Chi-Square Test was used to assess the association between two categorical variables, such as the presence of calcifications and the health status of the participants.

Results: The mean age of the participants was 73 years, with a standard deviation of 7.62 years. In total, 90 (75%) participants were females, and 30 (25%) were males. 45 (37.5%) participants were healthy, 44 (36.5%) had osteoporosis, and 31 (25.8%) had osteopenia. For healthy individuals, calcifications were present for 27 cases (60%), and for 18 (40%), they were not, $p=0.081$. For patients with osteoporosis, calcifications were identified in 29 (65.9%) radiographic images; meanwhile, in 15 (34.1%) panoramic radiographs, they were not present, $p=0.067$. Individuals with osteopenia had calcifications present in 26 (68.3%) cases, and for 5 (16.1%), they were not identified, $p=0.033$.

Conclusions: In the study population, a statistically significant prevalence of calcifications visible in panoramic radiographs was associated with patients with osteopenia. Although calcifications were identified in most radiographs, more data need to be analysed to confirm the hypothesis of bone mineral loss and its impact on calcifications' occurrence. When commissioning oral health care services, Dental Public Health specialists should be informed by this research.

Keywords: Radiography, Osteoporosis, Prevalence, Bone diseases

Presenter: Alina Pūrienė email: alina.puriene@gmail.com

EADPH 2024 ABSTRACT 407

A Comparison of Oral Health Coverage for Children in Six European Countries

*Úna McAuliffe*¹, Máiréad Harding², Helen Whelton³, Jodi Cronin⁴, Sara Burke⁵*

¹School of Public Health, University College Cork, Ireland; ²Oral Health Services Research Centre, University Dental School and Hospital, University College Cork, Ireland; ³College of Medicine and Health, University College Cork, Ireland; ⁴Centre for Policy Studies, Cork University Business School, Cork, Ireland; ⁵Centre for Health Policy and Management, School of Medicine, Trinity College Dublin, Ireland

Aim: To compare publicly funded oral health coverage for children in six European countries, Denmark, Germany, Hungary, Ireland, Scotland and Spain, each representative of a different oral health system model.

Methods: A multiple case study approach was adopted encompassing two strands of data: a detailed documentary analysis and in-depth interviews with two experts from each selected country (n=12) and two experts from non-selected countries. The World Health Organisation Universal Health Coverage Cube guided data collection and analysis. Ethical approval was granted and informed consent provided by each interviewee.

Results: Variation in oral health coverage for children was observed in all six countries. From 'universal' systems (Denmark, Germany and Scotland) where all children access most care without charge, to 'targeted' systems where the private sector assumed a dominant role. Universal systems gave a higher priority to prevention, were better at implementing oral health system reform and played a stronger role in the general health system. While 'targeted' systems were characterised by reduced oral health coverage and high out-of-pocket expenditure. The out-of-pocket expenditure was typically borne by families, leading to inequitable access to care.

Conclusion: The WHO global oral health action plan recommends universal oral health coverage. To achieve this for children, lessons must be learned from the impacts of different types of systems on universal oral health coverage. Targeted systems are less likely to meet the needs of all children, to engage in prevention contributing to inequitable service provision and oral health outcomes. Better quality oral health data can be a useful mechanism with which to engage oral health leadership and professionals, as well as prompting the political priority required for oral health reform.

Keywords: Universal Health Coverage, Oral Healthcare Systems, Inequality, Prevention

Presenter: Una McAuliffe email: una.mcauliffe@ucc.ie

EADPH 2024 ABSTRACT 408

Trauma-Sensitive Treatment in Educational Storytelling, an Innovative Interdisciplinary Training Programme against Child Abuse and Neglect – Part 3

Karin Goplerud Berge, Knut Helge Midtbø Jensen, Ingrid Vaksdal Brattabø*
Oral Health Centre of Expertise in Western Norway, Bergen, Norway

Background: Dental treatment settings may trigger responses in children who have experienced psychological trauma related to child abuse and neglect, hence there is a need for evidence-based training programmes for dental health personnel addressing trauma-sensitive treatment.

Aim: The aim of the study was to evaluate if Educational storytelling, an evidence-based training programme against child abuse and neglect, has an effect on dental health personnel's attitude, knowledge and competence regarding trauma-sensitive treatment.

Methods: The study was performed in Norway from February to September 2022. It was a cluster randomised controlled trial (C-RCT). All public dental health clinics in Vestland county participated in the study, with clinics serving as clusters. In total 51 clinics were included in the C-RCT. The clinics were randomly allocated to either a test-group, receiving the Educational storytelling (a one-day training programme), or a control-group, which did not receive this training programme within the same period. All dental health personnel (including dental secretaries, dental hygienists, and dentists) were included in the study, and invited to complete a questionnaire at three different time-points. The test-group received the questionnaire, distributed by email, three weeks prior to the training programme, one week after and 6 months after the training programme. The control-group received the questionnaires at the same three time-points. The questionnaire assessed dental health personnel's attitude, knowledge and competence regarding trauma-sensitive treatment. Consent was obtained prior to the study, and voluntary participation emphasised. The study was approved by Norwegian Agency for Shared Services in Education and Research (SIKT) and the ombudsman of Vestland county.

Results: The response rate for the questionnaires at the three different time points were respectively 86.2% (363/421), 79.7% (302/379) and 67.9% (256/377). The C-RCT find the Educational storytelling programme to significantly and positively influence dental health personnel's attitude, knowledge and competence related to trauma-sensitive treatment.

Conclusion: In the population studied, the Educational storytelling programme was found to be an effective tool for dental health personnel encountering with traumatized children.

Keywords: Innovation, Child Abuse, Trauma-Sensitive Treatment, Training Programme

Acknowledgement: The study is part of the Children at risk and oral health research project, funded by the Research council of Norway.

Presenter: Karin Goplerud Berg email: karin.goplerud.berge@vlfk.no

EADPH 2024 ABSTRACT 409

Oral Health in Norway: A Follow-up Study of Health Behavioural Changes in Migrant Parents of Children between 3 and 5 years old. Preliminary Results

Dixie Brea Larios, Manal Mustafa
Oral Health Centre of Expertise in Western Norway (TkVestland)*

Background: Migrants face health challenges due to limited access to healthcare services, lack of familiarity with health information, and language barriers. Limited oral health literacy and unawareness of oral health risks may affect health assessments, habits, and outcomes.

Aim: This follow-up study examines the oral health knowledge, attitudes, and practices of migrant families in Norway and their impact on oral health behaviour over time.

Methods: A baseline study of migrant parents with young children (3-5 years old) recruited from an intervention program in Bergen between 2018 and 2022. The follow-up study collected these families' socio-demographics, oral health knowledge, attitudes, and practices using a cross-sectional questionnaire. Correlations and regression analysis were assessed and controlled for socio-demographic variables. The Regional Ethics Committee (REK) and the Norwegian Agency for Shared Services in Education and Research (SIKT) approved the study. The SPSS statistical program was used, and numbers were reported as percentages and means. This abstract presents the preliminary results of the follow-up study in 2023/2024.

Results: The preliminary results came from 59 (82%) of migrant parents who consented to participate 17 (41%) of their children were male and 24 (59%) were female. The majority of parents came from African and Asian regions and had lived in Norway for 6 to 15 years, 39 (54%) had higher education and were in employment. Sixty to eighty percent demonstrated knowledge of oral hygiene, caries development, and the risks of sugar consumption. While 40 (55%) reported favourable oral health attitudes and practices. The means for behavioural intentions, attitudes, subjective norms, and perceived behavioural control were (2.31), (12.7), (8.86), and (19.6) respectively. The importance of children's eating habits, toothbrushing, and time management had a positive relationship.

Conclusions: Limited oral health literacy, environmental and biological factors, along with cultural differences and beliefs can influence oral health behaviour and outcomes over time. Understanding and acting upon health information is crucial for migrant parents' intentions to improve oral health. Culturally sensitive oral health education and repeated information may be beneficial. Motivation and self-regulation could facilitate acculturation and knowledge adaptation. Further research is needed to develop effective strategies for overcoming oral health barriers in this population.

Keywords: Oral Health Literacy, Health Behavioural Changes, Acculturation

Acknowledgement: This study was funded by the Norwegian Research Council (NFR).

Presenter: Dixie Brea Larios email: dixie.brea@vlfk.no

EADPH 2024 ABSTRACT 410

Erosive Tooth Wear among a Group Finnish Adults

Hanna Kangasmaa^{1}, Viivi Alaraudanjoki¹, Tarja Tanner^{1,2}, Vuokko Anttonen¹, Marja-Liisa Laitala^{1,2}*
¹Research Unit of Population Health, University of Oulu, Finland; ²Medical Research Centre, Oulu University Hospital, Finland

So far, scientific evidence on erosive tooth wear (ETW) among Finnish adults is vague.

Aims: The aim was to investigate the prevalence of ETW among Finnish adults.

Methods: Adults from Northern Finland were invited to participate in this cross-sectional study. All the participants were over the age of 18 years, and participation was voluntary. According to power calculation 139 participants were needed to give 80% possibility to find clinical significance of ETW. Of 246 adults invited, altogether 176 gave their written consent and participated. As background factors age (yrs), gender (male/female), height (cm) and weight (kg) were recorded, and Body Mass Index (BMI) calculated. Participants were grouped by age (≤ 40 yrs/ $41-65$ yrs/ >66 yrs) and gender. BMI was categorized as normal weight (BMI <25)/overweight (BMI=25-30)/obesity (BMI >30). ETW was recorded using BEWE index and categorized as BEWE sum score <3 (no or only mild ETW)/BEWE sum score 3-8 (moderate ETW)/BEWE sum score ≥ 9 (severe ETW). The outcomes were described as frequencies and proportions. For statistical analyses crosstabulation and Pearson's Chi-square or Fisher's Exact test was used. Ethical Committee of North Ostrobothnia's Hospital District (EETMK: 64/2020) gave the approval for the study.

Results: The mean age of the participants was 58.6 yrs (SD16.5, range19-87yrs) and n=112 (64%) were female. Practically all (98.3%) had ETW of at least some degree (BEWE sum score 3-18) and 26.9% (n=46) severe ETW (BEWE sum score 9-18). In the youngest (19-40yrs) and in the oldest (65-87yrs) age groups severe ETW was found in one third of the participants, 29.4% (n=10) and 30.4% (n=21) respectively. ETW was more common among males than females ($p=0.05$), 23 (37.7%) males and 23 (20.9%) females had severe BEWE sum score 9-18. Of the obese males (BMI >30), 71.4% (n=5) had severe ETW, whereas 21.4% (n=6) of females, respectively ($p=0.038$).

Conclusions: In the population studied ETW is common, especially among males with high BMI.

Keywords: Erosive tooth wear, ETW, BEWE sum score, BMI

Presenter: Hanna Kangasmaa email: hanna.kangasmaa@student oulu.fi

EADPH 2024 ABSTRACT 411

Intake of Ultra-Processed Food and Essential Nutrients by Caries Active Children

Adamantia Filippou^{1}, Eleni Giannakidou², Aristidis Arhakis¹, Konstantinos Arapostathis¹, Sotirios Kalfas²*
¹Department of Pedodontics, School of Dentistry, Faculty of Health Sciences, Aristotle University of Thessaloniki, Greece; ²Department of Preventive Dentistry, Periodontology & Implant Biology, School of Dentistry, Faculty of Health Sciences, Aristotle University of Thessaloniki, Greece

Aims: To retrospectively examine the intake of ultra-processed foods and essential nutrients based on the dietary references in Europe, in a group of Greek children.

Methods: Ethical approval was received from the Bio-Ethics Committee of Aristotle University of Thessaloniki (approval number: 247). Patients' records of caries active children aged 5 to 16 years who visited the Dental Clinic of Aristotle University in Thessaloniki during the time period 202-2024 were used to extract data on caries status, and dietary records for three consecutive days (Thursday, Friday, and Saturday). Dietary records were evaluated using the Nutrium software to categorize foods as minimally, moderately, or ultra-processed and assess micro- and macro-nutrient intake. The caries experience was determined by dmfs and DMFS index. Data were statistically analysed to evaluate the dietary parameters of this population.

Results: Total of 99 children (54 girls and 45 boys) participated in the survey. The median age of the group was 9 (min=5, max=16.5) years. The median DMFS+dmfs score was 9 (min=1, max=46). Analysis of three-day diet records revealed that two-thirds of the children's meals were processed foods, with 42 children consuming moderately-processed and 57 ultra-processed. Additionally, 82 children consumed processed snacks exclusively, of which 79 out of 118 snacks were sticky. Added sugars were 45.8% (44.3 g) higher, and fibre were 54% (9.2 g) lower than the recommended amounts according to the European Food Safety Authority's Dietary Reference Values for the EU (2019). A significant ($p<0.05$) negative correlation was found between DMFS score and protein, vitamin C, calcium, phosphorus, or potassium intake.

Conclusions: In the caries active population studied, the high prevalence of ultra-processed food and especially of sticky snacks in the diets is highlighted. Low intake of some essential nutrients correlates with a high caries experience.

Keywords: Ultra-Processed Food, Caries, Child, Nutrient Intake, Diet

Presenter: Adamantia Filippou email: adfilippou@gmail.com

EADPH 2024 ABSTRACT 412

Impact of Interrupting Oral Prevention on Dental Health of Children in Marburg due to COVID-19

Julia Winter^{1}, Constanze Schul², Esther Hörschgen², Miriam Thöne-Mühling², Thea Hartmann¹*
¹Philipps-University Marburg and University Medical Centre Giessen and Marburg (Campus Marburg), University Dental School, Department of Operative Dentistry, Endodontics and Paediatric Dentistry; ²Dental Public Health Service of the Public Health Department in the District of Marburg Biedenkopf, Germany

Aim(s): Due to the Covid-19 pandemic, the selective intensive preventive programme (SIP) in Marburg (Hesse, Germany) with fluoride varnish applications had to be interrupted. The aim of this retrospective anonymised data analysis was to investigate possible effects of SIP interruption on oral health of 7- and 8-year-olds in socially deprived areas.

Methods: Data from the dental public health service were used to calculate caries increment in 7- and 8-year-olds for the test group, between last dental check-up before the interruption of SIP (02/2019-02/2020) and the first check-up after restart (01/2022-07/2022). The test group was compared to a control group of children (same age and schools, with SIP, data collected between the school year 2017/18 and 2019/20). One experienced dentist (TH), who participated in all previous calibrations for examinations in Hesse as part of the Deutsche Arbeitsgemeinschaft Jugendzahnpflege (DAJ) studies conducted all the dental examinations. The University of Marburg ethics committee approved the study (file number 24-42-BO). Mann-Whitney U test and Pearson's chi-square test were used for statistical analysis.

Results: For the 7-year-olds/8-year-olds, 103/112 children could be included for the control (first examination mean dmf-t/DMF-T 2.6 to 2.4 second examination / 2.3 to 1.5), and 89 children for the test group (first and second examination mean dmf-t/DMF-T 1.2 / 2.6 to 1.2). For both age groups no significant difference in caries increment in deciduous teeth between the test and control groups was found.

Conclusions: In the population studied, the interruption of SIP due to the Covid-19 pandemic had no negative impact on caries increment. In such analyses, it is important to examine caries increment values and not just mean dmf-t/DMF-T values, although the latter data can often be extracted much more easily from dental public health service patient records.

Keywords: Dental Caries Increment, Children, Covid-19

Presenter: Julia Winter email: julia.winter@med.uni-marburg.de

EADPH 2024 ABSTRACT 413

Attitudes, Behaviours, and Perceptions of E-cigarettes among the University Students of Dundee

Suvetha Manoharan, Niall Mc Goldrick*
School of Dentistry, University of Dundee, Dundee, Scotland

Aims: This study aims to explore attitudes, behaviours, and perceptions of e-cigarettes among students at the University of Dundee, Dundee, Scotland, UK.

Methods: Ethical approval was obtained from the University of Dundee Research Ethics Committee. Participation in the study was voluntary, and informed consent was obtained from all the participants. A mixed-methods approach was employed, combining an online questionnaire and an in-person focus group. The study was a convenience sample between June 28 and July 15, 2024. Quantitative data were analysed using descriptive statistics, while qualitative data underwent thematic analysis.

Results: A questionnaire was completed by 75 people, followed by a 5-person in-depth focus group. In the focus group, 20% were current e-cigarette users, 20% had tried e-cigarettes, and 60% were non-smokers. For the questionnaire, 40% of the respondents were aged 21–25. Gender of respondents: 73% were women, 24% were men, and 1% preferred not to say. 99% of participants were aware of e-cigarettes, with 37% reporting use. 75% found e-cigarettes highly visible, and 94% believed flavours and packaging affected their appeal. 76% perceived e-cigarettes as safer than traditional cigarettes. Key qualitative themes included addiction concerns, social influences, and uncertainty about long-term health effects. Attitudes towards e-cigarette use in public spaces varied, with stronger restrictions preferred in enclosed areas. Social context and peer influence were significant factors in shaping e-cigarette behaviours. Environmental concerns, particularly regarding disposable vapes, emerged as a notable theme.

Conclusions: The study revealed complex attitudes, behaviours, and perceptions towards e-cigarettes among university students, reflecting both perceived benefits as potential smoking cessation aids and concerns about their appeal to non-smokers. The findings underscore the need for comprehensive education on e-cigarettes, targeted policies, and further research into long-term health and environmental impacts. Future studies should focus on longitudinal effects, the effectiveness of various education and policy interventions, and the environmental consequences of e-cigarette.

Keywords: E-Cigarettes, University Students, Attitudes, Behaviours, Perceptions, Mixed-Methods, Smoking Cessation, Health Effects, Social Influences, Environmental Concerns, Addiction

Presenter: Suvetha Manoharan email: suvementhan1999@gmail.com

EADPH 2024 ABSTRACT 414

Caries Trend in the Child Population from 1983 to 2022 in Spain. A Meta Regression Analysis

José María Montiel Company^{1}, Yolanda Martínez-Beneyto^{2,4}, Verónica Ausina-Márquez^{3,4}, José Enrique Iranzo-Cortés¹, Ana Sandra Llera-Romero¹*

¹Department of Stomatology. University of Valencia, Spain; ²Unit of Stomatology. University of Murcia, Spain; ³Health Department Valencia-Clínico-Malvarrosa, Valencia, Spain; ⁴Spanish Society of Epidemiology and Oral Public Health (SESPO), Madrid, Spain

Aims: The aim of the study was to quantify the epidemiological trend of dental caries in the Spanish paediatric population.

Methods: The source of data used in this study was Oral Health Data Bank insights (OHDBI). We included 52 national or autonomous community (regional) surveys in the 6-year cohort (primary dentition) and 51 surveys in the 12-year cohort (permanent dentition) carried out from 1983 to 2022. The data were combined using a mixed effects model in a meta-regression to assess the significant effect of time (years) on both the DMFT/dft trend and caries prevalence (z-test; p-value<0.05).

Results: In the 6-year cohort in the period 1983-1995 (17 surveys, n=13,434; z-test =-2.87; p<0.001) dft decreased 0.1 points/year, while in the period 1997-2022 (35 surveys; n=31,780; z-test= 0.71; p=0.478), it did not change over time. Caries prevalence in the period 1983-1995 decreased by 0.09 percentage points each year (z-test =-3.33; p<0.001), and in the period 1997-2022 it remained stable and unchanged (z-test=0.04; p=0.966). In the 12-year cohort in the period 1983-1995 (17 surveys; n=13,113; z-test=-3.04; p=0.002) DMFT decreased 0.11 per year while in the period 1997-2022 (34 surveys; n=28,442; z-test=-4.11; p<0.001), it decreased 0.03 points/year. The caries prevalence in the period 1983-1995 decreased over time by 0.093 percentage points/year (z-test=8.29; p<0.001), while in the period 1997-2022 it decreased by only 0.02 each year (z-test=-3.3 y un p<0.001).

Conclusions: The epidemiological trend of dental caries in the Spanish child population has been decreasing in the last 45 years, but while in the 12-year cohort a smooth decreasing trend is observed to continue, on the contrary, in the primary dentition of the 6-year cohort no improvement is observed since 1997.

Keywords: Caries Trend, Meta Regression, Child Population, DMFT/dft, OHDBI

Presenter: José María Montiel-Company email: jose.maria.montiel@uv.es

Decision-making Challenges for Health Workers in Bombed or Besieged Hospitals in Gaza (2023-2024): A Qualitative Study

Saga Hamdan, Sucharita Nanjappa
University of Dundee, Dundee, United Kingdom*

Aim: This study aimed to investigate the decision-making challenges experienced by healthcare workers in besieged or targeted health facilities in the Gaza Strip during 2023/2024.

Methods: Semi-structured interviews were conducted with five healthcare workers (doctors and nurses) who worked/are still working in various hospitals in Gaza from October 7th 2023 to 15 July 2024. Interviews were audio-recorded, transcribed, and analysed using framework analysis to identify key themes and codes. The study was approved by the Nursing and Medical ethics committee of the University of Dundee.

Results: Analysis of the interviews revealed several key themes affecting decision-making in besieged or targeted health facilities in Gaza. Healthcare workers reported severe shortages of medical supplies, frequent power outages, and constant fear for personal safety as primary challenges. Many described working extended shifts under extreme stress and making difficult triage decisions due to limited resources. Participants also highlighted the psychological toll of witnessing repeated trauma and the struggle to maintain professional composure. The interviews highlighted the ethical dilemmas faced by healthcare workers, particularly in situations where they had to prioritize patients based on severity and likelihood of survival.

Conclusions: In the population studied, healthcare workers in Gaza faced and face extraordinary challenges that significantly impact their ability to provide care and maintain their personal well-being. The findings underscore the urgent need for international support to protect healthcare infrastructure, ensure consistent supply of medical resources, and provide psychological support for healthcare workers in conflict zones.

Keywords Gaza, Healthcare workers, Decision-making challenges, Bombed hospitals, Besieged healthcare facilities.

Acknowledgements: The authors thank all the healthcare workers who participated in this study for sharing their experiences.

Presenter: Saga Hamdan email: Sagahamdan98@gmail.com

Leveraging Opportunities in Immunisation from a Dental Public Health Perspective

Lwazi Sibanda^{1,2}, Rakhee Patel^{1,2}, Susan Elden²*

¹NHS England (NHSE) – London Region, London, UK; ²Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, London, UK

After clean water, immunisation is the most effective public health (PH) intervention, yet marked inequalities in uptake exist across London, putting the population at greater risk of disease outbreaks. The United Kingdom was in the top 10 countries in the WHO-European region for numbers of measles cases in 2023 and 2024, so the London Immunisation Strategy (LIS) marks a significant step forward to improving access and equitably and increasing vaccination uptake.

Aim(s): Inequalities exist influencing oral health outcomes and access. Dental public health (DPH) input acts to reduce inequalities. Harnessing these skills, the aim was to work within the NHS England Public Health to the development and implement the LIS, to increase vaccination rates across diverse populations and to identify opportunities to deepen collaborative working between dentistry and other professions, where access and inequality areas overlap.

Methods: In 2023, a core working group involving wider PH teams advised the London Immunisation Board (LIB). Epidemiological data analysis, review of existing policy, and stakeholder engagement were undertaken. A multiagency, interprofessional approach was implemented.

Results: An accessible LIS was developed and published, and a measles information letter was distributed by dental teams in London, via commissioning teams, responding to increasing cases and low vaccination uptake.

Conclusions: DPH can play a crucial role in wider health agendas, due to its unique position in the healthcare system, utilising PH competencies and strategic dental leadership. The LIS outlines comprehensive measures to improve coverage and reduce inequalities. Dental professionals can potentially engage with individuals, who may not regularly engage with other healthcare providers. Dental teams can provide invaluable inputs for health promotion and highlight how systems can be integrated for interprofessional learning. Future work could focus on the feasibility of vaccinations in new locations including dental clinics.

Keywords: Vaccination, Immunisation, Dental Teams, Dental Access, Inequalities, Interprofessional Working

Acknowledgements: The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation. The North London UKHSA health protection team for their support with drafting communications across London's dental teams.

Presenter: Lwazi Sibanda email: Lwazi.sibanda@nhs.net

EADPH 2024 ABSTRACT 417

Improving Oral Health Outcome in Autistic Children: A Narrative Review of Strategies and Interventions

Delara Kakavand^{1}, Mahdia Gholami¹, Simin Z. Mohabbi^{1,2}*

¹Community Oral Health Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran; ²Research Centre for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran

Aims: Children with autism spectrum disorder (ASD) encounter distinct challenges that hinder their ability to access and receive optimal oral healthcare. Sensory sensitivities, communication difficulties, and behavioural complexities create barriers that go beyond the usual anxieties associated with dental visits. This narrative review examined current strategies and interventions aimed at improving oral health outcomes for children with autism.

Methods: A comprehensive search was conducted across multiple databases, including Cochrane, Dentistry, Oral Science Source, PubMed, and Web of Science. The search utilized key phrases such as “autism spectrum disorder,” “ASD,” “oral health,” “dental care,” “oral health intervention,” “oral healthcare,” and “oral hygiene” to identify relevant literature. The search strategy was limited to the English language from 2015 to June 2024. The title and abstract of records were reviewed by two authors independently, and the related articles were included in the study.

Results: In total, 26 original articles (including case-control, clinical control, and cross-sectional) were consistent with the purpose of the present study. Several effective strategies were identified based on the specific needs of autistic children, including the use of visual aids, social stories, and desensitization techniques to alleviate anxiety related to dental visits. The importance of caregiver involvement was emphasized, as educating parents about effective oral hygiene practices can significantly enhance their children's oral health. Furthermore, the effectiveness of interdisciplinary approaches was shown, where dental professionals collaborate with psychologists and occupational therapists to develop comprehensive care plans. Emerging technologies, including telehealth services, were recognized for their potential to improve access to dental care for children with ASD.

Conclusions: This narrative review underscored the need for ongoing research to formulate and implement effective oral health strategies tailored to the unique characteristics of children with autism. By adopting a multifaceted approach that includes education, behavioural strategies, and collaborative care, healthcare providers can significantly improve oral health outcomes and overall quality of life for this vulnerable population.

Keywords: Autism Spectrum Disorder, Autistic Disorder, Oral health, Intervention

Presenter: Delara Kakavand email: delakakavand@gmail.com

EADPH 2024 ABSTRACT 418

Key Determinants of Health and Wellbeing of Dental Nurses: A Rapid Review

*Nana Opoku-Ansah, Jennifer E. Gallagher, Victoria Niven**

Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, United Kingdom

Aim: To review the literature on the key determinants of health and well-being amongst dental nurses.

Methods: A rapid review of the literature, adopting Kangura's approach, across seven health and social science databases through OVID and the Cochrane Library, professional and health system databases. Informed by past research exploring the health and wellbeing of other dental professionals, a two-stage review process was implemented by the reviewing team. Data extraction and qualitative synthesis of the included studies were undertaken, with quality assessment for risk of bias conducted using a Mixed Methods Appraisal Tool.

Results: Out of 4,450 identified papers, 44 underwent full-text screening, with 37 studies included in the analysis. Four were of high quality, thirteen moderate-high, fourteen moderate-low and six low-quality studies. The determinants influencing well-being were grouped into micro-, meso- and macro-level factors with factors identified across the three domains. Workplace characteristics were the most frequently identified determinants of health and wellbeing. Dental nurses with extended duties had higher job satisfaction. There was evidence that the COVID-19 pandemic caused high levels of anxiety, stress, burnout, and isolation among dental nurses.

Conclusions: Current research indicates that the determinants of dental nurses' health and well-being are comparable between nations and similar to those of other dental professionals. Organisational and policy changes to recognise and improve the determinants of health and well-being among dental nurses and support retention within the profession are recommended, especially following the pandemic.

Keywords: Health & Wellbeing, Dental Nurses, Literature Review

Presenter: Victoria Niven email: victoria.niven@kcl.ac.uk

EADPH 2024 ABSTRACT 419

Behavioural Risk Factors for Adolescent Injuries – Findings from the Millennium Cohort Study

Alex Blokland^{1}, Renato Venturelli^{1,2}, Anja Heilmann¹, Maria Sifaki¹*

¹Department of Epidemiology & Public Health, University College London, UK; ²Department of Special Care Dentistry, Royal National ENT and Eastman Dental Hospitals, University College Hospitals NHS Foundation Trust, London, UK

Aims: Injuries, including dental trauma, continue to pose a global public health problem. The aetiology of injuries is multifactorial and includes behavioural factors that change over the life course. During adolescence, behaviours such as drinking alcohol and smoking/vaping become relevant. Such risk-taking behaviours may elevate the risk of injuries. This study aimed to explore the association between risk-taking behaviours and injury experience among UK adolescents.

Methods: This is a secondary data analysis including 4,048 participants from the sixth sweep of the nationally representative UK Millennium Cohort Study, when cohort members were 14 years old. The main outcome was the number of medically attended injuries sustained since the last sweep (age 11), as reported by the parent. Risk-taking behaviours, namely having ever drunk alcohol and having ever smoked/vaped, were reported by the cohort members. Negative binomial regression models were used to estimate the associations. Models were adjusted for child characteristics, family factors and socioeconomic position.

Results: The prevalence of dental trauma was very low (n=22, 0.5%), whilst the prevalence of overall injury was 1,470 (37.8%). Therefore, the analysis was conducted on overall injuries only. Having ever drunk alcohol was reported by 2,040 (54.7%) cohort members, whilst having ever smoked/vaped by 862 (23.7%). The prevalence of ever experiencing one such risk-taking behaviour (either smoking/vaping or drinking) was 2,136 (36.9%), and 1,006 (19.0%) cohort members reported having ever experienced both behaviours. The highest injury rates were observed in adolescents who experienced both risk-taking behaviours, i.e. smoking/vaping and drinking alcohol (IRR=1.43, 95%CI 1.17 – 1.74, $p=0.001$). Those who engaged in either smoking/vaping or drinking alcohol also presented with elevated injury rates, although this was less pronounced (IRR=1.26, 95%CI 1.07 – 1.49, $p=0.007$).

Conclusions: In the population studied, there was evidence of an association between risky behaviours and overall injury risk. Further research should explore this association longitudinally.

Keywords: Injury, Trauma, Risk-Taking Behaviours, Smoking, Vaping, Drinking, Alcohol, Adolescence

Presenter: Alex Blokland email: alex.blokland@ucl.ac.uk

Self-assessed Oral Health in Community-dwelling Adults in a Socially Diverse Metropolis Area of Iran

Aydin Joudi^{1*}, Hossein Hessari²

¹Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran; ²Research Centre for Caries Prevention, Dentistry Research Institute. Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran/ Departments of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aim: This study aimed to determine characteristics associated with, self-assessed oral health status in community-dwelling adults in the socially diverse Tehran metropolis area.

Methods: This telephone-based cross-sectional study was conducted among adults older than 18 years in Tehran. A random number generator was used to generate 75 numbers for each district, and randomly select phone numbers. A power calculation indicated that the minimum sample required for this study was 1,510 participants. Trained interviewers conducted telephone calls between January 2023 and June 2023, using a validated structured questionnaire. Self-assessed oral health (SAOH) was evaluated using: “How would you describe your oral health status?” with four response options: excellent, very good/good, fair, and poor/very poor. Descriptive statistics and multivariate ordinal logistic regression were used to measure the association of SAOH with respondent characteristics. The study was approved by the Ethics Committee of Tehran University of Medical Sciences.

Results: The response rate was 52.4%. The total number of call attempts was 11,691, and 2,582 subjects refused to participate. Most (693) of the participants (45.8%) were in the 18–34 age group with a mean age of 46.21 (SD=18.43). 582 (38.5%) of the participants had an academic degree. A total of 387 participants (25.7%) assessed oral health as poor/very poor, 390 (25.8%) reported fair, and 126 subjects (8.4%) rated excellent. Findings revealed that dryness, oral problems, and unmet dental needs increase the probability of worse SAOH ($p<0.001$), while dental insurance, and not time loss due to dental problems increase the probability of better SAOH ($p<0.001$).

Conclusion: While enabling factors like insurance increases the probability of better SAOH, experienced difficulties related to oral issues such as dryness and unmet dental needs could be a potential factor influencing SAOH. Health-care providers should routinely monitor SAOH to detect early signs and symptoms of oral health problems, evaluate access to dental services, and monitor general health and well-being.

Keywords: Oral Health, Dentistry, Self-Assessed Oral Health, Dental Services

Presenter: Aydin Joudi email: Aydinjoudi@gmail.com

A Healthy Mouth for All: Training Community Oral Health Workers to Serve as a Link between Vulnerable Groups and Dental Professionals

Ruth Sederel^{1,2*}, Karen Godfrin^{1,2}, Luc De Visschere^{1,2}, Martijn Lambert^{1,2}

¹Flemish Institute for Oral Health, Ghent, Belgium; ²Department of Oral Health Sciences, Ghent University, Belgium

Aim(s): The programme ‘Ieders Mond Gezond (‘A Healthy Mouth for All’) aims to minimise the gap between underprivileged people and dental professionals, by training community oral health workers (COHWs) within poverty- or welfare organisations. This study aimed to explore the characteristics of those applying to become a COHW in Flanders, Belgium.

Methods: Five out of 60 primary care zones in Flanders were randomly selected. All local welfare organisations in these zones were asked to be involved in the study. Between February and June 2024 six COHW training programmes were organised. After giving their consent, those who attended were asked to complete a survey, questioning their socio-demographic characteristics, attitude towards oral health care (for vulnerable groups), and knowledge about oral health. Descriptive analyses of these results gave a first insight into essential characteristics of the COHWs trained. Ethics approval was obtained from the Medical Ethics Committee of Ghent University (ONZ-2023-0631).

Results: Out of the 95 trained COHWs, 93 (98%) participated in the study, of whom 82 (88%) were female and 60 (65%) were 30-60 years of age. Eighty one (87%) were born in Belgium and 86 (93%) had Belgian nationality. Furthermore, 87 participants (94%) spoke Dutch as native language and 67 (72%) had at least a higher education degree, and concerning job status, 83 participants (89%) were employed. The mean attitude score was 3.58 (SD=0.33) out of 5, and assessment before the training showed a mean knowledge score of 6.83 (SD=2.81) out of 19.

Conclusions: The participating COHWs showed limited knowledge but a rather positive attitude towards oral health-care. Concerning their characteristics they consisted of a rather homogeneous group of people, with predominantly highly educated female professionals, differing from most underserved populations. Further research to examine a potential impact on the work as COHW is required.

Keywords: Oral Health, Community Oral Health Workers, Underserved Populations

Presenter: Ruth Sederel email: ruth.sederel@ugent.be

EADPH 2024 ABSTRACT 425

Does Amalgam still Play a Significant Role in German Dental Practice?

Michael Raedel¹, Heinz-Werner Priess², Steffen Bohm², Michael H. Walter³*

¹University Dental Medicine, Faculty of Medicine Carl Gustav Carus, Dresden, Germany; ²Agenon GmbH, Berlin, Germany; ³Technische Universität Dresden, Dresden, Germany

Aims: Focusing on the upcoming prohibition of amalgam within the European Union, the aim of this study was to investigate the recent use and importance of amalgam in German dental practices, using claims data from a national health insurance company's database.

Methods: Since 1 January 2021, amalgam fillings in general dental practices have to be recorded as such in fee claims. 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 2021 and 2023. The use of amalgam was measured at three levels: the percentage of all restorations level, the utilisation rate at the patient level and the percentage of dentists still using amalgam at the practice level. The restoration proportion and the utilisation rate were calculated for all fillings and specifically in the posterior region of the mouth. Analyses were conducted for whole Germany as well as by region.

Results: In 2023, the percentage of amalgam fillings nationwide was 1.9% of all dental restorations and the percentage of posterior amalgam fillings nationwide was 3.0%. There was a decreasing trend between 2021 and 2023, from 3.6% to 3.0% of the restorations for patients who received amalgam fillings for posterior teeth. The regional utilisation rates of amalgam fillings for the posterior teeth ranged between 0.8% and 17.1%. The proportion of dental practices still using amalgam ranged from 4.4% to 59.2% depending on the region.

Conclusions: These results confirm a decrease in the use of dental amalgam in Germany. However, the regional differences are unexpectedly high. There are regions, where amalgam still plays a major role for nearly one fifth of the patients, while in other regions amalgam use is now almost irrelevant

Keywords: Claims Data, Amalgam, Fillings, Direct Restorations, Prohibition

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

Presenter: Michael Raedel email: Michael.Raedel@ukdd.de

EADPH 2024 ABSTRACT 427

Application of the Health Action Process Approach model to Promote Denture Cleaning Behaviour, in Elderly Iranians: A Randomised Controlled Trial

Fatemeh Moghaddam, Katayoun Sargeran, Mahdia Gholami*

Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Aim: Improving the oral health of elderly individuals should be a key objective for multidisciplinary teams responsible for their care. This study aimed to compare the effectiveness of an oral health educational programme based on the HAPA (Health Action Process Approach) model when provided by a dentist versus a health officer among elders.

Methods: This cluster-randomized controlled trial included 132 elderly residents aged 60 years and over wearing partial or complete dentures from 24 municipal residential care homes in Tehran, Iran in 2021. A questionnaire was administered through face-to-face interviews at baseline and follow-ups to collect socio-demographic characteristics and HAPA model constructs, including risk perception, outcome expectancies, action self-efficacy, intention, action planning, coping planning, recovery self-efficacy and maintenance self-efficacy related to denture cleaning behaviour. The care homes were assigned into two groups via simple randomisation: Group A with 68 elderly residents, received oral health education based on the HAPA model from one dentist and Group B with 64 residents from one health officer. Both groups received follow-up education every two weeks. Participants voluntarily completed informed consent and the study had ethics approval (ID: IR.TUMS.DENTISTRY.REC.1399.102). Follow-ups were conducted after one and three months by a calibrated examiner. The Generalized Estimating Equations (GEE) analysis was used for intragroup and intergroup comparisons.

Results: There was no significant difference in cleaning of dentures regularly ($p=0.53$) between the intervention groups. However, the behaviour among participants in both groups had improved after three-months (OR=1.17). The scores of all HAPA theory constructs for regular denture cleaning behaviour increased significantly in both groups at one and three months follow-ups compared to baseline ($p<0.001$).

Conclusion: No difference was observed in the effectiveness of educational methods using the HAPA model when delivered by a dentist versus a health officer. Both interventions were effective in promoting improved denture cleaning behaviour. These interventions could be integrated into existing public health programmes.

Keywords: Elderly, HAPA Model, Denture Cleaning, Oral Health

Presenter: Fatemeh Moghaddam email: fmoghaddam@razi.tums.ac.ir

EADPH 2024 ABSTRACT 429

What Impairs Oral Health Quality Care? - Results from the EU DELIVER Project

Paulo Melo¹, Leonor Frey-Furtado^{1}, Stefan Listl^{2,3}, Michael Lorenz³, Maria Lurdes Pereira¹*
¹EPI Unit, Faculdade de Medicina Dentária da Universidade do Porto. Porto, Portugal; ²Department of Dentistry–Quality and Safety of Oral Healthcare, Radboud University Medical Centre–Radboud Institute for Health Sciences (RIHS), Nijmegen, Gelderland, the Netherlands; ³Heidelberg Institute of Global Health – Section for Oral Health, Heidelberg University Hospital, Heidelberg University, Heidelberg, Baden-Württemberg, Germany

Aim: This study aimed to address the prioritisation of pressing issues for oral care quality improvement within the framework of the European Union DELIVER project, funded by the Horizon Europe programme.

Methods: Ethical approval (n°19/2022) was obtained from the Ethics Committee for Health at the Faculty of Dental Medicine, University of Porto and informed consent was obtained from all participants. The Nominal Group Technique, a structured group brainstorming method, was used to identify priority issues for oral healthcare quality improvement. The first stage occurred at the DELIVER project kick-off meeting (4th November 2022, Porto), generating a preliminary list of pressing issues at practice, community, and policy levels. In this stage, 27 experts of the DELIVER project were grouped into three groups, each addressing one level. The second stage was an online session with 17 stakeholders - a convenience sample recruited by snowball technique - from various backgrounds, including researchers, citizens/patients, providers, and health policymakers from Portugal, Denmark, Malta, Germany, Sweden, and the United Kingdom. For the final voting, 13 stakeholders participated. The representatives included five researchers, three policymakers, two providers, and three patients/citizens.

Results: Significant differences were found across different levels, with accessibility identified as a prominent issue. They encompassed the affordability, availability, and acceptability of oral healthcare services.

Conclusions: The stakeholders that participated in Nominal Group Technique found an urgent need for policy reforms, increased investment, and a transition to preventive and patient-centred dental care. Collaborative efforts among stakeholders are essential for addressing key issues and enhancing oral care quality. The results highlight the necessity for better oral health policymaking, with a focus on equitable and affordable access to care.

Keywords: Quality Improvement, Oral Health, Health Policy, Stakeholder Participation, Pressing Issues

Acknowledgement: Supported by the European Union's Horizon Europe research and innovation program under grant agreement 101057077.

Presenter: Leonor Frey-Furtado email: lfurtado@fmd.up.pt

Implementation of QR Codes - Improvement of Healthcare Sustainability in Orthodontics

*Huda El Wahed**, Catherine Tohill, Elinor Chalmers
Dundee Dental Research Hospital and School, Dundee, United Kingdom

Aim: This three-cycle quality improvement project aims to determine if a paper-free method of patient information in the orthodontic department at Dundee Dental Hospital and Research School will improve sustainability from financial, social and environmental aspects.

Methods: In the first cycle at baseline, the number of patient information leaflets (PIL) which were distributed over the month of December 2022 was recorded. Using a standardised environmental calculation tool, the total number of leaflets distributed were used to calculate the financial cost of the leaflets and the total carbon footprint emitted as a result. In the second cycle, an alternative was offered to deliver patient information using a quick response code (QR code) accessed through a smart phone for one month. An electronic platform prospectively recorded how many patients consented to the use of QR codes. This was used to calculate the total digital carbon footprint, using a standardised digital carbon footprint calculation tool. A 7-item questionnaire assessed the social impact of using QR codes. The study did not require prior approval by the ethics committee.

Results: Following QR code implementation, 31 patients preferred QR codes over paper PIL. Of those who used QR codes all 31 (100%) said they would prefer to use it again and 26 (83%) found it easier to use than a paper PIL. QR codes led to a 77% financial saving and reduction in carbon footprint compared to a paper PIL. A third cycle of this project is underway and further results will follow.

Conclusion: A paper-free method can successfully reduce carbon footprint while saving money and improving patient care, (compared to paper PIL). Patients with no prior experience of QR codes expressed interest in its use. Educating patients and designing posters on QR codes have been discussed and will be the focus of future work.

Keywords: QR Codes, Financial Savings, Environmental Savings, Orthodontics

Presenter: Huda El Wahed email: huda.elwahed@nhs.scot

Seroprevalence of SARS-CoV-2 Antibodies among Oral Health Care Workers: A Systematic Review

Elisabeth Santigli¹, Marlene Lindner², Harald H. Kessler³, Mandana Dehghannejad⁴, Norbert Jakse¹, Omid Fakheran¹

¹Division of Oral Surgery and Orthodontics, Department of Dental Medicine and Oral Health, Medical University of Graz, Graz, Austria; ²Division of Restorative Dentistry, Periodontology and Prosthodontics, Department of Dental Medicine and Oral Health, Medical University of Graz, Graz, Austria; ³Diagnostic and Research Institute of Hygiene, Microbiology and Environmental Medicine, Medical University of Graz, Graz, Austria; ⁴Priva Dental Office, Elisabeth Santigli, Gleisdorf, Austria

Aims: Aerosol and droplet exposure makes oral health care workers (OHCWs) highly susceptible to transmissible infections, for example with SARS-CoV-2. Population-based screening is useful in understanding public health interventions in COVID-19. This systematic review with meta-analysis presents the prevalence of SARS-CoV-2 antibodies among OHCWs.

Methods: An electronic search has been performed to identify records indexed in Medline, Web of Science, Scopus, and the Cochrane Library until December 2023. All observational studies providing data on SARS-CoV-2 antibodies in OHCWs with natural seroconversion were included. The quality of 722 records was evaluated using the Joana Briggs Institute (JBI) critical appraisal tool.

Results: Finally, ten studies were considered as eligible encompassing point-seroprevalence data on 6,083 dental professionals (dentists, assistants, and administrative staff) from seven European countries and Brazil. The antibody seroprevalence was pooled by a meta-analysis performed with MedCalc® statistical software. Applying random effects model, the overall seroprevalence of immunoglobulin G antibodies among OHCWs was estimated at 13.49% (95% CI 9.15%–18.52%).

Conclusions: These findings from a selection of European and Brazilian dental teams indicate that the seroprevalence of SARS-CoV-2 antibodies based on natural seroconversion may be higher compared to other healthcare professionals (7%-9%) and the general population (9.5%). To date, the present study is the only systematic review summarising exclusively the IgG results of OHCWs with natural seroconversion for all members of the dental team (dentists, dental hygienists, dental assistants (nurses) and administrative staff.

Keywords: COVID-19, Health Personnel, Seroprevalence, SARS-CoV-2, Antibody

Presenter: Mandana Deeghannejad email: elisabeth.santigli@medunigraz.at

EADPH 2024 ABSTRACT 433

Public Dental Care System for Children (0-14 years) in Spain

Yolanda Martínez Beneyto^{1,2}, Verónica Ausina Márquez¹, María Victoria Mateos Moreno¹, María Elena Martínez Sanz¹, José María Montiel-Company³*

¹Spanish Society of Epidemiology and Oral Public Health (SESPO), Madrid, Spain; ²Department of Stomatology. University of Murcia, Spain; ³Department of Stomatology. University of Valencia, Spain

Aims: The aim of the study was to analyse the current situation of public dental healthcare for children in Spain, following the publication of the WHO's oral health strategy for the years 2023-2030.

Methods: A literature search has been conducted in databases from the Ministry of Health and Spanish Autonomous Communities to identify information related to dental healthcare services aimed at children (0-14 years old) in relation to the global oral health strategy published (WHO).

Results: Spanish Royal Decree 1030/2006, of 15 September 2006, established the common service portfolio of the Spanish National Health System in dental health with coverage for 6 to 14 year-olds. Recently the 0-5 years-old group has been incorporated, within this coverage, regulated through a National Service Portfolio (RD 606/2024, which modifies the common service portfolio of the National Health System), as a consequence of the WHO oral health strategy for 2030. However, for the 6 to 14 year-olds, because of different funding and provision systems (public, capitation system, or mixed) the provision of care and treatment still varies between the 17 Spanish Autonomous Regions.

Conclusion: In Spain, one consequence of the WHO oral health strategy for the years 2023-2030 has been a widening of the age range of children, who can obtain oral health care from public services. It is now available to children aged between 0 and 14 years of age.

Keywords: Dental Public Health, Spain, Children, Coverage, WHO

Presenter: Yolanda Martínez Beneyto email: yolandam@um.es

EADPH 2024 ABSTRACT 435

Analysis of Public Dental Care for the Elderly in Spain

Verónica Ausina-Márquez^{1,2}, José María Blanco-González², María Eulalia Llamas-Ortuño², Yolanda Martínez-Beneyto², José María Montiel-Company³*

¹Department of Health Sciences, Faculty of Dentistry. European University of Valencia, Spain; ²Spanish Society of Epidemiology and Oral Public Health (SESPO), Madrid, Spain; ³Department of Stomatology, University of Valencia, Spain

Aim: To analyse the current situation of public dental health care for people over 65 years old in Spain, its degree of concordance with national epidemiological data, and the World Health Organisation's (WHO) oral health strategy.

Methods: To achieve these objectives, an online search of relevant databases was conducted to identify information on the oral health status of this cohort and the dental health care services available to people over 65 years old in Spain. The identified services were analysed to determine their impact and alignment with the WHO oral health strategy.

Results: The oral health status of people over 65 years old in Spain reveals a high prevalence of caries, periodontitis, and edentulism, significantly affecting their quality of life. Although the Spanish National Health Service portfolio includes basic services aimed at the adult population in general, there is no specific portfolio for this cohort that considers their particular needs.

Conclusions: Currently, there is no specific oral health service portfolio for people over 65 years old in Spain. An expansion of the service portfolio based on their needs, prioritising equity and accessibility, is essential. Integrating these services into primary care, oral health literacy, innovative staffing models, and the use of digital technologies are part of the WHO strategy that can reduce inequalities and improve the quality of life for the elderly, promoting a preventive and public health approach.

Keywords: Oral Health, Over 65 Years Old, National Health System, WHO

Presenter: Verónica Ausina-Márquez email: veronicaausinamarquez@gmail.com

EADPH 2024 ABSTRACT 436

New Oral Health Services and Educational Programme for Caregivers of Intellectually Disabled

María Carmen Trullols-Casas^{1}, Antonio Expósito-Delgado¹, Marta Lázaro-Cabello¹, Teresa Almerich-Torres, Pilar Raigal-García de las Heras²*

¹Spanish Society for Epidemiology and Public Oral Health (SESPO), Madrid, Spain; ²Spanish Confederation of Associations for Care of People with Cerebral Palsy (ASPACE), Madrid, Spain

Aim: This study evaluated newly implemented oral health services in Spain for individuals with intellectual disabilities and the impact of an educational course for their caregivers and professionals.

Methods: The study was conducted following the new benefits law established by the Ministry of Health in 2022, with participation from SESPO. An educational training course was organized by SESPO and ASPACE, along with a satisfaction survey to assess participant feedback. Data were collected via evaluation forms completed by 45 participants. The new services were designed to address the oral health challenges faced by individuals with intellectual disabilities. Key interventions include essential hygiene and dietary advice, management of acute dental issues, oral surgery, preventive care and treatments for caries.

Results: The online course, held in October 2023, included 65 participants of whom 60 (93%) were women. They included 41 (62%) speech therapists, 6 (11%) caregivers and 4 (6%) physiotherapists, and nurses. It consisted of 2 hours of instruction followed by a 30-minute discussion session. Participants reported positive feedback on the training, with high scores for organization (8.47/10), participant suitability (8.93/10), duration (8.24/10), and overall effectiveness (9/10). Notably, 60 (93%) of participants found the course instrumental in enhancing their understanding of oral health care.

Conclusions: The implementation of specialised oral health services and targeted training for caregivers and professionals has the potential to significantly improve oral health outcomes for individuals with intellectual disabilities in Spain, ensuring better overall health and quality of life.

Keywords: Oral Health Services, Intellectual Disabilities, Caregivers, Educational Programme

Presenter: Maria Carmen Trullols-Casas email: mctrullols@gmail.com

EADPH 2024 ABSTRACT 437

Tobacco Control in Europe: A Policy Assessment Review

Angeliki Anna Gkinosati^{1}, Maria Myrto Solomou², Polykarpos Hadjiperikli², Yiannis Pistolas², Chrystala Charalambous²*

¹University of Queen Mary, London, UK; ²European University Cyprus, Nicosia, Cyprus

Aims: This review aimed to assess the progress and effectiveness of tobacco control efforts in Europe, with a particular emphasis on the existing guidelines, such as the WHO Framework Convention on Tobacco Control and the ongoing review of the Tobacco Products Directive, within the EU, as well as the likelihood to achieve the WHO goal for 30% relative reduction in prevalence of current tobacco use, in persons aged 15+ years, by 2025.

Methods: The results of the Tobacco Control Scale (TCS) study that was conducted across 37 European countries in 2021, have been compared with data obtained from Eurostat on trends regarding tobacco use among people aged 15 years and older, as well as with data provided by WHO regarding expected relative reduction in tobacco use in the years 2010-2025.

Results: The TCS score results indicated that nine countries (Ireland, UK, France, the Netherlands, Hungary, Norway, Finland, Iceland, and Romania) have achieved scores of 60 points or higher. These countries were also among the countries with the highest TCS scores in 2019 except Romania and Netherlands. Five countries—Bosnia & Herzegovina, Switzerland, Serbia, Germany, and Bulgaria—have particularly low scores, with fewer than 45 points. Similarly, the Eurostat results have revealed that most of the countries with high TCS scores achieved lower smoking rates by 2019. However, based on WHO estimations only 8 EU-countries, as well as the UK, are on track to achieve the WHO goal for a 30% reduction by 2025.

Conclusions: A positive correlation was evident between the TCS scores and tobacco reduction. However, the TCS score results have shown that the guidelines in place for controlling tobacco use are not always effectively enforced across all countries. Therefore there is definitely room for better implementation and, maybe for additional policy measures.

Keywords: Tobacco Control, Tobacco Policy, Policy Assessment, Tobacco Control Scale

Presenter: Angeliki Anna Gkinosati email: angeliki_anna_gkinosati@outlook.com

EADPH 2024 ABSTRACT 442

Dental Patients with Additional Support Needs Treated under General Anaesthesia. A Comparative Study of Oral Treatment Provided

Evangelia Bogosian¹, Evangelia Vailaki^{2}, Maria Alexaki³, Ioanna Panagiotopoulou¹, Emmanouela Maisi¹*
¹Dental Clinic, University General Hospital of Heraklion, Greece; ²General Hospital of Agios Nikolaos, Greece; ³Health Centre of Heraklion, Greece

Aim: The aim of the present study was to compare oral treatment provided to dental patients with additional support needs, under general anaesthesia (GA) at the University Hospital of Heraklion twenty years ago and in the recent past.

Methods: It was a retrospective study of the patient records of first hundred patients treated under GA, between January 2000 and February 2003 (group 1) and the first hundred patients treated under GA, between January 2020 and July 2022 (group 2) at the Dental Clinic of the University General Hospital of Heraklion. Data were obtained from patients' files. Sex, age and indication for GA plus the treatment carried out were recorded.

Results: In group 1 there were 50 males and 50 females, with a mean age of 27.2 years. Nasal intubation (NI) was used for 85, oral intubation (OI) for 14 and through a tracheostomy for one patient. The patients received 135 fillings, 3 fissure sealants, 590 extractions, 10 endodontic treatments, 7 apicectomies, 33 non-surgical periodontal treatments, 20 periodontal surgery, 30 fluoride applications. Mean surgery duration was 2 hours and 25 minutes. In group 2 there were 49 males and 51 females, with a mean age of 21.7 years. NI was used for 84, OI for 14 and through a tracheostomy for 2 patients. The patients received 435 fillings, 244 fissure sealants, 460 extractions, 10 endodontic treatments, 5 apicectomies, 91 non-surgical periodontal treatments, 12 periodontal surgery, 77 fluoride applications. Mean surgery duration was 2 hours and 23 minutes.

Conclusions: Dental patients with additional support needs, treated under GA, have many and complex odontotherapeutic needs. The great number of extractions indicates their poor oral health. In group 2 the increased number of restorations and preventive fillings and the decrease in the number of extractions indicate an improvement of their oral health status, due to the existence of the Dental Clinic and a systematic effort to serve their needs.

Keywords: Dental Patients, Additional Support Needs, General Anaesthesia, Oral Treatment Provision

Presenter: EvangeliaVailaki email: evavailaki@ gmail.com

EADPH 2024 ABSTRACT 445

Shared Decision-Making in Primary Care. A Scoping Review

*Hana Arab**

Department of Dental Public Health, University of Dundee, Dundee, UK

Introduction: Shared decision-making involves healthcare providers engaging patients in making healthcare decision. It can reduce decisional conflict, increase patient satisfaction and improve health outcome in secondary care. Evidence regarding its implementation in primary care however, remains limited.

Aims: The aims of this study were to:

- summarise the literature on shared decision-making in primary care
- explore barriers and facilitators to its implementation,
- highlight factors patient consider important when deciding on treatment options,
- and identify examples in primary care and dental care.

Methods: A scoping review was employed using Arksey and O'Malley's framework. Eligible studies included those published from 2016, following the introduction of the realistic medicine model of health, and studies that involved patients and healthcare providers in primary care using shared decision-making.

Results: One thousand three hundred and ninety-three studies were identified which yielded 15 eligible studies. Seven quantitative studies evaluated patient-provider experiences with shared decision-making, while nine quantitative studies used shared decision-making as an intervention, comparing it to usual care. Healthcare providers reported time constraints and training gaps, as barriers to shared decision-making. Meanwhile, patients highlighted providers' perfunctory discussion style as a hindrance. Both healthcare providers and patients agreed that incorporating decision aids, such as pre-consultation educating material, helped streamline the shared decision-making process. Shared decision-making has been shown to improve health outcomes by increasing prostate screening rates, booking recall intervals in dental care, and increasing prediabetes awareness. Financial support was the main factor which patients considered when making decisions.

Conclusions: This review identified barriers leading to inadequate shared decision-making practices including, time constraints and gaps in training. This proposes a need for professional training in shared decision-making in routine care. Implementing educational health material, through decision aids prior to consultation, can enhance shared decision-making, resulting in increased patient satisfaction and better health outcomes.

Keywords: Shared decision-making, Healthcare provider, Patient, Primary care, Barriers, Facilitators

Acknowledgement: I would like to express my gratitude to my supervisor Dr Heather Cassie and Shambhunath Shambhunath for their invaluable input and feedback.

Presenter: Hana Arab email: hanaf.arab@hotmail.com

EADPH 2024 ABSTRACT 446

Intraoral Camera Utilisation: A Multi-perspective Study of Applications, Challenges and Future Directions in Iran

Seyed Kian Haji Seyed Javadi^{1}, Aisan Nouri²*

¹Community Oral Health Department, Shahid Beheshti University of Medical Sciences, Dental Faculty, Tehran, Iran; ²Nano Tech Laboratory, School of Engineering, Faculty of Science and Engineering, Macquarie University, Sydney, Australia

Aim: This study aimed to explore the applications, challenges and future prospects of using intra oral cameras (IOCs) and their role in oral health promotion.

Methods: This research utilised a qualitative focus group design, incorporating five separate groups—comprising 16 dental professionals, 12 patients and 7 digital technology experts—to explore the various dimensions of IOC usage in Iran. Thematic analysis, following the Braun & Clarke method, was used to analyse patterns and themes within the discussions. The study was approved by the ethics committee of the Zanzan University of Medical Sciences. It included obtaining informed consent from all participants and ensuring confidentiality and anonymity of the data. Participants were informed of their right to withdraw from the study at any time without consequence.

Results: Six themes were identified regarding IOCs applications, including diagnosis, patient education, documentation, referral, teleconsultation and student training. Additionally, challenges such as technical issues, financial constraints, the need for training and patient acceptance were noted. Suggestions for the future development of IOCs included enhancing their features and integrating them with emerging technologies such as sensors, artificial intelligence, and augmented reality.

Conclusion: IOCs mark a major advancement in dental technology, significantly improving oral care quality. Moving forward, continued innovation and research will be essential to address existing challenges and fully leverage their benefits, especially in rural areas.

Keywords: Intra Oral Camera, Teledentistry, Teleconsultation, Dentistry

Presenter: Seyed Kian Haji Seyed Javadi email: kian.javadi.dentist@gmail.com

Poverty Dynamics and Caries in Adolescents: Evidence from a Birth Cohort Study

Gisselle Carbajal Rodriguez^{1,2*}, Agatha W van Meijeren-van Lunteren^{1,2}, Eppo B Wolvius^{1,2}, Lea Kragt^{1,2}
¹The Generation R Study Group, Erasmus MC University Medical Centre, Rotterdam, The Netherlands;
²Department of Oral and Maxillofacial Surgery, Special Dental Care and Orthodontics, Erasmus MC
University Medical Centre, Rotterdam, The Netherlands

Aims: The aim of this study was to investigate whether timing, accumulation, and trajectories of poverty are associated with dental caries in young adolescents.

Methods: The study was conducted within the Generation R Study, a population-based prospective cohort study. The Medical Ethics Committee of Erasmus Medical Centre, approved this research and parental consent was obtained for each participant. This study included 2653 children. Information about the number of children and adults living in a household and household income at six time points from pregnancy to 13 year-old was obtained from parental questionnaires to construct a poverty variable. The DMFT index was used to assess dental caries at the age of 13 years. Sociodemographic and oral health-related characteristics were included as possible confounders. Hurdle Negative Binomial Models were used to assess the relationship between dental caries at the age of 13 years and poverty.

Results: Poverty at birth and intermittent poverty up to the age of 13 were significantly associated with dental caries (OR 1.41, 95% CI 1.01-1.99; OR 1.36, 95% CI 1.01-1.83 respectively) and with an increased mean number of decayed teeth by 34% (95% CI 1.02-1.76; 95% CI 1.05-1.71, respectively). Latent class growth analysis showed four trajectories for the probabilities of poverty. All trajectories were associated with dental caries at 13 years of age. However, the “moderate to high” trajectory showed the strongest association (OR 1.55, 95%CI 1.05-2.29) and an increase in the mean number of decayed teeth by 58% (95%CI 1.18-2.12) than the “stable non-poor” trajectory.

Conclusion: In the population studied, poverty at birth, intermittent poverty and downward poverty trajectory were associated with higher odds and higher mean number of decayed teeth at 13 years of age.

Keywords: Dental Caries, Poverty, Children, Adolescents, Cohort Study

Presenter: Gisselle Carbajal email: g.carbajalrodriguez@erasmusmc.nl

The First Teledentistry Oral Healthcare Intervention in Greece; Preliminary Results

Venetia Sotiri^{1*}, Maria Tsantidou², Emmanuel Liristis¹, Ioannis Kiouisis¹, Nicolas Giraudeau³
¹Tzaneion General Hospital of Piraeus, Greece; ²Office of Chief Dental Officer, Hellenic Ministry of Health, Greece; ³University of Montpellier, Montpellier, France

Aim: To perform a preliminary evaluation of Greece’s National Health System’s first teledentistry action.

Methods: In April 2024 Tzaneion Piraeus Hospital implemented a teledentistry project to Oinousses island, in which 42 patients’ oral health status was recorded and detailed treatment plans were made. Two months later three dentists provided on site therapy for 40 of these patients. The project was approved by the Tzaneion Hospital Ethics Committee and all patients consented to take part.

Results: Twelve children and 30 adults, 18 males and 24 females, with average age of 38.1 years received telediagnosis from a dentist. One case of oral cancer and one case of leukoplakia were suspected and referred for immediate further examination. Two months later, on site clinical examination found that 23 individuals had a CPI score of 2 or lower. Poor periodontal status was noticed in 14. The adults’ mean DMFT score was 12.51. Four patients had diseases of the mucosa and 8 other oral pathologies. Caries was confirmed in 146 teeth. Two dental teams performed 40 clinical examinations and delivered 255 items of treatment during 66 hours of 4-handed dentistry. Treatment included: 95 fillings, 34 extractions, 38 scalings, 14 root surface debridements, 8 fluoride applications and 24 fissure sealants. Twenty six patients were referred to a dentist or a physician for further treatment.

Conclusions: Teledentistry enabled distant preliminary diagnosis of severe and life-threatening diseases and facilitated pre-appointment treatment planning, which contributed to the provision of treatment for patients living in an island with limited access to dental care. It was concluded that more research to optimise the efficacy and efficiency of dental treatment following teledentistry preliminary diagnosis and treatment planning in a remote population as well as its acceptance by patients and dentists is important.

Keywords: Teledentistry, Oral Diagnosis, Greece

Disclaimer: Opinions expressed are the authors' and do not reflect positions of any Greek State entity

Presenter: Venetia Sotiri email: vensotiri@gmail.com

EADPH 2024 ABSTRACT 451

Exclusion of Molar-Incisor Hypomineralisation in Metrics Leads to Overestimation of Caries Prevalence

Isadora Passos Maciel, Erica Torres de Almeida Piovesan, Soraya Coelho Leal
Department of Dentistry, Faculty of Health Sciences, University of Brasilia, Brazil*

Aim: This cross-sectional study aimed to assess the increase in caries prevalence when carious lesions are not distinguished from molar-incisor hypomineralisation (MIH).

Methods: A total of 471 children 6 to 9 years old (8.12 ± 0.90) from the Federal District of Brazil were examined by a single calibrated dentist for dental caries and MIH using the CAST (Caries Assessment Spectrum and Treatment) and the MIH-SSS (MIH-severity scoring system), respectively. This study was approved by the Research Ethics Committee of the Health Sciences Foundation (CAAE 00617218.3.0000.5553), Federal District. The association between MIH and dental caries was analysed using the chi-square test, and odds ratios with 95% confidence intervals were calculated. The Wilcoxon signed-rank test was used to determine the differences between children with and without MIH.

Results: The prevalence of dental caries in both primary and permanent dentitions (restricted to dentine lesions) was 46.49%, while MIH prevalence in permanent dentition was 13.59%. Among the first permanent molars, 123 teeth exhibited MIH, 76 dental caries, and 31 presented with both conditions. Children with MIH were 4.43 times more likely also to have carious lesions. The proportion of children with moderate and severe MIH was significantly higher than those with mild MIH ($p < 0.0001$).

Conclusions: MIH and dental caries are associated, and the failure to distinguish MIH from carious lesions can lead to an overestimation of caries prevalence. Public health authorities should recognise the importance of including MIH detection in epidemiological surveys.

Keywords: Molar Incisor Hypomineralisation, Dental Caries, Prevalence

Presenter: Erica Torres de Almeida Piovesan email: ericatorresa@gmail.com

EADPH 2024 ABSTRACT 453

More than just Cost? Affordability of Private Dental Care in Australia 2014-2022

Matt Hopcraft, Ankur Singh
Melbourne Dental School, The University of Melbourne, VIC 3010, Australia*

Aim: The aim was to analyse private dental fees in Australia in relation to weekly earnings as a measure of relative affordability, looking at changes over time and geographic differences within Australia

Methods: Dental fee data for 2014-2022 was obtained from the Australian Dental Association and mean fees for select treatment procedures were calculated (check-up, extraction, posterior amalgam and composite restorations, molar root canal and crown). Median and percentile weekly income data were obtained from the Australian Bureau of Statistics. The proportion of full-time weekly earnings (at the 10th, 25th, 50th, 75th and 90th percentile) required to pay for each treatment items was calculated. Figures are reported in Australia dollars.

Results: From 2014-2022 dental fees increased - check-up 5.3% (\$266 to \$280); crown 8.5% (\$1,546 to \$1,678); composite 10.3% (\$232 to \$256); extraction 13.3% (\$181 to \$205); molar root canal 14.3% (\$1,056 to \$1,207); and amalgam 16.8% (\$196 to \$229). Median weekly full-time earnings increased from \$1,208 to \$1,500 (24.2%), with smaller increases for those in the 10th and 25th percentile. A dental check-up cost 22% of the median weekly income in 2014, decreasing to 18.7% of the median weekly income by 2022. However, in 2022 a dental check-up costs nearly one third of the weekly income for low-income earners but less than 10% of the weekly income for the highest income earners.

Conclusion: In the population studied, the cost of private dental services as a proportion of weekly income has not increased over the past 9 years. However rising inflation contributing to increased costs for housing, food and energy is likely to have made dental care relatively less affordable for those with lower than median incomes. These findings demonstrate that relative inequality in Australia may act as a barrier to accessing dental care, and more nuanced research is required to better understand affordability.

Keywords: Dentists, Public Health Dentistry, Health Equity, Socioeconomic Disparities in Health, Affordability

Presenter: Matt Hopcraft email: m.hopcraft@unimelb.edu.au

EADPH 2024 ABSTRACT 457

Causal Modelling and Inference: Prerequisites and Potential for Oral Health Policy Globally

Zoi Tsarnava^{1*}, Maria Tsantidou², Chrystala Charalambous³, Demosthenes Panagiotakos⁴,
Aristomenis Syngelakis^{5,6}

¹National Rehabilitation Centre, Athens, Greece; ²Panhellenic Union of Public Health Physicians, Athens, Greece; ³European University Cyprus; ⁴Harokopio University, Athens, Greece; ⁵Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ⁶School of Dentistry, European University of Cyprus, Republic of Cyprus

Aim: An ageing population needs effective and evidence based oral health policies which consider the impact of oral health on general health, quality of life and health system's viability. The aim of this study was to examine the prerequisites for developing a causal, prediction model of the aged population's oral health status and needs, in connection with related health policies.

Methods: A review of the literature, published prior to July 2023, in MEDLINE (via PubMed), Scopus and Google Scholar, was performed regarding the impact of demographic, social, economic, behavioural, and public policy determinants on oral health status. In addition, data regarding the determinants were extracted from Global Burden of Disease (GBD), WHO, World bank, Eurostat and OECD databases. Disability-Adjusted Life Years (DALYs) due to edentulism and oral cancer, in European countries, were used as the outcome. Multi-level, mixed-effects generalised structured models were estimated.

Results: The determinants studied were included in a structured, prediction model of the aged population's oral health status and needs trends and estimated its influence on DALYs due to edentulism and oral cancer. Alcohol consumption, tobacco use, raised glucose levels and sugar consumption per capita, along with public oral health expenditure, were the main factors that were highlighted as significant for the oral health.

Conclusions: The development of a prediction model of the aged population's oral health status is of crucial importance for the development of evidence-based oral health policies that aim to be comprehensive, fair, effective and deliver viable oral health care, as well as interventions on the Social Determinants of Health and primordial prevention.

Keywords: Population aging, Oral health policy, Oral health prediction model, Oral health needs, Oral health funding, Structured modelling

Disclaimer: The opinions expressed in this abstract are the authors' own and do not reflect the opinions of any Greek government entity.

Presenter: Zoi Tsarnava email: zoitsarnava88@gmail.com

EADPH 2024 ABSTRACT 459

The Impact of COVID-19 Pandemic on Delayed Diagnosis of Oral Cancer. A Preliminary Study

Yiannis Pistoras^{1*}, Maria Myrto Solomou¹, Maria Georgaki², Evangelia Piperi², Nikolaos G. Nikitakis²
¹School of Dentistry, European University Cyprus, Nicosia, Cyprus; ²Department of Oral Medicine & Pathology and Hospital Dentistry, School of Dentistry, National and Kapodistrian University of Athens, Greece

Aim: COVID-19 pandemic's impact on health care systems worldwide has been very significant. Among other consequences, the disruption of health care services has resulted in delays in cancer diagnosis with negative effects on prognosis. This study aimed to assess the pandemic's impact on the delayed diagnosis and treatment of oral cancer.

Methods: A comprehensive literature search was conducted in PubMed, Scopus, and relevant reference lists, following PRISMA guidelines, to identify studies on the impact of COVID-19 on oral cancer diagnosis. The search terms used were “Covid 19 AND oral cancer AND delayed diagnosis”. Full-text studies published in English were included, while case reports, reviews, abstracts, editorials, conference proceedings, and duplicates were excluded. Out of 56 articles retrieved, 20 met the inclusion criteria after final selection and duplicate removal.

Results: Thirteen studies reported delays in patient referrals to specialists, leading to late oral cancer diagnoses. Dental practices were temporarily closed or operated at reduced capacity due to lockdowns and health concerns. Patients, fearing infection, hesitated to seek dental services, resulting in later detection of oral cancer and delays in addressing mild symptoms. These delays have serious implications, as late-stage oral cancer is associated with more aggressive disease, higher mortality, and more complex, invasive treatments. Six studies specifically noted a statistically significant increase in patients with advanced-stage tumors (T3–T4) during the pandemic, alongside a decline in newly diagnosed cancer cases.

Conclusions: COVID-19 pandemic has exacerbated challenges in oral cancer detection, leading to delays in diagnosis. This underscores the need for robust and resilient health care systems that can maintain essential services during crises. In addition, investing in new technologies, like telemedicine and artificial intelligence, may prove valuable for timely detection and prompt diagnosis and treatment, even during pandemics.

Keywords: Oral cancer, Delayed diagnosis, Covid19, Prognosis, Pandemic, Telemedicine

Presenter: Yiannis Pistolas email: yiannis.pistolas@gmail.com

EADPH 2024 ABSTRACT 460

Impact of Covid-19 Pandemic on Access to Oral Health Services. A Preliminary Review

Julia Solomondos^{1}, Maria Kouri², Chrystala Charalambous¹, Aristomenis I. Syngelakis^{3,4},
Nikolaos G. Nikitakis²*

¹School of Dentistry, European University Cyprus, Cyprus; ²Department of Oral Medicine & Pathology and Hospital Dentistry, School of Dentistry, National and Kapodistrian University of Athens, Greece; ³Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ⁴School of Dentistry, European University of Cyprus, Republic of Cyprus

Aim: Oral health (OH) is integral part of systemic health showing bi-directional interconnection. Covid-19 pandemic had a significant impact on OH in several ways, including limiting patients' access to OH services. This study aimed to review access to OH services during pandemic.

Methods: PubMed database was searched up to August 2024 following the PRISMA guidelines. The search terms impact OR impactful OR impacting AND covid-19 OR pandemic covid-19 AND oral health AND oral medicine were used, revealing 548 articles. Only English language articles were included. Reviews were excluded.

Results: Nine articles met the inclusion criteria. Postponing or cancelling visits to dental offices was reported in six of the studies resulting in a decrease of the average number of patients seeking outpatient services for the year 2020. Visits were limited to those deemed necessary, mainly because of patients' fear of infection. One study reported no changes in visits related to oral mucosal lesions. Greater demands for oral surgery and teledentistry and less demands for preventive services were also observed. Three studies reported that teledentistry can be used to monitor changes in oral cavity, suggesting that it may be necessary to be integrated into dental education.

Conclusions: This preliminary review revealed that visits to dental care units decreased during Covid-19 pandemic. Although exact data on visits related to oral lesions or to specialised oral medicine centres are scarce, it is reasonable to assume that pandemic had a negative impact on access to OH services for several oral diseases' diagnosis and management. Teledentistry could be used as a potential tool for assessing and triaging patients and may be incorporated in the primary health care, especially in periods of limited physical access to OH services, such as pandemics. It is planned to conduct a full systematic review on the topic in the near future.

Keywords: Covid 19", Pandemic, Teledentistry, Oral Health, Dentistry, Oral Medicine

Presenter: Julia Solomondos julia.solomon.13@gmail.com

Access of Cancer Patients to Oral and Dental Care Services - A Preliminary Review

*Fotios Charitos**, Maria Kouri, Erofilia Papadopoulou, Emmanouil Vardas, Nikolaos G Nikitakis
Department of Oral Medicine & Pathology and Hospital Dentistry, School of Dentistry, National and Kapodistrian University of Athens, Greece

Aim: Maintenance of oral and dental health through preventive and therapeutic interventions is an important component of supportive care for cancer patients (CP). This preliminary review aimed to explore the access of CP to oral and dental care (DC) services.

Methods: PubMed database was searched up to August 2024 following the PRISMA guidelines, using the search terms access AND dental care AND oral care AND cancer. The filters applied were “full text “and “humans”. The search revealed 204 articles. Only articles in English language were included. Articles referring to CP before diagnosis were excluded.

Results: Eight relevant articles were included in this review, seven from the USA and one from Australia. Five studies reported that financial problems, including insurance status, were the most common reason limiting or precluding access to DC. Two studies reported that several cancer centres did not have dental staff for assessing and managing CP, thus oncologists were addressing the patients’ oral care needs. However, location and ease of access to dental offices affected oncologists’ likelihood to refer to DC services. Additionally, one study focused on the training programmes at dental schools, where a lack of adequate knowledge and hands on experience required for managing CP seeking DC among graduates was reported.

Conclusions: This preliminary review revealed that financial issues were the most likely reason for hampering access to oral and dental care services, followed by the reduced frequency of dental referrals from oncologists. Since management of CP by specialised dentists is essential, increased awareness and vigilance of both oncologists and dentists, collaboration in the context of a multidisciplinary team, and facilitation of patients’ access to dental treatment are crucial; financial issues, availability of services and adequately trained personnel, are imperative. It is planned to conduct a full systematic review on the topic in the near future.

Keywords: Oral Care, Dental Care, Cancer Patients, Oncologists, Financial Issues, Education

Presenter: Fotis Charitos email: fotischaritos21@gmail.com

Oral Cancer Screening in Public Health Care Services. A preliminary review

Georgios Rafeletos^{1}*, Maria Georgaki¹, Evangelia Piperi¹, Konstantina Delli², Nikolaos G. Nikitakis¹
¹Department of Oral Medicine & Pathology and Hospital Dentistry, National and Kapodistrian University of Athens, Greece; ²Department of Oral and Maxillofacial Surgery, University of Groningen, University Medical Centre Groningen, Groningen, Netherlands

Aim: Oral cancer (OC) is a significant global public health concern, associated with significant mortality and morbidity, especially when diagnosed at advanced stages. Effective population-based screening programmes to detect early-stage asymptomatic OC cases, as well as pre-existing oral potentially malignant disorders (OPMD), is crucial. This review aimed to assess the effectiveness, challenges and outcomes of OC screening programmes performed in public health care units.

Methods: A search in database MEDLINE/PubMed following the PRISMA guidelines and relevant reference lists was conducted. The terms used were “screening AND oral cancer AND public health services”. Only studies published in the English language literature, clinical trials and available full texts were included. Case reports, reviews, abstracts, editorials and duplicated studies were excluded. Out of 117 articles retrieved, 12 were finally selected.

Results: Twelve relevant articles were included, most performed in Taiwan, India and Japan. All studies were related to mass visual screening examination by trained health care providers, physicians and dentists. Three studies also focused on the importance of the degree of examiners’ training (dentists vs. non-dentists). In some programmes, only high-risk individuals such as smokers, alcohol drinkers and chewing tobacco or areca nut users, for developing OC were included. Three studies reported that early detection reduce the incidence rate of advanced cases and mortality and especially in repeated screening rounds.

Conclusions: In the population studied, regular OC screening programmes appeared to have the potential to reduce the burden of OC when integrated into existing public health systems. This preliminary review highlights the need for effective training of dentists and other involved health care providers in detection of early signs of OC and OP-MDs. Also, public education campaigns are vital to ensure massive participation, especially of high-risk individuals. The role of public health care systems in efficiently implementing comprehensive programs for OC prevention and detection cannot be overemphasised.

Keywords: Oral Cancer; Oral Potentially Malignant Disorders; Public Health Care Services; Screening; Early Detection

Presenter: Georgios Rafeletos email: giorgosrafeletos@gmail.com

ABSTRACTS PRESENTED BY UNDERGRADUATES

EADPH 2024 ABSTRACT 297

Preventive Care and Maintenance of Oral Health in Romanian Children Diagnosed with Autism Spectrum Disorders

Muhi Balázs^{1}, Judit Réka Nagy², Eszter Acs¹, Melinda Székely¹, Bernadette Kerekes-Máthé¹*
¹Faculty of Dental Medicine, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania; ²Psychology Office, Targu Mures, Romania

Aim: The present study aimed to identify oral health problems of children with autism spectrum disorder and to create an educational tool which could be used in a preventive dental care programme.

Methods: Children with autism spectrum disorder attending a special day care centre in Targu Mures, Romania were recruited for the study conducted in 2023-2024. The parents gave their informed consent and ethical approval was obtained from the Research Ethics Committee of the University. The parents completed a special questionnaire regarding the oral hygiene and eating habits of their children. Preventive dental care workshops, using specially designed, exercises were provided periodically.

Results: A total number of 45 children (aged 3-17 years) were included in the study. The most common oral health problems among the children were toothache, tooth decay, and gingivitis. Most of the children (36 - 80%), did not visit a dental office regularly and were afraid of dentists. Atypical eating habits were also present in the group and 27 (60%) had infantile deglutition. The majority of the parents (32 -71%) answered the question about the most hated food consistency and 29 (65%) of the children hated lumpy food. All children showed a high level of engagement during the oral care workshops. A poster for preventive oral care was designed, based on this study's findings and according to psycho-educational principles. The poster was dedicated to children with autism spectrum disorder and consists of three main parts: dental hygiene, the importance of chewing, and bad dental habits.

Conclusions: In the studied population it was found that autistic children presented an altered chewing reflex combined with atypical eating habits. They were receptive to participating in playful exercises that allow them to improve their manual skills beyond routine brushing. The poster designed especially for children with autism spectrum disorder could increase the effectiveness of dental preventive measures in their particular circumstances.

Keywords: Autism Spectrum Disorder, Preventive Oral Care, Poster, Autistic Children

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Muhi Balázs email: muhi.balazs@stud19.umfst.ro

EADPH 2024 ABSTRACT 304

Carotid Artery Calcifications on Panoramic Radiographs and their Association with Demographic Variables

Simona Cesnauskyte, Indre Stankeviciene, Deimante Ivanauskaite, Vilma Brukiene, Alina Puriene*
Institute of Dentistry, Faculty of Medicine, Vilnius University, Lithuania

Aims: The aim of this study was to determine the frequency of carotid artery calcifications (CACs) detected on panoramic radiographs in dental patients at Vilnius University Hospital Zalgiris Clinic (VUH ZC) and analyse their presence and association with demographic factors.

Methods: The approval to conduct study was obtained from the Vilnius Regional Bioethics Committee. The study included a randomized sample of 6,000 panoramic radiographs obtained from patients aged 45 years and above, who visited VUH ZC between 2014 and 2020. Demographic information (gender and age), was gathered from Planmeca Romexis system. SPSS 29.0 and Microsoft Excel were used for statistical data analysis. Descriptive statistics, Chi-square and Mann-Whitney tests were applied at the level of statistical significance $p < 0.05$.

Results: CACs' anatomical region was visible on 4478 (74.6%) panoramic radiographs. The study included 2394 (53.5%) women and 2084 (46.5%) men. Mean age of the population was 59.0 years (SD = 9.8): 58.5 years (SD = 9.7) for men and 59.5 years (SD = 9.9) for women. CACs were detected in 365 (8.2%) patients: 212 (58.1%) were unilateral and 153 (41.9%) were bilateral lesions. More CACs were detected in men (195, 53.4%) compared to women (170, 46.6%), $p=0.006$. The presence of CACs was associated with older age, $p<0.001$. The type of lesion (unilateral/bilateral) was statistically dependent on gender: both unilateral (112, 30.7%) and bilateral (23.0%) CACs were more often detected in men ($p=0.018$). Type of lesion did not associate with age.

Conclusions: The presence of CACs on panoramic radiographs increased with patients' age. This study suggests that dentists may play an important role in primary prevention of cardiovascular disease by detecting CACs.

Keywords: Calcification, Carotid Artery, Dental, Panoramic Radiography

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Simona Cesnauskyte email: simona.cesnauskyte@mf.stud.vu.lt

EADPH 2024 ABSTRACT 307

Knowledge of Nutritional Habits' Impact on Oral Health Among Professionals Supervising Vulnerable Groups

Agne Zbarauskaite, Alina Puriene, Lina Stangvaltaite-Mouhat, Vilma Brukiene, Indre Stankeviciene*
Institute of Dentistry, Faculty of Medicine, Vilnius University, Lithuania

Aims: The aim of this study was to assess the level of knowledge regarding nutritional habits' impact on oral health among professionals caring for vulnerable populations and to explore associations with qualifications, experience, and practice area.

Methods: Permission for the research was obtained from the Vilnius Regional Ethics Committee for Biomedical Research. Using convenience sampling, 430 professionals from Lithuania working in vulnerable group care, namely, medical staff, personal care professionals, social workers, and public health professionals, completed a questionnaire about oral health via Google Forms. Fifteen out of the 36 questions in the questionnaire were used to evaluate knowledge of nutritional habits' impact on oral health. Statistical analysis employed IBM SPSS Statistics 29.0.2.0, utilising Kruskal-Wallis and Spearman tests, with significance set at $p<0.05$.

Results: Out of 430 participants, 133 (30.9%) were personal care workers, 133 (30.9%) social workers, 101 (23.5%) public health professionals, and 63 (14.7%) medical staff. The overall mean knowledge score was 6.5 (SD 3.0) out of 15. The mean knowledge scores were 8.5 (SD 2.8) for public health professionals, 7.7 (SD 2.5) for medical staff, 5.3 (SD 2.7) for personal care workers, and 5.5 (SD 2.9) for social workers, $p<0.001$. A positive correlation was observed between the years of professional experience and the knowledge score among specialists, $r_s=0.164$, $p=0.001$. There were differences in knowledge levels across practice places: village practitioners exhibited lower knowledge levels (5.9, SD 3.0) compared to city practitioners (6.7, SD 3.0), $p=0.038$.

Conclusions: In the population studied, the knowledge level of professionals supervising socially vulnerable groups was insufficient and associated with qualification, experience, and practice area; the highest knowledge was among public health specialists and medical workers, along with city practitioners. Disparities among professionals indicate the need for interventions improving oral health knowledge for all specialists, focusing more on village practitioners, social workers, and individual workers.

Keywords: Oral Health, Health Personnel, Knowledge, Vulnerable Populations

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Agne Zbarauskaite email: zb.agne@gmail.com

3D Virtual Models Use for Minimally Invasive, Personalised Dental Prophylaxis

Marion Nigoghossian^{1*}, Daniel Corneliu Leucuta², Meda-Romana Simu³, Bogdan Culic⁴, Ioana Porumb⁵
¹Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; ²Department of Medical Informatics and Biostatistics, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; ³Department of Paediatric Dentistry, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; ⁴Department of Dental Propaedeutics and Aesthetics, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; ⁵Department of Preventive Dentistry, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

Aims: The aim of this study was to evaluate the intra- and inter-rater agreement of ICDAS (International Caries Assessment and Detection System) scores assigned during clinical examination and on virtual 3D models acquired using Omnicam, clustered of the examiner's level of experience. The agreement of diagnosing early stage and reversible caries was assessed.

Methods: The Iuliu Hatieganu University of Medicine and Pharmacy Ethics Committee approved the study protocol, and written informed consent was obtained from each subject. The patients were randomly selected from dental students and interns. Each patient underwent two examinations, including one clinical examination and one intraoral scan (Omnicam). One of the randomly selected 31 raters recorded the ICDAS scores. The examiners had varying levels of expertise (dental students, interns, and experienced dentists). Fleiss' kappa coefficient, Cohen's weighted kappa, and inter-class correlations were chosen for statistical analysis.

Results: When calculating intra-rater agreement, 3D models acquired with Omnicam® were found to be in statistically significant agreement ($p < 0.001$) with the clinical examination for senior dentist raters. When calculating inter rater agreement, for experienced raters with the same level of experience, the 3D models acquired by the Omnicam® intraoral scanner were statistically significantly comparable ($p < 0.001$) for a total of 288 surfaces which were evaluated. An ICC of 0.969 (95% CI 0.949–0.981) for pits and fissures was obtained. For raters with low experience, the results for lateral teeth were statistically significant ($p < 0.05$). The inter rater agreement Fleiss Kappa coefficient was 0.275 for pits and fissures when recorded with Omnicam.

Conclusions: This study presents the preliminary findings on the computer modelling of caries diagnosis accuracy. These could be first steps towards developing artificial intelligence-assisted diagnosis and monitoring of caries, particularly in the initial stages, by analysing 3D virtual models.

Keywords: Intra Oral Scanners, Caries Diagnosis, Dental Caries, 3D Virtual Models, Optical Imaging

Acknowledgement: The presentation of this abstract was financially supported by a travel grant from Colgate

Presenter: Marion Nigoghossian email: marion.audr.nigoghossian@elearn.umfcluj.ro

Association between Serum vitamin D levels and The Prevalence of Severe Early Childhood Caries in Children under Six Years Old: A Systematic Review and Meta-analysis

Firoozeh Nilchian¹, Faraz Ezati^{2*}, Mohammad Javad Tarrahi³

¹Department of Community Oral Health, School of Dentistry, Dental Materials Research Centre, Isfahan University of Medical Sciences, Isfahan, Iran; ²Isfahan University of Medical Sciences, Isfahan, Iran;

³Department of Epidemiology and Biostatistics, School of Health, Anaesthesiology and Critical Care Research Centre, Isfahan University of Medical Sciences, Isfahan, Iran

Aims: This systematic review and meta-analysis aimed to investigate the association between serum vitamin D levels and the prevalence of severe early childhood caries(S-ECC) in children under six years old.

Methods: Ethics approved by Isfahan university of medical sciences (code:IR.MUI.RESEARCH.REC.1402.171). A systematic search was conducted across multiple databases (PubMed, Scopus, Cochrane Library, Embase, and Web of Science). Inclusion criteria encompassed case-control studies published between 2012-2024; prevalence of S-ECC; and vitamin D levels assessed by laboratory analysis. Two authors selected studies, extracted data and assessed risk of bias independently. The quality of the studies was assessed according to STROBE checklist. Meta-analysis was done using CMA software version 3 for qualitative data assessment. The I² index determined data homogeneity, with a fixed model applied for homogeneous data and a random model for heterogeneous data. Forest Plots, Funnel charts, and Egger's tests were also utilized. Egger and Forest plot were utilized to assess publication bias.

Results: Among the 235 identified studies, 10 studies were finally included in the meta-analysis. Meta-analysis results revealed a significant association between lower serum vitamin D levels and higher prevalence of S-ECC in children under six years old (mean difference: 12.73 nmol/L, CI: [-17.10, -8.35]).

Conclusions: This systematic review and meta-analysis suggest a significant association between lower serum vitamin D levels and higher prevalence of S-ECC in children under 6 years of age. However, the cross-sectional nature of included studies and variations in methodologies highlight the need for further research to establish causality definitively. These findings underscore the importance of considering serum vitamin D levels in paediatric dental health strategies and advocate for more robust study designs in future research.

Keywords: Dental Caries, Vitamin D, Children, Preventive Dentistry, Severe Early Childhood Caries

Acknowledgements: Supported and granted by Isfahan university of medical sciences, grant no. 3402275. The presentation of this abstract was financially supported by a travel grant from the Borrow Foundation.

Presenter: Faraz Ezati email: drfaraz.ezati@gmail.com

EADPH 2024 ABSTRACT 358

Association between Periodontal Health Status and Oral Health-Related Quality of Life

Daniil Louiza, Sultana Almas*, Nicos Christodoulides
European University Cyprus, School of Dentistry, Nicosia, Cyprus*

Aim: The aim of the study was to examine the association between Periodontal Health status and Oral Health-Related Quality of Life (OHRQoL) in periodontal patients.

Methods: Two independent researchers conducted a literature review on the terms “OHRQoL”, “periodontitis”, and “periodontitis associated QoL” from 2014 to 2024, using databases like Elsevier, PubMed, SPRINGER LINK, and Frontiers. The search spanned 2014-2024, focusing on studies published between the aforementioned years. Exclusion criteria excluded studies with additional disease or disorder participants. Out of 54 initial studies, 20 remained to be examined.

Results: The study analyzed over 34,550 periodontal patients through 8 cross-sectional studies (40%), 3 questionnaire-based studies (15%), 3 systematic reviews (15%), 2 meta-analyses (10%), 1 case report (5%), 1 qualitative study (5%), 1 narrative review (5%), and 1 literature review (5%). 12 studies (60%) found that periodontitis severity affects overall health and well-being (OHRQoL), 4 (20%) with age, 3 (15%) for DMFT > 4 and missing teeth (especially if more than 20) being contributing factors. 2 (10%) identified smoking, tooth mobility, and supportive periodontal therapy. However, 1 (5%) periodontal surgery, reduced family income, health illiteracy, obesity, and female sex also influence OHRQoL. 5 (25%) of reviewed studies found that pain directly exacerbates QoL, while 4 (20%) attributed reduced QoL to psychological discomfort, speech impairment, and masticatory ability. 3 studies (15%) highlighted the negative impact on socializing, while two (10%) identified stress, physical discomfort, removable partial dentures, and eating habits as contributing factors. 1 (5%) study revealed that anxiety, hopelessness, low self-esteem, depression, poor appearance, and difficulty maintaining good oral hygiene significantly impact QoL.

Conclusions: The periodontal patients experienced lower OHRQoL, due to psychological and physical problems. Aggravating factors included increased age, DMFT scores and smoking, whereas regular SPT and periodontal surgery increased the OHRQoL.

Keywords: Oral Health, Periodontitis, Quality Of Life, OHRQoL

Presenters: Louiza Danii email: Louiza.dan@gmail.com and Almas Sultana almassultana62@gmail.com

EADPH 2024 ABSTRACT 363

Dentists' Perceptions of Radiation Protection in Thessaloniki

Christos Impas, Zois-Panagiotis Vlachopoulos, Evangelos Liappis, Chrysi Papadeli
School of Dentistry, Aristotle University of Thessaloniki, Greece*

Aims: This research aimed to investigate what dentists in Thessaloniki, Greece, think with regard to choosing the appropriate radiographic examinations in several clinical cases, and to canvass their knowledge of radiation protection.

Methods: Our sample was equal to 7% (86 out of 1235 who filled in the questionnaire) of private-working dentists in the urban complex of Thessaloniki, Greece. Self-referential multiple choice questionnaires were distributed via email within the period May 2022 – July 2022. The formulation of the questionnaires was based on other recent researches with slight modification. The questionnaires included questions related to socio-demographic parameters, participants' knowledge and practices on radiation protection, and selection of the appropriate radiographic examinations. Anonymity was ensured by excluding participants personal data and coding the data base.

Results: According to the gathered replies and after their statistical analysis, orthopantomographs seem to be the most usual radiographic examination for new patients and for the evaluation of complications (51,2%, 44 out of 86). Regarding intraoral radiography, the paralleling technique is more usually applied (31,4%, 27 out of 86). Most participants choose digital intraoral radiography (69,8%, 60 out of 86). When asked about the place in the dental office where intraoral radiographs are taken, only the minority of dentists (22,1%, 19 out of 86) stated that they have created a specially designed room for that purpose. As regards the appropriate angle from the X-ray tube in order to avoid radiological exposure, the vast majority (51,2%, 44 out of 86) believes that the angle does not make any significant difference.

Conclusions: The findings suggest the need for dentists' constant education on radiation protection.

Keywords: Digital Radiography, Radiation Protection, Radiation Equipment, Radiography, Greece

Presenter: Christos Impas email: impaschristos@gmail.com

EADPH 2024 ABSTRACT 374

Adverse Childhood Experiences and Oral Health in Adulthood

Laura Ylittervo^{1}, Anu-Helmi Halt², Mika Niemelä¹, Anna Pelkonen¹, Marja-Liisa Laitala¹*

¹Research Unit of Population Health, University of Oulu, Finland; ²Department of Psychiatry, Research Unit of Clinical Medicine, University of Oulu, Finland

Aims: To investigate the relationship between adverse childhood experiences (ACEs) and adulthood oral health (dental caries, periodontal disease, erosive tooth wear) and related behaviour (frequency of snacking, toothbrushing, and smoking status) in the Northern Finland Birth Cohort 1986 (NFBC1986).

Methods: Subjects involved cohort members of NFBC1986 prospective longitudinal research program - a representative sample of general Finland population. All participants gave informed written consent. In 2018-2019, cohort members aged 33-35, in Oulu area (n=5,717) were invited to clinical examinations, and altogether n=1,964 (29.6%) were examined. Four participants were excluded due to incomplete data. ACEs were measured in two ways: as individual variables retrieved from the cohort and register data, and as subjectively perceived by the participant on the Trauma And Distress Scale (TADS). We calculated the TADS sum score, but also analysed the five TADS domains: physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect. Oral health was assessed using DMFS-index, periodontal probing depth >4mm, bleeding on probing, and BEWE-index.

Results: Total of study sample involved 1,690 participants. Participants who reported one or more ACEs had higher DMFS score (DMFS=15.6), than those with no ACEs (DMFS=13.9). More current smokers were among participants with one or more ACEs (n=170, 28.8%) than those with no ACEs (n=287, 26.1%). The TADS domain of physical abuse was statistically significantly positively associated with increased bleeding on probing (mean BOP 43.9% vs 38.8%, p=0.02), smoking (33.3%, n=30 vs 26.0%, n=40, p=0.005), insufficient toothbrushing (33.3%, n=30 vs 19.5%, n=30, p=0.013) and an increased frequency of snacks (mean 14.7 vs 14.3, p=0.049).

Conclusions: In the cohort studied representing general Finland population, subjects with increased ACEs presented more harmful oral health behaviour in adulthood, and poorer oral health.

Keywords: Adverse Childhood Experiences, Oral Health, Oral Health Related Behaviour

Presenter: Laura Ylittervo email: laura.ylittervo@oulu.fi

Causes and Levels of Dental Anxiety amongst the Cypriot Population

*Maria Myrto Solomou**, *Rafailia Ioannou*, *Christos Theocharides*, *Salim Anas*, *Paris Vogiazanos*
European University Cyprus, Nicosia, Cyprus

Aims: Dental anxiety is a global issue with multifactorial causes, including cultural influences and the cycle of dental avoidance. This study aimed to estimate the prevalence and levels of dental anxiety in the Cypriot population and identify risk factors for increased anxiety.

Methods: The Cyprus National Bioethics Committee approved this cross-sectional study, which included a random sample of 494 adults from the general Cypriot population. Participants were required to be over 18, of Greek Cypriot nationality, capable of providing informed consent, and fluent in English or Greek. The validated questionnaire included 24 questions in both languages, available in paper and online. The Modified Dental Anxiety Scale (MDAS) was used, with scores ranging from 5 to 25; a score of 19 or above indicated high dental anxiety.

Results: Of 580 participants, 86 were excluded due to incomplete questionnaires, leaving 494 for analysis. The prevalence of dental anxiety was 10.5%. No significant correlation was found between age, education level, and anxiety. Dental anxiety was more prevalent in females (14.5%) than males (6.3%), with mean scores of 11.6 and 9.6, respectively.

Conclusions: Dental anxiety's clinical importance shouldn't be ignored, since it is linked to fewer dental visits and a higher prevalence of dental disease. Identifying anxious patients before treatment can help break this cycle and improve care.

Keywords: Dental Anxiety, Dental Phobia, MDAS, Modified Dental Anxiety Scale, Pain

Presenter: Maria Myrto Solomou email: solomou.myrto@gmail.com

The Role of Vitamin D in the Prevention of Oral Diseases: A Review of the Literature

Lambrou Persefoni¹, *Eliadou Zoe^{1*}*, *Solonos Constantina^{1*}*, *Hadjinicolaou Eleni²*, *Emmanouil-Nikoloussi Elpida-Niki¹*

¹*School of Dentistry, European University Cyprus, Nicosia, Cyprus;* ²*Dental Practice, Nicosia, Cyprus*

Introduction: Recent studies presented strong evidence that vitamin D deficiency is a widespread, global epidemic issue affecting about 1 billion people and poses a serious health risk since it is also associated with various oral health disorders and pathologies. In Cyprus, 31% of the population is affected by vitamin D deficiency, particularly males.

Aim: This study aims to investigate the correlation between vitamin D deficiency and oral pathologies onset and how these negative effects can be mitigated or prevented.

Methods: An electronic search of the PubMed database was conducted to identify studies examining the relationship between vitamin D and oral health, published in English from 2020 until now. The selection encompassed a range of systematic reviews and observational studies with keywords 'vitamin D' and 'oral health'.

Results: The search yielded 450 articles of which 15 articles were left after titles and abstracts screening. The analysis of the results revealed that there is a negative association between Vitamin D deficiency and oral health. This deficiency is linked to various oral health issues, including impaired tooth mineralization, dental caries, periodontitis and oral cancer. Recognising the importance of maintaining adequate vitamin D levels is crucial for sustaining optimal oral health. Prevention of vitamin D deficiency can be achieved through educational campaigns, lifestyle modifications, dietary adjustments, vitamin D supplements and adequate sun exposure.

Conclusion: Public awareness of Vitamin D has increased in response to the global prevalence of its deficiency which is associated with increased risk of oral pathologies. The need to compensate for its deficiency is advisable to conduct further research, therefore, preventive measures should be taken to enhance vitamin D levels as maintaining normal levels plays a crucial role in preventing and managing oral diseases.

Keywords: Vitamin D, Oral Health

Presenters: Solonos Constantina email: cs212424@students.euc.ac.cy and Eliadou Zoe email: ze211943@students.euc.ac.cy

E-Cigarettes/ Vapes Impact on Oral Health: A Review of the Literature

Lambrou Persefoni¹, Gavriel Panayiotis^{1*}, Tillirou Despina^{1*}, Hadjinicolaou Eleni², Emmanouil-Nikoloussi Elpida-Niki¹

¹School of Dentistry, European University Cyprus, Nicosia, Cyprus; ²Dental Practice, Nicosia, Cyprus

Background: The rising popularity of e-cigarettes, particularly among young people, raises concerns about their negative impact on oral health, despite being promoted as safer alternatives to conventional tobacco products.

Aims: The aim of this study was to review the adverse effects of e-cigarettes on oral health, comparing findings across various studies to provide a comprehensive overview of the associated risks.

Methods: An electronic search was conducted using PubMed and Google Scholar, focusing on articles published in English from 2020 onward. Keywords included “electronic cigarettes” and “oral health”. The search yield reviews and case reports that provided insights into the oral health consequences of e-cigarette use. From an initial pool of 450 articles, 14 articles were selected and critically evaluated for methodological rigor and relevance.

Results: It was reported that e-cigarette vapor contains harmful substances, including reactive aldehydes, nicotine, and flavouring agents, which adhere to oral tissues, inducing oxidative stress, DNA damage, and cytotoxicity in gingival fibroblasts. These effects disrupt the oral microbiome, resulting in dysbiosis marked by elevated pathogenic bacteria and increased pro-inflammatory cytokines, contributing to periodontal disease. Clinical studies indicate that e-cigarette users experience worse periodontal parameters, higher plaque index, probing depth, and clinical attachments loss, compared to non-smokers. Furthermore, reduced salivary antioxidant ability linked to e-cigarette use exacerbates oral inflammation and dental caries. The presence of toxic substances in e-cigarette aerosols raises concerns about a potential link to oral cancer. E-cigarette users also demonstrated a higher prevalence of conditions such as nicotinic stomatitis and angular cheilitis. Despite being viewed as a harm reduction tool, e-cigarettes impose considerable threats, especially to young and vulnerable populations.

Conclusion: This review underscores the notion that e-cigarette is linked to significant oral health risks, including periodontal diseases, fibroblast dysfunction, and increased risks of oral cancer. Future research should comprehensively evaluate e-cigarette-related oral health risks to inform public health strategies and clinical recommendations.

Keywords: Electronic Cigarettes, Oral Health

Presenters: Gavriel Panayiotis email: pg211248@students.euc.ac.cy and Tillirou Despina email: dt211941@students.euc.ac.cy

Impact of Global Crises on Prevalence of Paediatric Dental Caries in Northern Greece

Eirini Tsanidou^{1,2*}, Antonios Rossos^{3*}, Evangelia Nena² and Theodoros Constantinidis¹

¹Laboratory of Hygiene and Environmental Protection, School of Medicine, Democritus University of Thrace, Alexandroupolis, Greece; ²Laboratory of Social Medicine, School of Medicine, Democritus University of Thrace, Alexandroupolis, Greece; ³Dental School, Aristotle University of Thessaloniki, Greece

Introduction: Within the last 15 years the world has experienced two severe crises, the financial one in 2010 (when Greece was worst affected) and COVID-19 in 2020, with limited evidence regarding their impact on the prevalence of dental caries in the Greek paediatric population.

Aim: To evaluate the effect of the financial and COVID-19 crises on the oral health of school children in Evros Prefecture, Greece.

Methods: A retrospective cohort study has been conducted in the Greek Ministry of Health’s dental health program framework. (Ethics approval of Greek Ministry of Education: 1850/15798/T7 for general schools, 101398/T2 for minority schools). It included two phases: PH1(2009) and PH2(2024), before and after financial and COVID-19 crises. We sent email invitations to all 62 local primary schools, 26(41,9%) and 28(45.1%) of those consented to participate in PH1 and PH2, respectively. Children were selected at random, their participation was voluntary and anonymous, with previous written consent of parent/guardian. Data collection included demographic information (gender, age, ethnic minority status, urban/rural/remote area of living) and full-mouth clinical examinations, using the dmft/DMFT Index. The data were then statistically processed with IBM_SPSS version.

Results: A total of 738 children were examined (387 in PH1 and 351 in PH2, originating from the same ethnic groups/geographic areas). Clinical examination recorded a decline in the prevalence of dental caries in the primary dentition (from 34% (n=172), average dmft=12.1 in PH1 to 25% (n=203), average dmft=7.4, in PH2). However, in 2024 the prevalence of dental caries in permanent dentition increased to 52% (n=148), average DMFT=14.5 compared to 41% (n=215), average DMFT=10.2 recorded in 2009. Associated variables to dental caries in both cohorts and both dentitions were female sex, ethnic minority status, and older age. Living in a remote/isolated area did not appear to be statistically significant.

Conclusion: Caries prevalence was significantly associated with several socioeconomic factors, including gender and minority status. These findings can be used to evaluate current public health approach and inform future planning in order to minimize disparities in access to dental health care.

Keywords: Dental Caries Prevalence, Financial Crisis, COVID-19 Pandemic, Epidemiology, Dmft/DMFT Index

Presenters: Antonios Rossos email: arosso@dent.auth.gr and Eirini Tsanidou email: tsanidou@gmail.com

EADPH 2024 ABSTRACT 428

E-cigarettes: A Contemporary Trojan Horse

Fanouria Papaioannou^{1}, Irene Anthopoulos¹, George Vassilopoulos¹, Maria Tsantidou^{2,3}, Eleana Stouft^{4,5}*
¹School of Dentistry, National and Kapodistrian University of Athens, Greece; ²President of the Panhellenic Union of Public Health Physicians; ³Ministry of Health Hellenic Republic, dep. Chief Dental Officer, Greece; ⁴Harvard Dental School, USA; ⁵Oral Medicine Department of “Euroclinic Hospital” Athens, Greece

Aim(s): Perform a review of the literature on the characteristics of e-cigarettes and health risks that can arise from their usage.

Methods: The available literature was reviewed in July 2024 in the PubMed database, without setting a time limit for existing articles, in the English language, using the keywords: tobacco, e-cigarettes, vape, periodontal disease, oral cancer, inflammation, oral diseases, periodontitis, smoking, oral health, nicotine, smoking cessation. The following websites were also navigated in order to search and analyse existing guidelines and recommendations: World Dental Federation (FDI), US Centres for Disease Control and Prevention (CDC), European Centre for Disease Prevention and Control (ECDC), and Tobacco Induced Diseases (TID). Studies included those referring to the use of e-cigarettes, without excluding due to special characteristics of the sample or frequency of use. The existence or not of a control group did not constitute reason for exclusion

Results: After a thorough literature review, 60 clinical studies were found that concerned the health risks of e-cigarettes to general and oral health. After screening the titles and abstracts, 28 were retrieved and from these, 13 studies fulfilled the inclusion criteria and included in the present study. The researchers found that the content but also the mechanism of e-cigarettes can cause acute (incidental explosions, burns, poisonings) and long-term health risks, affecting a variety of the human body's systems. One of these systems is the oral cavity, which is strongly affected with a significant increase in oral diseases (e.g. periodontitis, implant failure, dental caries) and risk for oral cancer.

Conclusions: E-cigarettes, which are widely used especially by teenagers and young adults, pose a threat both in oral and systemic health. For this reason, they should not be used as a “safe” alternative to conventional cigarettes. Instead, health professionals and the state ought to intensify their efforts and campaign of smoking cessation of any kind of nicotine/tobacco-based product.

Keywords: E-Cigarettes, Tobacco, Vape, Smoking Cessation

Presenter: Fanouria Papaioannou email: faniapapaio@gmail.com

Vaping Opioids: Is it a Public Health Issue?

George Vassilopoulos^{1}, Irene Anthopoulou¹, Fanouria Papaioannou¹, Eleana Stoufi^{2,3}, Aristomenis Syngelakis^{4,5}*
¹School of Dentistry, National and Kapodistrian University of Athens, Greece; ²Harvard Dental School, USA; ³Oral Medicine Department of "Euroclinic Hospital" Athens, Greece; ⁴Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ⁵School of Dentistry, European University of Cyprus, Republic of Cyprus

Aim(s): Fundamental Purpose of this study was to explore recent scientific literature regarding the use of cannabinoids in e-cigarettes, the frequency of their consumption from young and old smokers and the dangers hiding in their use.

Methods: For this study thorough search has been conducted on Medline/PubMed, Nature, Google Scholar and Academia (during time interval: 5th-10th of July 2024). Keywords like Cannabis, cannabinoids, electronic cigarettes, cigarettes, e-cigarettes and e-cigs guided the search. Additional filters were used, focusing the search on the last decade (2014-2024), without restricting the article type or availability. Multiple publications were chosen exclusively in English language.

Results: From the 54 publications handpicked after title and abstract reading, 15 were retrieved as full texts and used, as the most relevant, with the rest not included due to lack of inclusion prerequisites. As reported from four of the surveys, the use of electronic delivery systems to inhale cannabis was more popular among 14–18 years old students compared with middle school students and adults. Highest usage rates can be observed among young adults, especially for mood-changing reasons. Cannabis use has seen a global increase compared to the past decade, according to the most recent papers making comparisons, and has risks for oral health and dental treatment, while recreational or addictive cannavaaping is theoretically possible.

Conclusions: Inferentially, the new social phenomenon of canna-vaping may slide from nicotine towards other psychoactive drugs. But more importantly, the emergence of this "new youth culture of vaping" could weaken the efficiency of anti-smoking campaigns and measures. Opioid vaping therefore deserves the urgent scientific investigation and strict risk assessments which are especially important when adolescents are involved. Therefore, Governments should take precautionary action against the uncontrolled canna-vaping among adolescents, introducing age restrictions for the purchase of such products, as well as imposing strict advertisement guidelines.

Keywords: Vaping, Opioids, Cigarettes, E-Cigarettes

Presenter: George Vassilopoulos email: GeorgeVassilopoulos.g@gmail.com

From Teeth Staining to Oral Cancer: Oral Health Consequences of Cigarette Use

Irene Anthopoulou^{1}, George Vassilopoulos¹, Fanouria Papaioannou¹, Eleana Stoufi^{2,3}, Aristomenis Syngelakis^{4,5}*
¹School of Dentistry, National and Kapodistrian University of Athens, Greece; ²Harvard Dental School, USA; ³Oral Medicine Department of "Euroclinic Hospital" Athens, Greece; ⁴Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ⁵School of Dentistry, European University of Cyprus, Republic of Cyprus

Aims: The aim of this study is to provide a concise overview of the effects of smoking on oral health, exhibiting a spectrum, from benign to malignant conditions.

Methods: Data available from the PubMed, CDC, World Dental Federation (FDI), Tobacco Induced Diseases and The American Academy of Oral Medicine, Wiley Online Library were used. Inclusion criteria involved studies published 2012-2024, written in the English language and using the keywords: tobacco use, dental implants, caries, periodontal disease, oral cancer, oral diseases, smoking, cigarettes.

Results: A total of 156 publications were initially found using the selected keywords within the time limit of three months. After title screening, 103 publications were excluded due to irrelevance. From the 53 articles left for abstract reading, we excluded 25 as they did not meet the inclusion criteria. We reviewed the full text of the 28 remaining articles and excluded 13 due to insufficient data. Ultimately, 15 studies were included in the final study. The selected studies were distributed across the following study types: 60% reviews, 10% cross-sectional studies, 20% monographs, and 10% peer-reviews and demonstrated that smoking may influence oral microbiota and inhibit local immune responses, leading to oral tissue damages. Those damages can be divided into: a) benign lesions and there we classify, among others, the higher DMFT score, the 85% increased occurrence of periodontitis and doubled possibility of edentulism and b) precancerous and cancerous soft tissue lesions, such as leukoplakia, which may progress to carcinoma. Furthermore, smokers have been shown to have a higher implant failure rate.

Conclusions: Tobacco use has hazardous effects in Oral Health and also reduces the success rate of dental treatments. Awareness of Dentists is important to aid their patients to quit smoking, since smokers visit the dentist, mostly when they are facing several oral diseases, making the dental clinic an ideal place for smoking cessation interventions.

Disclaimer: “The views and opinions expressed are exclusively the author’s and don’t reflect the positions of any Greek state entity”.

Keywords: Tobacco Use, Dental Implants, Caries, Periodontal Disease, Oral Cancer, Oral Diseases, Smoking, Cigarettes

Presenter: Irene Anthopoulos email: ireneanthop@gmail.com

EADPH 2024 ABSTRACT 438

Economist & EFP White Paper on Oral Health Inequalities: Next Steps

Dorothea Delaki, Maria Myrto Solomou, Doros Picolos
Department of Dentistry, European University Cyprus*

Aims: Oral diseases are strikingly common across the globe, but also largely preventable. Left untreated, they are the main cause of tooth loss and considered one of the main threats to oral health. Evidence shows poor oral health can exacerbate systemic conditions, creating a compounding effect on general health outcomes. Our study emphasizes the economic and societal and psychological benefits of prevention, diagnosis and management of oral diseases.

Methods: Our study was mainly based on the two European Federation of Periodontology (EFP) & Economist white papers on oral health and gum disease inequalities. PubMed and Cochrane Library were also searched for Peer reviewed articles published in English, evaluating the implications of oral health in economy, general health and psychology as well as epidemiological data throughout Europe. The search protocol included: “oral health inequalities AND oral health promotion AND oral health costs”. No publication date limits were applied. Case reports, editorials and non-full text articles were excluded.

Results: Out of 28 publications, 13 were excluded after title screening, and 1 was a duplicate. Of the remaining 14, 2 were excluded after full-text review. The final selection included 6 reviews and 6 research papers. Caries and periodontitis share common risk factors while presenting a higher prevalence and severity among individuals with low socioeconomic status. Furthermore, studies have shown that implementing preventive dentistry can improve individual health outcomes, promoting systemic health while it yields a positive return on investment, highlighting the economic benefits of proactive dental care.

Conclusions: Evidence connects oral and general health, but integration is still evolving. Better data collection and sharing across disciplines can enhance patient care by raising awareness among the public, professionals, and policy-makers. This can improve preventive care, reduce chronic disease, lower costs, and boost long-term health outcomes. A significant preventive care opportunity remains unexploited, which could greatly reduce the impact of oral diseases.

Keywords: Health Care Costs, Oral Health Promotion, Preventive Care, Oral Health Inequalities

Presenter: Dorothea Delaki email: delaki.dorothea@gmail.com

EADPH 2024 ABSTRACT 439

The Role of Implants after Surgery for Oral Cancer in Cyprus

Ioanna Arvanitaki, Loren Napso, Chrystalla Charalambous, Georgios Pantelas, Nikos Papadopoulos
Department of Dentistry, European University Cyprus*

Aim: to investigate the benefits of using dental implants as part of the rehabilitation process in patients with oral cancer globally in recent literature. The study also analysed post-surgery health related quality of life (HRQoL) in Cyprus.

Methods: A PubMed literature search was performed. Search terms included keywords: “oral cancer,” “quality of life,” and “dental implants”. The eligibility criteria included: original research articles; clinical studies; reference list of pertinent original and review studies published in English between 2010 to 2024. Information on patient gender, diagnosis, tumour location, stage, treatment and prognosis were obtained from Maxillofacial Clinic of the Nicosia General Hospital. EORTC QLQ H&N43 questionnaire was used to assess HRQoL in patients in Cyprus.

Results: PubMed search revealed 80 articles and 24 were included in the final analysis. The results of all papers confirmed that implant-retained overdentures have a beneficial effect on masticatory performance that is lost after surgery for oral cancer. In the Nicosia General Hospital, 42 implants were placed in 16 patients after oral surgery and completed oncologic treatment. Ten patients (62,5%) were men, with a mean age of 61 years. The most common location was mouth and the most frequent stage was T2 and T3. Five-year survival rate was 81%. After five-year period patients in Nicosia showed better HRQoL compared to immediate post-surgery period in almost all symptoms showing satisfying function using their implant-retained dentures

Conclusion: Primary insertion of implants should be routinely incorporated in patients with oral cancer, as oral functioning and HRQoL could be improved considerably. Effective public health policies and initiatives are essential to support oral cancer patients. These include the prosthetic rehabilitation protocols development, public financing for dental implant procedures and establishment of specialized training programs for healthcare providers in order to guarantee comprehensive post-cancer care.

Keywords: Impact Of Oral Cancer Treatments, Rehabilitation Treatment Protocol For Implants After Surgery, Oral Cancer, Implants, Cyprus

Presenter: Ioanna Arvanitaki email: ia191577@students.euc.ac.cy

EADPH 2024 ABSTRACT 452

Bonding Agents in Orthodontics: Their Role in the Prevention of Carious Lesions

Michail Komvoutis^{1}, Ilias Visakis¹, Aristomenis Syngelakis^{1,2}, William Papaioannou¹*

¹Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ²School of Dentistry, European University Cyprus, Republic of Cyprus

Aim: The aim of the present study was to assess bonding agents for adhering brackets from the aspect of white spot prevention, overall oral health improvement and bacterial plaque adhesion reduction.

Methods: Search strategy used studies written in English and published during the period from 2009 to 2024 from MEDLINE/ PubMed and Scopus databases. Following keywords were used: orthodontics, bacteria, bonding agent, microbiota, adhesive, brackets, dental plaque, caries, white spot lesions. Randomized controlled trials (RCTs), cohort studies, case-control studies, and systematic reviews were included. Case reports, animal or In Vitro studies were excluded.

Results: Orthodontic brackets increase plaque retention and according to studies 15% of orthodontic patients require additional dental treatment. Orthodontic appliances are therefore a public health issue. Disease burden (mainly carious lesions) combined with the increasing number of patients contribute to a growing problem that requires better control of the biofilm with the aim of avoiding an additional therapeutic burden. Total of 38 studies were obtained but after title screening and abstract reading only 20 records were retrieved for full text reading. Out of these, 14 studies were selected and analysed. Most of the studies (n=4, 28,6%) showed that Glass ionomers are most frequently used as bonding agents, due to improved physical properties, antimicrobial effects, bond strength and fluoride release for antibacterial effects. However recent data in n=10 studies showed that use of adhesive materials with antibacterial properties show strong antibacterial properties without compromising bond strength: arginine incorporation in resin cements, chlorhexidine, resin-modified glass ionomer cement with protein-repellent agents, titanium dioxide nanoparticles and CHX integration.

Conclusions: The use of adhesive materials with antibacterial properties can have important role in white spot lesion prevention without reducing its' adhesive and mechanical properties contributing to overall oral health improvement. Further research is needed on how adhesives affect enamel demineralisation and remineralisation processes.

Keywords: Orthodontics, Bacteria, Bonding agent, Microbiota, Adhesive, Brackets, Dental plaque, Caries, White Spot Lesions (WSL)

Presenter: Michail Komvoutis email: michkomv@gmail.com

The Effects of Different Milk Types on Enamel Remineralisation and Cariogenesis

*Visakis Ilias**, *Papathanasopoulos Konstantinos-Eirinaios*, *Rahiotis Christos*
School of Dentistry, National and Kapodistrian University of Athens, Greece

Aim: In recent years, various substitutes for regular milk have appeared on the market, becoming very popular, especially among people with lactose intolerance or for dietary reasons. This research aims to review the existing literature and compare different types of milk concerning the remineralisation of dental surfaces.

Methods: A search strategy was employed to select studies from the MEDLINE (via PubMed) and Scopus databases. Two evaluators independently performed data extraction, screening, and quality assessment. Only studies written in English between 2004 and 2024 were included, using the following keywords: milk, soy milk, almond milk, milk substitutes, enamel mineralisation, enamel, teeth, and enamel remineralisation. The risk of bias was evaluated using the Cochrane Risk of Bias 2 (RoB 2) tool.

Results: The search yielded 69 papers, 50 of which were published within the last 20 years. After the initial title screening, 29 papers were retrieved for full-text reading, and 10 were analyzed in the final review. The review indicated that alternative milk beverages, particularly those with added sugars, are the most potentially cariogenic. Almond milk was associated with the development of more biofilms, while flaxseed milk was associated with the least. The highest acidity and lowest pH levels were related to coconut and almond milk. Consumption of soy milk was found to increase the depth of subsurface enamel lesions and promote demineralisation. In contrast, consumption of cow's milk was shown to reduce lesion depth and promote remineralisation, with milk enriched with 2.5 ppm fluoride yielding even better results. The risk of bias was assessed as high, primarily due to the differing methodologies across the studies, preventing us from drawing confident conclusions.

Conclusions: While alternative beverages are promoted as healthy solutions, their low calcium content and often high sugar addition increase the risk of developing caries. Fluoridated milk is an effective and promising solution for the prevention of cariogenesis.

Keywords: Milk, Soy milk, Almond milk, Milk substitutes, Enamel mineralisation, Enamel, Enamel remineralisation.

Presenter: Ilias Visakis email: iliasvis12@gmail.com

Distribution of Dentists and Income as Determinants of Oral Health

*Lagios Georgios**, *Vasiliades Dimitris*, *Malactou Maria*, *Proutsos Georgios*, *Filippa Aikaterini*
School of Dentistry, European University Cyprus

Aims: This study's aim was to examine whether there is a correlation between the way oral health care is organized (regarding financing and distribution of dentists) with the level of oral health.

Methods: Data from Pubmed, WHO's Global oral health status report (GOHSR), Eurostat, OECD, and the CECCO database of the Six EU countries (Greece, Cyprus, Bulgaria, Italy, Malta, Spain) regarding number and distribution of dentists per 10.000 population, per capita expenditure on dental healthcare and annual household income, have been collected and correlated with oral health indices (DMFT-12, unmet dental care needs, prevalence of permanent teeth untreated caries in people ≥ 5 year-old and prevalence of edentulism in people ≥ 20 years).

Results: Our results confirmed the number of dentists alone could not determine a country's oral health status. On the contrary, the distribution of dentists was shown to be a key factor in determining access to dental care in countries with remoted and not easily accessible areas (f.e. Greek islands, remoted areas in Bulgaria) combined with lower oral health status. Furthermore, the income quintile and the households' out-of-pocket spending for dental care were decisive factors for unmet dental needs. In Bulgaria, an increase of the income from 0-610 to 3,000 leva was linked with a decrease in the DMFT (MT), 2.4 to 1.5. The different dates on which the various epidemiologic surveys have been conducted as well as other methodological problems prevent safe conclusions.

Conclusion: The number of dentists, more importantly their distribution; the income level; and the out-of-pocket dental expenditure were shown to be among the main factors that influence population's oral health status according to the results of this survey. Therefore, an oral health reform towards universal health coverage, more rational distribution of dentists as well as further integration of Oral health into Health System is necessary.

Keywords: Oral Health, DMFT, Social Determinants, Economic Determinant, Dental Care Need

Acknowledgements: The authors warmly thank: Prof. Petar Bozhinov, Department of Dental Public Health, Faculty of Dental Medicine, Medical University of Sofia, Prof. Aristomenis Syngelakis, Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; School of Dentistry, European University of Cyprus, Republic of Cyprus.

Presenter: Lagios Georgios email: lagiosg001@gmail.com

EADPH 2024 ABSTRACT 456

Health Policies to Improve Access to Oral Health Care for Older Population

Ioanna Arvanitaki¹, Loren Napso^{1}, Chrystala Charalambous¹, Aristomenis Syngelakis^{2,3}*

¹School of Dentistry, European University Cyprus, Cyprus; ²Department of Preventive and Community Dentistry, National and Kapodistrian University of Athens, Greece; ³School of Dentistry, European University of Cyprus, Republic of Cyprus

Aim: To identify public health strategies that can enhance access to basic dental care, including removable prosthodontic services, for older people, thereby improving oral health outcomes and overall quality of life.

Methods: A literature review was conducted using PubMed and Google Scholar. Keywords included “oral care,” “public health policy,” “older adults,” “access to care,” and “Europe”. Relevant studies, policy documents, and reports published in English between 2010-2024 were analysed to identify common strategies, barriers, and outcomes. Exclusion criteria included case reports and case series. The findings were synthesized to highlight best practices and innovative approaches.

Results: Of 65 articles identified, 58 articles were excluded, and 7 articles remained for data extraction. Overall, most EU countries offer public dental coverage for basic services (exams, x-rays, simple fillings). On the contrary coverage for major services, such as crowns bridges, and dentures is shallow, increasing out-of-pocket expenses. In Denmark and Sweden, vulnerable groups of the population such as adults having nursing support at home or having some chronic illnesses have extra support towards their dental care costs. Moreover, some EU countries (Germany, Slovakia), provide different schemes to incentivise preventive care. The use of mobile dental clinics (Germany) has been successfully deployed in rural areas to reach older adults with limited mobility, significantly reducing geographic barriers to care. Training of nursing staff in care homes (UK) as well as incorporate oral healthcare in daily care in nursing homes (Belgium), is another effective health policy. These policies collectively demonstrate a positive impact on oral healthcare access and outcomes among older Europeans.

Conclusion: Improving access to basic dental care, including removable prosthodontic services, for older people requires a multifaceted approach, combining innovative service delivery models, community engagement, and supportive policies. These strategies can significantly reduce oral health disparities and enhance quality of life.

Keywords: Oral Care, Older Population, Dentures, Public Health Policy

Presenter: Loren Napso email: ln191728@students.euc.ac.cy

EADPH 2024 ABSTRACT 458

Oral Care for Patients in Intensive Care Units in Greece

Emmanouil Vardas, Eirini Koxaraki, Nikolaos Apostolidis, Maria Kouri, Nikolaos G. Nikitakis*
Department of Oral Medicine & Pathology and Hospital Dentistry, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece

Aim: To evaluate the oral care practices of critically ill patients in intensive care units (ICUs) in Greece.

Methods: The study was approved by Ethics Committee of National and Kapodistrian University of Athens. A comprehensive oral care questionnaire designed by the authors completed doctors and nurses working in seven ICUs of public general hospitals in Greece. The collected data were subjected to statistical analysis using the SPSS program, version 26 (SPSS Inc, Chicago, IL, USA) for Windows.

Results: The study participants included 115 nurses and 29 doctors; 107 were females (74.3%) and 37 males (25.7%). More than 70% of participants responded positively on questions regarding mechanical cleaning (94.4%), clinical assessment for detection of oral lesions (86.1%), use of chlorhexidine (78.5%), clinical assessment of the tongue (77.8%), and toothbrush use (72.9%). The percentage of positive responses was between 30% and 70% for clinical assessment of the oral mucosa (66%), assessment of oral malodour (65.3%), evaluation of oral examination findings (50.7%), clinical assessment of saliva (43.8%), teeth (42.4%) and gingiva (41.7%), and toothpaste use (40.3%). Less than 30% of participants gave a positive response about assessment of dental plaque (26.4%), performance of oral secretions culture (17.4%), use of mouthwashes other than chlorhexidine (28.5%), and interdental brushes use (4.2%).

Conclusions: Oral care practices in the ICUs in Greece mainly include mechanical cleaning, tooth brushing, and use of chlorhexidine. Although clinical assessment for detection of oral lesions is performed in most cases, not all oral mucosal sites receive the same attention, while teeth, gingiva, saliva and dental plaque are assessed in less than 50% of cases. In addition, the evaluation of oral examination findings remains questionable and the performance of oral hygiene suboptimal, underlining the need for closer collaboration with dental professionals to improve oral care of ICU patients.

Keywords: Intensive Care Units, Public Hospital, Oral Care, Critically Ill Patients, Clinical Assessment

Presenter: Eirini Koxaraki email:irene.koxaraki@gmail.com