Abstract No.57

North Macedonian dental students' knowledge regarding child abuse and neglect

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Aim The aim of the study was to investigate the knowledge and attitudes of North Macedonian dental students about child abuse and neglect. **Methods** This cross-sectional study was conducted among students from all six years of study. The data were collected in January and February 2022 using Google Form, a link to which a questionnaire was distributed via social media platforms. The questionnaire was sent to 233 students, selected at random.. Approval to conduct the study was obtained from the Ethics Committee at the Faculty of Dental Medicine, Saints Cyril & Methodius University. The definition of physical indicators of abuse, awareness regarding legal and ethical issues, student's experience about recognition of child abuse were evaluated by the students 'response to questions on these aspects in the questionnaire. Descriptive statistics and chi-square tests were performed to analyse the data. Significance level P <5% (0.05%) was used in all analyses. **Results** - A total of 163 (70%) students responded and completed the questionnaire, of whom 117 (71.8%) were female and 46 (28.2%) were male. They reported very rarely 34 (20.9 %) having access to training related to recognising and reporting abused and neglected children. One hundred and thirty students (79.8%) had never received information about child abuse during their university academic education. One hundred and forty-nine (91.4%) wanted to gain more knowledge about child abuse and neglect. No differences were observed between gender and year of study. **Conclusions** The findings of this study suggest that North Macedonian dental students should receive education to increase their knowledge and awareness of all aspects of child abuse and neglect. An educational programme about diagnosing, reporting and preventing child abuse and neglect should be included in their undergraduate curriculum.

Keywords: Child abuse, child neglect, dental student, knowledge

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Oral Health Status and Need for Oral Care Among Older People with Dementia-A Systematic Review

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Aim: The world population is aging and the number of older people with dementia is growing. The oral health of an ageing population constitutes a significant concern because it is closely linked to general health and the quality of life. Several studies have reported on the poor oral health of the elderly population with dementia. The aim of this study was to perform a systematic review of the oral health status and need for oral care in older people with dementia.   **Methods:** The systematic review accessed papers from PubMed, CINAHL, and the Cochrane Library. Papers published between the years 2002 and 2021. They were identified using the following MeSH-terms, singly and in different combinations: " Dementia," " Oral health," " Oral hygiene," " Oral care need," " Aging population."   The papers which met the inclusion criteria and were assessed for quality and underwent data extraction. **Results:** The searches yielded 549 unique papers, of which 68 were included for critical appraisal and data extraction. The included studies suggest that older people with dementia had high scores for gingival bleeding or inflammation, periodontitis, plaque, stomatitis, candidiasis, mucosal lesions, reduced salivary flow and assistance for oral care.   **Conclusions:** In older people with dementia, poor oral health is a common condition. The current state of oral health, in older people with dementia, could be improved if their carers received oral care education and regular professional dental care was provided.

Keywords: Dementia, elderly, oaal health, Aging population, oral care need

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Consequences for the Oral Healthcare System in a Crisis Situation in North Macedonia

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Aim: The aim of the study was to assess the impact on the oral healthcare system in Republic of North Macedonia arising from the COVID- 19 pandemic. **Methods:** In March 2022 a Self-Administered Questionnaire (SAQ) which consisted of 15 questions, was personally delivered by dental students to a random selection of 120 dentists, who worked in 10 cities and five rural areas in the Republic of North Macedonia. Sixteen were employed in public health institutions and the others worked in private practice. The questions were on their working conditions in the last three years, since the pandemic started and related to financial circumstances, governmental subsidies, staff management and investment and development of their dental offices. In North Macedonia, ethics approval is not required for a survey of this type. **Results:** One hundred and four dentists returned completed questionnaires (response rate 86.7%). Nineteen (18.2%) reported that in the last three years they had lost their jobs, while 39 (37.5%) had experienced a reduction in their monthly income. A high number (65 - 62.5%) noticed a deterioration in relationships amongst their staff, because of high tensions due to the COVID-19 crisis. The increased infection risks led to restrictions in the range of treatment offered. However, 43 dentists (41.3%) reported that they only restricted the range of treatment which they offered at the start of the pandemic. Two thirds (68 -65.3%), reported that pandemic had caused them to raise their treatment fees. Only 35 (33.6%) received a financial support from the Government. **Conclusion:** The Covid-19 pandemic has had a major impact on dental practice in North Macedonia. Some dentists lost their jobs and nearly all experienced a reduction in their monthly income, which led to existential problems. It is worrying that only a small number of dentists received governmental financial support.

Keywords: Crisis, COVID – 19 pandemic, oral healthcare system

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Title Cost-effectiveness analysis of a silver diamine fluoride to avert dental general anaesthesia.

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Aim: The aim of this study was to perform a model-based cost-effectiveness analysis, from the healthcare perspective, of a silver diamine fluoride (SDF) protocol intervention for averting dental general anaesthesia (DGA) among Victorian children aged 2- 10 years. **Methods:** The assessment of the effectiveness of the intervention was based on a published Australian perspective single-cohort study conducted in 2017/18. The costs of the SDF protocol intervention were estimated for 85 children who were referred for DGA at the Royal Dental Hospital of Melbourne (RDHM).   The comparator was derived from a de-identified service audit of 1,786 children aged 2-10 years, who were treated in 2018 under DGA at the same hospital. A simple decision-tree model with probabilistic sensitivity analysis (PSA) was used to estimate the incremental costs per DGA averted. The study was approved by Deakin University. **Results:** The mean cost for children receiving one DGA session was AUD$1,793.23 (SD 803.45), and AUD$3,104.72 (439.83) for two sessions of DGA. There was a probability of 0.003 (SD 0.001) for two DGA sessions within one year. On average, there was an incremental cost saving of AUD1,544 (SD $793) per DGA averted. Under PSA, the SDF protocol intervention was 97% cost-effective when there was incremental cost or incremental effectiveness. **Conclusions:** In the population studied, the SDF protocol intervention enabled cost-effective dental caries management for young children for whom referral for DGA was considered.

Keywords Cost-Effectiveness analysis; silver fluoride; dental caries; children; general anaesthesia

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Involvement of Lithuanian Dental Hygienists in Community Oral Health Education

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The profession of dental hygienist has been recognised in Lithuania for nearly 30 years. However, during this period the oral health of the Lithuanian population was not improved and the incidence of dental caries and periodontal diseases is still high. **Aim:** This study aimed to investigate the involvement of Lithuanian dental hygienists in community oral health education. **Methods.** A qualitative approach (an interview) was used to gather dental hygienists' experiences. The inclusion criteria were: graduated at least three years ago, has a dental hygienist's license and agrees to participate in the study. Written consents were obtained. Ethics approval was obtained from The Ethics Committee of the Faculty of Dentistry of the University of Lisbon. Interviews were conducted in 2021 with seven dental hygienists. Thematic content analysis was performed. **Results.** Three themes were identified. Study participants had many years of professional experience and had a broad approach to their work. They described how they considered oral health advice to help their patients prevent oral diseases and how they performed non-surgical periodontal treatment to be very important elements of their professional practice. Dental hygienists also reported carrying out oral health educational activities and they were happy to do this. They considered that community oral health education was provided randomly, often with little follow up. There was also a lack of funding, government involvement and social partners to support community oral health education. Training tools are prepared by dental hygienists themselves, using their own financial and time resources. **Conclusions.** Lithuanian dental hygienists are involved in community oral health education, usually on their own initiative, receiving no reward for this work. They are well-positioned and ready to conduct community oral health education. However, the prevention of oral diseases in Lithuania is not well organized and lacks a strategy, funding and consistency.

Keywords: Dental hygienist, community oral health education, prevention of dental diseases

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Oral Health-Related Cases of Lithuanian Parents Self-Medicating their Children During COVD -19 Lockdown

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Aim: The aim of the study was to investigate oral health-related cases for which the parents self-medicated their children during the COVID-19 lockdown. **Methods**: In February 2022, the Parents' Behaviour Questionnaire was distributed to a total of 1,463 parents of 6-17 years old schoolchildren in all 15 schools in the Klaipeda district, excluding Klaipeda city, located in the Western part of Lithuania. The study was approved by the University's Bioethics Committee. Data were analysed using IBM SPSS.17 software. Analysis was performed with Chi-square test for frequency and reasons of self-medication. A p-value <0.5 was considered as significant. **Results:** The response rate was 68.5% (1002 responses), 980 questionnaires were analysed. The responses overwhelmingly came from mothers (951- 97.1%) and only 29 (2.9%) from fathers. The mean age of respondents was 38.5 years, SD=5.705. Most of the children (894 - 91.3%,) had no chronic disease during the lockdown period, (70 - 7.1%) had a diagnosis of chronic disease, 16 (1.6%) of the parents gave no answer to this question. Nearly one third (304 - 31.0%) of the parents self-medicated their children for oral health reasons without consulting a dentist during the lockdown period, when the dental services were restricted. The numbers and reasons were: dental pain 220 cases, suppuration of dental origin 9 cases, facial oedema 12 cases, tooth eruption problems 31 cases, gingival problems 16 cases, dental trauma 1 case, bruxism 8 cases, temporomandibular joint problems 3 cases and enamel discolouration 4 cases. **Conclusions:** Restricted dental service accessibility for children led to the necessity for self-medication performed by nearly one third of the parents who took part in this survey. The most frequent reasons were dental pain and teeth eruption problems.

Keywords: Oral health, self-medication, children, lockdown

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Interventions in improving oral hygiene of visually impaired individuals: A systematic review

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Aim: Blindness and vision impairments are public health problems of significant importance and a cause of suffering, disability and diminished health-related quality of life (Vyas et al., 2018). The deterioration in the oral hygiene of visually impaired individuals has paved the way for the emergence of different interventions for oral health promotion. This systematic review aimed to assess the effectiveness of different interventions in improving the oral hygiene of visually impaired individuals. **Methods:** The systematic review was carried out via a comprehensive literature search in PubMed, Cochrane Library, Science Direct, Wiley online and the Scopus search engine. Medical Subject Heading (MeSH) terms and keywords used included 'Visually impaired', 'Oral Health', 'Braille' and 'Oral health interventions'. The assessment of the quality of the studies was performed using the 26 item checklist of Downs and Black (1998). The extracted data comprised: year of publication, first author of the article, country, study design, interventions, sample size and follow-up. The clinical outcomes and knowledge change, post interventions, were also assessed to evaluate the effectiveness of the interventions. **Results:** Nine studies fulfilled the eligibility criteria and were reviewed. The quality of evidence assessment, using the instrument of Down and Black (1998), gave a mean score of 17.66 ± 3.27. Two studies with limited quality of evidence were removed and the review finally comprised seven studies of good or reasonable quality. The assessed outcomes: dental plaque, gingival status, oral hygiene and knowledge change, were reported to be significantly improved (*p*-value 0.0001) in the interventional groups when compared with the control groups. **Conclusion:** A combination of two or more interventions was reported to be better in improving the oral hygiene of visually impaired individuals when compared with the individual interventional techniques. More studies are required to confirm this finding.

Keywords: Oral health, oral hygiene, visually impaired persons

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Romanian patients' self-medication with antibiotics for oral diseases - a pilot study

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Aim: The aim of the study was to assess Romanian patients' habits regarding self-medication with antibiotics for oral diseases. **Methods:** The pilot study was conducted on 137 adults, with a mean age 27.5±10.1 years. They were recruited as a random sample of patients who attended a private clinic in Bucharest in December 2021 and January 2022 and who met the Inclusion criteria, which were: adults with a history of self-medication with antibiotics for oral conditions. The Ethics committee of the Carol Davila University, Bucharest approved the study. **Results:** The frequency of self-medication with antibiotics for oral diseases was reported as: a few times per year by 7(5.1%), once a year by 12(8.8%), once every few years by 16(11.7%) and seldom by 102(74.5%), predominantly for dental pain (92, 67.2%), a dental abscess (46, 33.6%) and pericoronitis (26, 19.0%). The most frequently mentioned reasons were: ack of time for dental visits (56, 40.9%), previous similar acute episodes (32, 23.4%), increased costs of dental treatment (28, 20.4%), dental anxiety (26, 19 %), lack of perceived dental treatment need (25, 18. 3%) or as a simpler solution than the visit to the dental office (23, 16.8%). Predominantly, the duration of medication was either a few days until the remission of symptoms (47, 34.3%), 5 days (44, 32.1%) or 3 days (32, 23.3%); the type of antibiotic most frequently mentioned was amoxicillin and clavulanic acid (84, 61.3%) mostly chosen based on the recommendation from a pharmacist (68, 49.6%), previously from the dentists (55, 40.2%), acquaintances (34, 24.8%) or previous personal experience (30, 21.9%), and using a dose set by either the pharmacist (78, 56.9%), previous directions from a dentist (40, 29.2%), previous personal experience (28, 20,4%) or the medicine information leaflet (24, 17.5%). **Conclusion:** In the population studied, a quarter reported self-medication with antibiotics for dental issues once in a few years or yearly, predominantly for dental pain and instead of dental visits.

Keywords: Oral health, self-medication, antibiotic usage, oral health-related attitude

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Impact of COVID-19 pandemic on paediatric dental treatment: a retrospective study in Banja Luka

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Aims: The measures taken to contain the spread of the COVID-19 pandemic have had an impact on dental treatment. The aim of the present study was to assess the influence of the COVID-19 pandemic on dental treatment in children and compare it before and during the first and second years of the pandemic. **Methods**: This retrospective cross-sectional study was approved by the Ethical Committee of the Faculty of Medicine, University of Banja Luka. Data from dental records of paediatric patients who attended the Dental Clinic, University of Banja Luka were analysed for the period March 2019 to March 2022, for the number of dental treatment procedures per year across four categories (preventive, restorative, endodontic and extraction). A descriptive analysis reported the mean, frequencies, and percentages of the outcomes. The differences in the means of variables were analysed using the Chi-square test). **Results:** The number of dental treatments before the COVID-19 pandemic and during its second year was similar, with 2757 and 2585 cases, respectively. In the first year of the COVID-19 pandemic, the number of dental procedures was reduced by 40% compared to the year before the COVID-19 pandemic and amounted to 1,652 cases. The most common procedures before the pandemic and in the second year of the pandemic were preventive measures, with 1444 (52.4 %) and 1066 (41.2%) cases, respectively. In the first year of the pandemic, the most common procedure was restorative treatment with 614 (37.2%) cases. The least common procedure in all years was endodontic treatment, with 222 (8.1%), 238 (14.4%), and 236 (9.1%) cases, respectively. **Conclusions:** In the population studied, the COVID-19 pandemic had a long-lasting impact on dental procedures in paediatric dentistry. Preventive and restorative interventions could be the most appropriate strategy to improve the oral health of children after the COVID-19 pandemic

Keywords: COVID-19 pandemic, pediatric dental treatment,

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Assessment of nicotine dependence among smokeless tobacco users in Manipur.

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Aims: Despite the high prevalence of Smokeless tobacco (SLT) use in the north-eastern states of India, there is a paucity of data on its use. This study was conducted to assess the level of nicotine dependence among smokeless tobacco users visiting a dental hospital in Manipur. **Methods:** A descriptive cross-sectional study was conducted among the out-patients attending a dental college in Northeast India from December 2020 to May 2021. Ethical clearance was obtained from the institutional review board (No.A/206/REB-Comm(SP)/RIMS/2015/116/92/2020). Consent from participants was taken prior to the study. Sample size estimation was done using g power software™ and a total of 500 patients were randomly selected for the study. A pretested, structured questionnaire was used to collect the data through face-to-face interviews by a single researcher. Tobacco use history and level of nicotine dependency were measured using the Fagerström Test for Nicotine Dependence smokeless tobacco. Descriptive statistics, including the mean, median, percentage, standard deviations and interquartile range were computed. Chi-square test, Fisher's exact test and logistic regression were used where needed. **Results:** Nicotine dependence (moderate and severe) was found in 337 (67.4%) of smokeless tobacco users. About 488 (97.6%) participants were current users of SLT. Pan Zarda was used by 281 (56.2%) and was the most common type of SLT used. Level of education significantly (p=0.04) influenced the dependence, with graduates showing lower dependence than those with secondary school qualifications at 10th and 12th grade. **Conclusions:** In the population studied, a high prevalence of SLT use was observed with moderate levels of dependence. Dependence on tobacco is a concern in the present study population. Incorporating smokeless tobacco control at the policy level and community-based interventions are required to achieve a no tobacco society. However, more studies with representative samples should be carried out.

Keywords: FTND, Nicotine dependence, smokeless tobacco

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Willingness of international dental and medical students to treat patients with HIV/AIDS

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Aims: The stigma associated with AIDS continues to be a barrier to care for many infected individuals. Dental and medical students can be infected by HIV during their clinical work; therefore, there is important to know how they would deal with HIV infected patients. The present study was performed to gain insight into the knowledge, attitudes and willingness of international dental and medical students towards HIV/AIDS patients. **Methods:** In a cross-sectional study at the Tehran University of Medical Sciences, data were collected by questionnaire in 2021. Participants were all (132) dental and medical international first and second year students. The questionnaire included questions on: demographic data, knowledge of HIV transmission, attitude toward HIV patients, willingness to treat HIV patients. A higher score indicated higher knowledge, attitude and willingness to treat HIV patients. Data were analysed by multiple linear regressions and Pierson correlations. Ethics approval and consent of participants were obtained prior to the study. **Results**: Seventy four (56%) students were female and 58 (43%) were male. Minimum score for knowledge was 1, maximum was 8 and average was 5.2. Minimum score for attitude was 8, maximum was 22 and average was 15. Minimum score for willingness was 13, maximum was 30 and average was 20. There was a significant relationship between positive attitude and increase in age and male gender ($p<0.05$). There was a significant relationship between more willingness if there had been past exposure to HIV patients and past needle stick injuries ($p<0.05$). Pierson correlations showed a relationship between knowledge and attitude with willingness but it wasn't statistically significant ($p>0.05$). **Conclusions:** The study found that all students had good knowledge, but not a good attitude towards HIV/ AIDS patients and inadequate willingness to treat them. Therefore, HIV/AIDS patients' treatment should be included in future dental and medical educational courses.

Keywords: HIV, students, medical, dental

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Preventive equipment usage and experience of orofacial injuries in Iranian adolescent martial arts athletes

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Aim: The aim of this study was to assess the status of preventive equipment usage and self-reported experience of orofacial injuries and related factors in adolescent Karate and Taekwondo athletes in Iran. **Methods:** Ethical approval was obtained from the Ethics Committee of Tehran University of Medical Sciences (IR.TUMS.DENTISTRY.REC.1399.016). The Public Relation Offices of the Karate and Taekwondo Federations published a link through their social networks inviting Iranian 11-17-year-old athletes to complete an online, anonymous, self-administrated questionnaire. The questionnaire had three parts: background (age, gender, duration of sports activity, training sessions per week, and previous education on orofacial injury); preventive equipment usage; and self-reported experience of orofacial injury. The preventive equipment usage score was calculated by adding the scores of corresponding questions (possibly range 0-7). A linear regression model and the Pearson correlation were employed for statistical analysis. **Results:** 295 athletes participated in the study. Their mean age was 14.56±1.91 years; 147 (59.0%) of respondents were female, and 78.0% did Taekwondo. About 25% of athletes had received training in the prevention of orofacial injuries and 183 (62%) reported a history of orofacial injuries. In total 211 (71.5%) participants indicated that they usually used a mouthguard during practice or a match. The most common types of mouthguards used were stocks (39.7%). Only 11 (3.7%) participants reported the use of custom-made mouthguards. The mean score of self-reported preventive practice was 3.53±1.82 (out of 7) which was associated with age (β=0.19, p=0.002) and history of orofacial injury (β=-0.15, p=0.010). The most common reasons for not using a mouthguard included the annoying feeling they caused, reported by 43 (44.3%) of respondents. **Conclusion:** Adolescent athletes, who participated in this study had relatively undesirable preventive practices. The high occurrence of self-reported orofacial injuries indicates the importance of more education and stricter rules.

Keywords: Mouth protectors, orofacial injuries, martial arts athletes, Iran

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Professionals' perspectives on addressing persistent oral health inequality among young children

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Aims: Oral health promotion interventions have had limited success in reaching families in disadvantaged neighbourhoods, resulting in persistent oral health inequality. This qualitative study aimed to investigate professionals' perspectives on the causes of children's poor oral health (0-4 years), their perceptions of the roles and responsibilities of each stakeholder, and opportunities for child oral health promotion strategies. **Methods:** Professionals (n=38) working in different domains (community, social welfare, general health care, dental care, public health, and private sector) in a disadvantaged neighbourhood in Amsterdam, The Netherlands, participated in this study. Data were collected through 24 semi-structured (group) interviews between June and November 2021. The ACTA ethical review committee approved the study, and participants' consent was obtained. Transcripts and notes were analysed through thematic analysis. **Results:** Professionals indicated that unhealthy diet, children's non-compliance with tooth brushing, poor parenting skills, parent's negative attitude, family's daily struggles, and insufficient emphasis on childhood caries prevention in dental practices, general health and social welfare organisations, underlie poor oral health. They held parents most responsible for improving young children's oral health, but recognised that living circumstances and lack of social support of vulnerable families are complicating factors. Interestingly, non-dental professionals acknowledged their beneficial role in child oral health promotion, and dental professionals stressed the need for more collaboration. **Conclusions:** A broad child-, parental-, and societal-centred educational communication strategy is perceived as promising. Professionals working within and outside the dental sector acknowledge that local and collective action is needed. This involves a better understanding of the family's needs and complex daily reality. Also, intensifying child oral health knowledge in dental practices is essential in collaboration with families, general health and social welfare organisations.

Keywords: Professionals' perspectives, oral health inequalities, young children

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Correlation of anxiety, personality dimensions and oral health impact profile in young Romanian adults

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Aim: To investigate the relationship between anxiety (state and trait), social phobia and oral-health related quality of life (OHQoL) among young adults in Timisoara, Romania. **Methods:** Medical students from Timisoara were invited to complete the Social Phobia Inventory (SPIN), The State-Trait Anxiety Inventory (STAI), NEO-FFI -shorten version of NEO Personality Inventory (NEO-PI) and Oral Health Impact Profile (OHIP-49) online. Those who agreed to take part ticked a consent box. The study was approved by the ethics committee of the Pius Branzeu Emergency County Hospital Timisoara. The results were statistically tested. **Results:** Sixty seven students completed the online questionnaires. The highest levels of anxiousness, after the administration of STAI Form Y-1, were observed in those having Neuroticism (median=50) and in those with experience as character type (median=40). Anxiousness as a personality trait was observed as being least present in those who displayed Conscientiousness character type (median=38), closely followed by individuals pertaining to the Extraversion group, (median= 40), while the highest ranking was seen in those with Neuroticism character type (median=54), followed by Experience group character type (median=43). The OHIP score was positively and statistically significantly correlated with the STAI Form Y-1 (Spearman's r = 0.319; p=0.009) and STAI Form Y-2 (Spearman's r = 0.371; p < 0.001), signifying that the presence of high level of anxiety and anxiety traits lead to low oral health-related quality of life.. Social Phobia Scores as assessed by the SPIN questionnaire were also dependent on personality profile. Neuroticism as a character type scored highest (median = 31), followed by The Experience (median=20), while those in the Extraversion and Conscientiousness groups fell within one point of each other (median=15, median=16 respectively). **Conclusion:** In the group studied, anxiety (state and trait anxiety, social phobia) is dependent on personality profile and is associated with a worse OH-QoL.

Keywords: Quality of life, oral health, personality profile anxiety, social phobia

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A ten-year study of Romanian patients' attendance for public emergency dental care

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Background: In Mures county, Romania there is a single dental office which is providing and has provided publicly funded emergency dental care for 24-hour for ten years, however, only a few studies have dealt with its usage. **Aim**: This study aimed to assess the patients' demand for emergency dental health services in the Emergency Dental Office of Mures County Emergency Hospital (EDOMCEH) in Targu-Mures, since its establishment. **Methods**: The ten-year retrospective study was based on the analysis of dental records of patients who received an emergency treatment in the EDOMCEH of Targu-Mures between 1st February 2012 and 31st December 2021. Ethical approval was obtained from Mures County Emergency Hospital ethics committee. Descriptive statistical analysis was performed, and Mann-Whitney U nonparametric tests were used for inferential statistics, the significance level being set at $p<0.05$. **Results**: During the ten year period a total of 58,338 patients attended for emergency dental services. The highest rate of emergency dental visits 7,390 (12.6%) was observed in 2014 (the third year). The lowest level of emergency dental services 3,630 (6.2%) was provided in 2021 (the last year). Significantly fewer patients attended for emergency dental care during the COVID-19 pandemic in 2020 and 2021. No significant differences were recorded between the percentage of female and male emergency patients ($p<0.05$). **Conclusions**: The results suggest that, in the population studied, the number of patients attending for emergency dental care was lower in 2020 and 2021 due to the impact of the COVID-19 pandemic. The most likely explanation may have been related to patients' fear regarding the fast spread of COVID-19 and the enforced community discipline. The reduction in patients' demand for emergency dental care may be because in previous years for lower socio-economic groups free dental services were provided, even if it was not an emergency.

Keywords: ppublicly funded, emergency dental care, retrospective study, patients' attendance, COVID-19 pandemic

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Adults' compliance with an internet-based programme to reduce dental anxiety

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Aim: This study aimed to evaluate compliance with participation in an internet-based programme for adults experiencing dental anxiety. **Methods:** The programme utilised a tailor-made website consisting of six interactive articles, explaining dental anxiety management and dental treatment procedures. Volunteers aged 18-60 years were invited to participate in the programme either via an invitation from friends and relatives (FR), or by a treating dentist (TD) or they learned about it from social media (SM). Before starting the programme, they were invited to complete a questionnaire. The participants visited the website for 2 weeks, and then completed the post-programme questionnaire. The questionnaire was then sent to participants again after three months. Modified dental anxiety and oral health self-efficacy scales were included in the questionnaire. The Chi-square test in SPSS version 28 (IBM, Armonk, NY, USA) was used to compare compliance rates in the three groups. Ethics approval was granted by the Vilnius Regional Biomedical Ethics Committee. **Results:** Sixty volunteers consented to participate in the programme. 34 (57%) were in the FR group followed by TD and SM groups with 13 (22%) in each. Eight (62%) completed the two-weeks post-programme questionnaire in TD group. Of whom, seven (88%) read all articles. Half of the participants in FR group (17 - 50%) completed the programme, nine (53%) participants read all the articles. In SM group four (31%) participants completed the programme; they all read all articles. The three-months post-programme questionnaire was completed by five (15%) in FR, 3 (23%) in TD, and 2 (15%) in SM groups. There was no statistically significant difference in completing the post-programme questionnaires between the groups. **Conclusions:** The highest proportion of the participants who completed the programme were those invited by their treating dentist. Invitation via social media gave the weakest results. Studies with a larger sample size are needed.

Keywords: Dental anxiety, internet-based program

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Role of topical fluorides in prevention of radiation caries: A systematic review and meta- analysis

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Aim: The aim of this systematic review was to pool the evidence of effectiveness of various topical fluorides in preventing radiation caries or change in bacterial growth in adult patients with head and neck cancer. **Methods:** Three databases (PubMed and Google Scholar and Cochrane) were searched for randomized controlled or uncontrolled trials or quasi-randomised trials published before l February, 2021. Two independent reviewers screened 346 abstracts. Fourteen papers were included in the systematic review. The primary outcome evaluated was the prevention of radiation caries or change in bacterial growth in saliva. Meta-analysis was performed for the sub groups formed on the basis of fluoride formulations and adjuncts used. **Results:** The 14 studies were highly heterogeneous. The majority found different fluoride formulations to be effective in controlling radiation caries to a variable extent up to 70% depending upon the intervention, patient compliance, rate of attrition and follow up period. Sodium fluoride was the most commonly used caries preventive agent. Meta-analysis showed no significant difference between sodium fluoride formulations and other fluoride agents. Fluoride treatment when incorporated with a re-mineralising agent had no significant effect on caries prevention. **Conclusion:** The results of this review indicate the topical fluoride prevents radiation caries. However, to delineate its exact formulation, dosage or frequency, there is need for more well conducted randomised controlled trials.

Keywords: Radiation caries, dental caries, head and neck radiation, fluoride gel, fluoride varnish

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Designing a smartphone gaming application for oral health promotion in pre-schoolers – Part 1

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Aims: Despite the popularity of gaming using personal computers, gamification using smartphone applications (apps) is a relatively new topic. This study aimed to develop a smartphone gamified app to improve the oral health of pre-schoolers. This abstract provides details of the design of the app. A second abstract reports a pilot study which tested it. **Methods:** The existing literature, media and mobile apps were reviewed to find other apps in this field of research, to inform its design and the technical information required.   The resulting app provided mothers with oral healthcare information such as oral hygiene, proper nutrition, fluoride intake, and dental visits for their children. Later to gamify the app, toothbrushing for the child, frequency of toothbrushing, application of toothpaste, and daily amount of intake of sugary snacks by the child were added, as key elements reinforced by the app The study was approved by the ethics committee of School of Dentistry, Tehran University of Medical Sciences (IR.TUMS.VCR.REC.1397.1126). The mothers were rewarded in case of giving the correct answer to the questions in the app. The scores for each question were added together and the total daily score of the mother was displayed. If a high score was achieved, the background colour of the app changed for one week, indicating a higher performance level. Also, a progress bar is present at the top of the page showing the scoring process, to encourage users. Expert opinion was sought regarding this app, and modifications were made accordingly.

Keywords: Oral health, children, preschool, gamification, mobile app

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Psychological impact of COVID-19 and dentistry: A scoping review

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Aim: The outbreak of the COVID-19 pandemic was associated with severe psychological effects on individuals due to its life-threatening risks. Dental staff were under massive pressure because of their close contact with patients. The present study reviewed the psychological effects of COVID-19 and its relationship with dentistry. **Methods:** A comprehensive search of five databases (Google Scholar, Medline through PubMed, Embase, Scopus, and Cochrane Central), limited to articles in English published from January 2019 to January 2022, was conducted with the keywords: COVID-19 and terms describing the disease, dentistry, oral health, dental practice, dental service, dental emergencies, oral manifestation, dental clinics, dental education, and dental office. The resulting papers on the subject of psychological impact on dentistry (including such key terms as psychological, mental, anxiety, and stress) were screened and reviewed. **Results:** Of the 1236 papers related to oral health and COVID-19, 82 mentioned psychological effects. Based on the review, the articles were divided into four categories, which were: the effects of COVID-19 on the mental state of individuals, the need to use psychological counselling, prevention and control of psychological effects of COVID-19, mental state after COVID-19 and quality of life. Moreover, "The effects of COVID-19 on the mental state of individuals" category had four sub-themes which were: dental faculty and students, dentists, nurses and other staff, and patients. **Conclusions:** Psychological effects caused by COVID-19 have reduced dental service utilisation, which is likely to increase oral diseases in future. The results of the present literature review of problems and solutions will be helpful for designing and implementing community-based programs to promote oral health of the community.

Keywords: COVID-19, oral health, dentistry, psychological impact

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Providing dental services by commercial insurance companies in Iran : Challenges and solutions

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Aim: The present study aimed to explore the challenges of providing dental services by commercial insurance companies in Iran and suggested solutions to these challenges. **Methods:** This was a qualitative study carried out in Iran in 2021 (Ethics: approval IR.TUMS.DENTISTRY.REC.1399.168). Participants were selected through purposeful sampling from all stakeholder groups involved in insurance coverage including: 1) health policymakers, 2) insurers, 3) policy holders, 4) dentists, and 5) insured people. Data were gathered through in depth semi-structured interviews. All guide questions were drafted by an expert panel and finalised after pilot interviews in each stakeholder group. Framework analysis used to evaluate the resulting qualitative data. Interviews were reviewed and coded by MAXQDA software (Version 2020). **Results:** The total number of participants was 26 with a mean age of 47 (SD=7.7) years. About two thirds of participants were men. After framework analysis, twenty codes were extracted which were then categorised into six themes. The most frequent challenges related to economic issues including incompatibility of the dental services' tariff with economic conditions, inadequate coverage of basic insurance and imposing the financial burden of dental services on supplementary insurance. Information challenges such as lacking an integrated information system for insured people between insurance companies; and monitoring challenges such as low quality of provided services and lack of performance monitoring of contracted providers. Solutions suggested by the interviews included: coordination and solidarity of basic and supplementary insurances in policymaking and coverage of dental services, establishment of an integrated information system between insurance companies, reinforcement of the supervision of contracted providers, and defining a tariff for services in accordance with economic conditions. **Conclusions:** Most of the challenges in providing dental services in supplementary insurance are related to economic problems and regulatory system. They can be solved with the cooperation of basic and supplementary insurance.

Keywords: Dental Insurance, qualitative study, dental service

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Mothers' experience of an oral health care smartphone application for pre-schoolers Part 2

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Aims: Pre-school age is a critical period regarding oral health education and forming healthy behaviour. m-learning and mobile apps are nowadays used almost universally. Abstract 76 has described the design features of a smartphone application (app) which aims to advise mothers of pre-schoolers on oral healthcare. This abstract reports a pilot to test the app. The aim of this study was to assess mothers' experience of an oral health care smartphone app for pre-schoolers. **Methods**: The study population were mothers of 4-6-year-olds referred to the Tehran School of Dentistry. User experience was assessed via a questionnaire in three domains: simple utilisation, user satisfaction and security. The simple utilisation domain contained five items (1-pleasant application environment, 2-colour and picture variety, 3-use of symbols for switching pages, 4- fonts and 5- legible text. The user satisfaction domain had four items (1-approptiate guidelines, 2-simple reverse to previous pages, 3-simple switching pages and 4-simple information search) and two items (assurance of information accuracy and assurance of information validity) were related to security domain. The participants ranked items in five levels (very high, high, moderate, low, very low). This study was approved by Tehran University of Medical Science ethical committee . All participants signed written informed consent forms. **Results**: Twenty-two mothers of preschool children participated in this pilot study. Their mean age was 35.6±0.5 years. Twelve (54.4%) of the pre-schoolers were girls with a mean age of 4.6±1.2 years. Most mothers scored the 5 simple utilization items as high (17 (58.6%)-22 (75.9%)). Regarding the user satisfaction domain, most mothers described these items as high(16 (55.2%)-19 (65.5%)). Sixteen (55.2%) trusted the accuracy of information as high and 14 (48.3%) scored the assurance of information validity as very high. **Conclusions:** The results of this study suggest this mobile app is a user-friendly tool that improves user experience.

Keywords: User experience, m-learning, pre-schooler, oral health education

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A Scoping Review of oral health in pregnant women

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Aim: The aim of this scoping review was to evaluate, elaborate and categorise factors affecting oral health status of pregnant women. **Methods:** A literature search was performed of publications from 2009 to 2019 in PubMed and Scopus with the following keywords: dentistry, "dental health" and "oral health", AND pregnancy, "pregnant women", "pregnant mothers" and "expectant mothers". Studies were included if they had evaluated factors relating to oral health only in pregnant women, with clear methodology, and outcome measurement. All types of studies were included except qualitative ones and reviews. They included original articles and conference papers. Letters, opinions, and reports were excluded. Two reviewers independently assessed the resulting literature, based on inclusion and exclusion criteria. Independent variables were categorised in seven groups as follows: demographic, socio-economic, psychosocial, enabling, systemic, behavioural, and pregnancy-related factors. Oral health outcomes were categorised and significant relationships with determinants and risk factors were reported. **Results:** Initial search results included 1435 articles and 467 duplicates were excluded. Finally, 30 articles with relevant titles, abstracts, and full texts were included. Most studies (70%) were cross-sectional. Twenty studies had one outcome while ten studies had more than one. Among the reported outcomes, dental visit was the most common (found in ten studies), followed by periodontal disease and dental caries (found in nine and seven studies). The most studied independent variables were socio-economic and demographic factors, followed by behavioural and enabling factors. The least frequent variable was systemic factors. Mothers' education was the most common independent variable, included in 29 studies, and had significant relationships only in 34% of them. Dental counselling was assessed in only three studies, in all of them, the relationship with outcomes was significant. **Conclusions:** This literature review suggests that socio-economic, demographic and enabling factors affect the oral health of pregnant women.

Keywords: Oral health, pregnancy, scoping review

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Aim: The outbreak of COVID-19 virus has caused drastic economic changes in various aspects of life. Dentistry, as a discipline involving in public health, is no exception. The present scoping review aimed to summarise the financial effects that COVID-19 has imposed on dentistry and oral health. **Methods:** A comprehensive search restricted to English articles from January 2019 to January 2022, was conducted in five databases (Google Scholar, Medline through PubMed, Embase, Scopus, and Cochrane Central) was conducted with the keywords: COVID-19 and its other different terms;: dentistry, oral health, dental practice, dental service, dental emergencies, oral manifestation, dental clinics, dental education and dental office. Literature related to oral health and COVID-19, on the subject of the viruses financial impact on dentistry and oral health (such as: financial, economics, cost, and expenses) were screened and reviewed. **Results:** Of the 1236 articles related to oral health and COVID-19, 59 articles mentioned financial aspects. The United States, Saudi Arabia, and India, ranked higher than other countries in terms of the number of articles in this field. The review yielded the following themes: Effects of closure of practice on dentists and staff, Increase in treatment costs and impact on oral health, personal protective equipment and unforeseen costs, Psychological effects of financial issues, and financial problems and dental schools. The articles in each area were focused on either challenges and problems or solutions and opportunities. **Conclusions:** Despite the decline in the COVID-19 epidemic, its economic effects on dentistry remain. These economic problems for dental health providers and individuals can greatly affect the community's oral health. Attempts have been made in this study to point out these problems and offer available solutions, to take a step to improve the oral health of the community around the world.

Keywords: COVID-19, dentistry, oral health, financial impact

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Effect of an oral cancer prevention programme on knowledge and attitude of Iranian adult patients

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Aim: This study aimed to evaluate the effect of an oral cancer prevention programme on the knowledge of adult patients attending the School of Dentistry, Tehran University of Medical Sciences (TUMS). **Methods:** This was an interventional study, conducted in 2021. It was approved by the TUMS ethics committee. Its participants were a consecutive sample of adult patients who attended a clinic in the TUMS School of Dentistry. The participants were randomly allocated to intervention (n=34) and control groups (n=33). At baseline and one month after the intervention, both groups completed a questionnaire which included questions about knowledge of and attitude to oral cancer. The intervention group received education through posters and pamphlets containing information on risk factors, symptoms, and prevention methods of oral cancer. Data were analysed using paired t-tests and binary logistic regression. **Results:** The mean age of the study participants was 35.8 (SD:11.5) and 38.7 (SD:10.9) years in the intervention and control groups, respectively. The findings of the study showed that there was a difference between the level of knowledge and attitude after the intervention among the participants in the intervention group compared to the control group ($p<0.05$). No association was found between knowledge and gender, place of residence, and economic status, however, knowledge was associated with age, marital status, and education ($p<0.05$). Knowledge was higher in younger, married, and better educated people. **Conclusions:** This study found a low level of oral cancer knowledge and attitude among participants before the educational intervention. The intervention was effective in improving knowledge and attitude. Lack of knowledge and negative attitudes of people regarding oral cancer and its risk factors may well lead to an increase in incidence and delays in diagnosis. Therefore, the need for public education should be considered and more education in oral cancer prevention should be provided.

Keywords: Mouth cancer, knowledge, attitude, prevention

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The effect of interventions based on behavioural models on oral health promotion – a scoping review

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Aim: Educational interventions based on the behaviour change models can be useful in creating effective and sustainable behaviour change. The aim of the present scoping review was to assess educational interventions related to oral health promotion based on behaviour change models. **Methods:** The PubMed database was searched with the keywords including "Oral Health" AND "Behaviour Change Models", "Health Belief Model", "Theory of Planned Behaviour", "PRECEDE PROCEED Model", "Transtheoretical Model", "Social Cognitive Theory", "Theory of Reasoned Action". Papers published in the last 10 years were reviewed. Other inclusion criteria were: English language, clarity of the methodology and examined variables, as well as cross-sectional, interventional, longitudinal, and review design of the studies. Studies on population having systemic disease, qualitative, and pilot studies were excluded. **Results:** The search yielded 86 articles. After removing duplicate articles, 27 articles with the relevant title, abstract, and full text were reviewed. All of the models and theories of behaviour change were effective in improving oral health. The most studied models were the Health Belief Model and the Theory of Planned Behaviour, which evaluated tooth brushing and dental flossing more than other oral health-related outcomes. The Health Belief Model was also effective with regard to other outcomes such as fluoride toothpaste use, dietary habits, dental visit, dental caries, Plaque Index, Gingival Index, Simplified Oral Hygiene Index, Community Periodontal Index, Clinical Attachment Loss, and Oral Health-Related Quality of Life. Additionally, the Theory of Planned Behaviour also affected dietary habits, dental visit, fluoride use, toothbrush replacement, rinsing mouth after meals, dental caries, Bleeding on Probing index, and Periodontal Screening Index. **Conclusions:** According to the results of this review, oral health can be promoted through educational interventions based on the behaviour change models, especially the Health Belief Model and Theory of Planned Behaviour.

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Periodontitis and Associated Predictors in Patients Attending the Tehran School of Dentistry in 2020

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Aim: The present study aimed to determine predictors associated with periodontitis in patients attending the School of Dentistry (TUMS) in 2020. **Methods**: This analytical cross-sectional study (Ethics approval IR.TUMS.DENTISTRY.REC.1399.159), carried out in 2020, recruited volunteer patients (aged≥18 years). Those diagnosed with periodontitis who attended the clinic were invited to participate. Background information (age, gender, education level, marital status) and economic factors (income, and insurance coverage) were acquired from all participants. Patients answered questions about their experience of periodontal symptoms. Participants' periodontitis status was assessed in terms of Clinical Attachment Loss, (CAL). The extent of CAL was classified in one of three stages. A mean CAL of (1-2mm – stage I, 3-4 mm stage II, and over 5mm – stage III/ IV. Phi coefficient correlation Cramer v contingency analyses were performed in SPSS (version 26). **Results:** Ninety-one patients (41 females, 50 males) participated of whom 36 (39%) had stage I periodontitis, 22 (24%) stage II, and 33 (36%) stage III/ IV. The results showed that the older and married participants were more likely ($p<0.05$) to suffer from stage III/IV periodontitis, and were the most concerned about their periodontal status. Individuals from the high-income bracket experienced more severe symptoms of periodontitis ($p<0.05$). No significant difference in the severity of periodontitis was observed between subjects with or without insurance. The most frequent self-reported symptoms were tooth sensitivity 67 (74%), "bleeding while brushing and flossing" 64 (70%), and "swollen and painful red gums" 48 (52 %). As participants' age increased, symptoms such as gingival recession, tooth sensitivity, loose teeth, and dull pain were experienced more frequently. **Conclusions:** This investigation determined various background and economic predictors which increased the severity of periodontitis. Importantly, symptoms were reported by the older and married subjects and those who had higher levels of income as more severe.

Keywords: Periodontitis, predictor, social class

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Psychometric evaluation of instrument for evaluating general dentists' perspective of Obstructive Sleep Apnoea (OSA) in children

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Aim: Children with sleep apnoea may experience problems in different aspects of their life including health and welfare. Dentists can have important role in early diagnosis and management of this problem. The aim of the present study was the development and psychometric evaluation of a Farsi version of a questionnaire to assess the knowledge, attitude as well as self-reported practice of general dentists regarding OSA in children. **Methods:** A literature search of the existing instruments was conducted to extract relevant questions. After ethics approval from ……….., nine experts from relevant fields: three paediatrician, three paediatric dentists, one epidemiologist, one prosthodontist and one oral health specialist were asked to review the questions. The Forward-Backward method was used to translate and back translate the questions into Farsi. The psychometric properties of the questionnaire, including the item content validity index (I-CVI), scale validity index (S-CVI) and face validity were tested. For testing the reliability of the instrument Cronbach's alpha and Intra-Class correlation was performed. Confirmatory factor analysis (CFA) was performed to check the construct validity of the instrument. The ethics approval was granted by the ethics committee of Tehran University of Medical Sciences (TUMS.DENTISTRY.REC.1399.017). **Results:** A 22-item questionnaire was developed. The I-CVIs for all questions was above 0.7 and S-CVI was 0.86. The Cronbach's alpha was 0.7 for knowledge and self-reported behaviour and 0.6 for attitude. The factor analysis confirmed the four constructs including the knowledge of OSA diagnosis, knowledge of the outcomes, attitude towards its management and self-reported management of OSA. There was good fit for the data with RMSEA of 0.068. **Conclusion:** In the population studied, the findings suggested that the Farsi version of the questionnaire is a valid and reliable instrument for measuring the knowledge, attitude and self-reported practice of general dentists towards management of OSA problems in children.

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Relationship between job satisfaction and musculoskeletal and psychological disorders of Lithuanian dental hygienists

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Aims: This study aimed to examine the relationships between job satisfaction, musculoskeletal and psychological disorders among dental hygienists in Lithuania. **Methods:** In 2018, a 41 item questionnaire was sent by e-mail up to three times to all 328 members of the Lithuanian Dental Hygienists Association. It comprised 5-point Likert scale structured questions, which were based on those in three existing questionnaires. The Ethics Committee of the University of Vilnius advised that ethics approval was not required for an internal survey within a professional organisation. **Results:** One hundred and eighty two (56%) returned completed questionnaires. A correlation was found between the total physical health score and the psychological health total score for this dental hygienist group. The correlation was statistically significant (p <0.05), indicating that there was a statistically significant linear relationship between musculoskeletal and psychological disorders, i.e., the better physical health, the better psychological health of the dental hygienists. However, the correlation coefficient was in the range of 0.2 to 0.5, indicating that the relationship, although statistically significant, was weak. The musculoskeletal disorders, which affected psychological health disorders the most, were: physical complaints (e.g. pain, discomfort, numbness) in the head, hands/fingers, and lower back (p<0.05). In contrast, the psychological health disorders, which affected musculoskeletal disorders the most, were: depression, insomnia, nervousness and mental exhaustion (p<0.05). Additionally, the total physical health score and the total psychological health score separately were statistically significantly correlated with all job satisfaction criteria (p<0.05) However, there, was no correlation between psychological health and satisfaction with relations with patients (p>0.05). **Conclusion:** This study found that in the group studied the physical health score and the total psychological health scores of Lithuanian dental hygienists were statistically significantly correlated with all job satisfaction criteria. Better self-evaluation of physical and psychological health lead to higher reported job satisfaction.

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Oral health literacy and its determinants among women living in the slums of Zahedan, Iran

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Aim: Disadvantaged communities in urban areas present problems in all countries, especially those which are low-income and middle-income. The problems of such communities include Insufficient knowledge and a poor attitude to the importance of oral health, coupled with the lack of preventive services for these societies. As a consequence, dental caries can be one of the most prevalent diseases in slum areas. This study aimed to evaluate the level of oral health literacy, and its related factors in women, living in slum areas of Zahedan. **Methods**: In 2020, in this cross-sectional study, community health workers, who were attending two health centres in the slums of Zahedan, recruited 216 women. The validated Farsi version of the Oral Health Literacy Adults Questionnaire (OHL-AQ) for Iranian subjects, which consisted of 17 questions in four sections: reading comprehension, perception of numbers, listening and decision making, was used to collect data on oral health literacy. Women's oral health literacy score was divided into three groups: inadequate oral health literacy (0-9), borderline (10-11), and adequate (12-17). Data analysis including descriptive and multivariate linear regression analysis. The Ethics Committee of the Dentistry School of Tehran University of Medical Sciences approved the study and consent was obtained from each subject. **Results**: All 216 female participants completed the questionnaire (response rate: 100%). The mean age of the participants was 26.7($\pm$5.03years). Only 8(3.7%) women had adequate oral health literacy. The mean score of oral health literacy was 7.6($\pm$2.47) out of 17. There was a significant positive relationship between oral health literacy with educational level (P<0.001) and age (P<0.001). **Conclusion**: In the study population, oral health literacy was insufficient. Health care providers must make plans to improve oral health literacy and, as a result, the oral health behaviour of this group.

Keywords: Oral Health, health literacy, slums, women

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Comparison of Lifestyle between Rafsanjan Medical and Non-Medical students in 2016

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Aim: The aim of the present study was to assess lifestyle of students from Rafsanjan University of Medical Sciences (RUMS) and Vali-e-Asr University (V.A.U). **Methods:** In 2015-2016, this analytical cross-sectional study recruited 510 students from RUMS and V.A.U. A self-reported structured questionnaire was used to acquire data. The questionnaire consisted of two parts: the first part was related to socio-demographic information including 13 variables and the second part included 52 questions to measure health promoting lifestyle. Lifestyle questions were divided into six subgroups: nutrition, physical activity, health responsibility, stress management, intrapersonal relationships, and mental growth. The total possible score of health promoting lifestyle was between 52 and 208, which categorised the lifestyle of participants into three groups: poor, moderate, and good. The data were analysed statistically using T-test, ANOVA, and Chi-square. The study was approved by the Kerman University of Medical Sciences, **Results:** Of the total population, *178 (34.9%)* were males and *332 (65.1%)* were females. The majority of students *(85.1%)* were single. The mean score for lifestyle was *123.8 (SD=20.3).* The mean score of health promoting lifestyle among students of RUMS and VAU were *121.4 (SD=19.4)* and *125.2 (SD=42.6),* respectively, and the difference was statistically significant (*p<0.05*). Also, positive correlation was observed between the score for lifestyle and the subscales of health responsibility, physical activity, nutrition, mental growth, intrapersonal relationships, and stress management. All of the correlations were statistically significant *(p<0.001).* **Conclusions:** In the population studied, the students' lifestyle score was moderate, which suggests that it is essential to pay more attention to improving the lifestyle of students.

Key words: Lifestyle, students, health promotion

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The relationship between oral health beliefs, behaviours and quality of life among elderly Iranians

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Aim: Complex associations exist between oral health beliefs, behaviours, and oral health-related quality of life. Oral health influences daily activities especially in elderly people, which may negatively affect their social interactions and quality of life. This study aimed to apply the Health Action Process Approach (HAPA) model to evaluate the relationship between oral health beliefs, oral health behaviours, and quality of life among the elderly population in Tehran, Iran. **Methods:** This analytical cross-sectional study, was conducted in 2021 in Tehran, Iran. A number of 162 dentated elderly aged 60 years or more participated. The subjects were selected from six out of 22 districts of Tehran, Iran. These districts were selected randomly according to geographic division. In each district, approximately 15-20 elders voluntarily completed informed consent (approval ID: IR.TUMS.DENTISTRY.REC.1399.102). Oral hygiene behaviours were recorded using the WHO 2013 standard form. Target oral health beliefs for three behaviours (brushing, dental visit, and diet) were identified under three theoretical constructs of HAPA (risk perception, outcome expectancies, and self-efficacy). Additionally, the GOHAI (Geriatric Oral Health Assessment Index) was used to assess the oral health-related quality of life. Data were analysed by AMOS-24 software via correlation and SEM analysis. **Results:** Self-efficacy, outcome expectancies, and risk perception predicted brushing but only self-efficacy predicted regular dental visits. It was also found that those who were in the optimal beliefs group showed significant differences in brushing, regular dental visits, and diet control compared to the undesirable group ($p<0.05$). Active oral health behaviour predicted higher quality of life ($p<0.05$). **Conclusions:** In the study population, oral health beliefs and behaviours were associated with quality of life. The motivational phase of the HAPA model has led to better oral health behaviours and quality of life by modifying the beliefs of elderly people.

Key words: elderly, oral health beliefs, oral health related quality of life, oral health behaviours

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Efficacy of different interventions for oral hygiene of autistic children in Iran

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Aim: This study aimed to evaluate and compare the efficacy of two different tooth-brushing educational interventions on the oral hygiene status of 7-15-year-old students with autism in Tehran primary schools. **Methods:** This was a quasi-randomized clinical trial that was approved by the research ethic committee of the School of Dentistry, Tehran University of Medical Sciences (IR.TUMS.DENTISTRY.REC.1398.153 - Trial Registration number: IRCT20200208046413N1). Students from four government funded special primary schools in Tehran were selected. Information on their socio-demographic and oral health behaviour and data about parents' oral health knowledge and attitude were collected via questionnaires completed by parents. During a dental examination, the student's cooperation level, was recorded according to the Frankle Index. Oral hygiene status was recorded by a calibrated dentists using the Simplified Oral Hygiene Index (OHI-S). A psychologist assessed the level of autism using the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. The four schools were randomly divided into two intervention (video modelling) and comparison (social story) groups. Each group was provided with educational packages. Follow-up was after one month. STATA/SE was used for longitudinal data analysis. Multilevel mixed effect linear regression model was used for quantitative outcome variables and multilevel mixed effect logistic regression model was applied to categorical ones. **Results:** At baseline, 137 students participated. Post-intervention data from 133 were analysed. The OHI-S in the intervention group (1.85±2.26) was reported significantly lower (better) than the OHI-S in the comparison group (1.98±0,054), ($p = 0.006$). However, for other outcomes, such as parents' oral health knowledge and attitude and students' oral health behaviours, the difference between the two groups was not statistically significant ($p >0.05$). **Conclusion:** The present study suggested that a tooth-brushing educational intervention, using video modelling, based on new technologies can improve oral hygiene status more than social story modelling in individuals with autism.

Key words: Oral health, autistic disorder, oral hygiene, toothbrushing, dental health education, health education

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Investigating association between dental plaque and Early Childhood Caries among Iranian pre-schoolers

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Aim: A high prevalence of early childhood caries (ECC) highlights the need to analyse the causes and find reliable determinants. ECC is an important predictor for early development of caries in the permanent dentition, which according to a World Health Organization (WHO) report is widespread, and one of the most common chronic diseases. This study aimed to assess the association between prevalence of ECC and related risk indicators such as presence of visible dental plaque in Iranian pre-schoolers. **Methods:** In this analytical cross-sectional study, carried out in 2020, 441 rural and urban preschool children (4 to 6-year-olds) living in four provinces were randomly recruited using a three-stage stratified clustered sampling method. Four dentists were trained and calibrated and performed the clinical examinations. The "dmft" index was used as a criterium of ECC and dental plaque was measured as visible/ non visible on any tooth surface. Ethics approval was granted by Tehran University of Medical Sciences (ref: IR.TUMS.DENTISTRY.REC.1398.070) and after giving their consent, parents answered a questionnaire including questions on background characteristics. Each child then underwent a dental examination. Statistical analysis was performed using SPSS V25 and Stata V14.2 software packages. **Results:** The intra and inter-examiner Kappa coefficients for the examiners were 0.92 and 0.89 respectively. Out of 441 pre-schoolers, 226 (51.4%) were boys and 284 (70.6%) lived in cities. Prevalence of ECC and visible dental plaque was 83% and 66%, respectively. Visible plaque was associated with ECC occurrence *(p<0.001, OR=5.7)*. The subgroup analysis, according to place of residence (urban, rural) and gender (male, female), revealed that visible dental plaque was statistically not a determinant of ECC in rural areas (*p=0.13*) and in the rural female sub population (*p=0.991*, *OR=1.01*). **Conclusions:** In the population studied, dental plaque was found to be a major determinant for ECC in the majority of pre-schoolers. In rural areas more investigations are needed to identify predisposing factors for ECC. The need for oral self-care should be emphasised.

Keywords: Early childhood caries, dental plaque, preschool children, Iran

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Oral health behaviour of parents of 0–3-year-old Moldovan children

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Aim: The study aimed to assess the oral health behaviour of parents of children aged 0-3 years old living in the Republic of Moldova. **Methods:** The study targeted parents from all regions of Moldova with children under 3 years old, who consented to take part. Five hundred and fifty parents were invited to participate in the survey, which took place from November 2021 to March 2022. According to the legislation of the Republic of Moldova, anonymous questioning of participants in epidemiological studies does not require the approval of an Ethics Committee. A self-administered questionnaire, which was distributed online or in person at nursery schools or when they visited a children's hospital, enquired about parents' attitudes towards oral health and behaviours related to the potential transmission of oral bacteria to their children, dietary habits, and tooth brushing. Data were analysed using descriptive analysis and the Pearson correlation test. **Results:** There were 423 useable response (a 77% response rate), 195 (46% of the parents) reported brushing their teeth once a day. There was a statistically significant association between parents who brushed their teeth once daily and those who cleaned their children's teeth once daily $(p<0.01)$. Many parents (203; 48%) answered that they frequently share the same spoon with their babies. Meanwhile, 179 (42%) parents reported that their children had experienced caries. There was a statistically significant association between these two aspects $(p<0.01)$ and significant associations between parents who gave their children sugar-sweetened beverages daily and caries experience of their children $(p<0.01)$. **Conclusions:** A majority of parents who took part in this survey did not brush their children's teeth as recommended and had poor knowledge regarding oral health (brushing frequency, first dental consultancy, use of fluoride toothpaste, etc.). Implementation of dietary counselling and oral health programmes for Moldovan parents and research on this topic merit further exploration.

Keywords: Children, oral health, parents, behaviour.

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Promoting An Oral Health Coaching Model in Students through School Nurse Engagement

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Background: The role of the school nurse in India is very diverse and it is primarily to advise and support schools directly and indirectly in delivering health education. Forming the first line of contact school nurses are in a unique position to assess and impact the oral health of fellow students. **Aim**: The aim of the study was to promote an oral health coaching model in students through school nurse engagement. **Methods***:* The effectiveness of the oral health coaching model was evaluated by a pre and post validated questionnaire assessment of 557 residential school nurses following two online Socratic presentations for each nurse through open discussion using PowerPoint presentations, break out rooms, a question and answer round, projecting poll questions and revision of previous sessions using images. Impact evaluation was assessed through the number of completed tasks each school nurse fulfilled during their training period. The study was approved by Institutional Ethics Committee of All India Institute of Medical Sciences, New Delhi.

Results*:* A comparative evaluation of knowledge assessment scores among nursing professionals revealed a significant increase in the post-coaching knowledge assessment scores of the participants (17.67 + 1.858) when compared to the pre-coaching scores (16.05 +1.986). **Conclusion:** A significant improvement in the oral health-related knowledge, attitude and oral hygiene practices scores was seen after an oral health coaching among the residential school nurses. Improvement in oral health knowledge of school nurses can be translated into practice for oral health promotion of adolescent students. The study also identified that tailored public health educational resources are needed to support school nurses.

Keywords: Oral health promotion, oral health coaching, nursing profession

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The Design and Psychometric Evaluation of an instrument to assess patients' satisfaction from communication with dentists and dental care services

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Aim: Patient' satisfaction is an important aspect in the relationship between a patient and dentist. This study aimed to design a Farsi instrument to assess patients' satisfaction with regard to communication with dentists and the dental service based on the SERVQUAL model. **Methods:** This study was approved by the research ethic committee of Tehran University of Medical Sciences (IR.TUMS.DENTISTRY.REC.1399.207). A questionnaire, based on the SERVQUAL model, with domains including tangibility, reliability, responsiveness, assurance and empathy was designed to assess patients' satisfaction. The face validity and content validity were evaluated. For convergent validity, the domains' correlation with the dental satisfaction questionnaire (DSQ) was assessed with the Pearson coefficient ratio. Confirmatory analysis test was performed to evaluate the construct validity of the instrument. The reliability of the questions was assessed by test-retest. The intra-class correlation coefficient (ICC), agreement percentages and Cronbach's alpha were calculated. **Results:** The instrument had proper content validity (CVR of 0.6 and higher and CVI of 0.86 and higher), face validity, convergent validity (Pearson correlation coefficient of 0.22-0.56 and a correlation coefficient of 0.68 (between the questionnaire and total satisfaction of DSQ questionnaire), and construct validity of (GFI=0.83, CFI=0.92 and RMSE=0.006). The agreement percentages for the items was 50%-76% and the ICC was 0.52-0.84. The Alpha Cronbach coefficient and ICC coefficient for the tangibility domain were 0.86 and 0.84, and 0.91 and 0.84 for the reliability domain, 0.81 and 0.81 for responsiveness domain, 0.88 and 0.81 for assurance domain and 0.88 and 0.82 for empathy domain. Alpha Cronbach coefficient for all items was 0.96. **Conclusion:** The Farsi instrument assessing patient satisfaction arising from communication with dentists and dental care services based on SERVQUAL model was valid and reliable and can be used to assess patients' satisfaction of a dentist's communication skills and quality of dental treatments.

Spotting the "Red Flags" Improving General Medical Practitioners' Knowledge in Identifying Oral Cancer

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Aims: Each month, the Western Health and Social Care Trust (WHSCT), in Northern Ireland, receives an average of 15 suspected oral cancer referrals from General Medical Practitioners (GMPs). These patients attend with heightened levels of anxiety regarding their suspected diagnosis. Many of the suspect oral lesions turn out not to be oral cancer. A quality improvement (QI) project was therefore performed to evaluate the knowledge of GMPs in the Western Trust and to monitor the quality of referrals for suspected oral cancer.   **Methods:** Approval was sought from and granted by the local Audit & Quality Improvement department. Data collection commenced on the quality of red flag referrals between November 2020 and November 2021. A standard referral template was created, based on inclusion of factors such as size, location, and colour of the lesion. Data on GMPs' knowledge and confidence in identifying oral cancer were collected via an online survey. A teaching webinar was developed and GMPs and GMP trainees, who worked in the WHSCT's catchment area, were invited to attend a teaching session.   **Results:** Results were collected from 51 referrals from GMPs between November 2020 and November 2021. None of these 51 referrals met the standardised level of detail required. Baseline data collection from GMP surveys revealed low confidence levels and poor knowledge in identifying oral cancers. Despite this, only 5 GMPs/GMP trainees attended a multidisciplinary teaching session organised by the OMFS department.   **Conclusions:** It was hoped that referral quality would improve following the teaching session.   However, due to poor levels of attendance, this was not the case. This prompted a discussion on the lack of engagement in learning events in the WHSCT's catchment area, and the importance of attending such events.

Keywords: General Medical Practitioners, oral cancer, oral cancer referral, training

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Perspectives of Nigerian Adolescents about A School -Based Oral Health Promotion Programme

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Aims: Unmet dental needs and poor oral health remain a public health problem among adolescents globally. Instituting appropriate intervention especially in schools attended by adolescents requires understanding the perspectives and expectations of the adolescents about School-Based Oral Health Promotion Programme (SBOHPP). The aim of this study was to explore the perspectives and expectations of adolescents about SBOHPP in Nigeria. **Methods**: In 2019, data were collected through focus group discussions among a convenience sample of 120 students aged 14-18 years attending 12 secondary schools in Ibadan. The process involved open, audio-recorded interviews that were transcribed verbatim. Thematic inductive analysis was performed using NVivo. The University of Ibadan/ University College Hospital Ibadan Institutional Ethics Board approved the study and parental consent was obtained for each participant. **Results**: The mean age of participants was 15.2 (±1.2) years. Perceived threat, susceptibility to oral diseases, lack of oral health capabilities and opportunities in schools were the main reasons to take part in the SBOHPP. Barriers to ideal oral health included; laziness, poverty, ignorance, lack of parental supervision, illness and previous oral diseases. Many preferred dentists' delivered SBOHPP. Disciplinarian attitudes of teachers and dominance/chastisement of peers were reasons for non-preference of teachers and peer-delivered SBOHPP. Oral health education, free dental screening, dental treatment and provision of tooth cleaning agents were expected to be features of any SBOHPP. **Conclusion**: In the study population insight was gained into the expectations of adolescents about SBOHPP.

Keywords: Adolescents, school, oral health, health promotion, strategies, qualitative study

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Assessment of Oral Hygiene Knowledge and Practices among Pregnant Women in Serbia

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Aim: The aim of this study was to assess the change in attitude and level of knowledge of the oral health and oral hygiene practices for future mothers before and after undertaking an educational programme on these topics. **Methods:** The pregnant women were recruited for the study, by Belgrade obstetricians. The future mothers gave informed consent and the study was approved by the Ethics Committee of the Faculty of Dental Medicine, University of Belgrade. The study commenced in 2015 and to date 560 future mothers have participated in it. In order to assess their oral hygiene knowledge and their current level of oral hygiene, they have completed a specially designed questionnaire before starting the programme. They then attend lectures, provided by the authors, Doctors of Dental Medicine, after which they complete the same questionnaire for a second time. **Results:** Before the educational programme, the majority of pregnant women (427 : 76%) were not aware that periodontal diseases occur frequently during pregnancy. A total of 216 (39 %) reported that they stopped brushing their teeth, when they experienced bleeding. Answers to the questionnaire, administered after the educational programme, revealed that all 560 pregnant women reported that they will change their oral hygiene habits. **Conclusions:** In the population studied, oral hygiene knowledge and practices were improved by the educational programme.

Keywords: Oral health, oral hygiene, pregnancy, education, preventive measures

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Evaluation of the attitudes and interpersonal communication and collaboration skills of Greek dental undergraduate students during COVID-19 restrictions; a mixed methods investigation.

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Aim: The Council of European Dentists has suggested that dental students' interpersonal communication skills (ICS) and technical skills are equally important in developing good dental practice management. The aim of this study was to evaluate the attitudes and interpersonal communication and collaboration skills of Greek dental students during COVID-19 restrictions. **Methods:** One hundred and twenty-seven (response rate 87,6%) fourth-semester dental students at the Athens Dental School, completed a new online anonymous survey, the Dental Students Cooperation (DSC) questionnaire, it included closed-ended and open-ended questions, concerning aspects of a planned group project during the Operative Dentistry laboratory course. The construct validity of DSC survey was confirmed by a panel of experts and it was piloted on 10 students. Data (normally distributed) were analysed by applying the t-test, ANOVA, and linear regression. Qualitative content analysis was also performed to analyse responses to the open-ended questions. The study was approved by the Ethics Committee of the Department of Operative Dentistry. **Results:** The survey demonstrated satisfactory reliability (Cronbach's alpha = 0.93). The students had a high score for almost all questions, reflecting a high level of ICS. The mean survey scores increased in parallel with parents' educational level (F = 3.374$, p$ < 0.037). This predictor remained significant after applying linear regression models (b = 0.227, p < 0.04). 70.9% of students responded to the open-ended questions that the chosen incentive for teamworking was a better term grade, while 22% of the students reported that a patient and cooperative personality are the most desired characteristics of an academic teacher. **Conclusions:** The DSC questionnaire was a valid and reliable tool to assess ICS of dental students. Most of the dental students, who completed the questionnaire appeared to have the required ICS and the efficiency to collaborate, without any competition involved.

Keywords: Interpersonal, communication, collaboration skills ,dental education, undergraduate studies, COVID-19

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Caries prevalence and dental status determinants in 12-years-old Caledonian children in 2019

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Background: New Caledonia (NC) has a multi-ethnic population highly affected by "non-communicable diseases" such as dental caries and obesity. In 2012, the island's health agency evaluated children's health status. Results showed major health inequalities related to social determinants, province (North, South, Loyalty Islands) and ethnicity. Following this study, an Oral Health Promotion programme (OHP) was developed in 2014, based on a common risk factor approach.

Aim: To conduct a follow-up epidemiological survey in 2019 to investigate changes in the children's' dental status and to identify their determinants. **Methods:** After parental consent and approval by the New Caledonia Ethics Advisory Committee, a sample of 693 12-year-old children was randomly selected. Dental status was clinically recorded by calibrated examiners, and children answered questionnaires about oral health determinants. The methodology (sampling, variables, diagnosis criteria) was similar to the one used in 2012. Three multivariate mixed-models were employed to compare dental status in 2012 and 2019 and to explore the determinants of caries experience in 2019.

Results: Caries prevalence in terms of D_3T decreased from 46,9% in 2012 to 30,5%. Trends varied depending on geographical location and type of index used. D_3T index in 2019 was used as an outcome variable in four Zero-inflated negative-binomial models. In model 1, no explanatory social determinants were found to be significant. Difficulties for accessing oral health care were related to caries experience in model 2. For oral health behaviours (model 3), breakfasts' frequency and consumption of sweetened drinks were significant risk factors. In a combined model, ethnicity, accessibility of oral health care and oral health behaviours were significant explanatory factors.

Conclusions: This study illustrated how the follow up of OHP interventions can be linked to regular epidemiological studies to measure health inequalities, evaluate the impact of OHP interventions, and suggest changes with a general health equity approach.

Keywords: Health inequalities, oral health promotion, dental status, children

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Multilevel calibration method for a multicentre oral health epidemiological survey of Serbian preschool children

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Aims: The organisation of calibration and training sessions in a survey, involving several examiners at multiple sites, with subjects younger than 5 years-old, presents a challenge. The aim of this study was to test feasibility, describe and propose a method for a calibration exercise on primary teeth, before an oral health survey. **Methods:** The training and calibration sessions involved three main investigators, and 33 paediatric dentists from 21 randomly chosen survey locations across Serbia. The training of the examiners took place during three didactic workshops and involved clinical examination of eight children, whose parents gave written informed consent. The survey was approved by the Ethical Committee of the School of Dental Medicine University of Belgrade (number 36/10). The clinical calibration method included two levels: Level 1 (L1) agreement between three main investigators and Level 2 (L2) dividing all examiners into three groups of 11 paediatric dentists and seeking agreement with one of the three main investigators. All investigators were calibrated according to a benchmark. The modified World Health Organization Oral Health Assessment Form for Children was used as to record data, on caries experience (dmfs) and simplified ICDAS, adapted for pre-schoolers. Statistical analysis was performed with SPSS and involved calculating kappa scores, inter-examiner sensitivity and specificity. Sensitivity and specificity were calculated as the percent agreement between affected primary teeth surfaces observed by the examiner compared to those diagnosed by the benchmark. **Results:** The study sample consisted of 650 primary teeth surfaces. The examined children had total of 130 primary teeth present , nine primary teeth had been extracted due to caries , and 21 primary teeth were not present due to exfoliation or trauma. L1 examiners assessed n=180 surfaces, with 98% agreement. L2 examiners assessed 160, 160, and 150 tooth surfaces in groups 1, 2 and 3, respectively and achieved 98%, 94% and 96% agreement. in each group respectively. **Conclusions:** The outcomes revealed that the multilevel calibration scheme produced a high level of agreement and the method is feasible to organise in multicentred surveys.

Keywords: epidemiology, oral health, calibration. reliability, survey   Presenter: Ana Vukovic   Email ana.vukovic@stomf.bg.ac.rs

The use of patient-orientated mobile phone applications in oral health: a scoping review

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Aim: The aim of this study was to review the scientific literature on the use of patient-oriented mobile phone applications in oral health and summarize the key findings. **Methods:** A scoping review of the published scientific literature on the use of patient-oriented mobile phone applications in oral health was conducted in accordance with the Joanna Briggs Protocol (JBI). A search was performed in PubMed and Scopus for the studies published between January 2000 and June 2021 that were written in English. All the study types except for the ones reporting the developmental protocols were included in this review. The study protocol was registered on the Open Science Framework (OSF) registries in June 2021. Two reviewers independently screened the studies using the eligibility criteria. **Results:** The initial search yielded a total of 977 studies, 46 met the inclusion criteria. All the studies were published after 2009. The majority of the studies (63.0 %) concerned oral health promotion using mobile phone applications followed by behaviour management (17.4%). Half of the included studies (23) had been performed in Asian countries. Twenty four (52.2%) were randomised control trials. Many studies reported that use of mobile application improved oral hygiene and made oral health better. **Conclusions:** In the literature, use of mobile applications in oral health is increasing among patients, mainly children and adolescents. Many studies which have used mobile applications have focused on promoting oral health. However, other areas such as diagnostic and remote consultations (tele-dentistry) have, until recently, been neglected despite its potential.

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Impact of removable partial denture on OHRQoL: a systematic review and meta-analysis

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Aim: Removable partial dentures (RPDs) still have a place as an adequate prosthetic rehabilitation option. However, their impact on patient-reported outcome measures is sparsely covered in the literature. This study aimed to summarise the evidence on the change in oral health-related quality of life (OHRQoL) before and after RPD rehabilitation among partially edentulous adults. **Methods:** Three electronic databases(MEDLINE, EMBASE and Cochrane CENTRAL) were searched without date nor language restrictions. Studies that assessed OHRQoL use among partially edentulous adults aged 18 years or above, before and after rehabilitation with RPDs of any type and design, were eligible for inclusion in the review. The quality of included studies was evaluated using the Cochrane risk of bias tools. Meta-analysis was conducted using a random-effect model. **Results:** Of the 1696 records identified, 13 studies (17 records) were eligible. Eight studies were included in the meta-analysis. There was a very low level of evidence that OHRQoL, as measured using OHIP-14, improved 3 months after RPDs were fitted (222 participants, MD: -12.0, 95% CI: -16.1, -7.9, $p<0.001$) and after 6 months (101 participants, MD: -10.5, 95% CI: -16.4, -4.6, $p<0.001$). At 12 months post-treatment, RPD rehabilitation did not result in statistically significant improvement in OHIP-14 scores (62 participants, MD: -12.7, 95% CI: -26.1, 0.6, $p=0.06$), with a very low level of certainty. However, the assessment using OHIP-49 at 12 months showed significant improvement (87 participants, MD: -34.8, 95% CI: -41.9, -27.7, $p<0.001$), with low certainty of evidence. **Conclusions:** Based on the limited evidence available this review found that RPD rehabilitation significantly improved OHRQoL in the short term, and this positive effect began to diminish after 6 months, with very low level of certainty. The long-term effect of RPD treatment on OHRQoL after 12 months is inconclusive. Further research is needed before solid conclusions can be drawn.

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The impact of Covid-19 on children attending for new patient dental assessment.

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Aims This study aimed to investigate differences in children attending new patient assessments before and after the Covid-19 pandemic outbreak. With regards to patient characteristics, demographics, diagnosis, and treatment required. **Methods** This retrospective, observational study included a sample of all 1025 new paediatric patients attending Newcastle Dental Hospital (NDH) across two periods, pre-Covid-19 (February-March 2019) and two years after its outbreak (February-March 2021). The project was approved by Quality Improvement and Audit Department. Patients were identified by day lists, with data collected using a predetermined proforma. Data was collected by the lead researcher from medical notes, including patient characteristics, demographics, diagnosis, and treatment required. Descriptive statistics were then undertaken. **Results** Differences were identified between patients attending pre and two years post the Covid-19 outbreak. In the post Covid-19 group, patients were more likely to present with complex medical needs, 41 (7.5%) to 52 (10.8%) , and more likely to require treatment under general anaesthetic, 183 (45.4%) to 241 (50.2%). . Caries remained the most common diagnosis within both groups. However, the extent and severity increased following Covid-19. From the 1914 carious teeth diagnosed in the pre-Covid-19 group, 501 (26.2%) were restorable. Compared to 2256 carious teeth, with only 370 (16.4%) restorable in the post-Covid-19 group. Furthermore, fewer children from deprived areas attended following Covid-19, with the Multiple Deprivation Decile median rising from 3 (IQR 8) to a median of 5 (IQR 2). **Conclusion** In the population studied, differences existed in characteristics, presentations and treatment needs of children attending NDH for new patient assessments as a result of the Covid-19 pandemic. These differences are vital when identifying service needs and developing patient pathways. This study highlights possible areas of service development to meet patient's needs better and reduce health inequalities that have widened due to Covid-19.

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Oral healthcare during the Covid-19 pandemic in Slovakia

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Aims: The aim of this study was to analyse the influence of Covid-19 pandemic on providing oral healthcare in Slovakia. The attitude of Slovak dentists towards treating Covid-19 positive patients, their willingness to be vaccinated and experience with managing dental practice during the pandemic were investigated. **Methods:** A series of five anonymous online questionnaires were sent to all members of the Slovak Chamber of Dentists (SCD). They were sent from September 2020 to March 2022. Each questionnaire was completed by a minimum of 847 dentists. The questionnaires covered the topics of providing oral healthcare to infected patients, decrease in income, due to the pandemic, combined with an increase of expenses for practice maintenance, vaccination rate of dental team members, availability of protective equipment and overall satisfaction with information provided by national institutions and the SCD. Ethics approval is not required in Slovakia for a survey such as this one **Results:** After two years the experience of treating Covid-19 positive patients in a dental practice has significantly increased compared to the time of the initial survey. In the first wave only 16 (1.1%) of dentists provided such treatment, whereas in the last wave from October 2021 to January 2022, 548 (35.9%) dentists had treated infected patients in their office. The vaccination rate among Slovak dentists at the end of April 2021 was 79.5% (996). Nearly half (689 - 47.7%) expressed a high overall satisfaction with information and guidelines regarding pandemics provided by national institutions and 1,340 (92.8%) were satisfied, with information provided by the SCD. **Conclusions:** The dentists who answered the questionnaires are now more willing to treat Covid-19 positive patients. Possibly because of the high vaccination rate of Slovak dentists and also thanks to more information being available regarding the disease and its modes of transmission in dental clinics.

Keywords: Oral healthcare, COVID-19, Slovakia

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Oral Health Quality of Life among Kuwait Adults during the COVID-19 Pandemic

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Aim: To assess the oral health related quality of life (OHRQoL) among adults during the COVID-19 pandemic **Methods:** This cross-sectional study was conducted during 2020. Randomly, adults were sent an online questionnaire, with a total of 32 questions, 17 questions of which were on OHRQoL. A consent form was obtained from each participant and the survey was approved by the Research Committee of the Ministry of Health-KUWAIT. Data were analysed as percentages. **Results:** Overall, 915 participated in this survey. Most of participants were non-Kuwaitis (620- 67%). Two thirds of participants were working in the government sector. Most of the participants (857- 93%) were not infected with COVID-19. Two thirds (548, 60%) of the participants rated their oral health as excellent or very good and most were satisfied about their oral health (803- 87%). Most of the participants always enjoyed eating their food (660- 72%) and (362- 40%) like their smile. Few participants (132-14%) mentioned that they usually visit the dentist every six-months but because of the current pandemic situation, they could not visit their dentist. Almost half of participants (415 -45%) had the fear of getting infected with COVID-19 while visiting the dentist. Most of the participants (628 – 68%) performed oral hygiene daily. Social and psychosocial activities were not affected by the pandemic; only 5 (0.43%) avoided conversation, 7 (0.65%) had poor sleep experience; and 15 (1.41%) had missed going to work because of a problem with their teeth. **Conclusions:** Outcomes of this survey suggest that most of the participants were satisfied with their oral health and the COVID-19 did not have major impact on OHRQoL. Many of the participants felt that COVID-19 affected their regular dental visits, which might have affected their oral health status. More studies should be planned to measure oral health status among population during COVID-19 pandemic.

Keywords: OHRQoL, COVID-19, dental visit, oral hygiene

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Living in a Deprived Neighbourhood Directly Influences Children's Dietary Habits

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Caries levels among children differ, with the highest prevalence in children from low socio-economic and/or migration backgrounds, as in the Schilderswijk district of the Hague. Dietary habits are an important risk factor for health and oral health. **Aim:** To investigate how dietary habits of children from low socio-economic and/or migration backgrounds are influenced by environmental and family-related factors **Methods:** A participatory action research approach was used to identify the problem and analyse data. The ACTA ethics-committee approved the study. Consent was obtained from the children together with parental consent. Data were collected via observation of the environment during nine focus-group discussions and two work-sessions with children at a local primary school, complemented by 17 interviews with parents and professional stakeholders, such as teachers, dentists, and community centre volunteers. Data were analysed by ranking causes. **Results:** In Schilderswijk unhealthy foods are the easiest and cheapest choice. Snacks and candy are readily available. Parents work hard to make ends meet and experience social and financial stress. As a result, from a young age, parents give too much responsibility to children to choose and buy their own food. This leads to an unhealthy diet of sweets, snacks and soft-drinks. Dinner time is usually early, leading to frequent snacking before bedtime. Snacks and soft-drinks for breakfast are also a problem. **Conclusion:** Poverty and the living environment are the main concerns for an unhealthy diet in Schilderswijk. Poverty leads to the transfer of responsibility to the children and wrong choices when buying food. Because the whole living environment is unhealthy this leads to children and parents to make unhealthy choices. In order to change eating behaviour, it is essential that the food environment encourages healthy behaviour.

Presenter : Monique Van Der Veen   Email m.vd.veen@acta.nl

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Utilising dental workforce for delivering vaccinations

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Aims: The unprecedented COVID-19 pandemic pressures strengthened the need for action for dentists to support the vaccinator workforce gap to deliver both the COVID and Flu vaccination programmes in Yorkshire and the Humber, England. The aim of this study was to evaluate the feasibility of using early career (foundation) dentists (FDs), as part of a public health placement, to support the primary care workforce to deliver the vaccination programme using different service models, for the first time, nationally. **Methods:** A survey was developed to assess FDs views about the programme. Semi-structured interviews were conducted with representatives of healthcare organisations involved in the programme. Based on The UK Health Research Authority decision tool, no ethical review was required for this service evaluation. **Results:** One hundred and six FDs were trained to administer vaccinations. Eighty nine percent (n=94/106) of FDs completed the questionnaires. Around half of the FDs (n=54) were used to administer vaccinations and reported being confident administering them. Some (n=51) also reported improvements in their communication and teamworking skills. Eleven stakeholders from various healthcare organisations including host GP practices, NHS England, Public Health England, consented to participate in qualitative interviews. The main topics of the interviews related to value for stakeholders and barriers/facilitators for implementation. The participants suggested that the programme provided value to host organisations, FDs, and patients. Some of the barriers for implementation were represented by the absence of legislative framework/guidance, organisational/individual resistance to change and administrative burden. The key facilitators were strong system leadership including dental public health, strategic partnership working, organisational capabilities, FD professionalism and the sense of contribution to the pandemic response. **Conclusion:** This was the first time that dentists supported the primary care delivery of vaccinations in England. Dental Public Health specialist expertise facilitated strong system leadership to protect public health during the pandemic.

Keywords: COVID-19, vaccinations, dental public health, skill-mix

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Impact of Community Water fluoridation on Dental Caries Experience among Six-Year-Olds in Chile

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Aims: The most recent national child oral health survey in Chile (2007) showed that 70% of Chilean six-year-old children had experienced dental caries, despite the presence of a community water fluoridation (CWF). This study aimed to assess the impact of CWF on the caries experience of Chilean six-year-old children from 2008 to 2019, and examine related inequalities. **Methods:** Aggregated municipality-level (n=346) data for each year (2008-2019) were collated for: dental caries outcomes, CWF, socioeconomic deprivation, and rurality. Univariate and multivariate weighted least-squares linear regression models assessed the independent and adjusted for the potential confounders of both coverage and concentration of water fluoridation on caries experience of six-year-olds in Chile. In addition, univariate least-squares linear regression models assessed the socioeconomic inequalities related to CWF. **Results:** Dental examination municipality-level data on 1,397,377 children were available from 3608 municipality/years. Caries experience significantly reduced from 83% (95% CI 82%, 85%) in 2008 to 66% (95% CI 65%, 68%) in 2019. Children from areas, with greater water fluoridation coverage and fluoride concentrations of 0.6 mg/L or higher, demonstrated lower caries experience than those not exposed to CWF. A socioeconomic gradient was observed, with those from the most deprived municipalities bearing a significantly higher dental caries burden, while also having lower water fluoridation coverages. **Conclusions:** A significant improvement in the dental health of six-year-olds at the municipality-level was observed in Chile between 2008 to 2019. Areas with high CWF coverage and optimal fluoride concentration had significantly lower caries experience than unexposed areas. Inequalities in the caries burden are also mirrored by inequalities in the coverage of CWF.

Keywords: Dental caries, children, deprivation, inequality, water fluoridation

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Knowledge of risk factors for Early Childhood Caries among mothers with toddlers

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Aim: To investigate knowledge of the risk factors for Early Childhood Caries (ECC) among Lithuanian mothers with toddlers **Methods:** In 2016-2017, the study enrolled 123 mothers with children under three years, attending a primary health care centre in Kaunas, Lithuania. A self-administered questionnaire inquired about mothers' knowledge of and attitudes toward oral health and risk factors for ECC, smoking, age and other background characteristics. Answer options for questions of knowledge and attitude were on a 5-point Likert scale. The Bioethics Centre of the Lithuanian University of Health Sciences approved the study (No. BEC-OF-14). Statistical evaluation was by means of Chi-squared tests and regression models. The associations of an event concerning certain risk indicators were calculated using univariate logistic regression analysis, including odds ratios (OR) and confidence intervals (95% CI). **Results:** Cronbach's alpha for internal consistency of the questionnaire was 0.724. The response rate was 69.9%. Most (76; 68.5%) of the mothers brushed their teeth twice daily. The majority 77 (69.4%) had a university education. Almost all, 118 (97.5%) were aware: of good oral hygiene reducing caries risk, that frequent intake of sugar increases caries risk (99, 91.7%), and that oral health affects general health (118, 96.5%). A significant association was found between mother's university education and understanding of oral health impact on general health (OR=3.1; 95% CI 1.27-7.60; p=0.011). More than half (78, 65.5%) of the mothers stated that fluoride prevents dental caries. Most mothers 83 (69.2%) were not aware of the positive health effects of xylitol. A significant association was seen between the older mothers (≥ 35 years) and the impact of xylitol on caries risk (OR=3.40; 95% CI 1.19-9.70; p=0.018). **Conclusions:** The Lithuanian mothers' knowledge of ECC risk factor was fairly good. Mothers with higher education had a better knowledge of associations between oral health and general health.

Keywords: Child, ECC, mother, oral health knowledge

Presenter: Julija Narbutaite   Email julija.narbutaite@lsmuni.lt

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An initial assessment of a personalised technological aid for toothbrushing

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Aim: Previous studies have shown that controlling dental plaque and biofilm reduces the risk of cavities and periodontal diseases. Against this background, the aim of this pilot study was to assess the effectiveness of a newly developed interactive tooth brushing coach app (BCA) to achieve dental plaque (DP) reduction in children. **Methods**: In February 2020, twelve participants (male and female, aged 6 to 12 years) were recruited from the author's private practice patients. Parental and participant consent was obtained. The Quigley-Hein Plaque Index (QHPI) (Quigley et al., 1962) score served as the measurement tool for DP accumulation. Participants were randomly allocated to a test group (n=7), using a Playbrush ultra-sonic toothbrush (USTB) (Playbrush Ltd, London, UK) in combination with a newly developed BCA and a control group (n=5), using a Playbrush USTB only. QHI score was measured in all groups before the start of the trial (baseline), then once after one week and once after four weeks from baseline. **Results:** Collectively for all 12 children, after one week, there was a mean improvement from baseline of 0.07 points and in QHPI score (5,1%), which improved further by 0,42 points (29.0%) after four weeks. In the control group the mean average QHPI score compared to the initial one (1,6) was 0, 16 points (10.0%) lower after one week and 0,66 (41.3%) lower after four weeks. The test group's mean average QHPI score compared to the initial one (1,371) was 0,02 (1.0%) lower after one week and 0,25 (18.7%) lower than the control group's after four weeks. **Conclusion:** The BCA combined with the USTB in both groups effectively reduced DP by almost a 1/3 of the initial QHPI score. The role of the USTB alone was rated as crucial to this achievement and should be further investigated.

Evaluation of oral health knowledge and attitudes among health care students: methodology

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Aim: Oral health and oral care habits are poor among Lithuanian population (Grabauskas 2015). The role of health professionals in motivating people to take care of their oral health is significant. The aim of the planned study is to evaluate oral health knowledge and attitudes among future non-dental health professionals - medicine, pharmacy, public health and nursing students of Lithuanian University of Health Sciences (LSMU), and assess their readiness for oral health promotion activities. **Methods:** A questionnaire survey will be conducted anonymously at LSMU among Lithuanian national, penultimate year medicine, pharmacy, public health and nursing students (n=480) during a period of three months. Subjects will be invited to complete a self-administered questionnaire after approval by Kaunas Regional Biomedical Research Ethics Committee (Lithuania), permission by Dean of Faculty, and signed Informed Consent. If there is a response rate less than 65%, the survey will be repeated. oral health knowledge and attitudes will be assessed with five statements on a five-point scale from entirely agree to entirely disagree. Data on oral hygiene habits (tooth-brushing, inter-dental cleaning, use of fluoride toothpaste), dental attendance (reason for the last visit and habitual attendance), self-reported dental health and appearance (self-assessment of dental status and experienced symptoms during last six months), source of information about dental health care, and smoking habits will be collected. Gender, age, and marital status will serve as background information. The hypothesis, that the oral health knowledge and attitudes are insufficient among medicine, pharmacy, public health and nursing students of LSMU for oral health promotion activities, and differences between the groups will be tested. Detailed evidence-based recommendations to improve and maintain oral health knowledge and attitudes among healthcare students of LSMU will be prepared, as a helpful tool for effective oral health promotion activities.

Keywords: Oral health knowledge, oral health attitudes, oral health promotion, health care students, health professionals

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Artificial Intelligence Algorithm Accuracy in Assessing Panoramic Radiograph Dental Caries Experience

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Aim: To evaluate the accuracy of the deep learning neural networks (DLNNs) algorithm in assigning panoramic radiograph caries experience to a low, medium or high group. **Methods:** After receiving approval from the Lithuanian Bioethics Committee, two trained and calibrated examiners independently labelled tooth status according to the Decayed-, Missing- and Filled-Teeth (DMFT) index in 2,500 randomly selected, anonymised panoramic radiographs. In case of discrepancies, a third examiner decided the final tooth status. Labelled panoramic radiographs were used to train DLNNs. Using the developed algorithm, the assessment of DMFT index in 257 panoramic radiographs, that were not used for DLNNs training, was performed. Based on the calculated DMFT index, each radiograph was assigned as having low (DMFT ≤18), medium (DMFT 19-24) or high (DMFT ≥25) caries experience. **Results:** In total, 131 (50.9%) panoramic radiographs were assessed as having low, 58 (22.6%) medium and 68 (26.5%) high caries experience. The accuracy of DLNNs algorithm in assigning panoramic radiograph caries experience to one of the three groups was 96%, 97% and 97%, respectively. **Conclusions:** The current development phase of artificial intelligence algorithm gives promising results in assigning panoramic radiograph dental caries experience to low, medium or high group. This technology may contribute to improving patients' oral health; however, further research is warranted.

Keywords: Dental Caries, deep learning, panoramic radiography

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Digital oral health promotion in public health care: a pilot study

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Aim: DentView® is a digital self-care tool targeted for oral health organisations which aims to improve patients' oral health. It has interactive virtual oral self-care teaching programmes designed for different client groups. Patients are made aware of and motivated to improve their oral health by virtual content from the programme (www. https://dentview.fi/en/home-en/). This study aimed to evaluate patients' opinions of DentView® in public dental services in Northern Finland. **Methods:** Patients attending three public dental clinics in Oulu, Finland, from February-August 2021, were asked to use DentView® and complete an anonymous and voluntary self-administered questionnaire, on issues related to oral health-related habits and the usefulness of DentView®. Participants graded their response to questions, on topics such as oral hygiene manners, and DentView®'s ability to motivate better oral care, by means of a Likert scale (0-10). Additionally, education attained, smoking habits and perceived oral health were assessed. Statistical evaluation was performed by means(SD), medians and Chi-squared tests. The health care authorities of the city of Oulu gave the permission for the study. According to Finnish legislation, ethics approval is not required for voluntary and anonymous studies. Participants gave their consent by completing the questionnaire. **Results:** Altogether 60 patients completed the questionnaire. DentView® was found to be easy to use (mean 8.6;SD1.9, median 10.0) and to give useful information on oral health-related issues (mean 8.6;SD1.7, median 9.5). DentView® could motivate participants to brush (mean 8.34;SD2.4, median 10.0) and floss (7.4;SD3.1, median 8.0) their teeth. Participants' opinions did not differ according to their educational background (p=0.66) and smoking habits (p=0.89). A slight impact of perceived oral health on the opinions was observed (p=0.07). **Conclusions:** In the study population, a digital device such as DentView® could be a useful tool in oral health counselling.

Keywords: Digitalisation, oral health promotion, public health care

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A Mixed Methods Evaluation of the SUGARSMART Outreach Programme – Beyond Improving Knowledge

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SUGARSMART is an outreach health promotion intervention adopting a common risk factor approach to promote health among primary school children in a deprived area of East London. **Aim:** To evaluate SUGARSMART by assessing changes in pupils' knowledge and its acceptability among teaching staff. **Methods:** Mixed methods were employed to evaluate the intervention. The intervention involved interactive presentations delivered by dental students in eight Tower Hamlets primary schools selected via convenience sampling through the local borough. For the quantitative component, questionnaires assessing knowledge on diet, oral health and exercise were completed at baseline and follow-up by pupils aged 7-11 years (n=1,770). The response rate was 58.8% (n=1,041). Responses were excluded due to lack of details to aid matching baseline and follow-up questionnaires. The diet domain was analysed using a Related-Samples McNemar Change Test. For the qualitative component, one-to-one semi-structured interviews with teaching staff (n=13) were transcribed verbatim and analysed through thematic analysis using NVivo qualitative data analysis software. The Queen Mary Ethics of Research Committee approved the study. **Results:** There were significant improvements in knowledge in most domains. In the diet domain, which asked about foods and drinks containing added sugar, of five questions analysed, four showed statistically significant improvements in the proportion of correct answers from baseline to follow-up, ($p<0.05$). The qualitative analysis included five main themes, overall SUGARSMART was welcomed by teachers, but wider socio-economic factors were acknowledged to impact pupils' behaviours around healthy eating. **Conclusions:** In the population studied, SUGARSMART contributed to improving pupils' knowledge and was mostly accepted by teachers. However, while health promotion interventions can improve knowledge of healthy practices, wider socio-environmental factors shape much of pupils' health behaviours.

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Healthy Smiles: a pilot to promote oral health for Children Looked After in London

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Children Looked After (CLA) experience significant oral health inequalities in caries experience, pain, traumatic dental injuries and dental service use. CLA are required to have at least one oral health assessment annually, this has been challenging due to the pandemic. **Aim:** To develop and evaluate a six-month pilot to enhance access to dental services for CLA during the pandemic. **Methods:** The objectives were to assess the feasibility and acceptability of the pilot among CLA teams, dental teams and carers. Seventeen volunteer dental clinics were recruited to the pilot and a clinical care pathway was co-developed with clinicians, CLA teams, and social workers. Training was provided to CLA and dental teams. Two resources were co-developed with carers and CLA teams. Data collection included demographics and dental activity. **Results:** In total, 300 children have been referred and 206 appointments booked into 17 designated dental clinics across London. There was an uneven distribution of referrals and fewer children were referred into the pilot than expected. Nearly a third (27%) of CLA who were referred resided in one London borough. There were a small number of cancellations (13,6%). However, 32 (16%) of CLA were not brought to their appointments. Of those seen the following treatment was provided: Advice 54 (26%), Fluoride Varnish 13 (6%), Fissure Sealants 10 (5%), Fillings 74 (35%), SS Crowns 5 (2%), Simple extractions 11 (5%), Extirpation of pulp 9 (4%), Antibiotics 9 (4%) and Other 26 (12%). **Conclusions:** Early feedback from those utilising the pilot has been extremely positive. There was variation in engagement between CLA teams in different boroughs. The pathway has been reviewed and amended for the next phase. Data collection has been challenging. The next step is to conduct process evaluation of the pilot to inform future commissioning arrangements and oral health improvements for this vulnerable population.

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Evaluating an oral health training programme for caregivers of children with disabilities- study design

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Aim: This study aims to develop and implement an oral health training programme for caregivers of children and adolescents living with intellectual disabilities in Ouagadougou, Burkina Faso. **Methods**: As a first step, the Theoretical Domains Framework (TDF) and the New World Kirkpatrick training evaluation model was used to develop the oral health intervention. The second step will be to examine the effectiveness of the oral health training for caregivers using a single-arm, pre-post design and a parallel mixed methods assessment. Due to the small size of the target population for this study, caregivers working with children with intellectual disabilities, a total population sampling method will be used. Forty-eight caregivers will receive one-day in-person training on oral health for children with disabilities. They will be interviewed and observed at baseline and will complete a pre- and post-test about oral health before and after the training. Both qualitative (i.e., interview notes, stakeholder survey responses, trainee feedback forms) and quantitative data (pre-post test scores and observation scores) will be collected. Qualitative data will be analysed using content analysis. Quantitative data will be analysed using descriptive statistics, followed by a McNemar test for evaluating consistency across variables and ANCOVA for analysis of covariation. It is expected that after completing the training, caregivers will score higher in the oral health test, and they will implement oral health practices in their work with children and adolescents with intellectual disabilities. It is hoped that the outcomes of the study will motivate future research, across similar low-income settings and will help to find solutions for improving the oral health of 82% of all children living with disabilities in rural Burkina Faso.

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Caregivers' perspectives on oral health of people with disabilities: qualitative research

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Aim(s): The present study assessed the oral health experiences and needs of caregivers working with people with disabilities in residential care. **Methods**: Data collection took place through focus group interviews with (home care) nurses, speech therapists and educators and were moderated by a dentist and a psychologist. Audio recordings were transcribed in Microsoft® Word and coded in NVivo 12. The data were analysed by two people applying inductive thematic analysis. All participants signed an informed consent prior to participating. The study was approved by the Ghent University Hospital ethics committee (national registration number B670201941973). **Results**: Eight focus groups took place between November 2019 and November 2020 with 39 female (100%) caregivers participating in total. Caregivers' experiences and perceptions addressed three main themes: daily oral care, professional oral care, and oral health promotion. According to the theme "daily oral care", frequently mentioned barriers were absence of structure, lack of skills of the caregivers' and clients' negative behaviour. Caregivers needed uniform protocols with attention to structure and an improvement of practical skills. Within the theme "professional oral care", the main barrier was lack of a durable cooperation with a dentist. Concerning "oral health promotion", caregivers indicated inter alia that the educational attainment didn't determine the level of knowledge and skills and that the training availability was limited. They needed practical tips focusing on efficient time management. **Conclusions**: Various context-specific barriers and needs were identified for daily oral care, professional oral care and oral health promotion for people with disabilities in residential care. There is a need for standardised protocols, practical tools and for a supportive framework at various levels (government, organization, caregiver and person with disability).

Keywords: Caregivers, people with a disability, residential care, focus groups, qualitative research

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Nurses' self-efficacy in oral care in Oulu University Hospital

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Aims: According to the Bandura self-efficacy theory, a person's belief in his/her own abilities affects his/her actions and performance. Previous studies have found that nurses' oral health-related self-efficacy is weak. The aim of this study was to evaluate nurses' self-efficacy in patients' oral care in university hospital settings. **Methods:** The data were collected in August 2020 by using a self-administered anonymous questionnaire including an oral health-related self-efficacy scale. The study population (n=116) consisted of voluntary nursing staff from five wards at Oulu University Hospital. The self-efficacy items assessed nurses' practical skills, problem detection, and self-efficacy in relation to taking care of patients' oral hygiene. Factor analysis was performed for the items and three sum variables were formed. Mean factor sum scores were compared to background variables by One-Way ANOVA. Permission for the study was given by the medical superintendent of the Oulu University Hospital. No ethics approval was required. **Results:** The exact response rate could not be estimated due to the changing number of nursing staff.   For the factor *Self confidence in taking care of patients' oral hygiene,* nurses who had over 14 year working experience ($p=0.013$) and over 14 years after graduation ($p=0.009$) had higher total scores compared to nurses who had < 5 years and 10–14 years after graduation. For the factor *Confidence to detect oral problems,* nurses who had over 14 years working experience ($p=0.008$) and over 14 years after graduation ($p=0.018$) had higher sum scores compared to nurses who had < 5 years and 5–9 years after graduation. **Conclusion:** In the population studied longer working experience and more years after graduation were associated with greater confidence in taking care of patients' oral hygiene and detecting oral problems.

Keywords: Self-efficacy, oral hygiene, hospital ward, nurse

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Nurses' knowledge in oral care in Oulu University Hospital

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Aims: Nurses working in hospitals need to have knowledge of oral health and diseases, and skills to carry out patients' daily oral care. The aim of this study was to investigate nurses' oral health-related knowledge in patients' oral care in a university hospital setting. **Methods:** All nursing staff on five wards working in the Oulu University Hospital, Finland, were invited to participate. Data were collected in August 2020 by a self-administered, anonymous, voluntary questionnaire. The questionnaire included nine items about oral health knowledge and the association of oral health with general health. The nurses answered using a five-point Likert scale. Responses were presented in percentages. The permission for this study was given by the authorities of Oulu University Hospital and no ethics approval was required. **Results:** Altogether 116 nurses participated. Due to unstable number of the staff in wards, assessing the exact response rate was not possible. Most of the participants were registered nurses (89 – 77%). Almost all of nurses (113 – 97%) agreed/completely agreed with the statement 'oral health affects general health'. Majority of nurses (112 - 97%) knew that drugs can reduce salivary flow, and 95 (81%) knew that tooth loss is not a part of normal aging. Further, 81 (70%) knew the impact of oral health on the risk of aspiration pneumonia and 41 (36%) knew that chronic oral inflammation can increase the risk of dementia. The third of the nurses (38 – (35%) felt that they did not have enough knowledge of oral health. **Conclusions:** In this study population, the association between oral health and general health was well known, but more detailed knowledge was lacking. It can be concluded that nurses need more education and training concerning oral health issues. This may have clinical significance in preventing infections in hospital wards.

Keywords: Nurses' knowledge, oral health

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Impact of a national daily toothbrushing and fluoride varnish programme on dental caries of pre-school children in Chile

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Aims: Chile has developed new oral health programmes, including a daily supervised toothbrushing and fluoride varnish application intervention for pre-school children, who attend nurseries. This study aimed to evaluate the impact of these interventions on caries levels of Chilean pre-school children. **Methods**: Aggregated data from 346 municipalities were collated for: dental caries outcomes for children, nursery-based fluoride varnish applications and the delivery of oral health materials (toothbrushes and 1000 ppm fluoride toothpaste) for supervised daily toothbrushing, community water fluoridation (CWF), and socio-economic deprivation. Univariate and multivariate weighted linear regression models assessed the factors independently and were adjusted (by deprivation, and CWF exposure) for the potential effect of the programme's interventions. The endpoint was the caries experience of five-year-olds, covered by the programme, since its rollout in 2015. The endpoint of a weighted caries percentage was a continuous variable rather than a traditional percentage. **Results:** Dental examination municipality-level data on 309,360 five-year-olds was available. The delivery of materials for daily toothbrushing reduced caries experience from 55.0% to 50.1% with a difference of 4.9% (2.5%,7.2%), that remained after adjusting for deprivation and CWF. CWF reduced caries experience by 7.5% (4.2%,10.9%). The combination of having both the delivery of materials and CWF showed a synergistic effect with a reduction of 13.4% (7.5%,19.3%). Fluoride varnish application was not a significant explanatory variable in the univariate and adjusted models. **Conclusion**: A reduction in five-year-olds' caries experience at the municipality-level was associated with the delivery of oral health materials for daily supervised toothbrushing in nurseries, but not with fluoride varnish applications. The best results were observed in municipalities with CWF.

Keywords: Dental caries, children, toothbrushing, fluoride varnishes, Chile

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Erosive Tooth Wear among a Group of Finnish Adolescents

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Aims: Globally, prevalence of erosive tooth wear (ETW) among adolescents is reported to be 30%, ranging from 7% to 74% (Salas et al., 2015) and prevalence seems to be increasing (Stenhagen et al., 2017). However, no data on the prevalence and the severity of ETW among Finnish adolescents has been published so far. The aim of this study was to investigate the prevalence, severity and the associated factors for erosive tooth wear among a group of Finnish adolescents. **Methods:** Fifteen-year-olds from two Finnish secondary schools in Vaasa and Sievi were invited to volunteer. Altogether 147 teenagers, of whom 81 (response rate 55%) were from Vaasa and 66 (response rate 84%) from Sievi , accepted and participated in the study. Of these participants 68 (46%) were boys and 79 (54%) were girls. Clinical examinations were performed in the school premises by two experienced and calibrated clinicians. ETW was registered using the BEWE index. To evaluate factors associated with ETW, the participants were interviewed using a structured and validated anonymous questionnaire. Statistical evaluation was by means of Chi-squared tests and logistic regression analysis. Written consent was obtained from all participants and an ethics statement was obtained from the Ethics Board of Northern Finland Hospital District. **Results:** More than half (82 - 54%) of the participants had at least mild ETW (BEWE sum score 3-8). A severe ETW (BEWE sum score ≥9) was rare and was found in only 4 (3%). The most common factors associated with ETW were habitual consumption of acidic drinks between meals (p=0.025), high consumption of fizzy drinks (p=0.021), and consumption of fruits and berries at least daily. (p=0.021). ETW was more common among boys than girls (p=0.005). **Conclusions:** In the population studied, ETW seems to be frequent. Diagnosing, registering, and controlling ETW is important for teenagers.

Keywords: Erosive tooth wear, dental erosion, adolescents

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Continuing Professional Education of Dental Hygienists – A European Association of Dental Pubic Health/European Dental Hygienists Federation Survey

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Background: One of the questions in a recent EADPH/EFDH survey related to the continuing professional education (CPE) of European Dental Hygienists. **Aim:** The aim of this question was to investigate the CPE requirements of dental hygienists from the 26 member countries of the European Federation of Dental Hygienists (EFDH). **Methods:** In May 2020, a questionnaire with 17 questions relating to Dental Hygienists' (DH) employment was designed and piloted in 6 countries, prior to its distribution by email, with an explanatory letter, to national DH associations. Data collection was completed by September 2021 and the data have been confirmed since then. The ethics committee of Vilnius University Medical School advised that ethics approval was not required for this survey. **Results:** To date 23 (88%) of European national DH Associations have completed the questionnaire and confirmed its results. Nine countries (Belgium, Czech, Hungary, Israel, Italy, Latvia, Lithuania, Spain, UK) reported that there is a mandatory requirement for CPE for DH in their country. The highest requirements were in Italy (50 hr/year) and in Belgium and Israel (24 hr/year), followed by Hungary, Lithuania and UK (15rh/year), Latvia (6hr/year) and the Czech Republic (4hr/year). In 12 countries (Denmark, Estonia, Finland, Germany, Ireland, Malta, Netherlands, Poland, Portugal, Slovenia, Sweden, Switzerland) CPE was not mandatory, but was expected. For example, In the Netherlands 30 hr/year are expected. Austria and Romania reported that in these countries there was no CPE regulations for dental hygienists. **Conclusions:** The results of this survey demonstrate variations in requirements for CPE for DHs in the 23 European countries which took part in this survey.

Keywords: Dental hygienists, continuing professional education, EADPH, EDHF, CPE

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Co-Developing London's Water-Only Secondary School Toolkit to tackle Caries and Childhood Obesity

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Aim: The Water-Only Secondary Schools toolkit aims to provide a supportive environment for secondary school pupils to replace sugary drinks with water. Caries and obesity are linked through a common risk factor: excessive sugar consumption. The aim of the study was to understand what influences pupils' drinking habits whilst in school and with these insights to co-develop a toolkit. **Methods:** This initiative was promoted by the Greater London Authority to two youth forums. Approval was sought from Public Health England ethics committee and parental and young persons' consent was acquired. All volunteers residing in London who provided written consent were chosen to participate. Three focus groups each with fifteen pupils, as well as a semi-structured interview with a teacher, were held virtually due to the Covid-19 pandemic. The COM-B model framework was employed. The interviews were transcribed verbatim, and a thematic analysis was conducted. This informed the co-development of the toolkit. **Results:** Pupils reported that society (parents, teachers), sugary drink companies (price, marketing, accessibility), the physical environment (availability of water facilities), and the political context, in which young people reside, all have a role in their beverage choice. Despite knowing the advantages of drinking water and the harmful effects of sugary drinks, these influences made it difficult for them to make healthy decisions. **Conclusion:** In the population studied, pupils have recognised that socio-political, commercial, and environmental determinants impact on health behaviours. Additionally, criticisms were made for the use of moral panic which focuses on solely taking personal responsibility and individual lifestyle changes. It was recommended that the Water Only toolkit should focus on changing young people's school environment to encourage pupils to drink more water. Harm reduction strategies were offered as a viable solution to help young people build healthier relationships with sugar.

Keywords: Determinants of health, childhood obesity, caries, co-develop, toolkit, sugar

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Association between integration and oral health status and oral health care utilisation among Indian migrants living in the Netherlands

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Aims: Limited research exists on the role of integration among migrants on oral health outcomes. This study aimed to assess the association between integration and the oral health status and oral health care utilisation among Indian migrants living in the Netherlands. **Methods**: A survey-based cross-sectional study was conducted among a random sample of 1500 Indian migrants living in the Netherlands. A validated questionnaire with consent form was sent via post to gather information on socio-demographic characteristics, oral health status and oral health care utilisation. Immigration Policy Lab (IPL-12) Integration Index and the Everyday Discrimination Scale (EDS) were used to measure self-reported integration and discrimination respectively. Higher IPL-12 and EDS scores reflect better integration and more discrimination, respectively. The independent samples t-test and one-way ANOVA were used to assess the association between integration and oral health outcomes. Ethics approval was obtained from the Vrije University Medical Centre. **Results**: A total of 148 Indians responded out of which 141 (97%) were highly educated and 133 (90%) had paid jobs. Self-rated oral health was reported as good by 88 (59%) with median of 30 self-reported number of teeth. A total of 129 (87%) had visited a dentist in the past 12 months. Higher integration was associated with lower self-reported number of teeth (p=0.005). Also, Indian migrants with higher integration visited a dentist more often (p=0.006). Furthermore, higher integration was significantly associated with visiting a dentist in the Netherlands (p<0.001). However, no significant associations were found between discrimination and oral health outcomes. **Conclusion**: In the population studied, integration positively influenced oral health care utilisation and oral health status of Indian migrants. Stakeholders, practitioners and policy makers can obtain a clearer picture of the factors influencing oral health of the migrants and how to cater to their specific needs on based on cultural sensitivity.

Presenter: Amandeep Pabbla   Email a.pabbla@acta.nl

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Caries prevalence in six-year-olds in relation to socio-economic factors, development 2010- 2019.

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Aim: Children growing up in socio-economically vulnerable families and residential areas have a higher risk of caries experience. Resource allocation targeting risk groups is a mean of evening out these modifiable inequalities in health. Monitoring the development of caries, in relation to socio-economics over time, is essential for fair resource distribution to groups with higher caries risk. The aim was therefore to study the development of six-year-olds´ caries prevalence between 2010 and 2019, in relation to multiple socio-economic variables. **Methods:** The study design was an epidemiological register-based cross-sectional study based on caries data (grouped as 0, 1-3 and >3 dmft) for the population of Östergötland, six-year-olds in 2010 (n=4,408, coverage 95%) and 2019 (n=5,199, coverage 94%). Multiple socio-economic variables for the children were retrieved from official registries. Multinomial logistic regressions were performed to produce models for each year. The study was approved by the Ethics Review Board 2020(No. 2020-05054). **Results:** It was found that the variables that explained most of the association between caries and socio-economics were partly the same over the years. These were: type of housing, child's migration background, maternal migration, maternal age when first child was born and maternal employment. In the 2019 model, three variables from the 2010 model (financial assistance, maternal education and maternal age when child in cohort was born) were replaced with paternal variables (employment and migration) and child´s ethnicity. The association between caries and socio-economics was consistently stronger for severe caries experience (dmft>3) than mild. **Conclusions:** In the population and over years studied, variables related with low socio-economics continued to be associated with caries in young children growing up under socioeconomically vulnerable circumstances.

Keywords: Equal oral health, caries, socioeconomics, epidemiology

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Challenges in providing dental care for non-institutional care-dependent older adults in Norway

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Aim: The aim was to explore Norwegian dentists' and dental hygienists' perception of challenges for the dental treatment of older adults receiving home care services (HCS) **Methods:** An electronic questionnaire survey was distributed via QuestBack to dentists and dental hygienists from all counties in Norway. Data collection took place between November 2021 and 16 January 2022. In addition to background characteristics of clinicians, the questionnaire included 16 statements on treatment-related challenges, scored using a five-point Likert scale. Descriptive statistics were used to describe background characteristics. A principal axis factor analysis (PCA) was carried out on the 16 items. Three factors were extracted and Structural Equation Models (SEMs) were performed. The level of statistical significance was set at 5%. **Results:** Four hundred and sixty six dentists and 244 dental hygienists treating older patients in HCS responded. The majority were female (620 -87.3%) and worked in the public dental service (PDS) (639 - 90%). Challenges identified were "time needed to gather essential information on patients", "practical issues" and "communication problems". No differences in perceived challenges were observed between dentists and dental hygienists. Males were more likely than females to find practical issues challenging, when treating older patients receiving HCS. Clinicians graduated after 2007 were more likely to experience communication difficulties and were less likely to experience challenges related to time and practical issues. Private practitioners experienced more practical challenges than those working in the PDS, but were less concerned about communication. Clinicians graduated outside Norway were less concerned about time necessary to gather essential information about patients. **Conclusions**: In the population studied, challenges related to dental care for older adults receiving HCS may be categorised into time, practical and communication related issues. Variation in perceived challenges was associated with background characteristics and sector, but not to the professional category of clinicians.

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Methodology for Establishing a Global Head and Neck Cancer Research Network

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Often researchers work in silos that can stifle collaboration, a new approach to connect researchers working on the global public health issue of Head and Neck Cancer (HNC) is required. **Aim:** To create a global network of Early Career Researchers (ECRs) in HNC providing opportunities to coordinate research, collaborate, exchange information, and seek mentorship. **Methods:** Initially the network will be hosted in the UK by a founding leadership but will have a global membership, with a view to broaden the leadership in time. Central governance structures will include data protection and information sharing policies. A network website will provide registration facilities, discussion boards, webinar hosting facilities and knowledge exchange opportunities including journal clubs. A social media presence will be developed to drive recruitment to the network. The network will enable the development of regional divisions with a local leadership and an agenda driven by both global and local research needs. It will build research capacity in low resource areas, offering opportunities for mentorship. Mentors will be recruited through supporting organisations. Membership will be free and interdisciplinary. The network will go live over the course of 2022/23. **Results:** A founding core leadership group was established in May 2022. Initial partnerships have formed and supporting organisations include: Universities of York, Dundee and Glasgow, NHS Education for Scotland and Let's Talk About Mouth Cancer SC045100. Funding to support establishing the network has been secured. A beta website has been developed. **Conclusion:** The network will bridge the gap between ECRs globally and result in a connected community of researchers, fostering opportunities for collaboration, setting research priorities and advancing research impact in HNC.

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Quality of life in patients with squamous cell carcinoma after reconstructive surgery

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Aim: Radical surgical treatment is the method of choice in the treatment of oral cancer. However, it can cause oral dysfunction, social isolation, emotional and psychological distress, which significantly effects on patient's quality of life. The aim of the study was to determine the health-related quality of life (HRQoL) in patients with oral cancer after the treatment with microvascular reconstructive surgery. **Methods:** This study was conducted during the period from January 2021 to June 2022 at the Clinic for Maxillofacial Surgery, School of Dental Medicine, University of Belgrade and included 30 patients with histologically confirmed oral squamous cell carcinoma, of whom 15 patients had undergone microvascular reconstruction and 15 patients were without reconstruction. The measurement of quality of life (QoL) of patients was assessed using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30) and Head and Neck Cancer Module (QLQ-H&N43). The study was approved by the Ethics Committee of the School of Dental Medicine, University of Belgrade (No. 36/13) and all patients provided written informed consent to participate in study. **Results:** Prior to reconstruction, there was no statistically significant difference in quality of life between groups ($p>0.05$). Twelve months after reconstructive surgery, function was significantly improved and the symptoms were less pronounced. Patients had higher scores for social and emotional functioning and fewer problems with fatigue, insomnia, dry mouth, speech problems and appetite loss ($p<0.05$). Compared to the control group, patients with reconstruction had fewer problems with: fatigue, appetite loss, constipation, dry mouth, problems with eating and social contact ($p<0.05$). **Conclusions**: In the population studied reconstructive surgery significantly improved QoL after reconstruction. Implementing HRQoL questionnaires for the assessment of quality of life may be useful for specific prevention and treatment in order to achieve better perception of QoL.

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Developing a Patient Companion App for Periodontitis: "Paro-ComPas" Project Study Protocol

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Aims: Periodontitis is a chronic inflammatory disease, affecting billions of people around the globe and creating an enormous economic burden. Digital tools such as mHealth applications ("apps") have the potential to increase patient engagement, knowledge about the disease, and adherence. The Paro-ComPas project aims to develop a digital patient companion to empower patients along their journey with periodontitis. **Methods:** Firstly, a qualitative study design encompassing interviews with patients and experts, as well as focus group discussions (FGD), will be used. Patients undergoing periodontal treatment will be recruited from dental practices across Germany and invited to share opinions about their treatment and areas for support. Experts will be interviewed to map a holistic view of the current delivery of treatment and best practices for mHealth development. FGDs with patients will take place to incorporate user feedback in the prototype development. The app will then be evaluated in a randomized, multi-centre clinical trial in comparison with standard care. Finally, a comprehensive implementation roadmap will be developed. To date, the qualitative study has been approved by the Ethics Committee of Heidelberg University Hospital. Recruitment for the qualitative study is set to start in July 2022. Findings will be used for the development of the "Paro-ComPas" app. The clinical trial studying the app's effectiveness will start in 2023. This comprehensive approach will allow the patient journey to be mapped. Novel insights into patients' knowledge and perception of periodontitis, as well as barriers in adherence to treatment will be provided. This knowledge will be converted in a systematically tailored companion app. The results from the clinical trial will provide unique insights into the extent to which mHealth can contribute to adherence to periodontal care.

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Workforce planning for oral health: development of a needs-based simulation for Burkina Faso

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Background: As recently highlighted by the WHO Oral Health Resolution, needs-based workforce planning is crucial for integrating oral health into sustainable Non-communicable Disease and Universal Healthcare Strategies. **Aims**: This project aims to develop a comprehensive and concrete action tool for oral health needs-based planning of human resources in lower-income-countries. In the context of Burkina Faso, the study aims to identify and convert relevant information into an easy-to-use decision support tool. By simulating different scenarios of workforce skill-mix and services provided, it allows policymakers to compare and prioritise alternative routes of action, ideally involving all relevant local stakeholders, resulting in a concept for oral health care provision adequate for local conditions. The design of the simulation tool should enable swift adaptation and application in other countries and settings. **Methods**: Based on existing literature and data, a prototypic simulation tool for needs-based workforce-planning, with key elements specific to LIC, has been developed. The model is based on the integration of oral health into the wider, already existing, community health care approach present in the country. The simulation tool has been implemented via MS Excel. The model was populated with publicly available data from international organisations and local authorities. **Results**: The prototype has proven capability for simulating future workforce requirements according to demographic characteristic, oral health status, service coverage, skill-mix and productivity of oral health workers. The tool successfully demonstrates its usability to inform decision makers how to improve the prioritisation of human resources for oral health with context-specific resources**. Conclusions**: Applying an oral health needs-based resource and workforce planning framework seems highly relevant and is also feasible in lower-income-countries. Future research on concrete implementation in close collaboration with policymakers and local stakeholders - including through deliberative processes - is warranted.

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Machine learning algorithms to identify leading risk factors for early childhood caries

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Aims: This study aimed to integrate clinical, behavioural, social and laboratory data to find leading risk factors of Early Childhood Caries (ECC) in young children (24-to-36-months-old) living in Tehran, Iran using Machine Learning (ML). **Methods:** This ML analysis was carried out on the results of a cluster-randomized community trial in Tehran, in which 239 mother-child dyads, enrolled in public health care programmes, were selected, through stratified cluster random sampling, in 2012. Children's teeth were examined using ICDAS-II, dmft, and Plaque Index. Mothers filled out questionnaires about their background, socio-economic status, and oral hygiene habits and received an intervention to prevent ECC. The health care centres were randomly allocated into three experimental groups: educational/A, varnish fluoride/B, and control/C. Children were classified into four groups based on the two key oral hygiene habits: twice brushing a day and the frequency of added sugar intake. They took part in a follow-up examination after six months. Data were analysed using the Generalized Estimating Equation (GEE) and Marginal Regression (MR), and Number Needed to Treat (NNT). In 2021, the data were reanalysed using four algorithms to find the hierarchy percentage of the leading factors for ECC. The study was approved by the ethics committee of Shahid Beheshti University of Medical Sciences (No: *irct201212811693n1).* **Results:** Regression models showed that children in group C had a 1.36 and 1.59 times higher chance of experiencing new dental caries than those in group A (Adjusted OR=1.36, CI95%=0.7-2.61) and group B (Adjusted OR=1.59, CI95%=0.8-3.14); NNT was 3.1~3 and 2.9 ~3, for educational and varnish fluoride, respectively. Among 62 risk factors, according to Extreme Gradient Boosting (XGB), the age when cleaning of children's teeth started had an 11.6% positive effect and visible plaque had a 9.9% positive effect. **Conclusions:** Regardless of the intervention groups, the preventive intervention was effective for children whose teeth were cleaned twice a day regularly and also reduced added sugar intake frequencies. Education and using varnish fluoride both have acceptable effectiveness in preventing ECC.

Keywords: Oral health, ICDAS-II, machine learning

Delivering Better Oral Health Version 4: a resource for the dental team

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Aim: Guidelines are systematically developed statements to assist clinicians with delivering evidence-based care. The fourth and fully revised guidance *Delivering Better Oral Health* (DBOHv4), launched in 2021, represents an important collaboration between key agencies across the United Kingdom (UK). It has been updated regularly and recognised as good practice in Europe. This abstract aims to provide an overview of DBOHv4 and its development. **Methods:** DBOHv4 was developed using a published methodology, within a clear governance structure involving over 100 participants over a three-year period. **Results:** The Guideline Working Group (GWG) had day-to-day responsibility for conducting the evidence-reviews and running the project; supported by five Guideline Development Groups (GDG) addressing oral cancer, dental caries, tooth surface loss, periodontal diseases, and behaviour change, respectively. GDGs advised on the key research questions, reviewed the evidence, and suggest revisions, drawing on the expertise of academics and front-line dental team members across the UK. The Development Oversight Group (DOG), which had responsibility for initiating and signing off the project, provided additional insights. Chapter 1 provides an overview of risk across the life course, proportionate universalism. Chapter 2 contains the high-level evidence for population and higher risk patients (with full details presented in Chapter 13). Behaviour change is given prominence in Chapter 3. Chapters 4-7 cover diseases/conditions (dental caries, periodontal diseases, oral cancer, tooth wear), whilst Chapters 8-12 address common risk/protective factors in detail (oral hygiene, fluoride, diet, tobacco, alcohol). New readers are encouraged to focus on Chapters 1-3, with further details in the accompanying text in the remaining chapters. Apart from being in digital format, developments include greater information on weaning, and links to available resources and training. **Conclusion:** This important resource presents contemporary evidence on the prevention of oral and dental disease for use by all members of the dental workforce.

Keywords: Prevention, oral health, dental caries, periodontal diseases, oral cancer, tooth wear, risk

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Parents' satisfaction with aesthetic results of non-invasive Severe-Early Childhood Caries treatments

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Aims: The WHO recommends non-invasive methods including Silver Diammine Fluoride (SDF) in its Implementation Manual for ending Early Childhood Caries (ECC). SDF's dark staining compromises aesthetics but other non-staining high-fluoride products are largely untested. This randomised clinical trial, evaluated; SDF, Tiefenfluorid and a placebo (each with 2 regimes). The trial's primary aim was reduction in caries-related complications. The secondary objective reported here is parental satisfaction with aesthetics. **Methods:** The trial ran between: September 2020 and May 2022. Ethics approval was obtained (Ethics Committee Nr.6-1/06/20) as was informed written parental consent. At 12-month follow-up parents rated their satisfaction with aesthetics (Likert scale, 1-5) and whether they felt it acceptable to continue with the same treatment. Data analysis involved use of the R statistics programme (R Core Team, 2013). **Results:** Four hundred and twenty eight children; (248 (58%) boys, 180 (42%) girls; median (IQR) age, 45 (35;55) months) with S-ECC enrolled in the study, of whom 359 (84%) were followed-up at 12-months. Overall, 119 (33%) children experienced major complications. Parents of 144 (69%) children were satisfied with the aesthetic outcomes of treatment (4 or 5 on 5-point Likert scale). For SDF groups: the satisfaction levels were 37 (58%) and 47 (72%); for Tiefenfluorid: 36 (65%) and 51 (77%) and for the placebo: 39 (75%) and 38 (65%). There was no evidence of a statistically significant difference between groups , but parents were more likely to be satisfied with treatment if their children had no visible plaque OR (95%CI) values of 1.79 (1.05;3.07) and no major complications 1.8 (1.03;3.18). Parents of 345 (96%) children would definitely continue using non-invasive caries treatment. **Conclusions:** SDF discolouration did not negatively impact parental satisfaction compared to non-staining treatments. Clean teeth and avoidance of major complications were important for parental satisfaction.

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Competencies for Dental Public Health Specialists; a thematic analysis

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Aim: Competency frameworks as essential tools of competency-based education provide a transparent guide for workforce training, resulting in competent professionals for service provision in the community. This study aimed to provide a comprehensive competency framework for Dental Public Health (DPH) specialists based on current related documents from around the world. **Methods:** A review of current competency sets for training DPH specialists was done by searching on PubMed, Scopus, Google Scholar, and Google from May to June 2021. All English sources in official documents or published articles were screened with no time restriction. The included documents were subjected to qualitative thematic analysis to extract different competencies. These extracted competencies were, then, discussed by a panel of experts for the development of the final competency framework. **Results:** Five documents that indicated expected competencies for the DPH specialists from Canada, the United Kingdom, the United States, Australia, New Zealand, and Ireland were reviewed. The thematic analysis led to the extraction of nine specific competency domains including Education, Research, Management of Oral health programs, Oral health policies and legislations, Communication, Collaboration, and Partnering, Leadership, Professionalism, Oral Health status and its determinant, and Development and evaluation of oral healthcare services. **Conclusion:** The content of the reviewed frameworks revealed different weights for different competency areas. Some important areas, however, seem to be underestimated. Better training and evaluation of the DPH workforce requires a comprehensive competency framework that is flexible to change and adaptable to various local, national, and international contexts.

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A literature review evaluating the interventions of managing xerostomia in nursing homes

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Xerostomia is a common and distressing condition experienced by the elderly in nursing homes, usually linked to disease and polypharmacy, and can lead to caries, difficulty in chewing and swallowing and the ability to taste food. **Aim(s):** To explore all interventions described in the literature for the management of xerostomia in nursing homes; and to compare the efficiency of each intervention. **Methods:** The PubMed database was searched to identify articles to review. Only five met the inclusion criteria. Keywords included: xerostomia, dry mouth, nursing home, care home. **Results:** Two papers reported the effects of introducing sugar free lemon-lime sorbets before lunch on the salivary rate and food intake of nursing home residents. One paper reported that residents who consumed the sorbet salivated 31% more than the control group and the other that sorbet consumers had an increase in food intake by 21.6%. One paper looked at the efficacy of auricular acupuncture in improving xerostomia and found that participants had an improved subjective assessment of dry mouth by 35%. Two further papers reported that regular use of 4% hypertonic saline solution mouthwash decreased xerostomia by 31.7% and a moisturising gel, together with water or a mouthwash, by up to 90%. **Conclusions:** There are few interventions for the management of xerostomia in nursing homes and each has limited evidence of its effectiveness. Overall, it appears that moisturising gel with water or mouthwash has had the best effect on xerostomia. All studies had small sample sizes, high drop-out rates and subjective assessments. More studies will need to be conducted to evaluate interventions and to assess whether they are cost-effective for widespread use and are simple, effective and cheap.

Oral healthcare related beliefs among personnel working in home care services in Norway

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Aims There is little knowledge about the nursing staff's competencies and beliefs concerning oral care for dependent older adults, and how the homecare services manage the oral health needs of older adults living at home. The aim of the study was to map oral health care beliefs among caregivers in homecare services in Norway. **Methods:** This was a cross-sectional questionnaire study among caregivers, working with elderly receiving home-based care services, in Norway. Data collection was performed between April 2021 and May 2022. The questionnaire consisted of background information (gender, education level, years of work experience), and the Nursing Dental Coping Beliefs scale (nDCBS). Ethical approval for this study was obtained from the Regional Ethics committee and from Norwegian Centre for Research Data (NSD). **Results:** One hundred and eighty-one caregivers responded to the questionnaire, 25 (14%) were men and 155 (86%) were women. Preliminary results showed that 69% of caregivers believed that gum diseases and cavities can be prevented, and dental flossing (60%) and toothbrushing (98%) can help in preventing these diseases. While 57% disagreed that it is not possible to prevent sickness and medicines destroy teeth. There was a significant difference ($p= 0.000$) between caregivers with different education levels. There was uncertainty about how different oral mucosal disorders can be treated **Conclusion:** In the population studied, the caregivers have a good understanding of how to prevent cavities and gum diseases. They need more education about mucosal disorders, the effect of poly-pharmacy on oral health and how to prevent gum diseases in older people.

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The dental service and home-care services , two disintegrated services – us and them

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Aim: The aim was to explore challenges in the coordination of oral care and home health care services (HCS) for older adults in Norway. **Methods:** This study had an explorative design using both workshops and focus group interviews. Two workshops were conducted with personnel from the HCS and the dental service (DS) (n=12,15) and four focus group interviews with personnel working in HCS (n=4-6). Participants were from three municipalities in eastern Norway. To gain a common understanding across services, a scenario ("Cecilia") was developed, based on previous case studies. Cecilia was actively used for group work in the workshops. For both the interview and the workshops the Rainbow Model of Integrated Care was used as a theoretical framework, to understand the complexity and analyse the factors that are key challenges in the coordination of services. All interviews and workshops were transcribed verbatim and analysed using an inductive approach. Participants gave written consent. The Norwegian Centre for Research Data approved the project. **Results:** The results showed that oral health was a non-prioritized area for the homecare service providing the everyday service to the older adults. The data also showed that challenges in integrating the services were present, especially at organisational (meso-level) and had both normative and functional aspects. This was exemplified by blurred responsibilities, "us and them" mindset, lack of systems for sharing information, both within and across the services and compartmentalised knowledge. **Conclusion:** In conclusion, the elderly are a group with increasing need of care from a range of different disciplines, sectors and professionals. This will require coordination of services. This study revealed a lack of integration in the care system and a culture both are a challenge for the coordination of the oral care and home care service.

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The World Health Organisation 74.5 Resolution on oral health: challenges for Greece

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Oral health is critical to overall health, quality of life and social well-being. However, dental care is neglected by the Greek state and WH0 74.5 Resolution provides an opportunity for reform. **Aim**: To evaluate the current oral health policy in Greece and to investigate the conditions required for the successful implementation of the objectives of WHO 74.5 Resolution. **Methods**: Qualitative research was developed by conducting semi-structured, in-depth interviews with 14 representatives of the Greek State, the dental community and patients, whose selection was made by purposive sampling. The participants were contacted via email and were sent a consent form, a research information sheet, as well as an 11-item questionnaire. The interviews were conducted, from March to June 2022. The method of triangulation using multiple data sources was used to confirm the validity of the results. Participants were advised that the interviews would be confidential and that their anonymity would be maintained at all times. **Results**: Oral health has not been a priority in the context of public health policies in Greece and the existing oral health model is treatment-based. Furthermore, there is no National Oral Health Strategy. Although the opinion of the government's representative, on the current situation in Greece, differed from that of the other participants, there was, nevertheless, a consensus on the interventions that need to be implemented, including: the introduction of a guaranteed percentage of public health expenditures dedicated to oral health; the establishment of a system of dental care needs assessment; the creation of an Observatory for oral health inequalities and policies; the further integration of oral health in PHC; strengthening prevention and promotion actions and targeting of the vulnerable groups in Greek society. **Conclusion:** The WHO Resolution on Oral Health focusing on universal oral health coverage is a historic challenge for Greece to bridge a gap of decades of a lack of a national oral health strategy.

Keywords: Universal oral health coverage, dental care, public health policy, health inequalities, qualitative research

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Knowledge and interest in oral cancer by professionals and the population in Europe

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Aims : The aims were to identify the level of training and knowledge of general medical practitioners (GMPs) and to analyse a potential temporal association between public health programmes and interest in oral cancer (OC) on the internet in the European Union. **Methods**: A national evaluation of professional practices was carried out using a questionnaire, distributed on the internet by professional institutions of GMPs,. A search of data from Google ©, Wikipedia © and Twitter © users in 28 European countries, relating to OC between 2004 and 2019 was completed. Bibliometric analysis of press and scientific articles over the same period was performed. The association between these data and the introduction of public health programmes in Europe was assessed. **Results**: Responses were received from 2156 people, 2.5% of the target population. Whatever the type of lesion assessed, the inability to make a diagnosis was the most frequent response ($p<0.001$). The need for the development of telemedicine in everyday practice was mentioned by 1701 (82%) and specific training needs on OC by 1846 (89%) of respondents. There was an association between changes in tobacco packaging and a significant increase in internet searches for OC in seven countries. There was an asymmetric correlation in internet searches between publications on oral cancer from scientific articles or "traditional" media (weak association) and those from internet media such as Twitter © or Wikipedia © (strong association). **Conclusion:** This survey, the largest ever carried out, seems to justify and promote the implementation of awareness campaigns and training measures for all GMPs. It highlighted seven areas around which OC awareness in Europe could be refocused, such as the involvement of public figures and associations in initiatives, to be organised at a local level, and strengthening of awareness of the dangers of tobacco in the development of OC.

Keywords: Oral public health, oral cancer, screening, diagnosis, early detection of cancer

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"They always fall over": injury trajectories across childhood and early adolescence

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Aim: Injuries, including dental trauma, are a public health problem. They are a cumulative condition with complex aetiology and potentially far-reaching consequences. Previous research focused predominantly on risk factors while injury trajectories received little attention. This study aimed to explore injury trajectories across childhood and early adolescence. **Methods**: The analysis used the nationally representative data from the UK Millennium Cohort Study. Parent-reported data on injuries requiring medical attention were used to create a cumulative number of such injuries across five timepoints, i.e., from birth up to ages 3, 5, 7, 11, and 14 years. The sample size was 8,167. Latent growth curves were modelled to explore individual injury trajectories, and latent class growth analysis was used to identify groups of children with specific trajectories. **Results**: The cumulative prevalence of overall injury increased from 3,151 (37.9%) at age 3 years to 6,350 (78.8.%) at age 14 years. The cumulative prevalence of dental trauma was very low and ranged from 164 (2.0%) at age 3 to 415 (5.3%) at age 14 years, hence further analysis considered overall injuries only. Piecewise latent class growth curve modelling identified two trajectories; the high-risk trajectory was steeper and the absolute increase in the number of injuries from age 3 to 14 years was much more pronounced (average increase from one to over three injuries) compared to the low-risk trajectory (average increase from zero to one injury). In both groups, the rate of change in the number of injuries was faster from age 7 to 14 years than from age 3 to 7 years. There was no difference between trajectories by sex. **Conclusions**: In the population studied, two distinct injury trajectories were identified corresponding with high- and low-risk of injury. Further research should seek to explore trajectories for specific injuries, including dental trauma.

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Unidimensionality of Schizophrenia Coping Oral Health Profile and Index (SCOOHPI): A Rasch model analysis

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Aims: The unidimensionality of a subjective measurement scale refers to the measurement of a single ability, attribute, construct or skill (Kotz et al., 2006). The Schizophrenia Coping Oral Health Profile and Index (SCOOHPI) was developed to assess coping strategies related to oral health deficits in people with schizophrenia (Siu-paredes et al.,2021). The aim of the present study was to explore the unidimensionality of the SCOOHPI. **Methods**: For this study, data from the Quality bis® study were used (www.ClinicalTrials.gov: NCT03699501). The partial credit model (PCM) which is part of the Rasch polytomous models was used. The PCM can be used if each item has at least two ordered response modalities. The fit of items indicates whether they belong to the same dimension or whether there are other sub-dimensions. An item has a good fit if the values of outfit and infit are between 0.5 and 1.5. The study was approved by the Comité de protection des personnes de la région Ile de France (registration number: 2018-A02043-52). **Results:** Ninety six people with schizophrenia, of whom 70 (72%) were male, participated in the study. The easiest item was item 7 and the most difficult was item 17. The grouping of response modalities may be justified by the confusion for many patients of the terms rarely, sometimes and often. The item characteristic curves showed that all response modalities were well represented by the item fit. The SCOOHPI scale items show a good fit (MSQ outfit and MSQ infit between 0.5 and 1.5). **Conclusions:** This study confirmed the unidimensionality of the SCOOHPI scale and provides an index that produces a global score for all items for the assessment of oral health coping strategies for people with schizophrenia

Keywords: Schizophrenia, oral health-related quality of life, psychometrics, oral health, coping strategies.

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O-Health Edu : A Vision for Dental Education in Europe- a Progress Report

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Numerous projects and activities have been carried out to harmonise all aspects of dental education in Europe, including in dental public health. The Association for Dental Education in Europe (ADEE) has played an important role by advancing the professional development of dental educators and supporting research in education and training of oral health professionals (OHP). The Erasmus + project O-Health-Edu "Advancing Oral Health: A vision for dental education" started in 2019. It is coordinated by the University Clermont Auvergne (France) with ADEE and nine other university partners. Its aims are to gain a validated understanding of the realities of OHPs' education within Europe, to enable a shared understanding and a common vision for the future of OHP Education among European stakeholders and policy makers and finally to define priorities for a strategic vision and support changes for OHPs' education. After three years, some key outcomes have been achieved. First, a scoping review revealed significant gaps in the knowledge of how education of OHPs is implemented and delivered across Europe, being both limited and somewhat outdated. Second, one specific outcome is the creation of a resource where terms, specifically related to OHPs education, are clearly defined and explained. The resource is now freely available online and feedback from the OHP education community is expected. Third, the process of collection of programme-level data on OHPs education across Europe is underway. Related outcomes will improve the visibility of OHP programmes across Europe, to all interested stakeholders. O-Health-Edu also elaborated a longitudinal vision for the education of OHPs in Europe into the future, to 2040. It acts in the best interests of both students and patients, and sits within the context of a wider strategy for general health. The involvement of multiple stakeholders has enabled the creation of a shared vision, built through consensus.

Keywords: Health professionals, education, Europe

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An oral health needs assessment for those experiencing homelessness in London

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Aim: Homeless populations experience significant oral health inequalities and barriers to accessing dental care. The aim of the study was to conduct an oral health needs assessment to assess dental needs, current dental services provision and exploring the experiences of peer advocates and dental providers to inform modelling of dental and oral health promotion services. **Methods:** A comprehensive mixed methods oral health needs assessment was conducted with those experiencing homelessness across London. Mapping of homeless dental care provision was conducted to identify gaps in dental services. A validated survey questionnaire assessing demographics, health behaviours and perceived oral health needs was completed (remotely and face-face). A sample size of 400 was targeted using convenience sampling of homeless adults residing in emergency accommodation Training was provided to oral health promotion teams to support data collection for the survey. Focus groups and semi-structured interviews with dental providers (n= 15) and peer-advocates (n=13) were conducted. Written consent was obtained.. Focus groups and interviews were recorded and data was transcribed. Data analysis: descriptive analysis was conducted for the survey and thematic analysis was adopted for the qualitative data. Ethics approval was sought from Public Health England. **Results:** A response rate of 79% (n=314) was achieved for the questionnaire survey. There were high levels of unmet need and riskier health behaviours: 115 (46%) brushed their teeth once a day and 81(26%) consumed sugar more than six times per week . Nearly half, 114(49%) had accessed dental care within two years with 81 (31%) needing urgent or emergency care. Qualitative data revealed numerous challenges for homeless populations to maintain good oral health and access dental care including costs, stigma and mental ill-health. Oral health was perceived to have a transformational influence on well-being **Conclusion:** Those experiencing homelessness in London were found to have high levels of unmet oral health need and challenges in accessing services.

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Evaluation of participation in a dental prevention programme using the French National Health Insurance data-set

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Aims "LoveUR Teeth (LUT)" is a national prevention programme offering children a free-of-charge dental health examination and subsequent treatment, if necessary. In 2010, the programme was under-used. This study investigated how the LUT participation rate changed between 2009 and 2019. The main aims of the study were to investigate participation rates and to determine why any changes had occurred. **Methods** The study utilised the National Health Insurance administrative data on care consumption. A representative sample of data for 93,980 French children aged 6,9,12 and 15 years was obtained. The participation rate in the programme, use of dental care services and the total dental expenditure between 2009 and 2019 were analsyed. Data analysis used multivariate logistic and linear regressions. **Results** The LUT participation rate increased by 4% over the 10 years, reaching 38.5% (10,126) in 2019. Six-year-old children participated more than others. In comparison, 15-year-olds were less likely to participate (OR_a = 0.4 ; 95% CI [0.37 ; 0.43]). Children covered by public complementary insurance were less likely to take part in the programme (OR_a = 0.27 ; 95% CI [0.25 ; 0.3]). Local circumstances had a major impact on the probability of participating until 2016, but were no longer significant in 2019. Participation in the programme was associated with a decrease in dental expenditure at the individual level. (Coef = -0.19 ; [-0.2 ;-0.17]) and this effect remained constant over time. Dental expenditure for the 12-15 year- olds was higher than for the 6-year-olds (Coef = 1.36 ; [1.34 ; 1.39]), mainly because of expenditure for orthodontic treatment in 12-15-year-olds. **Conclusion** In the population studied, the programme remained under-used but there was an improvement in the targeting strategy. For12-15-year-olds, seeking orthodontic care seemed to be a substitute for LUT participation... Coordinated action between dentists and orthodontists needs to be implemented.

Keywords: Prevention, access to care, dental care, paediatric dentistry

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The Effect of Non-Surgical Therapy on Oral-Health Related Quality of Life of Patients with Morbid Obesity

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Aims. The patient's perception regarding their quality of life, in relation to oral health, is an important aspect for the success of the treatment. The aim of this study was to assess the oral health related quality of life (OHRQoL) before and after non-surgical periodontal therapy and assess the impact of this treatment on the OHRQoL of patients with morbid obesity. **Methods.** Fifty-five patients, thirty-two females and twenty-three males, aged between 25-60 years, who were obese were randomly distributed into two groups: test group (with morbid obesity) and control group (healthy patients) and their OHRQoL was evaluated using the Oral Health Impact Profile (PHIP) – 14 questionnaire. The study was conducted with approval from the Ethics Committee of Dentalmar. The periodontal and obesity status of the subjects was recorded at baseline and after non-surgical treatment of periodontitis. Pocket probing depth (PPD), clinical attachment loss, and sulcus bleeding index (SBI), body mass index (BMI) and waist circumference (WC) were assessed. The test group received therapeutic intervention, and all indicators were recorded before and six weeks after the treatment. **Results**. After six weeks, the results showed poor scores for OHRQoL in the control group compared with the test group, There were significant improvements in the levels of PPD and SBI in the patients receiving non-surgical therapy before and after treatment. Sixty eight percent of the females perceived the quality of life related to oral health to a higher degree as compared to males (32%). **Conclusions.** Within the limitations regarding the number of patients, this study indicated that non-surgical periodontal therapy lead to substantially greater improvements in periodontal status, and greatly improved quality of life in the test group. Thus , a preventive strategy, including oral hygiene instructions and proper management of the periodontal problems are needed to improve patients' general health and social life.

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Self-Perceived Competency among Dental Public Health Graduates in Iran

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Aim: Dental Public Health (DPH) specialists' competencies should address the real needs of society and solve actual population oral health problems. The purpose of this study was to describe the levels of self-perceived competency of DPH graduates in Iran. **Methods**: In this cross-sectional study, a self-completed questionnaire was prepared in two parts, including demographic information and competency assessment statements (69 statements in 9 areas of competence). The study was approved by the ethics committee of the Shahid Beheshti University School of Medicine (IR.SBMU.DRC.REC.1398.127). After confirming its validity and reliability, the questionnaire was distributed online to all DPH graduates in Iran, between March and May, 2022. Participants rated their perceived competency for each statement on a Likert scale of 7 (1 = not competent at all, 7 = fully competent). The results were entered in Excel software and statistically tested using the t-test, one-way ANOVA, and a correlation test in SPSS software. **Results:** The response rate was 88% (54 individuals) and 63% (34) were women. The mean total scores of self-perceived competency in all competency domains were higher than 4. The "oral health status and its determinants" had the highest mean score (5.46) and the lowest score (4.40) was in the "Policy" domain. Men scored significantly higher than women in the "Leadership" and "Policy" domains, and Master of Dental Public Health graduates scored lower than Doctorate graduates in the "Research" and "Policy " domains. **Conclusion:** The DPH graduates' self-perceived competency was acceptable in most domains. However, in some areas, due to reasons such as the lack of training courses or the incompatibility of educational methods with the educational requirements, individuals did not consider themselves competent enough. Regular formative and summative assessments are necessary to understand the outcomes of DPH education better and eliminate educational shortcomings in Iran.

Keywords: Dental Public Health, education, postgraduate, competency

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Oral stereognosis in patients of different age groups with full dentures in the upper jaw

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Oral Stereognosis (OS) is the ability of a person to recognise the shape and surface of an object by manipulating it within the mouth, without looking at it. **Aim**: The aim of this study was to determine the oral stereognostic ability (OSA) in different age groups of people with full upper dentures. The hypothesis was that younger full denture wearers have higher OSA than the older individuals. **Methods:** This study was conducted in 2015 in the Prosthodontic Department of the Dental University Clinic Vienna and was approved by the Ethics Committee (approval number 1759/2015). It included 27 patients (16 female, 11 male) with full upper dentures. There were two different age groups of participants (Group 1: 11 aged 30-60 years, Group 2: 16 aged 61 years or older). In order to examine the OSA, the oral stereognostic test was conducted. Special test objects, specially designed for this purpose were used. The difference in OSA was tested by identification of small acrylic objects placed in the mouth. The statistical tests used were Spearman`s Rank Correlation Test and the U-test. **Results:** Using Spearman`s Rank Correlation Test the hypothesis was proven (α =0.05, power 0.8, correlation coefficient 0.50). The U-test was applied to examine the correlation between the two age groups and OSA. There was a significant difference in OS within the two different age groups (α = 0.05) . The U-Test was also used to examine the correlation between genders and OS. Results showed that the sex of the patients had no influence on OS. **Conclusions:** The results showed that in the small group studied, there was a significant correlation between the age of patients with full upper dentures and their OSA. This finding may help healthcare and care workers when they look after older patients.

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Oral Health Disparities among the 65+ age groups in Israel

Aims: To explore the oral health disparities among older adults aged 65+years and their barriers to using dental services, which since the 2019 reform are provided by law in Israel. **Methods:** A random sample of 1,250 older adults' aged 65+ telephone numbers was selected: 64 had passed away, One hundred and seventy four phone numbers were incorrect or disconnected and in 258 cases no one answered the phone over four weeks. Telephone interviews were conducted with 512 of the remaining 754 in the sample (response rate of 67.9%); 168 declined to take part and 74 were not interviewed for other reasons. The study was approved by the Helsinki Committee at the Ministry and by the Ethics Committee of the Myers-JDC-Brookdale Institute. Socio-economic status was measured by the ability to cover monthly household expenses **Results:** In the higher socio-economic group (SEG) 255 (66.7%) perceived their oral health status as good or very good, compared with 52 (52.5%) in the lower SEG. In the lower SEG, 38 (38.6%) were edentulous, compared to 66 (17.4%) in the higher. Oral health behaviour was found to be better in the higher SEG than that in the lower. Dental care costs were found to be a barrier primarily in the lower SEG: 18 (18.3%), compared with 14 (3.7%) in the higher. One hundred and seventy six (46.3%) participants from the higher SEG were aware of the inclusion of dental care services for the older adult population in the basket of health services provided by the health plans, less in the lower 28 (28.3%). **Conclusions:** Lack of awareness of the importance of proper oral health behaviour and dental care costs are the main barriers to dental care in the lower SEG. Still existing disparities and barriers have to be continuously re-evaluated and the policy accordingly amended.

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The challenge of increasing public oral health care provision in Spain.

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Aim: To implement new oral health services within the Spanish National Health Service (NHS). **Methods**: Between December 2020 and January 2021, a survey was carried out to assess the current situation of the oral health provision in the Spanish NHS, offered in the Autonomous Communities. Subsequently, the creation of an Oral Health Working Group was proposed in order to reduce the health inequalities detected and to increase the extension of the common provision of services. The working group was formed with members appointed by the Autonomous Communities, the Spanish Society of Epidemiology and Oral Public Health (SESPO), the Spanish Society of Paediatric Dentistry (SEOP), the General Council of Dentists of Spain and representatives from the Directorate General for Public Health (Spanish Ministry of Health). Five working subgroups were formed and through virtual meetings reached consensus on a final proposal, which was submitted to the Ministry of Health. **Results**: The proposal was approved in June 2022 for implementation between December 2022 and December 2023. **Conclusions:** Actions are needed to improve public oral health services in order to standardise access to oral health in Spain, reduce oral health inequalities and prioritise the preventive approach. The groups to be targeted are children and young people (0 to 15 years), pregnant women, people with disabilities and people with cancer of the cervicofacial area.

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Spanish Oral Health Survey 2020

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Aim: To carry out a pathfinder survey, according to WHO (1987) methodology. The results will be compared with those obtained in the previous Spanish national oral health surveys. **Methods**: Following the WHO recommendations for conducting oral health surveys, an observational, cross-sectional, descriptive and analytical cross-association study was carried out. The population was stratified according to population size. The 5 age cohorts recommended by the WHO, 5-6, 12, 15, 35-44 and 65-74 years, were examined. **Results**: Mean dmft was 1.28 at 6 years. Mean DMFT was 0.58 (12 years,), 0.94 (15 years), 7.4 (35-44 years),14.99 (65-74 years). A mean of 23.7% of 65-74-year-olds had root caries and 7.3% (4.4-10.2) were edentulous. In 35-44-year-olds the mean Community Periodontal Index value was 17.9 (44.4-24.5) . 36.5 % (30.0-42.9) of 12 year-old children visited the dentist once a year, Active caries in the primary dentition has been reduced from 35.1% (1993) to 28.35% (2020), for 12 year-olds the reduction has been by 58.1% from 1993 to 2020. **Conclusions**: Spanish Oral Health has improved over the years but a major governmental effort in oral public health is needed to reduce oral disease levels by incorporating oral health programmes for target groups.

Keywords: Dental Caries, epidemiology, oral health

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Introduction of sweet beverages before 6 months of age and early childhood caries

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Aims: Early childhood caries affects 20 to 30% of children under 6 years of age in France. Among the known risk factors, dietary habits and the consumption of free sugars play an important role. The aim of this study was to investigate the relationship between the introduction of fruit juice and other sweet beverages before the age of 6 months and the presence of early childhood caries at 3.5 years of age. **Methods:** Data were acquired from the results of the national ELFE study (French Longitudinal Study since birth) in which 18,329 children were recruited at birth in 2011. Data collection for the ELFE was facilitated by questioning parents by telephone using a questionnaire. The primary outcome was the presence of caries lesions reported by the parents at 3.5 years and the main exposure was the introduction of fruit juice or other sweet beverages before the age of 6 months in the child's diet. Missing data were handled using multiple imputation by chain equations, and a logistic regression was used to study the association. The ELFE study was approved by the CCTIRS (the national advisory committee on information processing in health research) and the CNIL (national committee for the protection of persons engaged in research) **Results:** 10,587 children were included in this study. The introduction of sweet beverages before 6 months was associated with a higher risk of early childhood caries compared with children not exposed before 6 months to these beverages (OR = 1.4, CI95% [1.0; 2.0], p = 0.047). **Conclusions**: Introduction of sweet beverage or fruit juice in the child's diet before the age of 6 months is a risk factor for early childhood caries.

Keywords: Dental caries, cohort study, early childhood caries, nutrition

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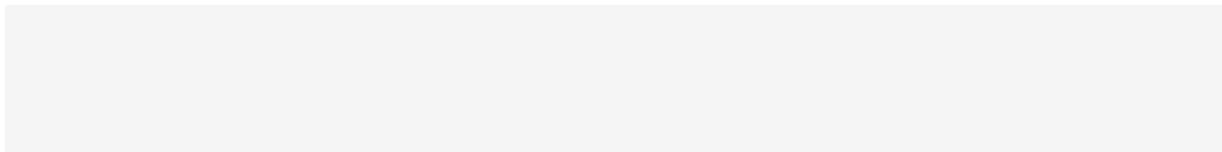
Water fluoridation, an effective public health measure in Scotland to reduce dental caries? A narrative review.

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Background: The implementation of water fluoridation in Scotland has been a controversial topic and currently there are no fluoridation schemes, although they existed in the past. Furthermore, dental health inequalities exist in Scotland with dental caries a common disease. The efficacy and implementation of water fluoridation in Scotland can be determined by understanding the past impact of the intervention on the dental health of Scottish children. **Aims:** The aim of this review is to critically evaluate the available literature to determine whether water fluoridation was effective in improving dental caries among Scottish children. Additionally, to compare results before and after the discontinuation of fluoridation in Scotland. **Methods:** Numerous databases including PubMed, Scopus, ASSIA, Web of Science, CINAHL Plus and Medline were searched for identifying the relevant articles. The Grey literature approach was also employed for retrieval of missed articles and reports. Limitations were applied in the electronic searches to retrieve articles in English language. Articles and reports were eligible for inclusion if the population of interest was the Scottish children, and the objective was to evaluate the influence of water fluoridation on dental caries using the dmft/s, DMFT/S or the deft/s indices. **Results:** A total of nine studies were included in the review. All the included studies were of cross-sectional design. The results obtained during the fluoridation period showed that fluoridation caused reductions in caries prevalence and cost of dental treatment in favour of the fluoridated children. The findings after the cessation of fluoridation also revealed that the caries levels and the cost of all dental treatment remained lower in the fluoridated groups. However, when caries prevalence was compared during and after the cessation of fluoridation, it was shown that the caries rates increased in the fluoridated groups. **Conclusion:** The findings revealed that water fluoridation was effective in improving dental caries among Scottish children. Future studies need to evaluate the oral health of the Scottish population while adjusting for factors such as intake of tap water, diet, and the effect of other preventive methods to provide stronger evidence for the initiation of water fluoridation.

Keywords: Water fluoridation, Scotland, narrative review

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