18th Annual Congress of the European Association of Dental Public Health in a Joint Meeting with The Council of European Chief Dental Officers

14th - 16th November, 2013
Westin Dragonara Resort, St. Julians, Malta.
Editors
Colwyn M. Jones
Kenneth Eaton
Paula Vassallo

EADPH Abstract
Review Committee
Ivor Chestnutt
Kenneth Eaton
Rebecca Harris
Colwyn M. Jones (Chair)
Andreas Schulte
George Tsakos
Paula Vassallo
Huda Yusuf

With thanks to Henrik Kropp
the EADPH Webmaster.
<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome from the Presidents</td>
</tr>
<tr>
<td>Sponsors</td>
</tr>
<tr>
<td>Conference Programme</td>
</tr>
<tr>
<td>Conference Site Map</td>
</tr>
<tr>
<td>Speakers’ Profiles &amp; Abstracts</td>
</tr>
<tr>
<td>Poster Sessions</td>
</tr>
<tr>
<td>Poster Session 1 Oral Epidemiology (I)</td>
</tr>
<tr>
<td>Poster Session 2 Oral Epidemiology (II)</td>
</tr>
<tr>
<td>Poster Session 3 Oral Health Promotion</td>
</tr>
<tr>
<td>Poster Session 4 Oral Health Services Research</td>
</tr>
<tr>
<td>Poster Session 5 Oral Epidemiology (III)</td>
</tr>
<tr>
<td>Poster Session 6 Tobacco and others</td>
</tr>
<tr>
<td>Poster Session 7 Oral Health Promotion: Adults</td>
</tr>
<tr>
<td>Poster Session 8 Oral Health Related Quality of Life / Health Services Research</td>
</tr>
<tr>
<td>Next Year’s EADPH Meeting</td>
</tr>
</tbody>
</table>
Welcome from the Presidents

We welcome you to the combined 18th Annual EADPH and CECDO Autumn meeting in Malta. It has been a great pleasure planning all aspects of the meeting and we hope that you will enjoy what promises to be an exciting series of presentations by renowned speakers, busy Special Interest Group meetings and poster sessions, all held in the friendly setting of the Westin Dragonara Resort. It is the first time that the EADPH and the CECDO have held a combined meeting. Both share a keen interest in Public and Dental Public Health and have been working closely together with the Association for Dental education in Europe (ADEE) and the European Dental Health Foundation, within the Platform for Better Oral Health in Europe. We hope that this conference will be another milestone towards the integration of Oral health policies in general health policies.

We hope that the social events will be memorable. For many, if not most, of you, it may be the first time that you have visited Malta. The island has a unique history that reflects its position in the very middle of the Mediterranean. Over the centuries it has seen many invaders from Europe and Africa and each has contributed to the architecture and culture of the island.

The opening reception will take place in the Pavilion Suite at the Westin Dragonara Resort overlooking the Mediterranean Sea and the annual dinner at the exclusive Casino Maltese, Valletta, originally used as the treasury of the Knights of St John and which still retains most of its 16th century features.

Apart from the scientific and social events, during the meeting, we hope you will all take the opportunity to enjoy Malta’s many attractions. It has a wonderful climate and because of its small size nowhere is more than 60 minutes travel.

Finally, we would like to thank the meeting’s sponsors: Colgate/GABA (EADPH’s gold sponsor) for sponsoring travel awards, the GABA lecturer and the pre-conference Research Workshop, the Borrow Foundation for enabling many young dentists from Central and Eastern Europe to be members of the EADPH, to compete for travel awards and for sponsoring the Borrow lecture, GSK for sponsoring the rental of the Audio visual equipment and contributing to the delegate package, DeCare for sponsoring in part the special interest working groups, Proctor and Gamble for sponsoring the Dental Public Health Education workshop and Henry Schien for part sponsoring the welcome reception. Without the generosity of all these sponsors the meeting could not have been held.

A special thanks also goes to Air Malta, Malta Tourism Authority and the University of Malta for their support.

Paula Vassallo
President CECDO

Kenneth Eaton
President EADPH
Sponsors

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

The Borrow Foundation
Colgate/Gaba
DeCare Dental
GlaxoSmithKline (GSK)
Henry Schein
Procter & Gamble (P&G)

A special thanks to:

Air Malta
Malta Tourism Authority
University of Malta

Thank you
Thursday 14th November
1.00pm Registration EADPH and Poster viewing

Oral Health – General Health: The Link
Chair: Prof Kenneth Eaton, President, EADPH
2.00pm Opening Ceremony and Welcome by the Presidents
2.30pm An overview of the epidemiological links between oral and general health
Dr George Tsakos, University College London
3.00pm Special Interest Groups with coffee
  Caries Epidemiology and Prevention (Dragonara Point Ballroom)
  Chairs: Klaus Pieper, Andreas Schulte and Nigel Pitts
  Gerodontology (Carthaginian I)
  Chairs: Jacques vanobbergen and Luc De Visschere
  Periodontal Epidemiology (Phoenician)
  Chair: Kenneth Eaton
  Prevention of Oral cancer (Castilian I)
  Chairs: Katrin Hertrampf and Colwyn Jones
  Tooth Surface Loss/ Erosion (Castillian II)
  Chair: Carolina Ganss
  Quality of life (Carthaginian II)
  Chair: George Tsakos
  Dental Public Health Education (Castillian III)
  Chair: Jenny Gallagher
5.00pm EADPH Annual General Meeting
7.30pm Welcome Reception at the Pavillion Suite, Westin Dragonara, St Julian’s

Friday 15th November 2013
Oral Health – General health: The Link
Chair: Prof Corrado Paganelli, President Elect, CECDO
9.00am Welcome by Co-Presidents
9.10am Public Health issues in Gerodontology
Dr Martin Schimmel, University of Geneva
Colgate/GABA Lecture
9.55am Dental Erosion – an indicator of Health and Dietary Habits
Dr Gabriella Gatt, University of Malta
10.20am Orthodontics – A Public Health perspective
Dr Kevin Mulfigan, University of Malta
10.40am The management of mandibular edentulism – A cost effective approach for a better quality of life
Prof Nikolai Attard, University of Malta
11.00am Coffee and Poster Viewing
11.30am Diabetes and Periodontal Health: A Two-way relationship
Dr Francesco D’Aiuto, University College London
12.15pm  The mouth the mirror of the body
         Prof George Camilleri, University of Malta

1.00pm  Lunch and poster viewing

Friday 15th November 2013 CECDO (Phoenician)

2.00pm  CECDO workshop
3.15pm  Coffee breaks
3.45pm  CECDO workshop

Friday 15th November 2013 EADPH

Learning from one another
2.00pm  Poster abstracts and Discussion I
3.15pm  Coffee
3.30pm  Poster abstracts and Discussion II
4.30pm  Presentation of Poster awards and travel grants
6.00pm  Tour of Valletta (Bus pickup from Hotel)
7.30pm  Gala Dinner at the Casino Maltese, Valletta

Saturday 16th November 2013

Practical and Political Perspectives
Chair: Dr George Tsakos, Vice President EADPH
9.00am  Working Groups – Plenary feedback
9.30am  Oral Health – General Health: A common risk factor approach
         Prof Aubrey Sheiham, University College London
         The Borrow Lecture
10.15am Oral Health - General Health: A European perspective
         Mr Martin Seychell, DG Sanco, European Commission
10.45am  Coffee Break
11.15am  Alliance for a cavity free future in Europe
         Prof Nigel Pitts, King’s College London
11.25am  Putting the mouth back in the body
         Prof Nairn Wilson, King’s College London
11.50am  Examples of integrated practical approaches from Chief Dental Officers
         Dr Anne Nordblad, CDO Finland
         Dr Lene Vilstrup, CDO Denmark
         Mag Gabriele Sax, CDO Austria
12.15pm  Women’s Oral Health – An overview
         Dr Paula Vassallo, Superintendence of Public Health, Malta
12.35pm  Men’s Oral Health – An overview
         Dr Nigel Carter, Chief Executive, International Dental Health Foundation
12.50pm  Closing ceremony
1.00pm  Conference close
Conference Site Map
An overview of the epidemiological links between oral and general health

The debate about the links between oral and general health is not new. Indeed, it is over a century since the theory of focal sepsis has linked oral sepsis and dental extractions with endocarditis. In more recent years, there has been a growing body of literature linking oral health, mostly tooth loss and periodontal disease, with different health conditions among adults, particularly those at middle and older ages. This presentation reviews the relevant evidence from both large scale epidemiological surveys and also more narrowly focused clinical studies. In general, these studies provide evidence (though, of variable strength) about an association between oral conditions and general health. Furthermore, in many cases the associations are not fully explained by adjusting for the well-known demographic and behavioural risk factors, such as age and smoking, and this has implications for research and practice. First, it has raised the plausible hypothesis of a potentially causal relationship, thereby suggesting that alleviating oral problems may result in better general health. However, the evidence on a direct causal link between oral and general health is still unconvincing, therefore future research could (and should) address this important question. Second, it is also recognised that epidemiology provides crucial and rather strong evidence about the common social distribution of oral and general health conditions. In that respect, emphasis on upstream public health interventions addressing the social determinants of health is an important and practical implication of the epidemiological links between oral and general health.
Dr Martin Schimmel
Senior Lecturer
Department of Gerodontology
University of Geneva

Martin Schimmel works as a Senior Lecturer at the Department for Gerodontology and Removable Prosthodontics at the University of Geneva (chair Prof F. Müller) since 2006.

He was born in Arnstadt (GDR) and graduated from the University of Mainz's dental school (Germany) in 1999, where he obtained the degree Dr med dent in 2000. Until 2003 he was employed as research assistant at the Department for Prosthodontics and Biomaterials at the University of Leipzig (Germany). Subsequently he worked in private practice in Germany and the UK. Since 2006 his main academic interest concerns removable Prosthodontics, Oral Physiology, Gerodontology and Palliative Care. Martin Schimmel obtained the degree MAS Oral Biol from the University of Geneva in 2010 and was nominated as privat-docent of the Medical Faculty, University of Geneva in 2012 for his thesis “Oro-facial impairment in stroke patients”. He serves as the president of the scientific committee of the Swiss Dental Society for Disabled and Elderly Persons (SGZBB) and on the board of the Geriatric Oral Research Group of the IADR.

Colgate / GABA lecture
Public Health issues in Gerodontology

With the world’s population ageing, the challenges to the dental profession in coming years will be greater in providing oral care to the older age groups. Not only will elderly adults have retained more teeth, their expectations will be greater at a time in their lives when their adaptability and general health will be increasingly challenged and diminished. Those charged with oral care will need to be technically skilled as well as empathetic practitioners whose role will be not only in maintaining oral health. Considerations involving general health and wellbeing are increasingly important especially for patients in long term care facilities. Particularly bedridden patients with unfavourable general health are at risk to develop aspiration pneumonia which may also originate from dental biofilm. Thus it seems to discuss the under- and postgraduate training programs, the barriers for dental care and to take a glance of the political perspective of oral health care for the frail and elderly in the shadow of the current financial crisis.
Dr Gabriella Gatt  
Assistant Lecturer  
University of Malta

Dr. Gabriella Gatt graduated as a dental surgeon from the University of Malta in 1992 and then went on to read for a Masters in Paediatric Dentistry at The Eastman Dental Hospital, University College London which she graduated from in 1999. Dr. Gatt is a full time assistant lecturer in Paediatric Dentistry at the University of Malta where she is reading for a PhD. She also carries out entirely paediatric sessions at The Dental and Implantology Unit - St. James' Hospital, Sliema.

Dental erosion – An Indicator of Health and Dietary Habits

Dental erosion has a multifactorial aetiology linked to dietary habits and lifestyle patterns.

A recent study shows how signs of dental erosion are found to be present in 29% of European Adults. Other studies have recorded a prevalence of up to 50% in two to five year old children and up to 100% in nine to seventeen year old children and adolescents. Dental erosion, however, is not yet in the mainstream of public understanding and its significance is often dismissed. It is often asymptomatic, subtle, with few visual cues and therefore may result in scepticism on behalf of the patient or parent who is unfamiliar with the process.

Left uncontrolled, the individual will proceed to experience further tooth softening and surface loss, sensitivity, over closure and poor aesthetics. This in turn shall lead to the need for preventive and restorative treatment adding to the family and government's public health burden.
Dr Kevin Mulligan
Head of Department, Faculty of Dental Surgery
University of Malta

Dr Kevin Mulligan graduated as a dental surgeon from the University of Malta in 1995. After 2 years working in the hospital service in Malta, he left for the United Kingdom, where he worked in a number of UK hospital trusts in oral and maxillofacial surgery departments during which he obtained the Fellowship in Dental Surgery from the Royal College of Surgeons of England. Following this he embarked on a specialist training program in Orthodontics at the Royal London Hospital and obtained an MSc and Membership in Orthodontics degrees in 2002. He then returned to Malta as a Consultant Orthodontist in the Ministry for Health. He is Deputy Dean and Head of Department of the Faculty of Dental Surgery at the University of Malta and is currently reading for a PhD degree with the University of Malta. He is also director of the postgraduate training course in Orthodontics held jointly with King’s College, London.

Orthodontics – A Public Health Perspective

Orthodontics is claimed to be the oldest dental specialty concerned with the correction of abnormal relationships of the dental arches and their supporting structures, and is one of two dental specialties that are officially recognised throughout the entire European Union.

To this effect it is available in virtually all EU countries within the publicly-funded health services at various levels of funding and with varying levels of treatment “free” at the point of delivery. It is well known that the costs associated with a typical course of fixed orthodontics are on the high side for several reasons including inherent costs of materials and the duration of treatment. This has given rise to questions regarding the possible health benefits of orthodontic treatment by health authorities as well as to whether these health benefits should be funded by the taxpayer or alternatively be within the domain of private dental services.

This presentation will aim to discover the reasons for seeking orthodontic treatment as well as the benefits and risks associated with treatment and cost implications. The place of orthodontics within the larger framework of other specialties shall also be touched upon. Finally the role of orthodontics in the training of the specialists of tomorrow will be highlighted.
The management of mandibular edentulism- A cost effective approach for a better quality of life

Epidemiological research shows that the proportional decrease of edentulism observed in different populations will not result in an actual decrease in the number of edentulous patients due to population growth alongside an increase in the longevity of seniors. Furthermore edentulism is associated with regional, racial, and socioeconomic differences. Therefore oral rehabilitation of edentulous patients will remain a reality in the foreseeable future, particularly in the disadvantaged segments of any population.

The advent of the osseointegration technique has successfully addressed the shortcomings of complete denture therapy in prosthetically maladaptive edentulous patients. Despite the fact that osseointegration has been clearly established as a therapeutic endeavor in clinical practice, there is still a dearth of information pertaining to patient mediated concerns. It is recognized that irrespective of the prosthetic plan, maintenance will be an ongoing concern and consequently research investigating the maintenance and associated economic burden with alternative treatment options is appropriate. A clear understanding of the alternative implant treatments for edentulous patients will allow both the individual patient and society at large to plan and subsidize cheaper but clinically effective treatments. This presentation will look at the alternative treatment options currently available, discuss the knowledge available and address emerging trends in the management of mandibular edentulism.
Dr Francesco D’Aiuto
Clinical Senior Lecturer
Periodontology Unit
Eastman Dental Institute

Francesco D’Aiuto qualified with DMD honour’s degree from the University of Naples in 1997. He attended a number of post-graduate training courses in periodontology in Italy and Sweden completing his specialty program (MClindent) at UCL, London in 2008. His research career started with a Clinical research fellowship from the Italian Society of Periodontology (2000) followed by a PhD in clinical periodontology. He was received a number of awards including the AAP clinical Research Award (2005), Antony Rizzo Young Investigator Award in (2009), Innovators in Diabetes Award from the UK Charity Diabetes UK (2012) and a Clinical Senior Lectureship from the Department of Health in UK. He currently works as HEFCE Clinical Senior Lecturer/Honorary Consultant at the Periodontology Unit of the UCL Eastman Dental Institute. His research focus is on the association between periodontal diseases and systemic diseases including cardiovascular diseases and diabetes.

Diabetes and Periodontal Health: A Two-way relationship

Diabetes mellitus (DM) and periodontitis (PD) both affect millions of people worldwide, many of whom have both diseases concurrently. Epidemiologic data on DM and PD suggest that patients with poor glycaemic control are at a greater risk for the development of infections than patients without diabetes. Hyperglycaemia and subsequent insulin resistance are the main mechanisms behind this association. PD is also a source of chronic systemic inflammation. Our group has recently shown that successful treatment of periodontitis results in a substantial reduction of systemic inflammatory markers and improved vascular function. There is also evidence suggesting that periodontal infection adversely affects glycaemic control in diabetes, although this has been less extensively studied. Current evidence suggests that insulin resistance might be exacerbated by a state of chronic inflammation as that secondary to chronic infections such as PD. This presentation will review all the clinical evidence on the association and critically discuss the possible mechanisms focusing on the role of systemic inflammation. In conclusion our group experience on this association will be presented and the data suggests a possible positive association between PD and impaired metabolic control in DM type 2 patients. Understanding these associations will enable dental and health care providers to gain further insight into the common features that DM and PD share.
**The mouth the mirror of the body**

The oral cavity has been utilised as an indicator of systemic disorders for a long time. The role of the dental surgeon in early recognition of alterations in the oral cavity attributed to systemic conditions is an important function of the clinical examination and diagnosis. These features may be reflected in the teeth and soft tissues which manifest in a small number of clinical changes.

The Public health dental surgeon has a role to play in this regard, (1) in the academic aspect of public health and the crucial part in epidemiological studies, (2) as a member of the general public health team with special expertise in oral conditions and (3) the socio-political role in advising and implementing Government policy.

The public health officer has to keep abreast of the ever changing public health problems and be on the lookout for new developments, such as possible iatrogenic disorders including the amalgam question, infective disorders including HIV/AIDS, and potential markers for oral cancer with their possible application in diagnostic surveys.
The Borrow Lecture: 

Although the common risk factor approach (CRFA) is mentioned in many reports, the concepts have not been rigorously applied. Moreover, the approach adopted by most dentists and dental associations have ignored the CRFA and hardly changed from fluoridating the mouth. Fluoride is considered the main solution to the caries problem. Policies to control sugars and the determinants of sugars consumption are ignored. Consequently, as sugars are the only cause of caries, there is a continuous increase in caries with age. To illustrate that continuous increase in caries, this presentation will first deal with the fact that despite the decrease in DMFT in children, the DMFT increases year by year, and most dental caries occurs in adults. That continuous increase in DMF suggests the profession is not controlling the main known cause of caries and tooth loss - sugars, and that future strategies need to be markedly different and focused on the proximal and distal determinants of caries. The failure to halt the increase in DMF with age is due to the lack of concerted integrated policies to reduce sugars consumption. Unless more attention is paid to sugars, the current policies are palliative. The second part of the presentation will suggest that although there are associations between oral health and general health, the aspects of general health definitely linked with oral health are largely ignored. Those largely ignored strong links will be highlighted as they should have more salience with policy makers than the unquantified associations, such as those between periodontal disease and heart disease. The third part of the presentation will deal with the application of the CRFA. The common risk factor approach and the risk factor, sugars, must be used to stem the increase in caries with increasing age in all populations. Unless there is change in strategy, caries rates will continue to increase with increasing age and will continue to be a major NCD for the remainder of this century. The dental profession should build strong alliances with groups concerned about NCDs and adopt an integrated common risk factor strategy on reducing sugars consumption to reduce caries and other NCDs such as obesity. Dentists should join action on sugar groups to lobby for reductions in sugars consumption and develop and implement guidelines on sugars in nurseries, schools, and institutions. A sugars tax on sugar-sweetened beverages (SSBs) should be considered.
Mr Martin Seychell  
Deputy Director General for Health and Consumer Affairs  
European Commission

A graduate in chemistry and pharmaceutical technology, Mr. Seychell specialized in Chemical analysis. He has held important positions on several government boards and commissions in Malta, including the Food Safety Commission and the Pesticides Board.

Mr. Seychell occupied the post of Head of Directorate at the Malta Standards Authority between 2001 and 2006. He has been responsible for the implementation of a number of EU directives in the areas of risk assessment, food safety, chemicals and cosmetic products legislation, and has actively participated in negotiations on major technical proposals such as the new chemicals legislation, REACH, and in screening processes in the areas of free movement of goods, environment and agriculture during the process leading to Malta’s accession to the EU.

He held the post of Director of Environment in Malta between 2006 and 2011. As Director, he was responsible for a broad range of functions arising from the Maltese Environment Protection Act. He was appointed Deputy Director General for Health and Consumers at the European Commission in March 2011.
Professor Nigel Pitts
Director of the Innovation and Translation Centre
King’s College London

At King’s College London Dental Institute, Professor Nigel Pitts FRSE is Director of the Innovation and Translation Centre for the Dental Institute and Professor of Dental Health. He is also an Honorary Consultant in Dental Public Health to Guy’s and St Thomas’ NHS Foundation Trust. Prof Pitts graduated in Dentistry from the University of London, moved to the University of Hong Kong to help set up a new Dental School in the 1980s and returned to the UK to take up the Directorship of the Dental Health Services Research Unit at the University of Dundee (where he also served as Dean of Dentistry and Director of the Centre for Clinical Innovations). He returned to London at the start of 2013. Professor Pitts has been awarded international research prizes from: the FDI World Dental Federation, the British Dental Association Research Foundation, the International Association for Dental Research (two Distinguished Scientist Awards) as well as from the European Organization for Caries Research (ORCA –where he is a Past President). He is also Past President of BASCD - the British Association for the Study of Community Dentistry and of EADPH – the European Association for Dental Public Health. He has assembled a portfolio of research and commercialisation grants of over £30 million, has over 200 peer-reviewed publications as well as 93 other published communications to date.

The Alliance for a Cavity Free Future (ACFF) in Europe

The aim of this presentation is to give an update on the progress of the Alliance for a Cavity Free Future (ACFF) and explain the plans and opportunities for the recently launched European Chapter. The objectives are to provide an overview of the Global Alliance for a Cavity Free Future (ACFF), - To allow attendees to understand how the European Chapter of ACFF is developing and how it can work with a range of stakeholders and organisations to meet the ACFF Goals - To allow attendees to appreciate recent and related progress with the development and implementation of “ICCMS” (the International Caries Classification and Management System).

The Alliance for a Cavity-Free Future (ACFF) is a worldwide group of experts and Networked “Chapters” who have joined together to promote integrated clinical and public health action in order to stop caries initiation and progression in order to move towards a Cavity-Free Future for all age groups. Overall, the Alliance believes that global (and European) collaborative action is needed to challenge leaders and other regional and local stakeholders to learn the importance of caries as a disease continuum and to participate in action toward the delivery of comprehensive caries prevention and management that can positively influence the continuing problem of caries.

References
Professor Nairn Wilson
Honorary Professor
King’s College London

Nairn Wilson is honorary Professor of Dentistry at King’s College London, where he was Professor of Restorative Dentistry and Dean and Head of the College's internationally renowned Dental Institute between 2001 and 2012, and Deputy Vice Principal (Health) between 2009 and 2012. Nairn Wilson’s many other positions have included Editor of the Journal of Dentistry (1986-2000), President of the General Dental Council (1999-2003) and Co-chair of the Forum of European Heads and Deans of Dental Schools (2007-2012). His interests and special expertise encompass healthcare regulation, international trends in dental education, and future developments in the clinical practice of dentistry. His latest award was the 2013 Dentistry Lifetime Contribution Award.

Putting the mouth back in the body

Given oral and systemic disease associations, increasing dental team involvement in health education and behaviour change interventions, and the shift to patient centred, preventatively orientated care, dentistry, while maintaining its independence and identity, is moving to a medically orientated model of patient management. Much remains to be done to complete the transition to new ways of working; for example, in the development of effective multidisciplinary, shared-care approaches to the management of those with special needs, chronic conditions and susceptibility to progressive debilitating disease. Exemplars of good practice in multidisciplinary, shared-care, with dental teams playing a major role in the detection and management of patients with, or at risk of significant disease destined to generate growing pressures on healthcare systems, should be used as a platform on which to begin to develop innovative approaches to holistic healthcare provision. An example of such an approach is a ‘total health’ programme being developed in the UK. Concurrent work to encourage pharmacists to better understand the prevention and management of oral and dental conditions is hoped to herald new collaborative working between dental practices and pharmacies, offering important benefits to patients. With the anticipated shift from mechanistic – to biological treatments in establishing and maintaining oral healthcare, and dentists becoming as much physicians as surgeons, the opportunity to ‘put the mouth back in the body’ in general healthcare planning and provision should not be lost. At one and the same time, medicine, including nursing should be challenged to increase awareness amongst practitioners of the nature and importance of oral and dental disease to help facilitate the development of multidisciplinary working with dental teams. The reasons and growing evidence for dentistry playing a much greater role in general healthcare provision are compelling in terms of potential health gains, efficiencies in healthcare provision and dentists applying their skills and knowledge to best possible advantage.
Dr Anne Nordblad
Ministerial Counsellor
Ministry of Social Affairs and Health
Finland

Anne Nordblad graduated as DDS in 1974. In 1986 she graduated as PHD in 1986. She is currently the Chief Dental Officer for the Ministry of Social Affairs and Health in Finland. In 2007 she was appointed Ministerial Counsellor for oral Health Affairs.

She has had numerous positions of trust and was recently the vice-chair of the working group on oral health care service structure within the Ministry of Social Affairs and Health

She has been consulting professor in oral health care since 1999. She has about 100 publications, scientific reports, articles and manuals in public oral health care services and preventive methods.

Quality recommendation aiming to guarantee high-quality ageing and improve services - oral health integrated

Together with the Association of Finnish Local and Regional Authorities, the Ministry of Social Affairs and Health has issued a quality recommendation, which strives to guarantee high-quality ageing and effective services for those older people in need of them. To integrate better oral health and services for older people a network project has been established to prepare a quality recommendation for oral health. The quality recommendation is one in the set of recommendations issued by the Ministry of Social Affairs and Health to ensure good aging.

The primary goal of the set of recommendations is to assist municipal policy-makers and leaders in the development and evaluation of services including oral health services for the older population. The producers of social and health services, professionals in the field and third sector actors can also utilize the recommendation in their own activities.

Local authorities must draw up a plan to promote the wellbeing and health of the older population and to develop services for them. The plan must assess the state of wellbeing, explore needs, risks and objectives and define the necessary measures and responsibilities. In action oral care should be a part of all services. An assessment of oral care needs and treatment are needed. Oral care for older people provided in cooperation improves the quality of life.

FINLAND’S POPULATION

- Finland’s population was approximately 5.4 million in 2012.

- The biggest change in the demographic structure is ageing.

- The over-65s accounted for 13.5 per cent of the population in 1990. The percentage rose to 17.5 in 2010.

- A Finnish woman gives birth to 1.83 children on average, which is above the European average (2011).

- Life expectancy among Finns has increased by approximately 25 years in less than a century. Life expectancy is 76 years for men and 82 years for women.
Dr Lene Vilstrup
Chief Dental Officer
Danish Health and Medicines Authority
Denmark

Lene Vilstrup is Chief Dental Officer at the Danish Health and Medicines Authority, Department of disease prevention and local health services, and since 2006 senior advisor for the Danish Government in dentistry regarding national public oral health services, quality of oral health care and surveillance of oral disease. Lene is currently leader of national working groups regarding development of national clinical guidelines and improving national oral health care programs. Lene participated in international collaborative work in development of quality indicators of oral health care and is a member of the executive board of the Council of European Chief Dental Officers (CECDO). Lene has a scientific background in public health and community dentistry with special interests in oral health care systems, health economy, health sociology, oral health prevention, and epidemiology. Lene has performed epidemiological studies both national and international and has been lecturer and assistant professor at the School of Dentistry, University of Copenhagen.

Health promotion and disease prevention in Danish municipalities - examples of a local multidisciplinary approach

According to The Danish Health Care Act the municipalities are responsible for providing various public health care services including public general health prevention and public oral health care services for children and young people. Since general health and oral health are closely related and share common risk factors a multidisciplinary approach is important and necessary. The presentation will give some practical examples how different health professionals in the municipalities work closely together in general and oral health promotion and prevention in order to enhance healthy lifestyles and increase health for the children and young citizen.
Gabriele Sax has been working at the Austrian Health Institute since 1990. After completing her studies in applied computer sciences she has undergone further studies in public health and organisational development. She is responsible for the Austrian Oral Health Surveys (done since 1996 in all WHO age groups) and was therefore nominated as Chief Dental Officer for Austria. Since 2001 she is a member of the CECDO Executive Board.

**Examples of integrated practical approaches from Chief Dental Officers**

The Austrian preventive medical checkup as example of an integrated practical approach

In 2005 the programme of the preventive medical checkup (“Vorsorgeuntersuchung neu”) was changed. The idea was to integrate only screenings where there is evidence. A detailed handbook for the general physicians, who do the preventive medical checkups, was developed.

For the first time a “periodontal screening” was included. The presentation will describe the content of the screening as well as some first results of an evaluation.
Dr. Paula Vassallo received her B.Ch.D. degree in Dentistry from the University of Malta in 1992. She specialized in Dental Public Health, attaining the Diploma in Dental Public Health from the Royal College of Surgeons of England, and a Master of Science in Dental Public Health from the University College London. She also graduated as MBA from the Warwick Business School. In 2011 she was elected Fellow of the Faculty of Public Health of the Royal Colleges of Physicians of the United Kingdom.

Dr. Vassallo has been a practising dentist since 1993 and holds an appointment as Consultant in Dental Public Health with the Government of Malta. She is also lecturer and course co-ordinator in Preventive and Community Dentistry at the University of Malta. She was Chair of the Council of European Dentists’ Working Group for Oral Health which was responsible for guiding the development of CED policies related to oral health issues. Dr Vassallo is currently President of the Council of European Chief Dental Officers after having been elected as President elect of the Council in 2011. She is an active member of the Platform for better Oral Health in Europe.

**Woman’s Oral Health – An overview**

Women’s health has been defined as diseases or conditions that are unique to, more prevalent in or more serious in women; have distinct causes or manifest themselves differently in women; or have different outcomes or require different interventions than men. This definition encompasses oral diseases and conditions.

Women have special oral health needs. Hormonal changes have a strong influence on the oral cavity. Puberty, menstruation, pregnancy, menopause and use of contraceptive medications all influence women’s oral health.
As Chief Executive for the last sixteen years of the UK’s leading dental health promotion charity the British Dental Health Foundation and its global arm the International Dental Health Foundation, and a previous Chairman and long term trustee of the Charity, Dr Nigel Carter OBE has a strong interest and experience in holistic dental and public health and health promotion.

The Foundation’s major annual campaigns of National Smile Mouth and Mouth Cancer Action Month involve working with Health Departments of all four UK countries as well as representatives of major health, cancer, dental and medical organisations. The Foundation is an active member of the Platform for Better Oral Health in Europe and is working to extend its international reach by migrating its successful campaigns to new countries. The Foundation's definitive oral health website at www.dentalhealth.org is currently being translated into 8 major world languages.

As a trustee and Treasurer of the Royal Society for Public Health Dr Carter is involved in mainstream public health strategy.

He is an experienced broadcaster and media spokesman giving over 500 interviews per year.

In 2012 he was honoured with an OBE for Services to Dental and Oral Health.

**Men’s Oral Health – an overview**

A great deal has been said about men’s poor use of general medical services but men’s use of dental services has been virtually ignored, even though they are at greater risk of gum disease and mouth cancers than women.

This brief presentation will examine some of the disparities that exist between the oral health status and habits of men and women and propose a ten point plan as to how these disparities might be addressed.
# Poster Sessions

18th Annual Congress of the European Association of Dental Public Health. 14th to 16th November 2013, The Westin Dragonara Resort, St Julian’s, Malta.

**Poster presentations Friday 15th November 2013.**

<table>
<thead>
<tr>
<th>Group</th>
<th>Room</th>
<th>Chairperson</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Break</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Epidemiology I</td>
<td>Castillian I</td>
<td>Ivor Chestnutt</td>
<td>2242</td>
<td>2251</td>
<td>2253</td>
<td>2299</td>
<td>2302</td>
<td>2314</td>
<td>2326</td>
<td>2335</td>
<td>2337</td>
<td>2353</td>
<td>2447</td>
<td></td>
</tr>
<tr>
<td>Oral Epidemiology II</td>
<td>Castillian II</td>
<td>Rebecca Harris</td>
<td>2269</td>
<td>2303</td>
<td>2317</td>
<td>2365</td>
<td>2460</td>
<td>2483</td>
<td>2318</td>
<td>2329</td>
<td>2357</td>
<td>2360</td>
<td>2450</td>
<td></td>
</tr>
<tr>
<td>Oral Health Promotion</td>
<td>Castillian III</td>
<td>Huda Yusuf</td>
<td>2230</td>
<td>2231</td>
<td>2232</td>
<td>2289</td>
<td>2332</td>
<td>2333</td>
<td>2334</td>
<td>2351</td>
<td>2401</td>
<td>2449</td>
<td>2341</td>
<td></td>
</tr>
<tr>
<td>Oral Health Services Research</td>
<td>Carthaginian I</td>
<td>Colwyn Jones</td>
<td>2241</td>
<td>2252</td>
<td>2338</td>
<td>2322</td>
<td>2323</td>
<td>2342</td>
<td>2493</td>
<td>2330</td>
<td>2361</td>
<td>2366</td>
<td>2435</td>
<td></td>
</tr>
<tr>
<td>Oral Epidemiology III</td>
<td>Castillian I</td>
<td>Andreas Schulte</td>
<td>2301</td>
<td>2313</td>
<td>2320</td>
<td>2325</td>
<td>2328</td>
<td>2368</td>
<td>2446</td>
<td>2448</td>
<td>2339</td>
<td>2350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobacco &amp; Others</td>
<td>Castillian II</td>
<td>Katrin Hertrampf</td>
<td>2363</td>
<td>2418</td>
<td>2306</td>
<td>2310</td>
<td>2345</td>
<td>2346</td>
<td>2347</td>
<td>2355</td>
<td>2364</td>
<td>2439</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Health Promotion: Adults</td>
<td>Castillian III</td>
<td>Roxana Oancea</td>
<td>2315</td>
<td>2336</td>
<td>2359</td>
<td>2477</td>
<td>2321</td>
<td>2372</td>
<td>2451</td>
<td>2371</td>
<td>2373</td>
<td>2343</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OHRQoL/Health Services Research</td>
<td>Carthaginian I</td>
<td>Ethel Vento Zahra</td>
<td>2319</td>
<td>2356</td>
<td>2362</td>
<td>2445</td>
<td>2344</td>
<td>2349</td>
<td>2348</td>
<td>2354</td>
<td>2370</td>
<td>2312</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ID: 2242, Presenter: Anastasia Rodionova,

**Salivary Tests for Caries Risk Assessment in Young Children without Oral Hygiene**

**Aim:** To study the results of salivary tests for caries risk assessment in young children without oral hygiene. **Method:** Sixty 12-23-month-old children who had never received oral hygiene were involved in the study. The study approved by the Regional Ethics Committee was conducted in Volgograd Pediatric Clinic in 2011. The written mothers informed consents were obtained. The children's saliva was analyzed to reveal buffer capacity (BC), colony counts of Streptococcus Mutans (SMs), Lactobacilli (LB) and yeasts (Candida albicans, CA) using diagnostic tests (Orion Diagnostica, Finland). Saliva microcrystallization (MC) was assessed using 0-5 points scale according to the open drop method± (Belskaya L.V. et al., 2011). Low (≤4.0) BC, high level (>10000CFU/ml) of SMs, LB and CA, low degree (0-2 points) of saliva microcrystallization were considered caries risk factors (CRF). Statistical analysis was performed using STATISTICA-6; mean and 95% confidence interval (CI) were calculated. **Results:** 22 out of 60 children (36.6%, CI 30.4-42.8%) had low BC, 9 (15.0%, CI 10.4-19.6%) children had high level of SMs, 4 (6.6%, CI 3.4-9.8%) children had high level of LB, 12 (20.0%, CI 14.9-25.1%) children had high level of CA, and 50 (83.3%, CI 78.5-88.1%) children had low degree of saliva microcrystallization. Six (10.0%, CI 6.2-13.8%) children did not have any mentioned above CRF, 10 (31.7%, CI 25.7-37.7%) children had only one CRF, 29 (48.3%, CI 41.9-54.7%) children had two CRF, 4 (6.6%, CI 3.4-9.8%) children had three CRF, and 2 (3.4%, CI 1.1-5.7%) children had four CRF. None of the participants had all five CRF. **Conclusion:** Most children aged 12-23 months without oral hygiene had 0-2 caries risk factors assessed by the salivary tests. However, 10% children had 3-4 caries risk factors and were identified as children with high caries risk.

**Acknowledgements:** the authors would like to acknowledge the personnel of Volgograd Paediatric Clinic for their help. Sources of funding: Volgograd State Medical University.

**Authors:**
RODIONOVA A.S. (*), YANOVS'KAYA M.L., MASLAK
Department of Paediatric Dentistry, Volgograd State Medical University, Volgograd, Russia

---

ID: 2251, Presenter: Basak Durmus

**Possible Medical Aetiological Factors and Characteristics of Molar Incisor Hypomineralisation in a Group of Turkish Children**

Possible Medical Aetiological Factors and Characteristics of Molar Incisor Hypomineralisation in a Group of Turkish Children **Aim:** To determine the clinical characteristics and possible medical causes of molar incisor hypomineralisation (MIH) in a group of Turkish children. **Method:** A total of 228 children aged 7–14 years were examined in the Department of Paediatric Dentistry Dental School of Marmara University between April and August 2011. Prenatal and postnatal medical data were recorded using a questionnaire. Children whose parents had provided written informed consent were included in the MIH group. **Results:** MIH was observed in 54 (24%) children, 41 (76%) of whom had only demarcated opacities (grade 1). Eight (15%) children had atypical
restorations (grade 2), and at least one post-eruptive breakdown (grade 3) was observed in five (9%) children. MIH affected molars (55%) more frequently than incisors (45%; P < 0.001). Prenatal bronchitis and hypertension were frequent in the MIH group. No significant difference in medical history during the first 3 years of life was observed between the MIH and non-MIH groups, except prolonged medicament consumption and asthma in the MIH group (P < 0.05). Conclusion: MIH occurred in 24% of children aged 7–14 years attending a paediatric dental department in Istanbul. The aetiology of this condition remains unclear.

Authors:
DURMUS B. (*), ABBASOGLU Z., PEKER S., KARGUL B.
Dept.of Paediatric Dentistry, Dental School, Marmara University, Istanbul, Turkey

ID: 2253, Presenter: Mirjana Djurickovic

Oral health in 6 year old children in Montenegro

The aim of this study was to establish the mean dmft, SiC (Significant index of Caries) and presence of fissure sealants of 6-year-old children in Montenegro. Method: The sample frame used all children in Montenegro who were aged 6 years; children born in the year 2004 were included, and this study was done in 2010. A list of elementary schools was obtained from the Ministry of Education, where 15 schools were randomly selected. A 5% sample of children was randomly selected in the three regions of Montenegro (North, Middle, and South). After approval from the ethics committee, approval was received from principals of the randomly selected elementary schools. Informed parental consent was gained for every child. All chosen children from the sample were examined using the standard dental diagnostic equipment (plane dental mirror, standard CPITN periodontal probe), under artificial light on the dry teeth on the dental chair. The data collected were: dmft, SiC and presence of sealants. One dental team examined all subject in line with WHO methodology and criteria (Intra examiner kappa score = 0.94). Results: The sample consisted of a total of 444 children. In the Northern regions of Montenegro (Berane, Bijelo Polje, Kolašin) 139 children were examined, in the middle regions (Podgorica, Cetinje, Nikšić, Danilovgrad) 203 children were examined, and finally in the Southern Region (Bar, Budva, Kotor) 102 children were examined. The number of male and female children was approximately the same. The average dmft of 6-year-olds in Montenegro was 5.4 teeth and 84% (373) of the children from this sample had dental caries experience. The total number of deciduous teeth with decay experience was 2407. A total of 92.6% (2230) had untreated caries, the percentage filled was 5.7% (N=139) and missing teeth was 1.5% (N=38). The SiC Index was 8.3 teeth and 8.8% (39) had at least one tooth with a fissure sealant. Conclusion: We conclude that for children aged 6 in Montenegro dental health is poor and efforts must be made to improve. The importance of modern evidence-based preventative measures and programs should be applied through the system of primary oral care to promote oral health.

Authors:
DJURICKOVIC M. (*), MATIJEVIC S., ANDJELIC J.
Faculty of Medicine, Podgorica, Montenegro

ID: 2299, Presenter: Riina Runnel

The caries experience in two different age groups in south-eastern Estonia

The mean DMFT in Estonia is close to the European average (2.7 at the age 12, by WHO). In areas with lower level of fluoride in water, caries experience is significantly higher. The aim of the study was to report caries experience in the mixed dentition in two different age groups in the same area with low level of fluoride (0-0.4 mg/L) in drinking water. Methods: 14% (N = 16) of the municipal schools from south-eastern Estonia were randomly selected. When the school agreed to participate all children were included (written informed consent from parents was requested). The Research Ethics Committee of the University of Tartu approved the study (166/T-7). The clinical
examination included the 1st and 2nd (mean age 8.3 years; SD=0.6) and 4th and 5th (mean age 10.8; SD=0.6) grade pupils (N=647) from 16 the schools. Caries was recorded by ICDAS code and converted to the DMFT/dmft index. **Results:** On the day of the examination 7% (N = 48) of children were absent. The mean DMFT indices in younger group were 1.0(SD=1.6)/5.9 (SD=3.4) (permanent/mixed dentition). The same indices among the older group were 2.5 (2.2)/3.7(2.5). The mean number of enamel caries scores (ICDAS codes 1-3) was 1.9 (1.7)/3.8(2.9) teeth in the younger group and 4.0(3.0)/4.4(3.1) in older children. The mean number of teeth with dentinal caries (ICDAS codes 4-6) was detected in 0.2(0.7)/1.9(2.3) of the younger children. The same values for older children were 0.5(0.9)/0.8(1.3). The mean FT/ft was 0.7(1.2)/4.1(3.0) in younger group. The mean indices of fillings in older grades were 2.1(2.1)/3.0(2.4). **Conclusions:** In south eastern Estonia the caries indices are rapidly increasing during the eruption stage of the first permanent molars – one per child affected every year. The DMFT index in the area where the fluoride level in drinking water is extremely low is predictably higher than the average reported for the country.

**Acknowledgements:** Supported by Cargill R&D Center Europe (Vilvorde, Belgium), ClinicalTrials.gov Identifier: NCT01062633

**Authors:**
RUNNEL R. (*)
1 Department of Stomatology, Faculty of Medicine, University of Tartu, Estonia
HONKALA E.
2 Institute of Dentistry, University of Turku, Finland
HONKALA S.
3 Faculty of Dentistry, Kuwait University, Kuwait
OLAK J.
SAAG M.

**ID: 2302, Presenter: Mikael Manrikyan**

**Children’s dental health in a district of Yerevan, Armenia.**

**Aim:** to evaluate children’s dental health in a district of Yerevan, Armenia and factors associated with their dental health status. **Methods:** This epidemiological survey of 12- and 15 years-old, used 200 pupils, according to WHO criteria and the WHO “Oral Health Assessment Form for Children” cards (2013). The dental caries prevalence (DMF), periodontal diseases’ prevalence according to the bleeding gums and OHI-S were determined. 100 adolescents in each group were questioned using the „Oral health questionnaire for children”. 12-year-olds, 38 girls (38%) and 62 boys (62 %) were examined, and for 15-year-olds, 56 girls (56%), and 44 boys (44%). Statistical processing was carried out using the Excel program to calculate prevalence, average values and standard deviation. **Results:** The permanent teeth dental caries prevalence of 12-year-olds was 86% with an average DMFT of 3.13 teeth, and poorer oral hygiene was observed among boys (OHI-S 1.62) than girls (OHI-S 1.49). Gum bleeding was observed among 38% of 12-year-old schoolchildren. 15- year-olds’ dental caries prevalence was 94% with a mean DMFT of 4.62 teeth. Boys oral hygiene was worse than girls (OHI-S 2.09 and 1.49, respectively). Bleeding gums were found in 48% of 15-year-olds. 51% of adolescents assessed their teeth as excellent and good, 44% - satisfactory, only 2% - poor, 58% are happy with the look of their teeth, only 3% are embarrassed to smile because of the appearance of their teeth. 39% of respondents experienced toothache in the past 12 months, 9% missed classes. 34% haven’t been to a dentist over the past year or don’t remember. Only 10% children keep to the recommended regime of toothbrushing of 2 times a day. 59% don’t brush their teeth regularly. 17% of children use fluoride toothpaste. 80% children eat fresh fruit daily and 54% of respondents eat sweets every day. **Conclusion:** Oral health in Yerevan (the capital of Armenia) is poor with high levels of tooth decay and bleeding gums. 95% of adolescents self-assess their dental health as excellent or satisfactory although 39% had experienced toothache in the previous 12 months. One third report not having attended a dentist for 12 months and only 10% report brushing twice daily.

**Authors:**
MANRIK cyan M.E. (*)
Yerevan State Medical University, Yerevan, Republic of Armenia
Association between mothers’ education level and caries experience in young children

**Aims:** Using data obtained in the Heidelberg Kindergarten Study, to evaluate whether education level of mothers has an influence on the caries experience of kindergarten children. **Methods:** The data of children who had been examined for the Heidelberg Kindergarten Study in 2010 and whose parents had completed a questionnaire were evaluated. For this cross-sectional study the ethic committee of the Heidelberg University had given approval. Caries diagnosis was based on visual examination by following the recommendations of WHO and AAPD so that dmft values and presence of severe early childhood caries (S-ECC) could be determined. The examinations had been performed by two dentists with large experience in paediatric dentistry. Their inter-rater agreement was very high (Kappa = 0.86). Chi square Tests and Mann-Whitney Tests were used and p-values <0.05 were regarded as statistically significant. **Results:** The data of 892 children aged 3 to 5 years could be included for this investigation: 701 children had mothers who had received education to professional level while 191 children had mothers without such an education. Key oral health values of the two groups differed significantly: proportion of caries-free children (83.3% vs. 65.4%; p<0.05), proportion of children with S-ECC (6.4% vs. 19.4%; p<0.05), and mean dmft value (0.50 vs. 1.48; p<0.05). Children of mothers with a professional level education were reported to benefit more often from using caries-preventive habits (i.e. early start of tooth-brushing, reduced use of nursing-bottles in bed, visiting a dentist for regular check-ups) than children having mothers without a professional education. **Conclusions:** These findings show that the education level of the mothers is strongly associated with the caries experience of their kindergarten children living in South-West Germany. German public health dentists should provide intensified preventive care in kindergartens with a high proportion of children with mothers without a professional level education. Furthermore, these dentists should try to reach these mothers soon after birth of their children to teach them about caries-preventive feeding and caring habits.

**Authors:** BISSAR A. (*), SCHULTE A.G. Department of Conservative Dentistry, University of Heidelberg, Heidelberg, Germany NIEKUSCH U Community Dental Health Service of the Rhein-Neckar Region Health Authority, Heidelberg, Germany

Dental caries experience in institutionalized disabled children in Moldova

**Aim:** This study explores the association of disabilities and oral health. The aim of the study was to compare and assess the caries experience in children with disabilities with healthy controls institutionalized children in Moldova. **Methods:** A case control study of children with disabilities was conducted between 2011 and 2012 at the Moldova State University of Medicine and Pharmacy „Nicolae Testemitanu”, Faculty of Dental Medicine. The study population comprised 2278 disabled children from 6-18-years age group, placed in specialized residential institutions. For comparison, 2296 healthy children were randomly selected from boarding schools for orphans or children deprived of parental care. Clinical data were collected on dental caries by three calibrated dentists according to the World Health Organization's index criteria. The following indices have been estimated: prevalence index (PI) of dental caries, dft, dfs, DMFT and DMFS index. The study was conducted in compliance with ethical requirements, obtaining the written consent of children's parents or legal custodians. SPSS© vs.16.0 was used for descriptive and inferential analysis using both parametric and non-parametric tests (p<0.05). **Results:** Significant differences were noted in the frequency of dental caries among subjects with disabilities and their healthy controls (p<0.001). Dental caries was present in 73.0±0.9% children from special schools as compared with 47.2±1.0% (t=12.9; p<0.001) from the control group. Mean DMFT (decayed, missing, filled teeth) values for special school children and healthy controls were 5.2±0.1 (Cl:5.0-5.2) and 3.7 ±0.1 (Cl:3.6-3.8), (t=11.9; p<0.001) respectively. The occurrence probability of dental caries in the group of children with disabilities is 3 times higher (OR=3.04 Cl95: 2.7-3.4) than children without disabilities. **Conclusions:** Dental care for the children with disabilities could be better harmonized within Moldova. Furthermore, specific dental care and dental treatment
strategies could be introduced in order to reduce caries prevalence and number of extracted teeth in persons with disabilities.

Acknowledgements: Supported by Moldavian Association of Stomatologists of the Republic of Moldova.

Authors: SPINEI A. (*), SPINEI I., BALTEANU O. State University of Medicine and Pharmacy “Nicolae Testemitanu”, Chisinau, Moldova

ID: 2335, Presenter: Irina Rugina

Factors influencing outcome of dental caries treatment in the Russian Federation

Currently many researchers study restorations survival and the factors that lead to failure. We aimed to evaluate tooth survival of restorations on different surfaces with various filling materials as well as to identify factors relevant for restoration longevity. Methods: This clinical-epidemiological study was organised by Moscow State University of Medicine and Dentistry and supported by the Russian Dental Association. It was conducted in 2007-2012. The study was approved by the University Ethics Committee. Thirty eight dentists in 19 clinics in different Russian regions participated. The main criterion for inclusion of a patient in the study was a need for tooth extraction, previous endodontic treatment and the ability to trace treatment stages of the particular tooth. Patients gave informed consent and 1296 from different Russian regions were included in the study. They were divided into age groups: 20 years-olds – 111 (8.6%) persons, 21-31-years-olds – 442(34%), 31-40 years – 612(47.2%), over 40-years-old – 131(10.1%). Results: The most common reasons for tooth extraction were destructions of the tooth crown (505, 33.5%) and exacerbation of apical chronic periodontitis (478, 31.7%). 781 (60.3%) carious lesions were Black`s class II, 325 (25.1%), 93 (7.2%), 63 (4.9%) and 18 (1.4%) – were Black’s class I, III, IV and V respectively. A total of 69.6% of teeth had endodontic treatment, 30.4% of teeth remained vital. The most common filling material was chemical-cured composite – 597 (46.1%), zinc-phosphate cements - 223 (17.21%) and light-curing composites 228 (17.59%). The teeth survival after caries treatment up to 3 years was recorded in 274 (21.1%) cases, 4-5 years – 296 (22.8%), 6-7 – 263 (20.3%), 8-10 – 223 (17.2%), more than 10 years – 240 (18.5%) cases. Tooth survival over 10 years was more often observed in cases of carious lesion localization on the occlusal tooth surfaces than on the mesio-occlusal and disto-occlusal surfaces. Conclusions: In this group of patients tooth survival after restorative treatment was on average 4-5 years. Survival was influenced by the cavity class and topography while filling material didn`t influence survival.

Authors: MALYY A., RUGINA I. (*), BOGOEVICH P., SAVINA A. Moscow State University of Medicine and Dentistry, Moscow, Russian Federation

ID: 2337, Presenter: Natalia Shakavets

A fluoride varnish program for early childhood caries prevention

Fluoride based caries preventive interventions are the most significant and widespread forms of caries control used globally. Fluoride varnish is the only high concentrated in-office caries preventive agent used with young children. The aim of the present study was to determine the efficacy of fluoride varnish (5% NaF, CavityShieldTM, 3M ESPE) applications to prevent early childhood caries. Methods: It was conducted as a two-year randomized, dental-examiner masked clinical trial. Initially 198 caries-free children (mean age 6.8 months) were enrolled in two paediatric clinics. All families received counselling, and children were randomized to the following groups: fluoride varnish twice/year (6A), fluoride varnish four times/year (6B) or no fluoride varnish (6C). Children were assessed clinically at baseline, 12 and 24 months after the initiation of the study. After two years one child dropped out. The caries experience of primary teeth was assessed
using the WHO (1997) diagnostic criteria at the d1-level with d(1)mft/d(1)mfs values. The results were analyzed statistically (ANOVA). Ethical approval was obtained. **Results:** At baseline all the children were caries-free. 76 children (38.4%) had no teeth. After one year caries prevalence was 13.5% in 6A, 11% in 6B and 20% in 6C (p>0.05). Caries experience amounted to 0.45 dmft/0.55 dmfs in 6A, 0.33/0.42 in 6B and 0.84/1.04 in 6C. After the two years caries prevalence increased to 37.8% in 6A, 28.8% in 6B and 44% in 6C. Caries experience was 1.66 dmft/2.53 dmfs in 6A, 1.1/1.49 in 6B and 2.94/3.72 in 6C (p<0.05). Children in groups A and B had a significantly lower number of decayed teeth when compared to group C (p=0.037; 0.001). There were no significantly differences between d(1)mft/d(1)mfs values in groups A and B. **Conclusions:** The results confirmed the effectiveness of fluoride varnish applications every 6 months for caries prevention.

**Authors:**
SHAKAVETS N. (*), TSERAKHAVA T., BELIK L., MEL NIKOVA E.
Department of Paediatric Dentistry, Belarusian State Medical University, Minsk, Belarus.

**ID: 2353, Presenter: Pavel Kuznetsov**

**Prevention of early enamel caries progression using ozone therapy**

The **aim** of this study was to evaluate the efficacy of a combination of ozone therapy and remineralising agents in the treatment of early carious enamel lesions. **Method:** 49 participants aged 12-18 years from randomly selected Moscow state schools took part in the study which was approved by the University Ethics Committee. The participants had 125 initial enamel caries lesions diagnosed by a single examiner using both vital staining with 2% methylene blue dye (a 10-point scale) and “DiagnoDent” (KaVo). Participants were randomly divided into 4 groups: 2 test and 2 control ones. In the test group I (11 children with 33 white spot lesions), early carious lesions were treated with ozone for 12 seconds using the «Coro» nozzle of the «Prozone» apparatus (W&H) followed by a Fluocal gel application (12500ppm fluoride); in the test group II (10 children with 31 white spot lesions) the ozone treatment and Tooth Mousse was applied. This regime of ozone was followed by application of fluoride or remineralising agent performed once a week for 7 weeks. In the control group III (15 children with 29 white spot lesions) Fluocal gel was applied to the early carious lesions; in the control group IV (13 children with 32 white spot lesions) Tooth Mousse was applied, no ozone treatment was done in both control groups III and IV. Oral examinations were performed at 7 weeks and 1 year after treatment. Analysis of variance of mean values (ANOVA) was used to measure differences distribution of the average number of initial enamel caries lesions between groups. The age of participants in the study and control groups was similar. **Results:** In the test group I 23 (70%) of white spot lesions showed no signs of staining by methylene blue after 7 weeks and 25 (76%) - after one year. In test group II where corresponding figures were 15 (48%),) and 16 (52%). In the control group III no staining of white spot lesions by methylene blue was detected in 18 subjects (62%) after 7 weeks of prevention, the corresponding figure in the control group IV was 12 (38%). At the one year examination in the control group III no staining of initial enamel lesions was observed in 19 (66%) lesions compared to the control group IV where corresponding figure was 8 (25%). «DiagnoDent» values were consistent with the results of vital staining in all groups. The average number of carious lesions comparing groups 1-3 and 2-4 showed statistically significant (p <0.05) or a more efficient effect of ozone in combination with remineralising agents. **Conclusions:** The combination of remineralising agents with ozone therapy showed greater prevention of early carious enamel lesion progression than without ozone after 7 weeks of treatment and after one year.

**Authors:**
P. KUZNETSOV (*), E.KOUZMINA, E KUZNETSOVA
Moscow State University of Medicine and Dentistry, Moscow, Russia
dmft in a Social Project in Brazil

The aim was to encourage attendance of children with high levels of decay at a dental clinic and record the dmft of children living in a deprived part of Brazil. Using dental students, the project encouraged promotion, prevention and education in oral health focusing on children in poverty.

Method: The research was undertaken on children aged 5 to 7 years that lived in vulnerable social conditions in Vitoria-Brazil in 2010. A convenience sample of 100 children was planned. The project had ethics approval from the School of Dentistry, Health and Environment College of Vitória Committee (Comitê Faculdades Integradas São Pedro-FAESA), and part of the Saltos Project. Consent was gained from the school director and children’s legal guardian by a signed consent form. The dmft was recorded by many examiners (a group of 25 students and 3 teachers) using WHO standards. Phase one of the approach between students and children was made through play activities (role play, puppets, music), in order to generate an environment to approach and present practical measures and daily oral care. The second phase was the examinations to record the dmft index. All of the children with decay experience were scheduled to attend the children’s dental clinic at the University for dental care.

Results: Among 100 children participants of the social project, 80 were examined. In the 80 children, only 10 were free of cavities (dmft=0) and 70 (87.5%) already had a history of at least one tooth with caries. The mean dmft index was 3.5 teeth.

Conclusions: The children in these low socio-economic circumstances had a higher prevalence of dmft than the goals established by the WHO (50% of children in this age group should have dmft=0). It is an urgent public health challenge to improve oral health in young Brazilian children that live with a diversity of social and personal risks caused by poverty.

Acknowledgements: The students performed this Project with total dedication, competence, care, creativity and concern with the social cause, especially dealing with children, who are harmless, with no blame for living in poverty. With this project, the children gained more knowledge about oral health and hygiene, which will contribute to their general health.

Authors:
RABELO T.L.(*), NETTO M.V.
FAESA School of Dentistry from Health and Environment College of Vitória - Brazil
ID: 2269, Presenter: Lina Stangvaltaite

Deep caries involvement of 18-year-olds in a county of Northern Norway

**Aim:** To record the prevalence of deep dental caries and its’ treatment in molars among 18-year-olds in Troms county, Northern Norway. **Methods:** The study was conducted in Spring 2012. All subjects born in 1993 and registered in Troms county Public Dental Health Care Service, with digital bitewing radiographs available were included in the sample. The final sample (n=1,876) comprised 95% of the entire age cohort registered in Troms county Public Dental Health Care Service. Deep involvement was recorded from the subjects’ last bitewing radiographs. The depth of the caries/restoration was assessed to reach the inner ¼ of the dentine, inter- and intra-observer kappa scores were k=0.62 and k=0.87, respectively. Root filled teeth and extractions were also counted as manifestations of deep involvement. Gender, urban/rural location, contributory medical history and mean time elapsed between bitewing examinations were recorded as background factors. Data was analysed using descriptive statistics and binary logistic regression analysis. Approval from the Regional Committee for Medical and Health Research Ethics in Northern Norway was obtained (2011/2492/REK Nord). **Results:** Out of 848 molars with deep involvement (comprising 3% from all 15008 molars analyzed), 38 (4%) had non-treated cavities, 592 (70%) had restorations, 117 (14%) had root fillings and 101 (12%) were extracted due to caries. Within 488 subjects (26%), at least one molar showed deep involvement. Having at least one molar with untreated deep caries (n=30, 1.6% of the subjects) was associated with male gender (OR = 2.9, 95% CI 1.2-7.2, p<0.05), while deep restorations (n= 404, 21.5% of the subjects) was associated with female gender (OR = 1.3, 95% CI 1.0-1.6, p<0.05). Ninety-five subjects (5.1%) had at least one root filled molar and 68 subjects (3.6%) had at least one extracted molar due to caries. Extractions were associated with contributory medical history (OR = 3.2, 95% CI 1.7-6.3, p<0.001) and rural location of the clinic (OR = 1.8, 95% CI 1.0-3.0, p<0.05). **Conclusions:** One fourth of the age cohort leaving free-of-charge dental care had at least one molar with deep involvement due to caries and in every third case, it had progressed to the most severe treatment modalities i.e. root filling or extraction. There is a need to improve the management of early and moderate carious lesions in order to avoid deep caries involvement. The management of deep caries involvement should be improved to keep more teeth vital.

**Authors:** STANGVALTAITE L.*, KUNDZINA R., ERIKSEN H.M., BOLSTAD N.L., KEROSUO E. Institute of Clinical Dentistry, Faculty of Health Sciences, University of Tromso, Norway

ID: 2303, Presenter: Alex D McMahon

Longitudinal progression of caries in Scottish children aged three to five-years

**Aims:** The aim of the study was to track changes in dental caries longitudinally from baseline at aged three- years old in nursery schools to the first year of primary education nearly two years later, and to determine if this differed by type of tooth and/or by socioeconomic status. Longitudinal follow-up is rare outside of clinical trials. **Methods:** The study children had participated in routine dental inspection programmes and the existing data from these inspections were analysed. The
data were part of a Scottish Government oral health monitoring system and no further ethical approval was required for their retrospective analysis. We linked the inspections from nursery schools (March-June 2008) with the subsequent ones in primary schools (November 2009-March 2010) in the same children to achieve a cohort study. d3mfs was calculated for each tooth separately, and then totalled for each child’s overall decay experience. The change from baseline in each metric was calculated (also d3mft). The primary endpoint was an increase in overall d3mfs from baseline. The Scottish Index of Multiple Deprivation (SIMD) was used, and analyses were by odds-ratio (OR) from Exact Logistic Regression. Results: It was possible to link and calculate SIMD for 494 children. Mean follow up was 1.8 years (SD 41 days). Mean d3mft/d3mfs was 0.9/2.2 at age3 and 2.1/6.0 at age5. The mean increase in d3mfs was 3.8 (SD 8.2). Overall 208 (42%) of children experienced an increase in d3mfs, ranging from 25% for the least deprived children to 47% for the most deprived children, OR=2.6(1.3,5.7), p=0.005. Progression of caries (worsening d3mfs) was not evident in the lower anterior teeth (0-1%), was 2-6% in the upper anteriors, and very high in both the upper posteriors (16-19%) and lower posteriors (18-23%). Social inequalities were seen in the children for whom progression was greatest in the upper first primary molars (OR=6.6 & 6.7). Conclusions: In the group studied worsening of obvious decay experience over time from the age of three-years was common and varied by type of tooth and socioeconomic status.

Acknowledgements: The data collection was funded by NHS Greater Glasgow and Clyde.

Authors:
MCMAHON A.D. (*), MACPHERSON L.M.D.
Community Oral Health, University of Glasgow Dental School, Scotland.
BLAIR Y
Oral Health Directorate, NHS Greater Glasgow and Clyde, Scotland.

ID: 2317, Presenter: Yulia Anopa

Economic Burden of Childhood Caries: Cost analysis of a national nursery toothbrushing programme

Aim: In a previous study we have shown that an improvement in the dental health of five-year-olds was associated with the uptake of nursery toothbrushing [1]. The aim of this study was to compare the cost of providing the Scotland-wide nursery toothbrushing programme with the associated National Health Service (NHS) cost savings from an improvement in dental health of five-year-old children: namely, cost savings through avoided dental extractions, fillings and potential treatments for decay. Methods: Estimates of the costs of the nursery toothbrushing programme in 2011/12 financial year were requested from the 14 Scottish Health Boards. Unit costs of a filled deciduous tooth, extracted and decayed tooth were calculated in 2009 GBP (£) using verifiable sources of information. The total costs associated with actual and anticipated dental treatments were estimated for the period from 1999/00 to 2009/10. These costs were calculated based on the unit costs above and using the data of the National Dental Inspection Programme (multiple cross-sectional dental epidemiology surveys, which included 62,419 five-year-old children, covering 11.0% to 23.2% of the relevant population in various years) and then extrapolated to the population level. Savings (avoided costs of dental treatments) were calculated for each of the subsequent years in comparison with the 2001/02 dental treatment costs, the year when the nursery toothbrushing programme was rolled-out nationally. Results: A novel methodology was developed to calculate unit costs of filled, missing and decayed teeth, based on treatment probabilities and available dental remuneration data. The estimated cost of the nursery toothbrushing programme in Scotland was £1,873,335 per year. The estimated cost of actual and anticipated dental treatments in the baseline year 2001/02 was £10,939,945, while in 2009/10 it was £5,145,962. In 2002/03 the costs of actual and anticipated dental treatments increased by £251,716 (2.3%). In the following years the costs decreased dramatically with the estimated savings ranging from £1,506,000 (13.8%) in 2003/04 to £5,793,983 (53.0%) in 2009/10 in comparison with the baseline. Conclusions: The NHS costs associated with the actual and anticipated dental treatments for five-year-old children decreased dramatically over time, with the findings suggesting that within three years the cost savings outweighed the costs of implementing the toothbrushing programme and by
eight years the savings were in excess of three times these costs. These savings were associated with the national roll-out of the nursery toothbrushing programme and an improvement in children’s oral health. 1. Macpherson, L.M., et al., National supervised toothbrushing program and dental decay in Scotland. J Dent Res, 2013. 92(2): p. 109-13.

Acknowledgements: Childsmile is funded by the Scottish Government. National Dental Inspection Programme is funded by the NHS and the Scottish Government.

Authors:
ANOPA Y. (*), MACPHERSON L.M.D., BALL G., McMAHON A.D., CONWAY D.I., McINTOSH E.
University of Glasgow, College of Medical, Veterinary and Life Sciences, Glasgow Dental School, Glasgow, Scotland

ID: 2365, Presenter: Etena Utkina

Pulpal blood flow in children’s permanent teeth with reversible pulpitis, Northwest Russia

Aim: to assess the pulpal blood flow in permanent teeth with reversible pulpitis using laser Doppler flowmetry in children before, during and after treatment. Method: 19 children age 8-17 years old without pain on questioning in examined teeth underwent clinical and X-ray examination. Altogether 21 molars with reversible pulpitis (cavities with no perforation into pulp chamber, 11 with incomplete roots) were chosen for treatment in two visits. Two molars were excluded due to pain between visits. During the first visit, anaesthesia, cavity preparation, application of calcium-hydroxide liner and temporary filling was made. After a month removal of the temporary material and restoration with glass-ionomer cement or light-cured composite (dependent on root formation) was performed. Pulpal circulation was measured using perfusion units (Lakk-02 HPP “Lazma”) before treatment, two weeks, one month (before the permanent filling) and three months later. The results were presented as medians and 25th, 75th quartiles. Teeth with complete and incomplete root formation were compared using Mann-Whitney test. Perfusion changes in time were analyzed with Friedman’s test. Post-hoc tests were made by Wilcoxon signed-rank test with Bonferroni correction. Informed consent was obtained from all participants. Results: Perfusion for teeth with complete and incomplete root formation had similar values: 4.04 (3.29; 4.38) versus 4.65 (3.77; 5.60) (p=0.083). Perfusion decreased from base data to second week after first treatment both in teeth with complete and incomplete roots (from 4.04 to 2.62, Δ=0.012 and from 4.65 to 3.73, Δ=0.003), but in the latter group we observed a perfusion increase from the first month to the third month after treatment (from 3.50 to 4.18, Δ=0.018). Conclusion: Our study shows that perfusion decreases by the 14th day after the first stage of treatment for both groups. This may indicate a reduction of pulpal hyperaemia and a decrease of inflammatory processes possibly confirming treatment success.

Acknowledgements: Northern State Medical University, Arkhangelsk, Russia

Authors:
UTKINA E.I.(*), GORBATOVA M.A., PASTBIN M.U., GORBATOVA L.N.
Department of Pediatric Dentistry, Northern State Medical University, Arkhangelsk, Russian Federation

ID: 2460, Presenter: Ioana Chifor

Caries And Restorations Prevalence In 6-7 Year Old Children In Cluj-Napoca, Romania

Aim: To investigate the prevalence of caries and restorations, including those with secondary caries, in clinically healthy 6-7 year old school children in 2012-2013. Methods: 343 children, representative of Cluj-Napoca children, enrolled in 3 randomly selected schools in Cluj-Napoca, mean age=6.8 years, 164 (48%) boys and 179 (52%) girls were examined by 3 pre-calibrated dentists that recorded dental health data using the ICDAS II index (scores 0 to 6). Ethical approval and informed consent of the parents was obtained. Descriptive and multivariate regression
analyses were performed. **Results:** At the pre-calibration tests the dentists recorded both inter- and intra-examiner kappa of >80%. Overall they identified 5124 caries lesions among which 283 lesions (6%) had score 1 and 802 lesions (16%) had code 2. Early stage cavity caries (code 3 ICDAS) accounted for 9% (450). 418 (8%) corresponded to code 4 ICDAS, whereas 846 lesions (16%) were recorded as code 5. Almost half of the recorded lesions, 2325 (45%) were deep caries (code 6 ICDAS). We found 1174 first permanent molars that could be examined, among which 311 (26.5%) had caries and 151 (12.9%) had sealants +/- adjacent caries. We found a correlation (Correlation Coefficient= 0.74) between caries and restorations using ICDAS scores on temporary molars and those on first permanent molars. So the children who had many caries and/or restorations on temporary molars had also a higher number of caries on first permanent molars.

**Conclusions:** The results suggest that caries, including restorations associated with secondary caries on temporary molars are very likely to predict a high incidence of caries on the 6 years molars. We conclude that caries in the permanent teeth might be diminished in young, clinically healthy 6-year-old children if they are identified by caries in their deciduous teeth and targeted with regular preventive dental treatment.

**Authors:**
BADEA I., CHIFOR I. (*), BADEA M., CHIFOR R., AVRAM R.
Department of Preventive Dentistry, University of Medicine and Pharmacy Iuliu Hatieganu, Cluj-Napoca, Romania

**ID:** 2483, **Presenter:** Ilhan Duygu

**Critical appraisal of a Turkish oral health epidemiological study**

**Aims:** The aim of the study was to evaluate the results of a cross-sectional oral health epidemiological study and to assess whether or not oral health policy should be based on the resulting data. **Methods:** The study was carried out in 7 regions of Turkey out with a sample of 3040 people in age groups from 5 - 65+ years of age. The sample was structured according to age, gender, and rural and urban domicile. Subjects were examined by three calibrated dentists. Carious lesions were diagnosed and assessed by visual and tactile criteria based on the recommendations of EGOHID (European Global Oral Health Indicators Development) project. Mean dmf-t and DMF-T were calculated for all age groups. Additionally, clinical attachment loss (CAL) and CPI (index teeth) were assessed. The resulting data were statistically tested using One-way ANOVA, Chi-square Test and Regression Analysis. In Turkey it is unnecessary to obtain ethics approval for such studies, only patient consent is required. **Results:** In the age group 30-39 years, consisting of 457 individuals, mean DMF-T was 15.68. There was a statistical difference between the mean of all age group's DMF-T and mean of caries frequency. A total of 14.1% of the 16 - 25 year-olds had at least one site with clinical attachment loss (CAL) > 3 mm compared with 68.35% those over 65 years of age. When CAL was collated with CPI scores, it was found that 2.6% of the 16 - 25 year-olds had a CPI score of 4 compared with 13.8% those who were over 65 years old. CAL of between 0-8 mm was seen with different CPI scores and CAL of > 6mm did not necessarily collate with CPI scores of 3 or 4. In consideration of the classification based on the functional dentition, the mean of CAL and number of teeth proportionally decreased in the those aged over 35 years. This was found to be statistically significant (p< 0.05). **Conclusions:** The mean of DMF-T in the age groups in this study did not represent exactly the distribution of caries risk. Caries risk frequency should be considered in order to plan an oral health promotion programme. The use of CPI scores alone was found insufficient to categorize the periodontal status of the population: Because of the statistically significant differences between CAL in respect of functional teeth, it might be suggested that the severity of CAL should be assessed by taking the number of remaining teeth into account. Thus, the data from the cross-sectional study were insufficient for planning oral health policy and this may well be true for other such studies. The life course epidemiology approach as applied to all chronic diseases might be used to define accumulated risk.

**Authors:**
OKTAY I., ILHAN D. (*), FISEKCIIOGLU E., NUR B.
Yeditepe University, Faculty of Dentistry, Istanbul, Turkey
Caries-promoting diet patterns in young adult Lithuanians

Diet is one of the key factors in caries aetiology. However, a comprehensive assessment of diet has not previously been studied in young Lithuanian adults. The present study aimed to assess comprehensive diet patterns of young adults. **Methods:** A one-week diet history was reported by 80 younger volunteer adults. All diet items were recorded in 10 minute intervals. This included both weekday and weekend consumption of different sugar or carbohydrate-containing items. This way the frequency of all sugar-containing items was recorded. In addition, the time periods necessary for repair of teeth hard tissues were also calculated. As the study was voluntary, did not include questions on income, health status and respondents could not be identified, ethics approval was not required. Independent sample test for comparisons between gender and paired sample test for comparison between weekday/weekend data were used. Statistical significance threshold set at P<0.05. **Results:** The mean age of all participants was 26.2±9.6. Of the group 35 were men (44%) and 45 were women (56%). Overall, a caries-promoting diet was prevalent among study participants with an average, SD frequency of sugar item consumption on weekdays being 4.8±2.5 and on weekends 4.6±2.1. A common pattern was that the time necessary for repair of hard teeth tissues was insufficient. During weekdays and weekends, 56 (70%) of participants consumed sugar-containing items four or more times daily. During weekdays, diet patterns differed statistically significantly (P=0.02) between gender groups with mean, SD for males being 4.1±2.0 and for females 5.4±2.4 times daily. However, there were no statistically significant gender differences when weekend diet patterns were analysed. There was a statistically significant correlation between weekday and weekend diet patterns (coefficient 0.480, P<0.001). **Conclusions:** The present study demonstrated that young adults consume a cariogenic diet on a frequent daily basis on both weekdays and weekends. Similar sugar and carbohydrate consumption was observed between weekdays and weekends. Statistically significant diet-based gender differences were observed only on weekdays.

**Authors:**
ALEKSEJUNIENE J.
The University of British Columbia, Vancouver BC, Canada
NAGINYTE P.(*), PURIENE A., PECIULIENE V., NAGINYTE M.
Vilnius University, Vilnius, Lithuania

Parents’ attitude and behaviour regarding their preschool children’s oral health

**Aim:** To investigate parents’ attitudes and behaviour towards the oral health of their preschool children, in relation to their education level. **Method:** A cross-sectional survey among parents (n=1349) of 4-6 year-old preschool children of 15 randomly selected kindergartens in five regions of Lithuania was conducted in 2011-2012. Kaunas Regional Committee of Ethics for Biomedical Research granted permission to conduct the study. The questionnaire included questions of the parents’ and their children oral hygiene habits, dental attendance, parents’ opinion regarding their own and their children oral health status, and education level. Statistical evaluation was by Chi-square test; statistical significance was assumed when p<0.05. **Results:** The response rate was 65%. Parents’ education level was categorised in two categories: university (university and college) 786 (58.3%) and professional (professional and secondary school) 563 (41.7%). Higher number of parents with a university education reported brushing their teeth regularly (64.5% vs. 50.1%, p<0.001), brushing their children’s teeth (25% vs. 12.7%, p<0.001), started brush their children’s teeth when a first tooth erupted (56.8% vs. 40%), were visiting a dentist regularly (19% vs. 9.6%, p<0.001) and taking their child to the dentist (21% vs. 14.3%). Regarding the evaluation of parents’ oral health: having no dental problems was reported by 74.2% with university education and 55.7% with a professional education, and having a lot of problems was reported by 5.7% and 11.2%, respectively (p<0.001). The same tendency was observed regarding children: good oral health status was reported by 61.5% of the university education level group respondents and 47.2% by the professional group. **Conclusion:** The study revealed that there is a positive
Modelling community, family and individual factors influencing childhood dental caries

Aim(s): There is limited understanding of the pathways between societal, community, family and individual forces that influence children’s oral health. The aim of this study was to develop and test a theoretical model of the relationships between neighbourhood quality, parental and familial psychosocial factors, oral hygiene behaviours and childhood dental caries. Methods: A random sample of 1,169 5 to 6-year old children was recruited from six paediatric dental centers in The Netherlands (response 54%, n = 630). Children’s dmft-scores were extracted from dental records. A parental questionnaire was used to collect data on socio-demographic characteristics, psychosocial factors and oral hygiene behaviours. Data about neighbourhood quality was obtained from the Dutch Central Bureau of Statistics. A theoretical model was developed, tested and modified using structural equation modelling (SEM). Results: SEM indicated that lower socioeconomic position was related to poorer family organization, lower levels of social support, lower self-efficacy and a more external dental health locus of control. These, in turn, were associated with poorer oral hygiene behaviours, which were linked to higher levels of childhood dental caries. In addition, a direct relationship was found between socioeconomic position and childhood dental caries. Poorer neighbourhood quality was directly associated with higher caries levels in children. Analysis of the model indicated good fit [comparative fit index (CFI) = 0.95, standardized root mean square residual (RMSR) = 0.04]. The model explained 22.6% variance in oral hygiene behaviours and 12.6% variance in dmft-scores. Conclusions: The model demonstrated an indirect influence of socioeconomic position on childhood dental caries and oral hygiene behaviours via an impact on parental and familial psychosocial factors. The direct relationship between socioeconomic position and neighbourhood quality with childhood dental caries suggest that the model should be further developed in future research by including other important mediators that were not addressed in this study.

Acknowledgements: This study was financially supported by Menzis Health Insurance, The Netherlands.

Authors:
DUIJSTER D. (*), LOVEREN C. VAN, DUSSELDORP E.,
Department of Preventive Dentistry, Academic Centre for Dentistry Amsterdam, University of Amsterdam
VERRIPS G.H.W.
Department of Social Dentistry and Behaviour Sciences, Academic Centre for Dentistry Amsterdam, University of Amsterdam
(Kappa>0.85 for all indices). The study was approved by the Research Ethics Committee of the Piracicaba Dental School, University of Campinas, protocol number 073/2010. The dependent variable studied was the number of decayed teeth. The independent variables were classified into individual (clinical, demographic, behavioural, socioeconomic, self-perceived oral health, access to dental services, quality of life) and contextual (Social Vulnerability Index of São Paulo State, Index of Social Exclusion of Piracicaba city, family education level of parents, monthly income, households with wastepipe and garbage collection). A multilevel regression model was estimated by PROC GLIMMIX (i.e. Generalized Linear Mixed Models) using the SAS statistical package. The model fit was assessed by -2 Res Log Likelihood with a significance level of 5%. **Results:** in the first model the intra-class coefficient of correlation was r = 0.012 (i.e. the variation in the number of decayed teeth between the neighbourhoods represented approximately 1% of the total variation). For model 2, the variables prosthesis need (p <0.0001), residents in the same household having caries (p = 0.0118), number of people in the family (p = 0.0342) and risk of caries (p <0, 0001) were associated with number of decayed teeth. In model 3 the number of decayed teeth increased with the worsening social exclusion index (p = 0.0070). **Conclusion:** Both individual and contextual variables influence the number of decayed teeth in adolescents of Piracicaba, São Paulo, Brazil.

**Acknowledgements:** FAPESP- São Paulo Research Foundation

**Authors:** PEREIRA A.C. (*), CORTELLAZZI LA, DE LIMA VAZQUEZ F., BOVI AMBROSANO G.M., DE CASTRO MENEGHIM M.
Piracicaba Dental School, Unicamp, Brazil
ID: 2230, Presenter: Ruxandra Sava-Rosianu

Perceived barriers of Timis County primary school teachers regarding oral health promotion

The aim of the study was to investigate teachers' perceived barriers to the implementation of a school-based oral health promotion program. **Method:** This cross-sectional study used a 5 item questionnaire (1 – totally agree, 5 - totally disagree) regarding the importance of oral health promotion programs in schools, persons involved and limitations of implementing such programs. After obtaining ethical approval from the County school Inspectorate, all 404 primary school teachers from Timis County, Romania, were selected. **Results:** The response rate was 60.9% (n=246) with a mean age of 41 years. 75.2% (n=185) were female with teaching experience ranging from 1 to 40 years (mean 19). Training in health education was reported by 28.9% (n=71) and 6.9% (n=17) received training in dental health education. Respondents were unsure about the importance of oral health in comparison to general health. 65% (n=160) said oral health promotion should be included in the school curricula but only 39.8% (n=98) strongly agreed that school staff should be involved. The main perceived implementation barriers were lack of teaching resources for 76.8% (n=189), lack of time - 46.2% (n=116) and lack of support from the regional administration - 47.6% (n=117). In addition, teachers thought that parental involvement was crucial in developing an effective dental health promotion program in schools. **Conclusions:** developing educational programs for teachers, which include oral health knowledge, in collaboration with other health organizations could allow teachers to play a very important role in oral health promotion in schools.

Acknowledgements: We wish to thank the School Inspectorate of Timis County for their support.

Authors:
SAVA-ROSIANU R. (*), PODARIU A.C., POPOVICI R., OANCEA R.
Department of Preventive, Community Dentistry and Oral Health, Faculty of Dentistry, University of Medicine and Pharmacy, "Victor Babes” Timisoara, Romania

ID: 2231, Presenter: Roxana Oancea

Knowledge and attitudes of primary school teachers regarding dental disease and prevention

The aim of the study was to assess the knowledge and attitudes of teachers regarding dental diseases and disease prevention and to assess the relationship of knowledge about prevention of common oral diseases with the socio-demographic variables. **Methods:** After obtaining ethical approval from the County School Inspectorate, all 404 teachers, from primary schools in Timis County, were questioned. The questionnaire comprised of six questions on knowledge, six questions on individual oral hygiene practices, and three questions on attitude regarding dental caries and periodontal disease prevention. Each question was followed by four answering choices. Chi square test and multivariate stepwise regression analysis was applied (SPSS) (version 17.0). **Results:** The response rate was 61.88% (n=250). More than 80% (n=202) of respondents were female (mean age 41). The female subjects had better knowledge and practices as compared to their male counterparts. Also the younger subjects had better knowledge and practices as compared to the older subjects A significant association was observed between teachers' levels.
of knowledge and their age groups (\(\chi^2 = 20.9950, P < 0.05\)) and education level—those with postgraduate degrees had greater knowledge (\(\chi^2 = 13.9740, P < 0.05\)). The multivariate stepwise regression analysis also showed that education, age group, sex was significantly correlated to knowledge (R\(^2\) = 0.1250, P < 0.05). **Conclusions:** The study revealed that school teachers, in particular older teachers from rural areas and those with only basic educational qualifications, need to be further motivated to improve their awareness and knowledge about oral diseases.

**Acknowledgements:** We wish to thank the School Inspectorate of Timis County and the regional administration for their support.

**Authors:**
OANCEA R. (*), PODARIU A.C., POPOVICI R., SAVA-ROSIANU R.
Department of Preventive, Community Dentistry and Oral Health, Faculty of Dentistry, University of Medicine and Pharmacy, “Victor Babes” Timisoara, Romania

**ID: 2232, Presenter: Ramona Amina Popovici**

**Developing an oral health behaviour questionnaire for a Timis County underprivileged area**

The aim of the study was to design a questionnaire which evaluates knowledge, attitudes, perception on oral health and appropriateness and accessibility to dental services, in an underprivileged area. **Method:** The target group studied in this project was represented by a rural community living in the Nadrag village, Timis County, an area that has been declared as underprivileged for three years. A questionnaire comprising questions regarding level of oral health knowledge, correct health behaviour, nutrition, healthy lifestyle and the perception of dental medicine service accessibility and appropriateness has been developed. After obtaining ethical approval from the regional bodies, the sample consisted of 70 randomly selected subjects, n1=30 from the urban, n2=20 from the rural control group and n3=20 from the target group, having a similar age distribution (18-60 years old, mean age n1= 32.1 ± 2.3, n2= 42.5 ± 3.6, n3= 39.3 ± 2.5), who signed an informed consent and were all willing to participate. Comparative statistics between the studied groups were used to evaluate consistency of the questions. **Results:** The Cronbach index for the whole questionnaire was \(\alpha= 0.91\), indicating very good consistency and validity of the questions. Correlations between subgroups showed good results, with scores of 0.67 for nutrition and oral hygiene, 0.59 for socio-demographical factors and oral hygiene, 0.63 between harmful habits and oral hygiene and 0.78 for accessibility and oral hygiene. Conclusions: This study shows that it is possible to build an accurate and valid instrument for the evaluation of knowledge and attitudes regarding oral health, appropriateness and accessibility to dental services which are important aspects that influence oral health.

**Acknowledgements:** We wish to thank the regional administration of Timis County.

**Authors:**
POPOVICI R.A (*), PODARIU A.C., OANCEA R., SAVA-ROSIANU R.
Department of Preventive, Community Dentistry and Oral Health, Faculty of Dentistry, University of Medicine and Pharmacy, “Victor Babes” Timisoara, Romania

**ID: 2289, Presenter: Tatiana Kupets**

**One-year follow-up of caries trends after school based toothbrushing**

This study aimed to evaluate whether the proven anticaries effect of toothbrushing with two differing types of toothpastes was maintained after the end of the original intervention. In 2009-2011, a school-based supervised toothbrushing program with a remineralising fluoride-free and fluoridated toothpastes (500 ppm F) for 6-7-year-old children resulted in a reduction of DMFT by 29-32% as compare to passive control (Kupets et al., 2011). **Methods:** Two schools were randomly selected from the six earlier involved in the two-year supervised toothbrushing program.
82 children 9-10-years old (mean. 9.6 years) from a school in which the remineralising fluoride-free toothpaste was used for 6-7-year-old children were group A; 74 children (mean age. 9.5 yrs) in the second school in which a low fluoride (500 ppm F) toothpaste was used was group B and 77 children (mean age 9.6 years) in a neighbouring school in which only oral hygiene instruction was group C. All were examined by one calibrated dentist in a single blind assessment. Parents gave their consent for the oral health assessment of their children. The DMFT of permanent teeth were recorded. Data were analysed by Students t-test. **Results:** Average DMFT in A group of school children was 1.34+-1.33S.D.; in B group was 1.28+-1.31S.D.; in C group was 1.96+-1.62S.D. The reduction of caries in A versus C was - 0.62 DMFT (-31.6%; p<0.05); in B versus C -0.68 DMFT (-34.7%; p<0.05). One year ago mean DMFT in A, B,C groups were 0.93+-1.09, 1.02+-1.26, 1.4+-1.32; three years ago (at baseline): 0.26+-1.17, 0.3+-1.23, 0.24+-1.16 respectively. **Conclusion:** This study suggested a long-term positive effect of two years supervised school-based toothbrushing on caries decline in young school children. Both types of toothpaste were equally effective in reducing dental caries of permanent teeth.

**Acknowledgements:** Supported by Minsk Public Health Committee, Minsk, Belarus.

**Authors:**
KUPETS T.V. (*), ZHUGINA L.F., LEOUS P.A.
Belarusian State Medical University, Minsk, Belarus

---

**ID: 2332, Presenter: Bahar Guciz Dogan**

**Oral health practices of fourth year students in health related faculties**

**Aims:** To determine the oral health practices of fourth year students being educated in health related faculties of Hacettepe University in Turkey. **Methods:** In this descriptive study, the data was gathered via a self-administered pre-tested questionnaire in 2012. The questionnaires were answered anonymously in the classrooms. Ethical Committee of Hacettepe University approval and verbal consent from the students of Faculties of Medicine, Pharmacy, Dentistry and Health Sciences were obtained. The questionnaire included questions on socio-demographic characteristics, some addictions and oral health related practice. Chi square tests were performed to test the significance of the differences in bivariate analysis. **Results:** From a total of 857 students, 744 (86.8%) were included. Almost one-third of the students (29.4%) were male. They were between the ages of 20 to 28; mean age was 22.7±1.7. Regular smoking was significantly commoner in males (18.9%) than females (8.2%) (p<0.001). 87.2% of males and 92.7% of females had ever visited a dentist; 45% of the total did not remember the age at first visit. Only 9.4% of females and 8.4% of males were visiting the dentist regularly (p=0.028). 99.6% had a toothbrush; 63.5% of them were brushing their teeth at least twice a day, 57.3% for at least two minutes. Of the students, 98.5% used toothpaste. The amount of toothpaste used was chick pea sized in 66% of students. **Conclusion:** The oral health practices of Medicine, Pharmacy, Dentistry and Health Sciences students were lower than expected. Effective oral health promotion strategies are perhaps needed to improve oral health practices among university students.

**Acknowledgements:** Supported by Hacettepe University Scientific Research Projects Coordination Office (012 D06 106 001), Ankara, Turkey.

**Authors:**
S. GOKALP
Dental Faculty, Hacettepe University, Turkey
B. GUCIZ DOGAN (*)
Medical Faculty, Hacettepe University, Turkey
Cultural Barriers to Oral Health Promotion - Implications for Oral Health Planning

**Aims:** The use of evidence based decision-making in health services and planning is essential to identify optimal health benefits. The aim of this study was to identify barriers to the effective adoption of evidence-based health practice, specifically those that apply to oral health promotion.

**Method:** Evidence-based oral health promotion and health promotion were explored through literature searches for available reviews. Data saturation and content analysis were used. The data was then grouped in the following categories: what constitutes evidence; how is quality determined; and recommendations to improve the evidence base. Ethics approval was not required for this study.

**Results:** Seventeen reviews were examined. Emergent themes were; barriers to the effective adoption of evidence-based health promotion included lack of quality in technical and conceptual support for health initiatives; inappropriate evaluation strategies; inappropriate application of randomised control trials criteria to population based studies; health workers' lack of knowledge on evidence-based strategies; lack of funding; no discipline based epistemological structure that underlies the evaluation process in health promotion; and failure of health systems research to take into account the cultural influences on health systems. Other themes included the need to focus on design and evaluation of oral health promotion programmes, collaboration and community involvement, theoretical basis or framework for health promotion inventions and oral health workforce capacity development. There was agreement that oral health/health interventions should be directed at human behaviour on the intrapersonal and interpersonal levels, at organization change on the community and institutional levels, and at policy on the systems level. However, one review noted that there may be areas of health and social development in which it would not be possible to provide evidence irrespective of the amount of research that is conducted in an effort to understand the processes involved.

**Conclusions:** The basis for existing evidence in oral health activities is grounded in social and organisational systems. Evidence-based oral health promotion highlights the importance of examining health promotion activities within a defined social context - a departure from the focus on improving study designs and research methods. This could contribute to sustainable health efforts, including improving oral health.

**Authors:**
SINGH S. (*)
Discipline of Dentistry, School of Health Sciences, University of KwaZulu-Natal, Durban, South Africa

---

Caries prevention based on individual needs among 7 to 15-year-old children in Moscow: 5 year results.

A caries prevention program based on individual needs among children in Moscow was extended owing to its efficiency and moderate level of caries prevalence (Kuzmina et al., 2011). The aim of the present study was to assess 5 year results of the program among 7-15-years-old children in Moscow. **Methods:** Fifty eight children aged 7-15 years old involved in the preventive program were included in the study. The program was based on: (1) education of children in caries prevention, (2) professional tooth cleaning at individually planned recall intervals, (3) topical fluoride and fissure sealant application. Children were examined at baseline and after 5 years for caries, plaque and gingival status as well as for frequency of recall visits. Dental caries was assessed by using DMFT and routinely available DMFT data for Moscow was used for comparison. Occurrence of plaque was recorded on the occlusal, buccal and lingual surfaces on teeth 46(85), 22(62) and 26 (65) (modified from Carvalho et al, 1989). The gingival status was scored on facial surfaces on 16(55), 12(52), 32(72), 36(75) as 0 - sound, 1 - bleeding on probing, 2 - bleeding after air blowing (modification from Loe, 1967). Students T-test was used to compare mean values. All parents gave written consent for their children to take part in the study, which was approved by the Ethical Committee of the University. **Results:** The mean DMFT increased from 0.29±0.10 at baseline to 1.05±0.27 at the end of the study (p<0.01). The mean DMFT of the study group was significantly lower than routine DMFT data for Moscow children (p<0.001). Caries
prevalence in the permanent dentition increased from 17.3% at baseline to 34.5% after 5 years. The prevalence of active caries lesions without cavitation decreased from 29.3% at baseline to 14.5% after 5 years. At baseline most of the active lesions without cavitation (56%) were observed on smooth surfaces, 24% - on occlusal and 20% - on approximal surfaces; after five years the distribution of active lesions without cavitation within the teeth surfaces was 10%, 80% and 10% respectively. In total 619 preventive appointments were performed. The mean recall interval between appointments increased from 3.75±0.07 to 4.73±0.15 months (p<0.001). After 5 years, the mean plaque index decreased from 1.33±0.07 to 0.76±0.07 (p<0.001), the mean Gingival Index - from 0.39±0.06 to 0.13±0.03 (p<0.001). **Conclusions:** The preventive program based on individual need was effective in controlling caries development in the permanent dentition, improving dental hygiene and gingival status of the 7-15-year-old children who took part in the study.

**Authors:**
KUZMINA I. (*)
Moscow State University of Medicine and Dentistry, Moscow, Russia
JANUSHEVITCH O.
LAPATINA A.
SMIRNOVA T.

**ID: 2351, Presenter: Elena Sozovska-Stojanovikj**

**Participation in a national fissure sealing programme in the Republic of Macedonia**

**Aim:** The aim of this study was to present the coverage of a national fissure sealing programme of first permanent molars in children born in 2005 in Macedonia. Since 2007, in order to improve the oral health status of children, the Ministry of Health, has invested in human and material resources (147 preventive dental teams, dental offices with equipment, dental materials) to provide preventive dental care. Among them, fissure sealing of the first permanent molars is conducted on every child who enrols in the first grade of elementary school. **Methods:** Children born in 2005 year in Macedonia, attending elementary schools throughout the state, were examined by 147 preventive dental teams from 32 public health centres in the period from 15th of January until 15th of February 2013. Informed consent was received from the parent of every child. As this is an audit of the national programme and involves normal clinical management it does not require ethics approval. **Results:** The total number examined was 18,301 (92%, birth cohort in schools =19,886). The number of children that were not examined was 1,585 (8%). Out of all the children, fissures sealants were found on a total of 53,099 (72.53%) permanent first molars. **Conclusions:** The national fissure sealing programme has achieved good coverage of the child population. But 1,585 (8%) of children born in 2005 have not been examined, and the same number of children have not participated in the fissure sealing programme. Possible methods to improve the children’s participation in the fissure sealant programme in Macedonia above 92% include; Joint action by the Ministry of health with the local authorities; Ministry of education promotion of the fissure sealing activities to school personnel and parents; distribution of promoting materials regarding the sealing among children at the beginning of every school year; distribution of reminders for parents with information about the sealant date for their child; providing information for the parents through e-mail, parent meetings, school websites and community newspapers.

**Acknowledgements:** Special thanks to the members of the Coordinate body for implementing National strategy for oral diseases prevention among children age up to 14 years in Macedonia

**Authors:**
SOZOVSKA-STOJANOVIKJ E. (*)
Ministry of health of Macedonia, Skopje, Macedonia
GETOVA B.
Public Health Center Valandovo, Macedonia
The association between family functioning, parenting style and dental caries in children

Little is known about the role of family factors in children’s oral health. The aim of this study was to investigate the association between family characteristics, family functioning, parenting style and dental caries in children. **Methods:** Participants were five-to-eight-year old children attending a paediatric dental referral practice in Noordwijk, The Netherlands (n=256, response rate 56%). Data were collected through parental questionnaires, the Gezinsvragenlijst (GVL, translation: family questionnaire) and the Child Rearing Practices Report (CRPR). Prior to completing the list, parents were asked to sign an informed consent form. The GVL assesses family functioning in five dimensions: responsiveness, communication, organization, partner-relation and social network. The CRPR measures parenting style in the dimensions of nurturance and restrictiveness. dmft- scores of children were obtained from dental practice records. Ethical approval was obtained from the ethics committee of VU University Amsterdam (VU METc). Anova was used to test bivariate associations. Multiple linear regression was used to evaluate multivariate associations. **Results:** Lower educational level of the mother, higher birth order of the child, ethnicity and restrictive parenting style were associated with higher dmft-scores (p<0.001, p=0.01, p<0.001 and p<0.01, respectively). Associations found in parenting style were not strong. The relationship between restrictiveness and dmft- scores did not remain significant after adjustment for the mother’s education level and ethnicity. However, this adjustment resulted in a significant association between dmft-scores and family organisation (p=0.04) and partner-relation (p<0.01). A multivariate regression model demonstrated that the mother’s educational level, ethnicity, family organisation and partner-relation were statistically significant predictors of childhood dental caries. **Conclusions:** The present study confirms a strong association between mother’s educational level, ethnicity and dental caries in children. To what extent higher dmft scores are explained by parenting style or family functioning remains to be ascertained. Maybe the role of family functioning and parenting are not all that important in developing dental caries in children.

Authors:
JONG-LENTERS M. DE (*)
Dutch Organization for Applied Scientific Research (TNO), the Netherlands.
VERRIPS G.H.W.
Academic Centre for Dentistry Amsterdam (ACTA), the Netherlands

The Opinions Of Primary School Students On Some Oral Health Related Issues

**Aim(s):** The aim of this study was to evaluate the opinions of primary school children on some oral health related issues. **Methods:** A convenience sample of 854 children aged 8 - 14 years were evaluated. Data were collected via a structured, pre-tested, self administered questionnaire which consisted of questions related to opinions on some oral health related issues. The participation of the study was voluntary and consent to take part was sought and obtained from the parents concerned and the children. In Turkey ethics approval is not required for non interventional, questionnaire studies such as this one. The data were processed by SPSS 15.0 program. **Results:** The children were in the 3rd to the 8th grades; 454 (53.%) were male. The level of satisfaction with the appearance of their teeth was between 37%–65%. Of the children, 235 (28%) had been absent from school because of an oral health problem mainly due to tooth pain, gingivitis and caries, 423 (50%) of the children thought that the health of their teeth was good. 769 (91%) of the students thought that a decayed tooth ruins the appearance of a person, 822 (97%) thought it is important to have healthy teeth for general health, 712 (84%) that it is not correct to hesitate to visit a dentist because of the fear of pain, 779 (92%) that regular tooth brushing could prevent decay, 779 (92%) that sweet foods and drinks cause caries, 605 (72%) that wearing a prosthesis is not comfortable. 277 (one-third) of the students did not know whether or not there is a protective substance in the tooth paste only 31 (4%) knew that fluoride was protective fluoride. All children reported that 2-3 times daily tooth brush was preventive. In answer to the question, “if a dentist examines your mouth today, what will he/she recommend?” 485 (57%) replied better tooth brushing, 183 (22%) that he/she should place a filling and 183( 22%) that he/she should start...
orthodontic treatment. **Conclusions:** The opinions of the students are interesting and may have importance in the planning and implementation of the oral health education.

**Authors:**

BAHAR GÜÇÝZ DOÐAN, MERYEM TEKÇÝÇEK (*), BURAK AKSOY, BAHAR ALIMCI, ÝREM DEMÝR, SEVAL ÖLMEZ

Hacettepe University, Faculty of Dentistry, Ankara, Turkey

---

**ID: 2341, Presenter: Irma Arpalahti**

**Organising health promotion for families with young children in the Finnish public dental service**

**Aims:** The present study assessed whether two new oral health promotion programs for families with young children improved on the routine program used earlier in relation to the effect on the presence of mutans streptococci (MS) in two-year-olds, when the other protective factors were controlled for. **Methods:** The participants were all newborn children born in the city of Vantaa in 2008 (n=2715). A letter was sent to the parents of newborns including an invitation/informed consent to the questionnaire study to the parents of first-born children. The ethics committee of the hospital district of Helsinki and Uusimaa gave approval. The city was categorised into three matching areas and these were randomly assigned to different programs. Both new programs included counselling on the parents own dental health; the first new program emphasized oral hygiene and fluoride, and the second proper diet and xylitol. The third area formed the control group using the routine program, and the 2006 birth cohort (n=2673) served as a historic control. The professionals involved in children's oral health were trained to use motivational interviewing. The main outcome measure was the presence of MS in two-year-olds; the tests were taken from plaque. Logistic regression was used as the statistical method. **Results:** The prevalence of MS was 15% and 11% in the 2006 and 2008 birth cohorts, respectively (p=0.011). Within the 2008 birth cohort, the addition of parental counselling did not improve the routine program. In the questionnaire study of first born children, the father's level of education (p=0.038) and the child's reported use of xylitol at least three times a day (p=0.009) was associated with the child's negative MS scores. **Conclusions:** The new programs did not improve the routine program, but the development of health promotion and training of the professionals reduced the proportion of children with presence of MS in the 2008 birth cohort in comparison with the 2006 cohort.

**Acknowledgements:** Financial support from the Research Fund of Finnish Dental Organizations, the Finnish Dental Society Apollonia, and the Paivikki and Sakari Sohlberg Foundation are gratefully acknowledged. The authors wish to thank the dental professionals in Vantaa Health and Social Welfare Affairs who participated in developing and carrying out the programs.

**Authors:**

ARPALAHTI I. (*)

Health and Social Welfare Affairs, City of Vantaa, Finland

TOLVANEN M., PIENIHAKKINEN K.

University of Turku, Institute of Dentistry, Department of Community Dentistry, Turku, Finland
Poster Session 4: Oral Health Services Research

Chair: Colwyn Jones

2241 2252 2338 2322 2323 2342 2493 2330 2361 2366 2435

ID: 2241, Presenter: Julijana Nikolovska

Job Satisfaction Among Dentists In Macedonia

The aim of this study was to analyse the level of job satisfaction among private and public dentists practicing in Macedonia and explore their satisfaction in different environmental and working conditions. **Method:** The study was conducted on 123 dentists randomly sampled and registered with the Macedonian Dental Chamber (the questionnaire was sent to each 20th dentist on the list in June 2012). Ethical approval was obtained by the Ethics Committee at the Faculty of Dentistry. Most of the dentists completed the questionnaire, there were 34 public practicing dentists, 32 completely private, 42 private dentists who work with a Health Insurance Fund, 10 concessioners and 5 (4%) didn’t answer the questionnaire. The questionnaire contained 16 items, divided into five groups. The first group of questions were about dentists satisfaction with the Macedonian oral healthcare system, a second group of questions were about dentists satisfaction with status they have, a third group of questions was about dentists satisfaction of relationship they have with colleagues, the fourth group consisted of questions about dentists satisfaction with the environment, equipment and materials they use and in the fifth group there were four independent questions about dentists feelings during working hours i.e. do they feel stressed, how often or where the stress is coming from and do they have any other psychological problems. The first four groups of questions were answered with a 4 point Likert format with a score range from 1 (very dissatisfied) to 4 (very satisfied). In the fifth group dentists chose one of four given answers. The statistical analyses were made by oneway ANOVA and Sheffe post hoc tests as well as chi-square tests and the corresponding C- coefficients. **Results** show that there are no significant differences between the four groups of participants in relation to: satisfaction with the Macedonian oral healthcare system (F=2.63(df=3); p>0.05), status as a dentists (F=0.50(df=3); p>0.05) and relation with the other colleagues (F=1.31 (df=3); p>0.05). However, significant differences related to working conditions are found (F=41.41 (df=3); p<0.01). In regards to job stressfulness and psychological problems, the groups differ only in regards of the source of job related stress (Chi2=44.52(df=9); p<0.01). **Conclusion:** Contrary to the perception that these categories of dentists differ regarding their job satisfaction, there were not many differences between public and private dentists regarding their job satisfaction. However, the finding that quite high percentage of dentists have psychological problems connected to their job requires further exploration.

**Authors:**
NIKOLOVSKA J. (*), PETROVSKI D., MINDOVA S., DIRJANSKA K.
Faculty of Dental Medicine, University “Ss Cyril and Methodius”, Skopje, Republic of Macedonia
MANCEVSKA S.
Faculty of Medicine, University “Ss Cyril and Methodius”, Skopje, Republic of Macedonia

ID: 2252, Presenter: Aristomenis Syngelakis

Primary dental care trends amidst the Greek economic crisis: challenges for reforms.

Thirty years after its establishment, the Greek National Health Service (ESY) is facing severe challenges, mainly due to prolonged austerity policies. Although some relevant data exists for medical care, nothing has been reported regarding dental care. The **aim** of this study was to
examine characteristics and trends in primary dental care provided by ESY during the recent period of recession and to identify potential priority areas for intervention. **Methods:** Data used concerned primarily personnel and workload at ESY primary care dental departments. All ESY primary care dentists were invited to participate; 135 (70.3%) agreed; research was conducted via a questionnaire (delivered between July and October 2012, with permission of the Ministry of Health) including items on staffing, operational and organizational issues as well as self-estimates of stress and professional satisfaction. Statistical analysis relied upon descriptive and bivariate methods. **Results:** Between 2006 and 2012 the number of dentists who work in ESY Primary Care Dental Departments decreased from 349 to 192. Most (65.2%, N=88) of the responding public health dentists (mean age 55.3 ± 6.6 years and 50.4% male) reported increased patient attendance during the previous year; of those, 94.3% (N=83) believed that this was a result of the economic crisis. Only 19.3% (N=26) of the responders were satisfied or very satisfied with their working conditions in ESY, dissatisfaction being mainly due to decreased salaries, more job insecurity and sub-optimal infrastructure of the system. **Conclusions:** Primary dental care delivered by ESY is shrinking; this is reflected by decreasing numbers of dental health staff as well as job dissatisfaction expressed by employed dentists. It is imperative that the Greek State undertakes prompt measures to reverse the shrinkage and obsolescence of publicly provided primary dental care, particularly in times where financially-pressed individuals are seeking publicly-provided dental care at increasing rates.

**Authors:**
SYNGELAKIS A.I. (*), KOLETSI-KOUNARI H., POLYCHRONOPOULOU A.
Department of Preventive and Community Dentistry, School of Dentistry, National and Kapodistrian University, Athens, Greece
PANAGIOTAKOS D.B.
Harokopion University, Greece.
LIONIS C.
Clinic of Community and Family Medicine, Department of Medicine, University of Crete, Greece.

**ID: 2338, Presenter: Tove Irene Wigen**

**Are public health nurses able to identify children with caries risk?**

**Background:** Children in Norway are offered oral health care in the Public Dental Services from birth. Before age 3 years the oral health care is delivered by public health nurses as part of the general care promotion to the parents. The objective of the study was to evaluate established routines for referral of children from public health nurses to the Public Dental Services. **Methods:** All children referred from public health nurses to the Public Dental Services in the county of Vestfold during the year 2011 were included. In 2011, dentine caries prevalence in 3-year-olds in the studied county was 6%. At the dental clinic, the reason for referral and children's dental health was registered. A questionnaire regarding oral health behaviour was completed by the parents. **Results:** A total of 192 children were referred to the Public Dental Services. The age of the children varied from 4 months to 16.6 years. Half of the children (53%) were younger than 3 years, which is 2% of children below 3 years of age in the county. In further analyses, children below 3 years of age were included. The main reasons for referral was caries, visible dental plaque, dietary habits or the child having a chronic disease. More than half of the children (57%) had parents of non-western origin. Oral health behaviour in the referred children was poorer than average in the studied county. Dental examination showed that 26% of the children had dental plaque, and 15% had caries lesions extending to dentine. **Conclusions:** Children referred to the Public Dental Services were caries risk children. The results indicate that the public health nurses are able to identify two thirds of children at risk of developing caries in early childhood.

**Acknowledgements:** We thank The Norwegian Directorate of Health for financial support.

**Authors:**
WIGEN T.I. (*)
Department of Paediatric Dentistry and Behavioural Science, Institute of Clinical Dentistry, University of Oslo, Norway
BERGER. B., EIKELAND J., FÜRST T.H.
The Public Dental Services in Vestfold, Norway
**ID: 2322, Presenter: Vilija Janulyte**

**Lithuania a donor or recipient country for dental professionals?**

In Lithuania there are 9.9 dentists for 10,000 residents and 21% of them are registered as dental specialists. This relatively high dentist-to-population ratio coupled with other economic difficulties the country is facing may lead to a number of employment-related challenges. **Aims:** This study aims to evaluate the employment-related status of Lithuanian dentists and dental specialists and to assess their emigration intentions. **Methods:** A questionnaire survey was carried out among all Lithuanian dentists and dental specialists (N = 2971). Their demographic information was retrieved from the License Register of the Lithuanian Dental Chamber in 2013. After three attempts to contact dentists, a final response rate was 67.6%. **Results:** Dentists and dental specialists face a number of challenges such as a lack of patients, working long hours and practicing in multiple clinics and the majority of dentists plan late retirement. Periodontologists and orthodontists experience the highest shortage of patients with around 45% of them lacking patients either sometimes or always. Thus, they would prefer to have an additional 20-25% workload. Around one third of general dentists, or endodontists or prosthodontists are lacking patients while smaller proportions of oral surgeons (24%) and pediatric dentists (15%) face similar problems. Around 10% in each professional cohort consider emigration as an option for their professional career. No significant association between the intention to emigrate and requiring an additional workload was found. **Conclusions:** The present survey reports a number of employment-related challenges which both general dentists and dental specialists are currently facing in Lithuania. The present results indicate that owing to hardship Lithuanian dentists are currently facing in their home country, Lithuania may become a donor country for dental professionals in the context of international dentists’ migration flows.

**Acknowledgements:** Structural Foundation of EU No.300949173

**Authors:**

JANULYTE V. (*), PURIENE A., PECIULIENE V.
Institute of Odontology, Vilnius University, Vilnius, Lithuania
ALEKSEJUNIENE J.
Faculty of Dentistry, University of British Columbia, Vancouver, Canada

**ID: 2323, Presenter: Luc De Visschere**

**Oral health related knowledge and attitude of family doctors in Flanders**

**Aims:** To quantitatively gain insight into oral health related knowledge and attitudes of family doctors in Flanders. **Methods:** An invitation to participate in this cross-sectional study was distributed by e-mail or telephone via the provincial orders of physicians and via the Flemish medical professional association of family doctors (Domus Medica) counting 8,000 members. Family doctors who agreed to participate received a link to the on-line validated questionnaire. Twenty questions measured knowledge anonymously in three oral health domains. Attitude towards oral health was measured by 23 statements (4 point Likert scale) subdivided in seven domains. Data of outcome variables were standardised to 100 and compared to data from final year dental students of the university of Leuven and Ghent (n=67) who answered the same questionnaire. One-way ANOVA and t-tests were used for testing for group differences and Spearman tests were used exploring correlations between outcome variables. This study was approved by the Ethics Committee of the Ghent University Hospital (B670201112521). **Results:** Despite several reminders only 128 family doctors participated with a mean age of 42 (±13.8). Half of the respondents (n=64) were female. The mean knowledge of physicians was 50% (±11.3) and significantly (p<0.0001) lower compared to dental students (80%, ±9.1). The lowest knowledge
score was in oral health prevention. Physicians’ attitude toward oral health was slightly lower (77%, ±5.9) when compared to dental students (79%, ±4.5) (p=0.02). The most positive attitude was observed toward their own oral health and the least toward how patients were dealing with their oral health. No correlations were found between knowledge and attitude. **Conclusions:** Family doctors demonstrated a positive attitude toward oral health but their knowledge on oral health was poor. Further research is recommended to explore influencing factors on physicians’ oral health knowledge.

**Authors:**
DE VISSCHERE L. (*), DESCHAMP A., JANSSENS B., VANOBBERGEN J.
Community Dentistry and Oral Epidemiology, Dental School Ghent University, Belgium

**ID: 2342, Presenter: Yelena Likhorad**

**The efficacy of oral health program in children with phenylketonuria.**

**Aim:** Phenylketonuria (PKU) - hereditary disease of fermentopathy associated with metabolic disorder of amino acids, especially phenylalanine. The aim of the present study was to evaluate the oral health status and the influence of the preventive measures implementation during a 12 months period in children with phenylketonuria. **Methods:** 75 children with PKU 2-18 years old were examined and trained in oral hygiene. Prophylaxis measures with subsequent application of fluoride varnish were performed twice a year. The children used in-home caries preventive agent (gel «ROCS Medical Minerals ») once a day during two weeks every second month. The prevalence and the intensity of caries were assessed using DMFT, DMFS, dmft and dmfs- index. Oral hygiene status was evaluated using patient hygiene performance index (PHP). The plaque acidity was determined by GC Plaque Indicator Kit. Mineralizing potential of saliva was estimated by the method proposed by P.Leous (1977). Evaluation of the studied parameters was carried out at baseline and in 12 months. The results were analyzed statistically (ANOVA). Ethical approval and parental consent was obtained for this study. **Results:** The mean age of examined children was 9 years old. Caries prevalence was 93.3%. At baseline the mean dmft was 4.3; DMFT -12.3. The mean PHP index was 3.1; MPS 1.6; plaque pH 5.7. In 12 months period there was a significant improvement of the following indicators: the mean PHP index 2.5, MPS 1.8; plaque pH 6.1. **Conclusion:** Preventive measures in children with PKU using remineralizing agents can reduce the risk factors for dental caries in this group of children.

**Authors:**
LIKHORAD Y (*), SHAKAVETS N.
Department of Paediatric Dentistry, Belarusian State Medical University, Minsk, Belarus

**ID: 2493, Presenter: Oles Shevchenko**

**Suitability of European indicators for monitoring oral health of children in Belarus and Russia**

The aim of this pilot study was to assess the applicability of several essential European oral health indicators (GOHIDP, 2005 Catalogue) for the evaluation and monitoring of the dental status of children in two Eastern European countries. **Method:** Five essential indicators (listed below) were selected to study in this international project. A total of 215 children 12- years-old (average age 12.4 years,) in randomly selected schools in Minsk (M), Belarus, and 150 children 12-years-old (average age 12.4 years) in Novosibirsk (N), Russia were surveyed by two calibrated dentists to assess dental caries, periodontal status (gums bleeding) and oral hygiene practices, using WHO Oral Health assessment forms and questionnaires (WHO, 2013). Dental examinations were performed in standard conditions with permission of local administrations, ethical committees and parents’ consent. Data from M and N were compared by Student’s t-test. **Results:** In M the proportion of caries-free 12- year-old children was 38% (Indicator D-12); average DMFT was 1.6±1.4 S.D. (indicator D-13); SiC-index was 2.4±3.2 S.D.; prevalence of gum bleeding was 14% (N=30) (Indicator D- 10); 65% (N=140) of children were brushing their teeth 2 times a day
(Indicator A-1); 94% (N=202) were using fluoridated toothpaste (Indicator A-4). In N, 29% of 12-year-old children (N=44) were caries-free; average DMFT was 2.4±1.9 S.D. (+ 0.8 DMFT, as compare with M; p<0.05); SiC-index was 4.1±3.8 S.D. (p<0.05); gum bleeding – 12% (N=18); 2 times a day tooth brushing was 84% (N=126); using fluoridated toothpaste was 66% (N=99), 28% less in N compared to M. Conclusion: Clinical testing of the European oral health indicators among Belarus and Russian 12-year-old children has shown their suitability for the monitoring of dental health and related factors.

Acknowledgements: Public Health Committees of Minsk, Belarus and Russian Dental Association, Novosibirsk, Russia.

Authors:
SHEVCHENKO O.V. (*)
Russian Dental Association, Moscow, Russia
LEOUS P.A.
Belorussian State Medical University, Minsk, Belarus

ID: 2330, Presenter: Daiva Askinytë

Different aspects of work-related stress reported by employees of an Academic Dental Institution

The aim of this study was to examine different aspects of work-related stress among employees of an Academic Dental Clinic in Lithuania. Methods: An anonymous survey of 288 workers of an Academic Dental Clinic was performed. The data was collected in January through February 2013. Survey questions inquired about stress caused by different work- associated factors and all responses were acquired on a 0-100% scale. Descriptive statistics were used to analyse the results. Results: Anonymous self-reported questionnaires were completed by 184 employees, representing a 64% response rate. No significant difference between responders and employees who had not filled in the questionnaire was found. Of all respondents, 32.5% (58) were medical professionals, 42% (76) were medical auxiliary staff and 24.3% (45) were other personnel. The mean years worked in this clinic was 12.1±8.2 years. Approximately 45% of employees reported that they additionally work in another clinic. Overall satisfaction with professional work was high (mean±SD) (80.6±19%). Factors contributing to work-related stress were rated as follows: workload (41.1±30.4%), interaction with patients (48.3±32.5%), executive personnel (23.4±24.7%), relations to colleagues (22.5±25.5%), documentation (33.4±29.4%), and meeting deadlines (34.2±30.0%). Conclusion: Overall satisfaction with work among employees of a university dental clinic was high. The strongest work related stress factors reported were interaction with patients and workload.

Authors:
PŪRIENĖ A., ASKINYTĖ D. (*), PEÈIULIENĖ V.
Institute of Odontology, Faculty of Medicine, Vilnius University, Lithuania
ALEKSEJÛNIENĖ J.
Department of Oral Health Sciences, Faculty of Dentistry, The University of British Columbia, Vancouver, Canada

ID: 2361, Presenter: Tiina Tuononen

Leadership as a career for dentists?

During the last decade major organisational reforms in health care have been undertaken in Finland. At the same time a lack of resources, an ageing population, and a shortage of personnel have also had an impact on leadership. Therefore, leadership as a career has not been seen as a favourable option for younger dentists. Aim: To describe the attitudes and vision of dentists attending the Public Dental Service (PDS) leader’s special qualification course. Methods: The
passive role playing method was used to gather the data. Course attendees (n=19) were randomly divided into two groups and asked to write a short essay imagining the future as a dentists leader in 2018. Group 1 was asked to write about the situation in which they were planning to leave their position and group 2 was asked to write about the positive future in their leading position.

Results: The mean experience of course attendees was 19.4 years (range 3-33), but they had less experience as a leader with a mean of 1.9 years (range 0-7). Both groups reported negative and positive visions. Negative issues included: not having enough time, not getting enough support and facing organisational changes. Positive visions included an “intention to lead” feeling.

In addition, group 1 reported negative issues: lack of team work in leading, not enough time to develop and lack of respect for leading work as reasons to leave. They also worried about ageing staff and continuous difficulties in recruiting. A better salary reflecting larger responsibility was also mentioned. Group 2 reported positive aspects: getting recognition from their work, the satisfaction of their achievements and personal development as individuals. Some were planning to undertake further education. Conclusion: In general working as a leader was regarded as a positive challenge and a good opportunity to supplement or compensate for clinical work. Leaders need more support in order to cope with such demanding work.

Authors: TUONONEN T. (*), SUOMINEN A.L.
Department of Public Health Dentistry, Institute of Dentistry, University of Eastern Finland, Kuopio
LAMMINTAKANEN J.
Department of Health and Social Management, University of Eastern Finland, Kuopio, Finland

ID: 2366, Presenter: Corneliu Amariei*

Dental Social Services’ Funding For Children In Romania’s South-East Region During 2008-2011

Aim(s): This study aimed to investigate public spending on and the volume of publicly funded oral treatment provided for 0-18 year-olds in the counties within the South-East region of Romania between 2008 and 2011. Methods: Data on expenditure and type of treatment provided for 0-18 year-olds, between 2008 and 2011 were provided by the County Health Insurance Agencies for the six counties in the region: Galati, Buzau, Braila, Vrancea, Constanta, Tulcea. Expenditure and treatment per child in each county for each of the four years were determined and averages per county calculated. Results: The budgets decreased over the four year period as follows: Galati by 23%, Buzau by 41%, Braila by 38%, Tulcea by 47, Constanta by 41%, Vrancea by 25%. The volume of oral health care provided fell as follows: in Galati by 4%, in Buzau by 49%, in Braila by 41%, in Tulcea by 61%, in Constanta by 4% and in Vrancea by 32%. The expenditure per child fell by 23% to 41% depending on the county with an average decrease of 31%. Although not within the scope of this study, it should be noted that from 1 April 2013 public funding for all dentistry in Romania has ceased. Conclusions: The data indicated that during the four years 2008 - 2011 the budgets for the public provision of oral health care in all counties of South-East Romania fell by from 23% to 41% and the volume of care provided by from 4% to 61%. The economic crisis has caused a sharp decline in public oral health care funding, in Romania and the Insurance Houses which provide funds for health care no longer cover dental services.

Authors:
MOISEI M., AMARIEI C. (*)
Doctoral School of Ovidius University of Constanta, Romania
Preventive oral care for children. Information sources and opinions of dental personnel and public health nurses

Background: Preventive oral services and advice to children are provided both by personnel in The Public dental services and Public health centres. The objectives of the study were to explore opinions of dentists, dental hygienists, dental assistants and public health nurses regarding preventive oral care for children, and to identify sources of their preventive services. Methods: Questionnaires were sent by the management/leaders to all employed/listed personnel, 1132 persons, giving oral advice to children in the Public dental services and Public health centres in south-eastern Norway. The personnel reported the sources they based their competence on, opinions on importance of preventive methods, and recommendations regarding fluoride. The project was approved by the Norwegian Social Science Data Services. Results: The overall response rate was 71%. The most important source of knowledge of preventive oral care was reported to be local public dental services by a majority of public health nurses, while most dental assistants relied on national guidelines, and dentists and dental hygienists on education and courses. The majority of all personnel, 66% (529 of 808) judged oral hygiene to be the most important preventive method. The remaining personnel judged either fluoride 16% (130 of 808) or diet 18% (149 of 808) as the most important method. Almost all personnel 97% (780 of 808) recommended all children use fluoride toothpaste, while the proportions that recommended fluoride lozenges to more than half of the children varied from 33% (53 of 163), of the health nurses through 49% (180 of 370) of the dentists and the hygienists to 70% (191 of 275) of the assistants. Conclusions: Opinions and recommendations regarding prevention varied among personnel giving oral advice to children. Similar patterns of variation were found within all personnel groups.

Acknowledgements: The study was supported by Dental Expertise Centre of Eastern Norway.

Authors: LØKEN S.Y. (*), WIGEN T.I., WANG N.J. Department of Paediatric Dentistry and Behavioural Science, Institute of Clinical Dentistry, Oslo, Norway
ID: 2301, Presenter: Abu Durhan

Traumatic injuries in school children in Budapest between 2007-2012

**Aim:** This retrospective study aimed to assess the prevalence of traumatic dental injury (TDI) in deciduous and permanent teeth among children and teenagers who attended Semmelweis University, Dental School, Department of Orthodontics-Paedodontics (self-presenting trauma patients are treated by orthodontists and paediatric dentists), in Budapest, Hungary between 2007-2012, and the correlation of their risk of dental trauma with factors, including gender, age, month, nature of dental emergency, treatment and sources of injury. **Methods:** All patient records between 2007-2012 were reviewed for trauma for those aged 0 to 18 years. Their data were reviewed and the following factors, relevant to dental trauma, were recorded: gender, age, type of dentition, injury aetiology, lesion type and location, number of teeth affected, occlusion, and radiographic findings. Results were expressed as frequency distributions in percentages. The data were subsequently processed and analyzed using the SPSS statistical software program. Chi-square and one way ANOVA tests were employed to evaluate dental trauma history profile of the patients. Ethical approval was not necessary for this retrospective study. **Results:** A total of 225 patients (134 boys, 91 girls) had TDI. It occurred more frequently in boys accounting for 60% of cases. The mean age±sd was 9.72±3.042 years. Of all age groups TDI was most commonly seen in those aged 9. Dental trauma was mainly in the permanent dentition (73 %, n=164), followed by the mixed dentition (20 %, n=46) and the primary dentition (15 %, n=15) respectively. 224 Permanent teeth and 16 primary teeth were affected. 28 patients had only intra-oral soft tissue injuries. May was significantly busier than the other months (p<0.05). The commonest etiologic factor associated with TDI was injury at school 19 (8%). The most frequent type of trauma was non-complicated crown fracture (71%). Bandage restorations and temporary treatment were the commonest procedure for permanent teeth (220 teeth). **Conclusion:** Traumatic Dental Injuries in patients attending the Semmelweis University, Dental School, Department of Orthodontics-Pedodontics in Budapest were commoner in male children and in those aged 9 years. Injury at school was the commonest presenting factor and this may have implications for schools and dentists making sure access to emergency paediatric dental care is available during school hours.

Authors:
DURHAN M.A. (*), KARGUL B.  
School of Dentistry, Department of Pediatric Dentistry, Marmara University, Istanbul, Turkey  
BARTA A., FABIAN G., KIYAN O.A.  
Orthodontics-Pedodontics Dentistry Department of Semmelweis University, Budapest, Hungary

ID: 2313, Presenter: Monika Naginyte

The knowledge about oral hygiene and periodontal health in Vilnius population

**Aims:** The aim of the present study was to examine different aspects of knowledge related to oral hygiene and periodontal health in a purposive sample of adults living in Vilnius, Lithuania. **Method:** A questionnaire was developed based on findings from five focus groups involving participants from different occupations. The final questionnaire comprised 58 questions and answers about different aspects of knowledge were obtained on a 0-100% scale. In addition, demographic data
was recorded (age, gender, occupation). In Lithuania, ethics approval is not required for studies such as this one. Results: A total sample of 190 participants (response rate 78%) included non-dental students or workers from Vilnius area and the mean age of responders was 25.6 ± 9.6 years. The threshold for statistical significance was set at P<0.05. Half of participants agreed that brushing time should be around one minute – one minute and a half and this time is sufficient to clean teeth. Of all, 83 (54%) believed that toothbrushing makes teeth whiter particularly with increasing brushing frequency, 81 (55%) were sure that teeth cleaning quality depended on the toothpaste; 59 (40%) that more expensive tooth paste cleaned better; 97 (66%) that the most important substance in toothpaste was fluoride. The majority (107 (71%)) thought that the shape of toothbrush determined the quality of toothbrushing; 108 (73%) that they should use mouthwash after tooth brushing. 120 (81%) of participants recommended toothbrushing movements for buccal surfaces as follows: vertical (up and down), 103 (70%) believed that these movements should be circular and 96 (65%) that correct brushing method is a rolling stroke technique. Around one third considered that toothbrushing prevented calculus deposition on teeth and half of responders that calculus deposition depended on smoking. A majority (123 (83%)) agreed that good oral hygiene prevented periodontal diseases, 81 (55%) that dental diseases were genetically predisposed and 77 (52%) that teeth can be lost because of poor oral hygiene. There were no statistically significant differences among gender, age or occupation groups. Conclusion: There is deficiency of oral hygiene and periodontal health-related knowledge in Vilnius population.

Authors:
NAGINYTE M.(*), PURIENE A., PECIULIENE V., VAINERMANAS G.
Vilnius university, Vilnius, Lithuania
ALEKSEJUNIENE J.
University of British Columbia, Vancouver, Canada

ID: 2320, Presenter: Griet De Reu

The oral health condition of the Belgian population by social parameters

Aim: The purpose of this study is to obtain a representative picture of the oral health of the Belgian population including oral health related behaviour in relation to social parameters. Methods: The results reported in this study are part of the Belgian “Oral Health Data Registration and Evaluation System (OHDRES) 2009”. A multistage stratified sampling method was used to obtain a sample representative of the Belgian population aged 5 years and older. Data collection consisted of a Health Interview (self- administered questionnaire, pre-tested and validated) and Health Examination (standardized oral examination using international criteria and performed by trained dentist-interviewers in the participant’s home), supplemented with (oral) health care consumption data retrieved from health insurance funds. Statistical analyses were performed using ANOVA test for the comparison of means. The study was approved by the Ethics Committee of the University Hospital Ghent. Results: 2755 participants were included in the analysis, 52.9% (N=1495) were female. The mean age was 43 years (range 5-98 years). In the permanent dentition the nationality of the participants was significantly related to DMFT, restorative index (RI=FT/DFT) and treatment index (TI=MFT/DMFT) (p<0.001, p=0.004 and p=0.003 respectively). DMFT was higher in patients with Belgian or Western European nationality; RI and TI was lower in patients with no Belgian or Western European nationality. Frequency of tooth brushing and mean plaque index were significantly related to DMFT (p<0.0001, p=0.001 resp.) and RI (p=0.007, p=0.017 resp.). Significant differences in CI were found by education and occupation with lower care index in unemployed and low- educated participants. In the deciduous dentition the mean plaque-index was not significantly related to dmft (p=0.1577) but significantly related to RI ( p=0.001) and TI (p=0.001). Brushing deciduous teeth less than once a day led to an increase in dmft (p=0.016) and a decrease in RI (p<0.001) and TI (p=0.0003). Conclusions: Employment, education and nationality are significantly related to the treatment- and restorative index in the permanent dentition. In the deciduous dentition a brushing frequency of less than once a day resulted in poorer oral health.
Acknowledgements: This study was supported by the National Institute for Health and Disability Insurance. OHDRES is a joint initiative of the University of Leuven, Ghent and Brussels (KUleuven, UCL, UGent, VUB and ULB).

Authors:
DE REU G. (*), DE VISSCHERE L., VANOBBERGEN J.
Community Dentistry and Oral Public Health, Dental School Ghent University, Belgium
DECLERCK D.
Department of Oral Health Sciences, KU Leuven, Leuven, Belgium
BOTTENBERG P.
Conservative Dentistry and Prosthodontics, Free University Brussels, Belgium

ID: 2325, Presenter: Gabrielius Vainermanas
Knowledge about chronic periodontitis in adult population in Lithuania.

Background: Chronic periodontitis is a multifactorial disease influenced by microbial and genetic factors. Nearly 70% of Lithuanians above 55 years have chronic periodontitis and 85% of adults aged 35 years have gingivitis. Aim: To evaluate the knowledge of Lithuanian adults about different aspects concerning chronic periodontitis. Methods: A total of 20 focus groups consisting of people from different socio-economic levels were formed (N=102) to generate data for the development of a questionnaire for the main study. Subsequently, the questionnaire was administered to 160 people aged 18 to 53 years with an average age of 20.7 years, among which 48 were males and 112 were females. The questionnaire consisted of 45 items related to age, gender, social status and it comprised a number of questions about chronic periodontitis. The knowledge related answers were assessed on a 0-100% agreement scale. The data was analyzed with the SPSS 21.0 software. Results: Of those who took part, 110 (67.5%) reported that they acquired knowledge about periodontitis from their general education or television advertisements, while the other 50 (32.5%) learned about it from their peers, family members, personal experience or dentists. The majority were not sure if chronic periodontitis was prevalent in Lithuania, and 37 (21.3%) thought that they had the disease. Moreover, 128 (80%) reported that patients with severe chronic periodontitis should visit a dentist, while116 (70%) answered that it did not matter whether the disease was severe or mild one, everyone should visit a dentist. There were statistically significant differences between those who had and who did not have experience with periodontitis regarding the following: tooth loss is inevitable in periodontitis patients (P=0.009), periodontitis is a genetic disease (P=0.001) and non-ecological food causes periodontitis (P=0.001), Conclusions: Lithuanians did not have sufficient knowledge about periodontitis and the majority thought that everyone should visit a dentist despite the severity of periodontitis.

Authors:
VAINERMANAS G. (*), PURIENE A., PECIULIENE V., NAGINYTE M.
Vilnius University, Lithuania
ALEKSEJUNIENE J.
The University of British Columbia, Canada

ID: 2328, Presenter: Edward Sammut
Peri-implantitis - a relatively new clinical problem

Peri-implantitis is a relatively new clinical problem, which is reported as being increasingly prevalent. It may be comparable to periodontitis, and shares several features of the latter disease, however there are some biological dissimilarities. Notwithstanding this, the risk factors for development of peri-implantitis appear to be very similar to periodontitis, namely being inadequacy of plaque control, tobacco smoking, and inherent susceptibility. Prevention and treatment of peri-implantitis is therefore currently an extrapolation and adaptation of the prevention and management of periodontitis. With increased patient life expectancy and the increased use
of dental implants in the rehabilitation of edentulous patients who may have lost teeth due to periodontitis, it may be expected that peri-implantitis will be a problem which dentists will need to treat frequently. The problem is likely to be compounded by an increase in dental tourism wherein patients may be encouraged to choose comprehensive implant treatment over more conservative and time consuming treatment options. The behavioural management of periodontal disease may be omitted leading to increased risk of peri-implant disease. There is also a growing market of low-cost implants, typically cloned from leading band designs, which may not offer the same level of R&D, quality control and warranty as offered by the larger brands.

In this overall picture, public health organisations may find it necessary to decide whether or not they will offer treatment for diseased dental implants performed in the private sector. Although more research is being focused on peri-implantitis, systematic reviews of the available literature are not able to provide evidence for clinical decisions and treatment. Therefore the treatment choices are largely guided by data from cohorts of cases, expert opinion and individual empirical clinical decisions.

Authors:
SAMMUT E., VASSALLO P.
MARTINELLI E.
Faculty of Dental Surgery, University of Malta

ID: 2368, Presenter: Melinda Szekely

A three-year longitudinal study on incidence of dental erosion in Romanian adults

Aims: (1) to assess the incidence of tooth erosion in young adults living in Tirgu-Mures, Romania and (2) to evaluate whether rinsing the mouth with water after dietary acidic attack could prevent erosive lesions occurrence. Methods: In 2009 a longitudinal study on dental erosion was started including a representative sample of dental patients (n=382) of both sexes, aged 18 to 30 years, living in Tirgu-Mures. Participants were healthy volunteers with erosive lesions and acidic dietary habits. Ethical approval was obtained from the Ethics Committee of the University of Medicine and Pharmacy of Tirgu-Mures and the participants gave written informed consent. Subjects completed a questionnaire on dietary habits and a clinical examination was performed. The BEWE index was used for the assessment of erosive tooth wear. Participants were advised to avoid acidic dietary habits or to rinse their mouth with plain water after the consumption of acidic foods and drinks. In 2012 the questionnaire was repeated (n=370). Twelve former patients were not available. Subjects who reported that they followed advice were included in the control group and those who refused were considered to be exposed to erosion (i.e. self-selected groups). Statistical analysis was performed using Chi-square test. Relative risk (RR) was calculated. The level of significance was set at p<0.05. Results: Of the 370 subjects (mean age 24±4.8 years) 191 were accounted in the control group and 179 in the exposed group. Significantly more males 101 (56.4%) than females 76 (43.6%) were observed among the exposed group (p=0.038). In 2012 the overall incidence of dental erosion was 15% (n=370), out of this total 9.7% were in the exposed subjects and 5.3% were in the control group, respectively (RR 1.8, p=0.022). Conclusions: The study revealed that young adults with regular exposure to acidic foods and beverages were more likely to develop erosive lesions and to be male, than subjects who followed advice to rinse their mouth with water after dietary acid attacks. The findings suggest that this method could be used on community basis to reduce the high incidence of dental erosion in Tirgu-Mures.

Authors:
SZEKELY M. (*), BORS A., MOLNAR-VARLAM C., KEREKES-MATHE B., BIRTA O.
University of Medicine and Pharmacy of Tirgu-Mures, Faculty of Dental Medicine, Tirgu-Mures, Romania
Evaluation of Growth of Schoolchildren with Dental Caries

Many studies have evaluated the general development of schoolchildren. The results of these studies vary, but there lacks an association between dental caries and alterations in general growth. The aim of this investigation is to compare means of body height and weight in schoolchildren from Lviv (Ukraine) and to assess any association with dental caries of permanent teeth. **Method:** 1301 children aged 5-16-year-old from Lviv (Ukraine) were examined (677 girls, 52%) and 624 boys (48%) by trained examiners. The following data were recorded for each child: name, age, gender, diagnosis (with/without dental caries), severity of dental caries, height (centimeters) and weight (kilograms). Weight and height were assessed using a standard physicians scale and a Stadiometer. Caries was assessed according to World Health Organisation guidelines (1997) under natural day light using mouth mirrors and probes. Decayed, missing and filled permanent teeth (DMFT) due to caries were recorded and summarized as DMFT by a calibrated investigator. All examinations were performed by the same person. Ethical approval and parental consent was obtained for this study. Data for the various groups were compared using Student’s t-test. **Results:** The average height of the 7-year-old children is 126.54±0.55 cm, the average weight is 25.78±0.47kg and the DMF = 0.93±0.13; the average height of the 12-year-old children is 155.53±0.67 cm, the average weight 45.62±0.84 kg and DMF = 3.92±0.22 and the average height of the 15-year-old children is 168.25±0.92 cm, the weight is 55.68±0.47 kg and DMF =5.40±0.31. The greatest increase of height and weight is observed in 9-13-year-old children in prepubertal and pubertal periods of growth. From 5 to 16 years the height of the children increased from 113.09±0.46 cm to 171. 29± 0.85 cm (therefore a height increase of 58.2cm is the baseline growth of 100%). The mean increase in height was from 5 to 6 years = 13.37%, from 7 to 8 years = 10.62%, from 9-10 and 10-11 years = 10.43%, and 10.59% respectively. Children without dental caries are taller in all age groups. So, in 16-year-old children without caries mean height was 175.56±3.02 cm and in children of the same age group with dental caries it was 170.21±1.76 cm. The mean weight increased in all age groups without dental caries except 7, 13 and 16-year old children compared to the children with dental caries. Conclusions: Our study showed that differences in height and weight were shown only in 9-13 year old children. An increase of 13.4% took place in height between 5 to 6 years, and dental caries of the permanent teeth increased by 2.91 times from 6 to 7 years. We showed an association between increased height and weight in children without dental caries in all age groups except 7, 13 and 16-year old children, compared to children with dental caries.

**Authors:**
SMOLYAR N.I., BEZVUSHKO E.V., CHIKHRAY N. (*)
Danylo Galytstskiy Lviv National Medical University (Ukraine)

Prevalence of Malocclusion and Access to Orthodontic Care in Californian Children

Aims: Malocclusion can be considered a public health problem due to its high prevalence and its impact on quality of life. Studies assessing prevalence of malocclusion and access to care in the US are limited. The overall goal of this study was to assess the prevalence of malocclusion and access to orthodontic care in California’s school children. **Method:** For this cross-sectional study, five calibrated trained orthodontists examined a sample of 389 adolescents (51% male and 49% female) attending 3 public schools in San Francisco, California. Schools were selected based on ethnic diversity and on being representative of San Francisco’s population. Occlusion was classified according to Angle’s classification. Orthodontic treatment need was determined according to the “Gold Standard”, the professional opinion of a group of orthodontists. Descriptive statistics were performed by means of STATA software program. Committee in Human research
approval was obtained. Parents gave written consent before their children took part of this study. 

**Results:** The age of the children ranged from 8 to 19. The majority of the children were 11 years old (26%) and self-identified as Asian (45%) or Latino (41%). Overall, more than half of the students examined required orthodontic treatment (54%) with only 26 (7%) students reporting having received treatment or were currently in treatment. The two most prevalent occlusal traits observed in this population were crowding (40%) and deep bite (27%). **Conclusion:** The prevalence of malocclusion in children living in San Francisco is high. Disparities exist in minority populations with respect to access to orthodontic care.

**Acknowledgements:** American Association of Orthodontist Foundation

**Authors:**
ORELLANA M.F. (*), VALDEZ J., REYNA-BLANCO O.
School of Dentistry, University of California San Francisco, USA

---

**ID: 2339, Presenter: Nida Huroglu**

**Nutritive And Nonnutritive Sucking Behaviors And Their Effects Of Occlusal Characteristics In The Primary Dentition**

**Aim:** The aim of this study was to monitor possible oral effects of nutritive and non-nutritive sucking behaviour and to assess the prevalence of occlusal abnormalities in 5-year-old children.

**Methods:** 128 children were recruited randomly from three nursery schools in Istanbul, Turkey. All children were examined under natural lighting by a dentist. The criteria of Foster & Hamilton (1969) were used for defining the prevalence of occlusal abnormalities. The parents gave their consent for their children to take part in the study and were then interviewed for current pacifier and/or finger sucking behaviour. The main questions concerned the age and sex of the children, their past breast, bottle, or complementary feeding, their non-nutritive sucking behaviour, and the duration of these activities. More specifically, the questions were about whether the children regularly sucked pacifiers, fingers, or other objects. None of the children had received any form of orthodontic treatment.

**Results:** At the time of the dental examination the mean age of the children was 4.45±0.93 (SD) years-old. Of the 128 children, 57 were boys and 71 were girls. Twenty one (16%) had or were using a pacifier, whereas 22(17%) had or were finger sucking, 17(13%) reported both finger and pacifier sucking, and 85 (67%) had no sucking behaviour. Of the 128 children, 14 were exclusively breast-fed (11%), 13 were exclusively bottle-fed (10%), and 101(79%) were fed complementarily. Eight(65%) of the bottle fed children reported finger sucking, 12 (92%) of the bottle fed children reported pacifier sucking, 65% (n=8) of the bottle fed children reported both finger and pacifier sucking after the first year of their life. Among the complementarily fed children, 14% (n=14) reported finger sucking, 9% (n=9) reported pacifier sucking and 9% n=9) reported both finger and pacifier sucking after the first year of their life. **Conclusion:** Although further study is needed to determine the effect of nutritive and non-nutritive sucking behaviours in the mixed dentition. It can be concluded that, in the group studied, exclusive breast-feeding in the first six months of life decreased the risk of acquiring non-nutritive sucking habits after the first year of life. The exclusively breast-fed children had no sucking habits after the first year of life. Type of nutrition had no effect on molar relationship.

**Authors:**
KOSEOGLU M.
Senior undergraduate student at Dental School, Marmara University, Istanbul, Turkey
HUROGLU N. (*), KARGUL B.
Dept. of Paediatric Dentistry, Dental School, Marmara University, Istanbul, Turkey
BEKIROGLU N.
Dept. of Biostatistics and Bioinformatics, School of Medicine, Marmara University, Istanbul, Turkey
Oral health in Dutch-Moroccan children: qualitative research from the Netherlands

Aim: Previous studies showed that 5-year-old Dutch-Moroccan children have significantly higher dmft scores compared to Dutch children of the same age, even after correction for social economic status (Verrips 1993). The mechanisms underlying this difference are little understood. The aim of this qualitative study was to explore culture as a risk factor for poorer oral health of Dutch-Moroccan children by identifying knowledge, ideas, attitudes and behaviour of their mothers concerning their children’s oral health. Method: In 2012 mothers of Dutch-Moroccan preschool children of five different primary schools in two cities in the Netherlands; The Hague and Amsterdam, were invited by letter to participate. Those willing to participate signed informed consent before being interviewed in two focus groups (n=16) or individual semi structured interviews (n=10). An interpreter was present when needed. Semi structured interviews were also completed with three oral health professionals working with Dutch-Moroccan children and one physician at an under-five-clinic for modification of the topic list and for triangulation. All interviews were undertaken and voice recorded by the first author. After transcription the interviews were inductively coded. MAXQDA software was used for data analysis. Results: All mothers mentioned pain complaints, swelling and black front teeth as oral health problems. Although mothers were aware that brushing teeth and reducing sugary snacks are effective preventive strategies, they did not sufficiently use these measures, due to lack of skills in brushing their toddlers’ teeth, insufficient awareness of the daily sugar intake of their children and their child rearing attitude concerning these measures. Whereas some mothers lack accurate knowledge regarding the causes of deteriorating oral health, mothers indicate they feel empowered in making dental care decisions. Conclusions: This research revealed the presence of knowledge on preventive strategies on their children’s oral health in Dutch-Moroccan mothers, but an inadequate implementation of preventive measures in the daily lives in Dutch-Moroccan mothers. Additional qualitative research is needed for broader exposure of values knowledge and culture.

Acknowledgements: Research was funded by the ACTA paediatric postgraduate training programme

Authors:
VAN NES K.A. (*), VEERKAMP J.S.J.
Academic Centre of Dentistry Amsterdam (ACTA), Department of Paediatric Dentistry, Amsterdam, Netherlands
REIS R.
Leiden University Medical Centre (LUMC), Leiden & Amsterdam Institute for Social Science Research

**Aims:** The aim of the study was to determine the prevalence of dental caries and gingivitis in adolescent male offenders during their six-week stay in a Youth detention centre (YDC) and to assess, to what extent oral health-related behavioural variables contribute to their increased risk for oral diseases. In the YDC, the adolescents are psychologically assessed because of previous significant behavioural problems such as drug use and distribution, stealing, robberies or violent behaviour and subsequently sent to a youth custody centre. **Methods:** The cross-sectional descriptive study approved by the competent Ethics Committee included clinical dental examination, validated 10-item questionnaire focused on hygiene habits and oral care-related attitudes and data retrieval from the patients’ psychological and medical records. A convenience sample of 64 institutionalised male offenders aged 15–18 years was recruited when they were present on the research days, and consent to participate in the study was obtained. During the course of the study, 4 subjects were excluded due to a chronic medication possibly influencing their oral health. **Results:** In total, 13 (21.7%) and 21 (35.0%) subjects had at least one tooth indicated for extraction and with extensive caries, respectively. An urgent need for dental treatment was identified in 33 (55.0%) individuals. 29 (48.3%) subjects visited a dentist only in case of toothache. Visible plaque was detected in 53 (88.3%) and gingivitis in 40 (66.7%) subjects, respectively. All 60 (100.0%) subjects were smokers, only 14 (23.3%) of them knew about detrimental effects of tobacco on the periodontium. 46 (76.7%) individuals reported tooth brushing at least twice daily and the same percentage knew that oral hygiene influences the onset of dental caries, but only 7 (11.7%) of them used interdental brushes or floss. **Conclusion:** The results confirmed unsatisfactory oral health of young male Czech offenders. Provision of dental care and preventive measures should be considered during their stay in the custody centres.

**Acknowledgements:** Supported by the PRVOUK-P 28/LF1/6.

**Authors:** NOVOTNA M.(*), DUSKOVA J., BROUKAL Z.
Institute of Clinical and Experimental Dental Medicine, General University Hospital, Prague, Czech Republic
NOVOTNA H.
Youth Detention Centre, Prague, Czech Republic

---

Implementing an obesity intervention in primary dental care: views from participants

**Background:** In England, 70% of adolescents consume sugar sweetened drinks (SSBs) on a regular basis. High SSB consumption is associated with obesity. **Aims:** This study assessed the feasibility and acceptability of delivering a motivation interviewing (MI) intervention to reduce SSB consumption among adolescents attending primary dental care. **Methods:** An exploratory cluster Randomised Controlled Trial (RCT) was performed in an effort to reduce SSBs, using motivational interviewing (MI) among adolescents attending NHS dental practices. For the process evaluation, a mixed methods approach was adopted. Recruitment, retention, and reach...
(number of participants who attended the MI sessions) were explored using quantitative methods. Acceptability of the intervention was assessed by conducting semi-structured interviews with adolescents and dental teams. The resulting qualitative data were analysed using thematic analysis. Ethical approval was sought and obtained from Camden and Islington Community Research Ethics Committee. Results: The intervention was successfully implemented. 10 (of 22) dental practices were recruited (5 control and 5 intervention). Out of 149 potential participants, 39 participants (26.2%) were recruited according to the eligibility criteria. Of those who participated, 5 withdrew (12.8%) from the study, and 3 adolescents were lost to follow-up (7.6%) and from the study, resulting in a retention rate of 79.5%. Of the 22 participants in the intervention group, 16 (72.7%), completed the intervention. In terms of acceptability, participants reported that the study had a positive impact on their knowledge or behaviours. Adolescents in the intervention group were positive about the MI practitioners and being involved in research. Dental teams valued being involved in research and facilitating factors included: supportive research teams, financial incentives, interest in the subject and patient motivation. Dental teams recognised the challenges in recruiting young people and employed varying mechanisms to overcome them. Conclusions: In the group studied, motivational interviewing conducted in dental practices was acceptable to adolescents. Involvement of primary dental care teams in research is feasible and acceptable with adequate support and engagement.

Acknowledgements: This poster presents independent research funded by the National Institute for Health Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number- PB PG 1207 14085). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health


ID: 2306, Presenter: Mihaela Adina Dumitrache

Smoking behavior among adolescents in Bucharest

The aim of this study was to assess the knowledge, attitude and behaviour of Romanian adolescents aged 12-16 from Bucharest, towards tobacco, which is the most preventable cause of disease and death in the world today. Methods: A cross-sectional study was conducted in 2012 among 681 schoolchildren from 8 randomly selected schools in Bucharest, using an anonymous questionnaire; ethics committee approval and informed parental consent were obtained. The data were analysed using descriptive statistics. Results: The response rate was 100%, of which 58% were female (N=395); the mean age was 13.62 years (SD= 0.92). The overall prevalence of smoking was 18%(N=123), the proportion of smokers was bigger in the 14 year group, 34.5% (N=235), and 27.5% in the 15 year and 13 year groups (N=187). Adolescent smokers were more likely to be female, 58.6% (N=399,) than male. Tobacco smoking started at age of 11 years for 14.3% (N=97), at 12 years for 25% (N=170), at 13 years for 43.5% (N= 296) and at 14 years for 10.7% (N=73). The reasons for starting to smoke were: peer influence for 42.4% (N=289), out of curiosity for 31% (N=211), desire to relax for 10.3% (N=70) and desire to feel special for 6% (N=41). 60.8% of the smokers (N=414) had tried to quit smoking and 89% (N= 606) reported that they were able to quit at any time. Their motives for quitting this habit were: hazard to health for 49% (N=333), lung infection for 24% (N=163), tooth staining for 13% (N=88) and addiction for 9% (N=61). 72% of adolescents were not aware of the influence of smoking on oral health (N=490), only 24% of them (N=163) knew about tooth discoloration, 3.2% (N=22) knew that smoking increases the accumulation of calculus, and only 0.8% (N=5) knew that can lead to oral cancer, stomatitis and periodontitis. Conclusions: Smoking is common in Romanian adolescents with the commonest age for smokers to start being 13-years, and they are more likely to be female. The influence of peers is reported to be the commonest reason to start smoking. Knowledge about the ill health effects of tobacco on the oral cavity was low. Smoking cessation programs are needed in Romanian schools in order to inform adolescents about the harm from tobacco and health issues and to teach them different strategies to quit smoking.
**Acknowledgements:** Professional Oral Health Balkans, Procter & Gamble Mkt Romania

**Authors:**
DUMITRACHE M.A. (*), SFEATCU I.R., DIDILESCU A., DUMITRASCU L.C., CARAMIDA M.
U.M.F. “Carol Davila”, Faculty of Dental Medicine, Bucharest, Romania

**ID: 2310, Presenter: Bahareh Tahani**

**Iranian dentists attitude and practices toward tobacco cessation in dental settings**

**Aim:** Dental professionals are in a unique position to promote smoking cessation among their patients. The aim of the current study is to assess Iranian dentists’ practice, knowledge and attitudes toward tobacco cessation programs. **Method:** This study was approved by the ethics committee of Isfahan Medical University and was carried out in Isfahan-Iran in 2012. A valid and reliable questionnaire was designed and piloted. To assess the practice profile, some questions were developed based on the 5As tobacco cessation protocol (Ask, Advise, Assist, Assess and Arrange). Statements on attitudes focused on professional responsibility towards smoking cessation, extent to which smoking cessation falls within the scope of dental practice and effectiveness of smoking cessation using a five-point Likert scale response. The questionnaires were distributed to dentists during their clinic hours. 150 dentists were randomly selected from the list of dentists working in Isfahan-Iran provided by the Vice Chancellery of Medical Care. Chi-square, ANOVA, and t test were used to compare the qualitative and quantitative variables. Analyses were conducted using SPSS 17.00 statistical software. **Results:** 139 valid questionnaires from dentists were finally obtained. Most of the dentists were male (62.5%, n=87) and were practicing in the private sector (72%). A high percentage of dentists correctly identified use of tobacco products (97%) as the main risk factors for oral cancer. It was shown that the cessation program in dental settings covers a small group of patients (about 18%). About 69.1% (n=96) of dentists reported they asked their patients about tobacco use. About 86.5% (n=83) of them advising their patients to quit, 33.8% (n=47) assessed their patients readiness and willingness to quit and about 20% (n=28) of them reported help for their patients in planning for changing their behaviour. A far lower percentage reported active involvement in arranging assistance for smokers to quit (4.3%, n=5). There were no significant difference between male and female dentists except of those who asked their patients (p <0.01); females were significantly more likely to ask (82% vs. 60%). Just about 26% of dentists disagreed or strongly disagreed that the tobacco cessation programs was part of dentists professional responsibility. 40% of dentists believed that encouraging patients to quit will make them feel uncomfortable. **Conclusion:** Iranian dentists Ask and Advise at much higher rates than they Assist, Assess and Arrange with patient quit attempts. They indicated that they were not familiar with clinical guidelines and suggested that lack of training is the major reason for non-adherence. Therefore, planning to encourage dentist to follow the protocol is needed such as conducting continuous educational programs.

**Acknowledgements:** We would like to thank Isfahan University of Medical Science as this paper is based on the results of a project supported—financially and administratively—by the Vice Chancellery of research in this university.

**Authors:**
RAZAVI S.M.
Department of Oral Pathology, Dental School, Isfahan University of Medical Science, Isfahan, Iran
TAHANI B. (*)
Department of Oral Public Health, Dental School, Isfahan University of Medical Science, Isfahan, Iran
ZOLFAGHARI B.
Department of Pharmacognosy, Pharmacy School, Isfahan University of Medical Science, Isfahan, Iran
EMAMI DOOST M.
Dental School, Isfahan University of Medical Science, Isfahan, Iran
**Self-reported gingival bleeding and associated factors in the North Finland 1966 Birth Cohort**

**Aim:** To evaluate the association of self-reported gingival bleeding with sociodemographic and health behaviour factors among subjects in the North Finland 1966 birth cohort. **Method:** Of the 11,541 members of the cohort 8,690 (75%) answered the questionnaire which comprised questions on oral health including gingival bleeding while brushing and dental treatment need as well as sociodemographic factors (gender, marital status and education), general health, BMI and health behaviours. Cross-tabulation and Chi-square tests as well as linear logistic regression analysis were used to analyze the association between the outcome and explanatory variables. Statistical significance was determined at p value level < 0.05. **Results:** Study group was equally distributed between the genders. One fourth of the respondents reported having gingival bleeding while brushing and half estimated having dental treatment need. Men reported significantly more symptoms than women (p<0.05). Logistic regression analysis revealed low tooth brushing frequency, poor general health increasing significantly the risk for gingival bleeding while brushing. The risk was also slightly increased by high BMI (>25) and single marital status. Smoking seemed to be a protecting factor for gingival bleeding (OR 0.767; 95% CI 0.667–0.883). Self-reported treatment need, however, was significantly associated with low toothbrushing frequency, poor general health, and smoking. **Conclusion:** Low tooth brushing frequency, poor general health and BMI over 25 are associated with self-reported gingival bleeding. Smoking is associated with high dental treatment need, but not with gingival bleeding while brushing. However, smoking may mask oral signs of periodontal disease.

**Acknowledgements:** Institute of Dentistry, University of Oulu, Finland

**Authors:**
LAITALA V.J.M. (*), LINTULA T.P., ANTTONEN V.
Institute of Dentistry, University of Oulu, Finland
SIPILA K.
Institute of Dentistry, University of Eastern Finland
JARVELIN M-L.
Imperial College, London, United Kingdom

---

**Self-reported caries prevalence and associated factors in the North Finland 1966 Birth Cohort**

**Aim:** To evaluate the association of self-reported oral health with socio-demographic and health behaviour factors among the members in the North Finland 1966 birth cohort. **Method:** Of the 11,541 members of the cohort 8,690 (75%) responded to the questionnaire in 1997-1998 which comprised questions on oral health (dental decay, gingival bleeding and self-estimated dental treatment need) as well as socio-demographic factors, general health and health behaviours. Cross-tabulation and Chi-square tests as well as linear logistic regression analysis were used to analyse the association between the outcome and explanatory variables. Statistical significance was determined at p value level < 0.05. **Results:** The study group was equally distributed between the genders. One third of the subjects reported having dental decay, half estimated having dental treatment need. Men reported significantly more symptoms than women (p<0.05). Logistic regression analysis revealed low tooth brushing frequency, smoking at least a couple of times a week, low education, male gender, poor general health, and frequent consumption of fizzy drinks significantly increased the risk of dental decay. Self-reported treatment need, however, was significantly associated with low toothbrushing frequency, poor general health, and smoking. **Conclusion:** Demographic factors (male gender, single marital status, having only basic education) as well as poor health behaviours and poor general health are significantly associated with self-reported poor oral health and dental treatment need. These results are noteworthy when designing approaches for oral health promotion for adults.
Acknowledgements: Institute of Dentistry, University of Oulu, Finland

Authors:
LINTULA T.P. (*), LAITALA V.J.M., ANTTONEN V.
Institute of Dentistry, University of Oulu, Finland
SIPILA K.
Institute of Dentistry, University of Eastern Finland
JARVELIN M-R.
Imperial College, London, United Kingdom

ID: 2355, Presenter: Angela Podariu

Investigation of smoking habits among dental medicine students from Timisoara, Romania.

The aim of the study was to assess factors related to smoking in dental medicine students.

Methods: this study was conducted during 2010-2011 involving students aged 20-33 years from the second (n1=67), third (n2=117) and sixth year of study (n3=121) at the Faculty of Dentistry, Timisoara, Romania. After obtaining informed consent, participants answered a questionnaire regarding frequency of smoking, number of cigarettes/day, reasons for starting smoking and smoking related problems.

Results: 56.4% (n=172) of the responders never smoked, 4.3% (n=13) were past smokers, 22% (n=67) current and 10.2% (n=31) occasional smokers. Among occasional smokers, 90.3% (n=28) smoke less than 5 cigarettes/day and 9.7% (n=3) 6-10 cigarettes. 56.3% (n=38) of current smokers smoke between 11-20 and 4.6% (n=3) smoke over 21 cigarettes. Regarding the reasons for starting smoking, 48.4% (n=15) of the occasional smokers said “out of curiosity” and 25.8% (n=8) mentioned other reasons. 56.3% (n=38) of current smokers smoke between 11-20 and 4.6% (n=3) smoke over 21 cigarettes. Regarding the reasons for starting smoking, 48.4% (n=15) of the occasional smokers said “out of curiosity” and 25.8% (n=8) mentioned other reasons. 18.4% (n=12) of the current smokers mentioned the friends influence, 59.8% (n=40) started out of curiosity and 21.8% (n=15) for other reasons. Asked if they were willing to stop smoking, 78.2% are and 21.8% are not. For occasional smokers 54.8% (n=17) wished to quit and 45.2% (n=14) did not. Regarding problems related to smoking, 9.7% (n=3) of occasional smokers mentioned they are tired, 9.7% (n=3) suffer from halitosis and 70.9% (n=22) didn’t mention any problems. For current smokers, 13.8% (n=9) mentioned feeling tired, 24.8% (n=17) suffer from halitosis and 35.6% (n=24) don’t report any problems. Conclusions: Although the study was conducted on a relatively small number of subjects, it allows us to conclude that the subjects are aware of the risks this habit involves. Further studies are needed to address other communities and assess the way this behaviour could be influenced.

Authors:
PODARIU A.C. (*), OANCEA R., POPOVICI R., SAVA-ROSIANU R.
University Of Medicine And Pharmacy, Faculty Of Dentistry, Departament I - Preventive, Community Denistry, Timisoara, Romania

ID: 2364, Presenter: Marja-Liisa Laitala

Finnish mothers' beliefs of and behaviour related to oral health

Aims: Finnish municipal maternity and child health clinics provide free services to all mothers. Our aim was to assess mothers' beliefs about oral health and behaviours related to it. Method: All mothers (n=407) attending two municipal health clinics completed an anonymous and voluntary self-administered questionnaire on oral health behaviours (OHB) such as tooth brushing and smoking, and conceptions related to oral health. The mothers selected their choices for the statements about the impacts of pregnancy and use of sugar on dental and periodontal conditions by means of a Likert scale. The mothers were grouped according to their age: <25, 26-29, 30-34, >35 years. The Ethics Committee of Human Sciences, The University of Oulu approved the study. Statistical evaluation was by means of Chi-squared tests, Pearson's correlation coefficient (r) and logistic regression modelling. Results: Of the mothers, 291 (72%) reported twice-a-day tooth brushing and 69 (17%) were smokers. Twice-a-day tooth brushing was least frequent.
among mothers <25 years compared with the older ones: (N=41, 57% versus N=250, 74-78%; p<0.05). Smoking was most common among those <25 years: (N=27, 38% versus N= 42, 12-13%; p<0.001). Most of the mothers believed that pregnancy has an impact on oral health (348, 86%) and is a cause of dental caries (372, 91%). Gingival bleeding was considered a normal phenomenon by 68 (17%) of the mothers while 223 (55%) thought that sugar causes gingivitis and 220 (54%) caries. Mothers’ belief that pregnancy has an impact on oral health strongly correlated (r=0.54) with belief that pregnancy causes gingivitis. Logistic regression modelling showed that disagreement with ‘Pregnancy causes caries’ was related to disagreement with ‘Pregnancy has an impact on oral health’ (OR=3.2; p<0.001) and to agreement with ‘Sugar causes gingivitis’ (OR=1.7; p=0.007). Conclusion: Surprisingly, the OHB were poorest among young mothers despite their life-long exposure to health education by free oral health services. The mothers believed that sugar is the common cause of oral diseases.

Authors: LAITALA M.L. (*), VIRTANEN J.I., VEHKALAHTI M.M. University of Oulu, Institute of Dentistry, Oulu, Finland

ID: 2439, Presenter: Jorma Virtanen

Smoking habits and social nicotine dependence among Romanian dental students

Aims: To evaluate the smoking habits and social nicotine dependence among dental students, and to find out efficiency of the Kano Test in detecting smokers and non-smokers. Methods: The representative sample comprised 223 first-year and sixth-year undergraduate Romanian dental students from the same university, all of whom completed a self-administered anonymous questionnaire. Data were collected using the Kano Test for Social Nicotine Dependence (KTSND), designed to assess psychological nicotine dependence. The Student t-test, one-way ANOVA test, Chi-square test and a logistic regression model served in the statistical analysis. Results: The smoking rate among the dental students was 35%. The students reporting a higher KTSND score were more likely to be current smokers (OR = 1.2, 95% CI: 1.1 to 1.3; p < 0.001). Among smokers, the females displayed the highest social nicotine dependence. In the logistic regression model, current tobacco use was associated with male gender (OR = 2.5, 95% CI: 1.34-4.69) and KTSND scores (OR = 1.18, 95% CI: 1.1-1.27). Conclusions: Our study showed high smoking rate among the undergraduate dental students. The social nicotine dependence was high in smokers and the KTSND was efficient in detecting smokers and non-smokers in the high prevalence smoking population. More emphasis ought to focus on tobacco prevention and cessation activities in the dental curriculum.

Authors: DIDILIESCU A., SFEATCU R. University of Medicine and Pharmacy, Bucharest, Romania INAGAKI K. Aichi-Gakuin University Junior College, Nagoya, Japan HANGANU S.C. University of Medicine and Pharmacy, Iasi, Romania VIRTANEN J.I. (*) University of Oulu, Oulu, Finland
The oral health condition of frail institutionalised elderly people in Flanders (Belgium)

Aim: The purpose of this study was to evaluate the baseline oral health condition at the moment of first consultation of institutionalized elderly treated by a mobile dental unit. Methods: A cross-sectional trial was carried out on all institutionalized individuals (n=450) consulting the mobile care unit between October 2010 (start of the project) and April 2011, belonging to twelve different nursing homes in Flanders. Several demographic and clinical parameters were registered and explorative data analysis was performed. Ethical approval was obtained from the Ethics Committee of the Ghent University Hospital. Results: The mean age of the study sample was 83.5 years (SD 7.8), 306 (68%) being female. The level of care dependency was low for 68 (15.6%), medium for 113 (25.1%) and high for 225 (56.7%) individuals (n=436). Three hundred and ten (68.9%) were entitled to an increased allowance for health costs. In total (n=418), 184 persons (44.0%) were edentulous, 146 (34.9%) were wearing a full upper and lower denture, 79 persons (18.9%) presented a combination of natural teeth and removable dentures. No implants were observed. The mean number of medications observed was 8.92 (n=412, SD 3.6, range 1- 18), 229 (55.4%) elderly were using anticoagulants or anti-platelet agents and 17 (4.1%) were using bisphosphonates. The mean number of teeth present among dentate persons (n=224) was 12.5 (SD 7.7, range 1- 32) of which 2.3 (SD 4.3, range 0-27) were residual roots. Ninety six persons (41.4%) had carious lesions (excluding residual roots) with a mean number of 1.24 per person (SD 2.0, range 0-9). Fillings were found in 101 individuals (43.7%), with a mean number of 1.46 (SD 2.2, range 1-11). Crowned teeth were found in 40 individuals (17.1%), the mean number of crowns in this group being 3.1 (SD 2.2). In the dentate group, 159 individuals (68.8%) needed extractions, with a mean number per person of 3.71 (SD 5.0, range 0- 32). Among the edentulous (n=184), 141 persons (76.6%) had full upper and lower dentures, 28 persons (15.2%) were wearing only an upper denture and 15 persons (8.2%) were not wearing any denture at all. Of all individuals with removable dentures, 16 (6.4%) were suffering pressure ulcers and in 97 (39%) cases repair, rebasing or renewal was strongly indicated. Conclusions: The oral health condition of institutionalized elderly in Flanders was demonstrated to be poor. Serious efforts should be made to increase the oral health delivery among this population.

Authors: JANSSENS B.(*), VANOBBERGEN J., DE VISSCHERE L. Community Dentistry and Oral Public Health, Dental School Ghent University, Belgium SCHOLS JMG.
Caphri, Dept. General Practice and Dept. Health Services Research, Maastricht University, The Netherlands
Effectiveness of an oral hygiene program in patients with bridges and removable partial dentures

Previously it was revealed that the survival time of prostheses is associated with the oral hygiene level because dental plaque accumulation on tooth and dentures surfaces increases risk of dental caries and periodontal diseases. **Aim:** to evaluate the effectiveness of an oral hygiene program in decreasing dental plaque accumulation and periodontal inflammation in patients with partial dentures. **Method:** A convenience sample of 50 patients aged 20-75- years-old, who had visited the University clinic for prosthetic treatment took part in the program, which was approved by the University Ethical Committee. 25 participants received bridges (fixed partial dentures) and other 25 – both bridges and removable dentures. The oral hygiene program included training in tooth-brushing and cleaning of dentures, instruction in using dental floss, mouthwashes, interdental brushes, water pick, tablets for removable denture cleaning and professional tooth cleaning. Plaque accumulation on natural teeth and fixed partial dentures was evaluated with the PI (Silness & Löe, 1964) and the API (Lange 1971) indices, periodontal status - with the PI Index (Russell 1956). Plaque accumulation on removable partial dentures was estimated with our modification of HI-RPD index (Schubert & Schubert, 1979). Oral examinations were performed at baseline, after 3, 6, 12 and 18 months. A statistical analysis was carried out with Student’s t-test. **Results:** During the study period significant reduction of plaque accumulation both on tooth and denture surfaces was observed. The mean values of PI index decreased from 2.04±0.17 at baseline to 1.33±0.11 after 3 months (34.8%), API – from 71.6±6.8 to 39.0±3.1 (45.5%) and modified HI-RPD - from 3.08±0.16 to 1.39±0.11 (54.9%), (p<0.001). After 18 months the changes were 1.12±0.08 (45.1%), 28.4±2.4 (60.3%) and 1.63±0.14 (47.1%) respectively with significant difference compare to baseline (p<0.001). The difference in API Index was also significant between 3- and 12- months (29.9±2.4) (p<0.05), 3- and 18- months examinations (p<0.01). PI Index (Russel) value was significantly diminished from 4.08±0.35 (baseline) to 1.77±0.15 (56.6%) and 1.15±0.09 (72.8%) after 3 and 18 months, respectively. **Conclusions:** Study results demonstrated significant improvement of oral hygiene level and periodontal status in patients with bridges and removable partial dentures due to detailed oral hygiene instruction and regular dentist’s supervision.

Authors:

KUZMINA E. (*), KAZANSKY M., IBRAGIMOV T.
Moscow State University of Medicine and Dentistry, Moscow, Russia

Fluoride varnish for prevention of caries in geriatric patients

This study **aims** to assess the impact of fluoride varnish on crown and root caries incidence among institutionalised older people. The poor oral status and oral hygiene of dependent older people and caregivers’ difficulties to perform daily oral hygiene requires preventive measures to maintain oral health of geriatric patients. **Method:** This is a prospective randomised interventional study using a split mouth design. Informed consent was signed by the patient if there is no cognitive impairment, a member of the patient’s family or the patient’s legal guardian. The patient is their own control. After teeth cleaning the varnish is applied every three months for two years on every tooth of one randomly selected side of the patient’s mouth, the other side being the control. Tooth cleaning is performed by the dentist in the patient’s room. Ultrasonic and manual scaling can both be used. The primary outcome is the mean number of crown and root caries lesions. The eligible population consisted of all patients in the long-term care participant structures for which consent for participation in the study has been collected. Ethics approval was gained from the French ethical research committee of the Intercommunal Hospital Center of Poissy Saint Germain and the C.N.I.L (French national committee of computing and liberties). Data analysis will use SAS software v8.0. Caries incidence rate between both sides of the oral cavity (treated and untreated), will be compared with a Chi-Square test with matched pairs (McNemar Test). The alpha risk is 5%, and the test’s power 80%. The 200 patients, overestimated to take into account expected deaths, will allow, under these hypotheses, to highlight a difference of at least 10% of
the main assessment criterion between the groups (5 % versus 15 %). **Results:** The study is ongoing. Early progress will be presented at the conference. **Conclusion:** This varnish application may provide benefits to dependant patients, including patients with dementia, by reducing the prevalence of new caries, the existing lesions’ progression and thereby limiting the need for dental treatment.

**Acknowledgements:** HEALTH OF MINISTRY, COLGATE

**Authors:**
VEILLE-FINET A. (*),  FERNANDES G.  
International Association of Gerodontology, France
HADAGE D. 
Paris Nord Research Unit, France
CHARRU P. 
Geriatric Department, Louis Mourier Hospital AP-HP, France
FOLLIGUET M.  
Dental Department, Louis Mourier Hospital AP-HP, France

---

**ID: 2477, Presenter: Gisele Fernandes**

**Patients’ oral health status in a memory consultation: a pilot study**

A specialised memory consultation aims to identify early stage Alzheimer’s disease, provide every patient with an accurate diagnosis and appropriate treatment for their memory disorders. Early screening helps people with memory deficits pursue a worthwhile life. As the disease progresses, the patients’ oral health status gets worse, that is why it is essential to put in place preventive measures to slow dental diseases onset. The aims of the study were to describe the patients’ oral status and their caregivers attitudes towards dental care, and to evaluate the relationship between patients’ oral health and their caregivers’ dental practices. **Methods:** This study was conducted over six months at the Paul Brousse Hospital in Villejuif (Ile de France). Each patient coming to the memory consultation had an oral examination performed by a dental student. Meanwhile, any caregiver accompanying the patient was asked to answer a questionnaire. Not every patient has an accompanying person. Oral health was compared in two groups: patients who have a caregiver and a comparison group of patients living alone. **Results:** 25 patients were examined. 14 had a caregiver. Patients with caregivers are older and present more severe cognitive impairment than the comparison patients. They have a poorer oral status but a better oral hygiene index compared to the comparison group. **Conclusion:** As the patient’s autonomy declines with the progression of Alzheimer’s disease, caregivers are needed to provide oral hygiene. Improving the oral health awareness of caregivers may promote better oral health and quality of life for people with cognitive impairments.

**Authors:**
FERNANDES G. (*), VEILLE-FINET A.  
International Association of Gerodontology, Paris, France
HAJAGE D.  
Paris Nord Research Unit, Paris, France
FOLLIGUET M.  
Louis Mourier Hospital AP-HP, Paris, France

---

**ID: 2321, Presenter: Jacques Vanobbergen**

**Evaluation of a high-risk-group-specific oral health promotion project**

**Aim:** The aim of the study was to evaluate a high-risk-specific oral health promotion campaign in a 3-year longitudinal study (2010-2012). **Methods:** The intervention group consisted of 600 children spread over 10 playgrounds in the city of Ghent (Flanders-Belgium), managed by “vzw Jong”, a professional youth welfare organisation. The control group consisted of a sample representative of
the average primary school population in Flanders-Belgium. Playgrounds are situated in the 19th century belt around the city of Ghent known as an area with vulnerable neighbourhoods, based on predefined indicators. To evaluate the impact of the intervention a cross-sectional survey was performed yearly on random samples in both the intervention and control group. "Playground" (intervention) or "school" (control) were the unit of randomisation. The baseline analysis included 195 (33%) and 367 children for the intervention and control group respectively. The final year analysis included 211 (35%) and 222 children. The clinical parameters were measured using the ICDAS criteria for caries and the Silness and Löe index for dental plaque. Knowledge and attitude were measured using a questionnaire. The validity and reproducibility of the questionnaire was tested in a pilot-study. Statistical analyses were performed using non-parametric t-test (Mann-Whitney) and paired t-tests for the comparison of means, depending on the nature of the variables. The study was approved by the Ethics Committee of the University Hospital Ghent.

Results:
Mean age at baseline was 8.0 ± 2.0 years and 8.3 ± 0.5 years for the intervention and control group respectively. Significant baseline differences were found in all considered parameters showing an important oral health deprivation in the intervention group. After 3-year health promotion activities significant differences were found in the intervention group for dental plaque (p=0.02), care index (CI=FT/DMFT) (p<0.01) and treatment index (TI=MFT/DMFT) (p<0.001). The Plaque Index decreased from 1.23 (SD 0.61) to 1.07 (SD 0.67). The care index increased from 29.5% to 54% and the treatment index from 36% to 61%. There was a non-significant increase of knowledge (4.5 to 5.2; p=0.09) and attitude (6.9 to 7.2; p=0.16). After the 3-year oral health promotion campaign, only the treatment index reached the level of the control group (p=0.11). For all other variables there was still a gap between the target group and the average primary school population in Flanders.

Conclusions:
There is an important oral health gap between vulnerable neighbourhoods and the average primary school population in Flanders. A risk-specific approach in oral health promotion resulted in significant improvement in oral health parameters but was not able to eliminate the entire gap.

Authors:
VANOBBERGEN J.(*), DE REU G, NAERT J., DE VISSCHERE L.
Community Dentistry and Oral Public Health, Dental School Ghent University, Belgium

ID: 2372, Presenter: Catarina Fernandes

Dental Caries in a Group of Portuguese Type-2 Diabetics

AIM: To determine the prevalence of dental caries in a group of type-2 diabetic patients attending a public primary health centre in Espinho, Portugal. Methods: A cross-sectional study was performed in a computer generated random sample who attended a primary health care clinic between January and April 2013. The exclusion criteria were: did: not agree to take part in the study; diabetics with functional limitation or bedridden and those whose medical records did not provide sufficient details of their diabetes. World Health Organisation (1997) criteria were applied to report DMFT and oral hygiene after a through oral examination performed by one calibrated dentist. The resulting data were entered into SPSS v.21. A logistical regression was performed with DMFT as dependent variable and adjusted for several independent risk factors. Ethical approval was obtained from Ethical Commission of the Health Regional Administration. Results: The 284 diabetics who were recruited to the study had an average age of 67.9 ± 9.5 years and 144 (50.7%) were male. The average time since diagnosis of type 2 diabetes was 9.6 (± 8.3) years, 240 (84.5%) were in metabolic control and glycated haemoglobin average was 6.7% ±1.1 (range 4.9-11.7). Daily oral hygiene was reported by 272 (96%) of the patients, but only 40 (14%) brushed three times a day and 102 (37%) twice a day. The average DMFT was 17.7±8.0, 177 individuals (62.3%) with caries, 269 individuals (94.7) with missing teeth, and 174 individuals (61.3%) filled teeth. There was no difference in average DMFT scores between men and women. There was a positive association between higher DMFT scores in those whose metabolic values were not controlled. Conclusions: In the group studied, the prevalence of dental caries was higher than in other studies of elderly type 2 diabetics, but similar to that reported in studies of similar age groups of Portuguese population.
ID: 2451, Presenter: Corrado Paganelli

Dental tourism: a questionnaire survey of the population attending an Italian 24 hour emergency dental service.

The aim of the study was to investigate the perceived need for treatment, views on the cost / benefit balance of dental treatment and the overall dental tourism experience using a questionnaire survey of the population attending a 24 hour emergency dental service. **Methods:** A questionnaire was used for 3 months on all patients presenting to the emergency service on 6 randomly selected days a month. Responses in this prospective longitudinal survey data were collected by trained dentist-examiners from a sample of 580 patients. None refused to fill out the questionnaire. Ethical approval and parental consent was obtained for this study. **Results:** The mean age of the sample was 45 years (range 26 to 68 years). 65% (377) were born in Italy, 19% (110) were born in Morocco and other Arabic countries, 12% (70) were born in Romania, and 4% (23) in other Eastern extra EU countries. 83% (481) had a secondary school or lower level of education, 12% (70) a high-school education, and 5% (29) a college level education. Presenting factors were: periodontitis in 40% of cases (232), pulpitis in 37% (215 patients), periodontal abscess in 13% (75), tooth fracture in 10% (58 patients). 87 (15%) (48 male and 39 female) of all responders had been treated in countries other than Italy because of dental tourism; 58 (10%) (27 male and 31 female) reported that they had direct relatives who had been dental tourists. The proposed treatment plan was in 133 (92%) of the cases based on implant supported immediate dentures or equivalent fixed prosthesis. The patients reported misunderstanding of the costs, misunderstanding of informed consent procedures; misunderstanding of treatment needs evaluation in 95% of cases. After evaluation of treatment needs and presentation of alternative treatment options, 45% of all the responders declared a change in attitude towards oral health and their interest in treatment plans. **Conclusions:** In the study population dental tourism as direct personal experience is reported by 15% and for direct relatives in another 10%. In most of the cases (95%) an implant based treatment plan had been proposed, even when it was not the best treatment option. A change in the perceptions of the cost / benefit balance in dental care has been reported in 45% of the responders after better explanation of the treatment options. These findings are important because it suggests that logistic or economic reasons influence the type of treatment plans proposed to patients acting as dental tourists.

ID: 2371, Presenter: Ivor Chestnutt

Tooth whitening – a public survey of women’s perceptions and attitudes

The options for individuals to have their teeth whitened have increased greatly, be this via in-surgery whitening by dental professionals, at home by over-the-counter products or even in beauty parlours and hairdressing salons. The views of women on these changes are unclear. **Aim:** this
study examined personal experience of tooth whitening, the desirability of tooth whitening and willingness to pay for the procedure. **Methods:** A convenience sample of 200 women, were interviewed in a public shopping street in Cardiff. A 29 item questionnaire, accompanied by cue-cards, was administered by a single interviewer. Participants’ responses were recorded and transferred to an electronic spreadsheet. Data were analysed by SPSS v16. Frequency counts were used to describe sample demographics and Chi square analysis was undertaken to determine the relationship between variables. **Results:** Of the 200 women interviewed; 180 (90%) claimed to have heard of tooth whitening, and 155 (77.5%) had used a “whitening toothpaste”. Only 19 (9.5%) women reported having their teeth whitened, 13 of these using an over-the-counter kit. 111 participants who had not previously had their teeth whitened said they would consider doing so. The majority of those who either had undergone tooth whitening or who would consider doing so, would prefer to have this done by a dentist. Only 5 (3.8%) said they were happy to have their teeth whitened in a beauty salon. The average price that participants were willing to pay was less than the current rates charged by dentists in Cardiff. It was agreed by 146 (73%) that tooth whitening should not be available via the National Health Service. Those aged 25 years and younger were significantly (P<0.03) more likely to claim media influence on their desire for whiter teeth. **Conclusions:** this survey provides an up to date insight into the public’s attitude to tooth whitening.

**Authors:**
LAWSON C., CHESTNUTT I.G. (*)
Applied Clinical Research and Public Health, Cardiff University School of Dentistry, Wales.

**ID: 2373, Presenter: Agnes Finet**

**Promotion of oral health among non dental students in France.**

Epidemiological data on students' hygiene and oral habits are rare. However, many changes occur during this period of life, increasing the risk of poor oral health, so our study **aims** were to promote oral health among non-dental students and to collect information about their oral habits. **Methods:** Two stalls were organised in 10 university student cafeterias in Paris in 2012-2013, from 12:00 to 16:00. They were staffed by 6th year dental students and named after famous TV shows. One was “The price is right”. Here non dental student subjects who attended were invited to guess the cost of regular dental care such as x-rays, scaling, fillings or tooth extraction. On the 2nd stall named, “How clean is your mouth?” the subjects had to show their tooth brushing technique with a real toothbrush and a dental cast. We collected data on their oral habits by questionnaire and we tried to interview all of the subjects who participated. **Results:** Among the 1417 students interviewed, 519 (37%) were male and 893 (63%) were female. A total of 62% were studying for a degree, 30% for a master degree and 8% were in other programs. 214 (15%) had no private personal insurance (covering dental care); 535 (38%) acknowledged that they visit a dentist less than once a year, 867 (62%) at least once a year. Considering the type of toothbrush, 369 (26%) used a soft one, 648 (46%) a medium one, 138 (10%) a hard one, 109 (8%) an electric one and 137 (10%) did not know. Only 251 (18%) used dental floss. 97 (7%) conceded having had toothache for a period of more than a year and 152 (11%) for less than a year. If experiencing toothache, 831 (60%) reported they would go to the dentist whereas 563 (40%) would wait until the pain goes away. The main reasons for not going to the dentist were lack of time (51%), budget issues (28%) and fear (8%). From the games on the stalls students were not aware of the true costs of basic dental care; most of them assumed costs were much higher than they truly are. Most students knew the correct brushing technique but some acknowledged not using it. **Conclusion:** Only a proportion of the students performed adequate oral hygiene (soft/medium toothbrush, flossing) and visited the dentist regularly at least once a year. Oral health promotion may be necessary to improve these issues among the student population.

**Authors:**
GERMA A., FINET A. (*), FERNANDES G., FOLLIGUET M.
Faculty of Odontology, Public Health Department, Paris Descartes University, France
Aim: To evaluate attitudes to dental care and general health of students being educated in professional programs. Methods: The survey was approved by the National Lithuanian Ethics Board (#158200-02-281-66). To prepare a questionnaire two focus groups of people from diverse social backgrounds were formed. Focus groups discussions lasted about 45 minutes and related to „Why there is a substantial proportion of Lithuanians who develop purulent odontogenic infections.” Findings from the focus groups formed the basis of a questionnaire which comprised 72 questions/statements. Statements included basic knowledge about oral anatomy, dental health, dental care habits and attitudes to oral and general health. Statements were rated by respondents on a 10 point scale from “0 - I completely disagree” to “10 - I completely agree”. Third year students from medical and natural science faculties and students chosen randomly from Vilnius college of design, Vilnius international school of law and business and the University of Mykolas Romeris were surveyed. On the day of the survey, at the end of a randomly selected lecture, the questionnaire was distributed among all students present in the class. The students were informed that the participation in this study was voluntary. Students willing to complete the questionnaire remained in the class. The inclusion criterion was the response to all the questions. No invited student refused to complete a questionnaire but 4 incomplete ones were returned, response rate was 98%. The sample comprised 115 medical and nature of science students (Group 1- medical) and 178 students from other programs (Group 2 - non-medical). SPSS 20.0 was used for statistical analyses, descriptive statistics, chi square, and independent sample tests were performed and the threshold for statistical significance was set at P<0.05. Results: A total of 293 students were surveyed. Male to female ratio was 1:2.1 and mean age was 21.2 ± 1.7 years. Of all, 81% of participants were from middle income families, 44% visited dentists only when in pain or having a problem, for 94% good general and oral health were important, 61% believed that healthy teeth are inherited, 40% agreed that a tooth is a body part similar to hair or nails and 51% that loss of teeth is a natural aging process, 80% thought that vitamins can strengthen teeth and 85% considered dental services to be expensive and 41% lacked knowledge about severe dental complications. Statistically significant differences were observed between medical and non-medical groups regarding knowledge of oral anatomy, physiology, pathology, microbiology and pharmacology. Conclusion: A majority of the students surveyed in this study considered oral health to be important part of general health, but high proportions of them avoid prophylactic dental visits.

Authors:
RASTENIENE R. (*), PURIENE A., PECIULIENE V., BORUSEVICIUS R.
Institute of odontology, Vilnius, Lithuania
Oral Health and quality of life in the Danube Delta Reserve Biosphere

The aim of this study was to investigate the effects of oral health issues of children aged 6-12 living in the Danube Delta Romania, on their quality of life, as assessed by the children themselves as well as by their parents/guardians. Methods: This study had a cross-sectional design and was conducted with all 595 school-children aged 6-12 years old living in the Danube Delta Biosphere Reserve. The protocol was given ethical approval by the local authorities and each school. Informed consent from parents was received for each child. All children were clinically examined based on the World Health Organization 1997 criteria. Dental caries, periodontal health, oral hygiene, orthodontic status and dental fluorosis were assessed. The Romanian Version of OHRQOL was applied during interviews with parents. Data was analysed using SPSS for Windows version 17.0. Results: The oral health status of children living in the Danube Delta Biosphere Reserve can be classified as poor. 38% of children reported at least one daily activity as being affected by their oral health, 17% reported 2 activities and 13% reported 3 activities while 27% of the children reported 6-8 activities as being affected. Data for dental caries, periodontal health, oral hygiene, orthodontic status and dental fluorosis have been reported previously. Conclusions: Children with oral health issues present a significantly lower oral health related quality of life than children without oral health problems. Most frequently affected activities were eating, oral hygiene, and the less affected were study activity and social life. Oral health related QOL is valid and reliable both in self reports from children as well as by asking their parents/guardians about their perceptions on their children’s OHRQoL. Oral health education programs are required for the children living in this economically poorly developed region in order to improve the oral health of its children.

Authors: TEODORA J.I., NUCA C. Department of Preventive Dentistry and Orthodontics, Faculty of Dental Medicine, Ovidius University FURTUNESCU F. Department of Public Health and Management, UMF Carol Davila, Bucharest, Romania NICOLAE C., CARAIANE A. Department of Orthodontics, Faculty of Dental Medicine Ovidius, University, Constanta, Romania

Discomfort due to dental problems among middle-aged Lithuanian university employees

Aims: To assess discomfort experienced due to dental problems and factors related to it among middle-aged Lithuanian university employees. Method: A questionnaire survey was conducted among all 35-44 year old employees (n=862) of four Universities in Lithuania, in March-June 2005. Self-administered questionnaires inquired about experienced discomfort due to dental problems, reason for the most recent dental visit, habitual reason for dental visiting, and self-assessed dental status. Answers to the question “During the last six months, how often have you had discomfort because of problems with your teeth?” comprised the following aspects: eating, communication, pronouncing, feeling taste of food, general embarrassment, satisfaction with life,
doing usual job. Three answering alternatives were offered for each question: often, seldom, and never, later dichotomised as experienced or not. The questions were selected from the validated subset of OHIP-14 (Slade 1997) and translated into Lithuanian. Gender, marital status, education and income served as background information. Statistical evaluation was performed by Chi-square tests. Results: A total of 553 (64%) subjects responded: 79% were women, 72% were married/cohabiting, 82% had a university degree; 39% reported medium household income, while 38% were below and 23% above it. Of all, 23% reported having experienced no discomfort due to dental problems during the last six months, significantly more often those with higher income (32% vs. 18%, p=0.013), those who visited a dentist recently for preventive reasons (39% vs. 19%, p<0.001), those who indicated preventive check-ups as the habitual reason for dental visiting (29% vs. 17%, p=0.001), and those who assessed their dental health (29% vs. 5%, p<0.001) and appearance (29% vs. 8%, p<0.001) as good or very good. Conclusions: Absence of discomfort due to dental problems is positively related to recent and habitual preventive dental visiting, better self-assessment of dental status, and higher income among middle-aged well educated Lithuanians.

Authors: SAKALAUSKIENE Z.*, MACHIULSKIENE V.
Faculty of Odontology, Lithuanian University of Health Sciences, Kaunas, Lithuania
VEHKALAHTI M.M., MURTOMAA H.
Institute of Dentistry, University of Helsinki, Helsinki, Finland

ID: 2362, Presenter: Ina Schüler

Patient versus dentist satisfaction with removable dentures in Thuringia, Germany

Aim: To compare patients and dentist’s satisfaction with removable dentures (RD) in Thuringia in a regional health service initiative. Method: During the “Oral Health Promotion Action 2012” organised by the German Dental Association, a regional survey “Check your dentures” was conducted between 01.09.2012 and 04.10.2012 in dental practices in Thuringia. A convenience sample of all patients with RD, visiting dental practices were invited to complete an anonymous questionnaire. Patient’s satisfaction, oral health related quality of life (OHRQoL) and oral hygiene were collected using a questionnaire containing 6 items from the German version OHIP14 and other items. The dentist added data about type and quality of dentures, oral and denture hygiene. The response rate was over 10%. Data was analysed by SPSS 20.0 using descriptive statistics and Kruskal-Wallis-Tests. The ethics committee approved this study. Results: 536 Patients aged between 25 and 95 (mean age 68.8 years, SD=10.4), wearing 879 RD with 0 to 40 years of service, were included. Although overall patient’s satisfaction was 82.8% (n=444), problems with OHRQoL were registered. 14.2% (n=63) patients declared difficulties of mastication, 4.7% (n=21) pain, 4.5% (n=20) speech problems and 3.8% (n=17) alteration of taste. Adaptation (p=0.001) but not satisfaction (p=0.215) with the denture was significant increased with longer service time. In the upper jaws, most patients were satisfied with complete dentures (44.2%; n=174), followed by telescopic dentures (25.4%; n=100) and model cast dentures (23.9%; n=94). In the lower jaw, 38.7% (n=130) patients were satisfied with model cast dentures, 30.7% (n=103) with telescopic and 22.0% with complete dentures. In patients satisfied with their RD, dentists reported 20.7% (n=92) needed replacement, 11.9% (n=53) had insufficient occlusion, 8.1% (n=36) needed relining and 5.6% (n=25) needed repair. Conclusion: Patient’s satisfaction with RD is high in Thuringia. In patients with subjective perception of satisfaction, dentists assessed various treatment needs and patients declared alterations of OHRQoL. Treatment planning should be based on clear communication about treatment outcomes.

Authors: SCHÜLER I.M.(*), HEINRICH-WELTZIEN
Department of Preventive Dentistry and Paediatric Dentistry, Jena University Hospital, Jena, Germany
WAGNER A.
German Dental Association, Thuringian Dental Chamber, Erfurt, Germany
**ID: 2445, Presenter: Daniela Santucci**

**Oral Health and Quality of Life in Institutionalised Older Maltese Adults.**

Institutionalised older adults are reported to have a poorer quality of life than independent older adults, with poorer oral health-related quality of life. Maltese older adults have a low proficiency in English and it has been reported that Maltese patients living in Australia were unable to participate in dental surveys due to English literacy barriers. The aim of the study was to develop reliable and valid Maltese versions of 3 internationally-reliable and valid oral health-related quality of life (OHRQoL) questionnaires and then determine the oral health status and oral health related quality of life of institutionalised older adults in Malta. **Methods:** Ethical approval was obtained from the University of Malta. The 3 questionnaires (OHIP-14, GOHAI and Denture Satisfaction) were translated into Maltese and back translated into English to compare with the originals. Specific sampling of a population well versed in Maltese and English was carried out to obtain a sample of respondents for each questionnaire (OHIP-14 n=54, GOHAI n=51, Denture Satisfaction n=51). Data was gathered through self-administered questionnaires, administering first the English version, followed by the Maltese version one week later. To then determine oral health status a random sample of 278 older Maltese adults with an average age of 83.5 ± 6.5 years from 9 state institutions participated in the study. Participants were both clinically examined and answered a questionnaire for socio-demographic, medical and OHRQoL data. **Results:** Cronbach’s alpha for all of the three translated questionnaires was high (>0.7) indicating satisfactory test-retest reliability of the instruments. Similarly the Spearman correlation coefficient for both the English and Maltese versions of OHIP-14 and GOHAI was good (>0.6). When the questionnaires were used on the older Maltese adults significant associations were found between questionnaire scores and parameters of oral health. OHIP-14 scores were associated with periodontal pocket depth (p=0.007), DMFT (p=0.011), number of carious teeth (p=0.004), number of missing teeth (p=0.005), number of functional sets of opposing teeth present (p=0.043) and types of prosthesis (p<0.05). Associations were found between GOHAI scores and periodontal pocket depth (p<0.0001), DMFT (p=0.018), carious teeth (p=0.002), number of missing teeth (p<0.0001), number of teeth present (p=0.028), types of prosthesis (p<0.05), maxillary dentures (p<0.0001), mandibular dentures (p<0.0001) and Denture Satisfaction (p<0.0001). Associations were also found between Denture Satisfaction and denture age (p=0.010), and types of prostheses (p<0.05). The overall response rate was 62%. **Conclusions:** The Maltese versions of questionnaires developed for OHIP-14, GOHAI and The Denture Satisfaction Questionnaire can be used as a reliable and valid alternative to the English versions in studies on Maltese patients. There is also a consistent significant association between measures of oral health status and the oral health-related quality of life in state institutionalised older adults in Malta.

**Authors:**
SANTUCCI D., ATTARD N.
Faculty of Dental Surgery, University Of Malta

---

**ID: 2344, Presenter: Jana Vasakova**

**Prague preschool childrens perception of their dentists**

**Aims:** To assess preschool children’s attitudes towards their dentists. **Methods:** A questionnaire was developed to evaluate children’s attitudes towards their dentists. Informed consent to distribute the questionnaire was obtained from the school principals and parents. The investigators filled the questionnaire out with the children. The questionnaire recorded age, gender, place of residence and contained 17 attitudinal items related to the dentist’s gender, attire, age, personal protective equipment and dental clinic interior. The children expressed their attitudes to the above items by choosing from pictograms or photographs. A previous dental experience, if any, was recorded, along with the date of the first dental visit provided by the parents. In a pilot study, 44 children were asked to complete the questionnaire and to identify any questions which were unclear. Subsequently, the questionnaire was modified accordingly and retested for internal consistency (Cronbach’s alpha 0.75). The child subjects for the main study were recruited in randomly selected nurseries in the capital city and rural regions. Then all children were included.
based on signed informed consent. Chi-square test at the significance level of 5% was used to test the relationships between the variables. **Results:** The questionnaire was completed by 439 children (247 girls, 192 boys; response rate 76.6%) within an age range of 3-7 years, attending public nurseries in the capital city Prague (312 children in 4 nurseries) and in other regions (127 children in 4 nurseries). In total, 376 (85.6%) of the study subjects had already been to the dentist. The girls preferred a dental office decorated with motifs for children more than boys (p=0.05). The children with a previous dental experience (p=0.05) and those who lived out of Prague (p=0.04) were more likely to prefer motifs for children in a dental office. The girls preferred female dentists at the age of their parents (p=0.05). The children currently undergoing dental treatment preferred female dentists, at the age of their parents (p=0.03), wearing colourful medical uniforms. Children from non-Prague regions preferred female dentist in coloured clothes without any protective equipment more than children from Prague (p=0.04). Several reasons for children's dental anxiety were identified. These were related to tooth drilling more in girls than in boys (p=0.03). The children preferred their parents staying in the dental office during their treatment (p=0.02). The children who lived out of Prague were more afraid of tooth drilling and extraction than those from Prague (p=0.03). **Conclusions:** The study described Czech preschool children's perceptions and preferences towards dental visits and dentists. Dental anxiety of children was related to the age of their first dental visit (2.5 years in non-Prague children, 1.6 years in Prague children), previous dental treatment and place of residence. Identification of children's attitudes towards their dentists could help initiate positive changes to make dental treatment more comfortable for preschool children.

**Acknowledgements:** Supported by program PRVOUK-P 28/LF1/6.

**Authors:**
VASAKOVA J. (*), BROUKAL Z., NAVAROVA L., TEUBEROVA Z.
Institute of Clinical and Experimental Dental Medicine (ICEDM), Charles University, Prague, Czech Republic

**ID: 2349, Presenter: Emma O'Keefe**

**Evaluation of dental therapists carrying out dental examinations in a school setting**

**Aim:** To measure the level of agreement between dental therapists and a gold standard dentist undertaking National Dental Inspection Programme (NDIP) epidemiological examinations in Scotland. **Method:** A study of inter-rater agreement between 19 dental therapists and the national gold standard dentist was carried out. Attention was given to sample size to ensure sufficient statistical power for both the number of therapists and number of children to be involved in the study, whilst giving due consideration to the practicalities of conducting the study. Pre-calibration training was carried out during the two-day study using the caries diagnostic criteria and examination techniques agreed by the British Association for the Study of Community Dentistry (BASCD). Twenty-three Primary 1 (P1) children (5 years old) and 17 Primary 7 (P7) children (11 years old), recruited from two primary schools in the city of Perth (March 2013) were examined. The East of Scotland Research Ethics Service approved the study. Agreement was assessed using kappa statistics on d3mft and D3MFT for P1 and P7 children. Historic NDIP calibration P1 and P7 data from 2009-2012 involving dentists as examiners were used for comparison. **Results:** The mean kappa score was 0.84 (SD 0.07) ranging from 0.69 to 0.94. All therapists scored either good or substantial/very good agreement with the national gold standard dentist. This compares with historic NDIP calibration data with dentists as examiners, against the same gold standard dentist, where the mean kappa value was 0.68 (SD 0.22) with a range from 0.35 to 1.00. **Conclusion:** The authors conclude that dental therapists show a high level of inter-examiner agreement and with the appropriate annual training and calibration could undertake dental epidemiological examinations.
Acknowledgements: The study was supported by the Chief Dental Officer, Scottish Government

Authors:
O’KEEFE E.J. (*)
NHS Fife, Leven, Scotland
MCMAHON A.D., MACPHERSON L.M.D.
Community Oral Health, University of Glasgow Dental School, Glasgow, Scotland
JONES C.M.
NHS Health Scotland, Edinburgh, Scotland
CURNOW M.
NHS Tayside, Perth, Scotland

ID: 2348, Presenter: Jari Linden

Effect of changing dentists on length of recall intervals in the Finnish PDS.

Individual recall intervals based on patients’ oral health status are recommended in the Finnish Public Dental Service (PDS). Aims: This study aimed to analyse the effect of changing dentists on the length of individual recall intervals. Methods: This retrospective registry-based study was conducted in the PDS in Lohja, Finland. The data were collected from patient database records in the years 2005-2011 and the population consisted of adults (>15 years) (n=1,544). The outcome was recall interval, which was counted in days from the day when the dentist suggested the recall to the first day of the recall-month. The main determinant was a dichotomous variable, whether the patient was new or familiar with the dentist (familiar patient). Other determinants were oral health indices at dental examination, the maximum count of Community Periodontal Index (CPI), decayed teeth (DT), filled teeth (FT), and the number of teeth with an initial caries lesion (IT). Patient’s age and number of teeth (NT) were considered as confounders. Multivariate regression analysis was used to analyse the associations and the main determinant familiar patient grouped all effects. R 2.15 environment for statistical computing was used for descriptive and inferential analyses. Results: in total there were 1,632 examinations and recall-intervals determined by a dentist. In 767 (47%) cases the dentist examined a new patient. In that case, the mean recall was 497 days compared to 580 days when the dentist examined a familiar patient. The strongest determinants of recall-interval were CPI (p<0.01), age (p<0.01), DT (p<0.01) familiar patient (p<0.01), and NT (p=0.01). FT and IT were not statistically significant. Recall intervals were longer according to all the significant determinants when the same dentist examined the patient. Conclusions: Permanent doctor-patient relationship determines longer recall-intervals. That could avoid unnecessary treatments and save costs. The fact that the number of initial caries lesions was not significant suggests that treatment may not be preventively-orientated.

Acknowledgements: The study was supported by Lohja town and Finnish Dental Association Apollonia.

Authors:
LINDEN J. (*), PIENIHÄKKINEN K.
University of Turku, Institute of Dentistry, Turku, Finland
SUOMINEN L.
University of Eastern Finland, Institute of Dentistry, Kuopio, Finland
HONKALA E.
Faculty of Dentistry, University of Kuwait, Kuwait University of Turku, Institute of Dentistry, Turkey
NHS contracts mediate the relationship between UK dental practitioners as independent contractors, and the State which reimburses them for their services to patients. Recent years have seen several contract revisions and each version has been met with practitioner behaviour viewed as opportunism. **Aim:** to identify factors which facilitate and hinder the use of contracts to manage and strategically develop dental services. **Method:** An electronic search of the literature was undertaken using Web of Science, Scopus and Medline databases. The search was limited to journal articles published in English from 1980 onwards. Concepts and relationships between concepts were identified and mid-level theory organised as sub-themes of macro-theory. Higher level abstraction of concepts let to production of a logic map conveying internal pathways linking contracts to opportunism. **Results:** 1519 titles were identified. After abstract and paper screening, 81 papers were included in the review. Five macro-theories were identified: 1) the use of managed competition to promote efficiency and quality gains; 2) the Principal-Agent model; 3) Transaction Cost Economics; 4) Relational contracts; 5) Markets are institutionally as well as socially embedded. Three pathways to control opportunism were identified as 1) tailoring of contract design; 2) fostering a sense of duty, reciprocity and solidarity via relations with commissioners; and 3) using the influence of personal and professional social networks. **Conclusion:** It is likely that multiple mechanisms restrain opportunism and more research is needed to examine how alternative mechanisms can be used concurrently to supplement and reinforce each other.

**Acknowledgements:** This project was funded by the National Institute for Health Research Health Services and Delivery Research Programme (project number 09/1801/1055). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HS&DR Programme, NIHR, NHS or the Department of Health

**Authors:**
HARRIS R.V. (*), MOSEDALE S., GARNER J., PERKINS E.
University of Liverpool, England, UK

**ID: 2370, Presenter: Adrian Gheorghe**

**Study Of Reasons For Students To Study Dentistry At Constanta Dental School**

**Aim(s):** This study aimed to investigate the factors that motivated new students to study at the Faculty of Dentistry Constanta during 2008-2012. **Method:** The survey was conducted at the Faculty of Dental Medicine, Ovidius University of Constanta, Romania. First year dental undergraduates were invited to complete a pre-piloted questionnaire on their motivation and reasons for applying to the faculty. All new students, a total of 205 (40 (20%) men and 165 (80%) women), who entered the faculty from 2008 to 2012 were surveyed between 2008 and 2012 just after they had entered the faculty. They completed a pre-piloted questionnaire, which included demographic questions including age, gender, year of entry to the dental faculty and questions on their reasons for applying to the faculty. Ethical approval for the study was obtained from the university ethics committee. **Results:** Out of the 205 respondents, 21 withdrew ( 4 and 17 women), by returning a blank questionnaire. Seventy six (44%) of students said that they opted for dentistry because of parental pressure, 9 (5%) due to the positive image they had of dentistry, 18 (11%) because of relatives’ recommendation, 19 (11%) because of recommendation from friends, 14 (8%) because they had a family member who was addentist and 37 (21%) because they believed that their choice of dental school was due to the financial advantages the dental profession offers. **Conclusions:** In the group studied, the most frequent reason for applying to the Constanta dental faculty was the influence of parents, followed by the perceived advantages the dental profession has to offer 21% (37).

**Authors:**
GHEORGHE A. M. (*), AMARIEI C.
Doctoral School of Ovidius University of Constanta, Romania
Oral health-related quality of life in patients with lichen planus

Aim: to examine the quality of life in patients with lichen planus attending the oral medicine Balgiris Clinic of Vilnius University hospital. Methods: The present study employed a census sample of lichen planus patients with ethics approval. A total of 79 patients were included and the diagnosis was confirmed both clinically and histologically. Patients were followed-up from 2 to a maximum 8 years and oral health-related quality of life was assessed by means of a self-reported questionnaire which included multiple inquiries measured on a Likert scale. Results: There was a statistically higher number of females 88.6% (n = 70) than males 11.4% (n = 9). The mean age of patients was 57 years for women and 51 years for men. The majority of patients were non-smokers 92.4% (n = 72) and only social or never users of alcohol 97% (n = 77). Of all, 72% (n = 57) of patients associated their disease with stress, 22% (n = 17) experienced strong or very strong pain on a regular basis and 38% (n = 30) of them had problems related to their disease. Approximately 50% of examined subjects perceived their health as critical and contributing to their overall discomfort. Some clinical forms of lichen planus were causing more discomfort than others, e.g. 28% (n=10) of patients with erosive-ulcerative and 8.4% (n=4) with the reticular form of disease experienced discomfort. Almost 50% of lichen planus patients were concerned that their disease will continue to cause problems in the future. Conclusion: A high proportions of lichen planus patients reported reduced oral health-related quality of life and they were also concerned about their future oral health.

Authors:
PŪRIENĖ A. (*), RIMKEVIĖIUS A., PEĖIULIENĖ V., GAIGALAS M.
Institute of Odontology, Faculty of Medicine, Vilnius University, Vilnius, Lithuania
ALEKSEJŪNENĖ J.
Faculty of dentistry, The University of British Columbia, Vancouver, Canada
Next Year’s EADPH Meeting

The 19th Annual EADPH will take place in Gothenburg, Sweden from 12th to 14th June 2014.

The theme for the scientific sessions will be

*Behavioural aspects of oral health, disease and interventions*

A conference website will be set up in the near future.

Magnus Hakeberg
EADPH Co-President 2014