



Abstracts for the International Symposium on Dental Hygiene, Cape Town, South Africa, August 14–17, 2013

Keynote Speakers

How important is oral health as a risk for general health

Robin Seymour BDS

School of Dental Sciences, Newcastle University, United Kingdom

Over the past 20 years there has been a considerable interest in whether oral health (especially the extent and severity of periodontal disease) is a significant risk factor for a variety of systemic conditions. Paramount in these associations was evidence suggesting that poor oral health was a significant risk factor for coronary heart disease and an adverse pregnancy outcome. Other studies have shown that poor oral health may be linked to Alzheimer's disease, cancer, male and female infertility, obesity, stroke, pulmonary infections and poor diabetic control. Whilst this list may seem exhaustive, it has been difficult to establish causality for many of these conditions. The presentation will provide an up to date review of the evidence that links oral health to systemic health, and where applicable putative mechanisms will be discussed. The emphasis of the presentation will be on the outcomes of intervention studies which have attempted to improve oral health and investigated the effect of such improvements on specific conditions.

Whilst some of the associations between oral health and systemic diseases remain somewhat equivocal, there is growing evidence that the association cannot be ignored. It thus presents new challenges to all members of the dental team, and the final part of the talk will address what we should tell our patients. It is clear that improving oral health is not just about maintaining the teeth and supporting structures. The potential significant benefits in terms of impacting upon several life threatening conditions should help to put oral health higher on the health care agenda.

The need for antibiotic cover to prevent infective endocarditis

Robin Seymour BDS

School of Dental Sciences, Newcastle University, United Kingdom

It is still common practice to prescribe systemic antibiotics prior to certain dental procedures in patients at risk from infective endocarditis and those who have had joint replacements. This practice is controversial and there is a poor evidence base

to support the use of antibiotics in either situation. Furthermore, there is uncertainty as to what dental procedures require cover and who is precisely at risk. The problem is further compounded by evidence showing that everyday oral activity such as chewing and tooth brushing produces similar bacteraemia when compared to a single tooth extraction. It is against this background that NICE (UK) investigated the whole issue of antibiotic cover in patients at risk from infective endocarditis. NICE guidelines were published in 2007 and announced that there was no indication for antibiotic cover prior to any dental procedures for those patients at risk from infective endocarditis. NICE also advocated that the risk from antibiotics was greater than any benefits that accrue from preventing infective endocarditis. Subsequent to the issue of the NICE guidelines, the prevalence of infective endocarditis has been carefully monitored. It has now been clearly demonstrated that withholding these drugs has not affected the prevalence of infective endocarditis. The presentation will discuss the evidence that led to the NICE guidelines and also provide advice on the dental care for those patients who have undergone joint replacement surgery.

A new approach to oral hygiene education – a scientific evident success story

Kerstin Öhrn RDH, RDHT, PhD, Birgitta Jönsson RDH, PhD
Dalarna University, Falun, Sweden

The presentation will cover an individually tailored oral health education programme performed by dental hygienists, followed by results showing an increase in periodontal health and patient related outcomes, and predictive factors of importance for oral health and finally the cost-effectiveness of the programme.

A scientifically evidenced individually tailored oral health education programme based on cognitive behavioral therapy techniques will be presented, including demonstration for clinical practice (on screen). The model has resulted in reduced gingivitis interproximally, reduced plaque and increased use of interproximal cleaning aids. More patients in the cognitive behavioral group achieved periodontal health.

The patients reported an improved oral health-related quality of life after dental hygiene treatment.

Predictive factors of importance for the more frequent use of interproximal cleaning and healthier gingiva was self-efficacy and cognitive behavioral intervention.

The health-economic evaluation showed that the incremental costs of the cognitive behavioral treatment can be considered as low and strengthens the suggestion that an individually tailored oral health educational programme integrated in non-surgical periodontal treatment is preferable to a standardised education programme.

State of oral health in nursing homes world-wide and its effects on the overall health of this vulnerable population group

Salme Lavigne Dip. DH, RDH, BA, MS

University of Manitoba, Winnipeg, MB, Canada

Numerous studies globally have reported similar findings on the poor state of oral health in nursing home populations. Despite numerous studies attempting various interventions, the results continue to be poor. With recently proposed linkages between oral and systemic health, the need for improvements in the oral health of this vulnerable population group have become a critical issue for not only their overall health and longevity, but their quality of life. This presentation will focus on the current state of oral health in nursing homes globally; some reasons why it is in the state that it's in; as well as various interventions that have shown some promise in improving not only oral but systemic health. Our roles and responsibilities as oral health professionals will be central to the solution for this world-wide issue.

Oral cancer and superheroes: understanding the effects of cultural oral habits

Sherry Priebe RDH, BDS, MSc

Sherry's presentations center on motivation for leadership in oral health professionalism through relevant practice to achieve total general health. Oral disease is not only epidemic in some parts of the resource-poor world but shockingly prevalent in the resource-rich, affluent world. The work of the oral health provider is more important than ever due to global trends and the alarming rise in oral cancer incidence rates. Oral health professionals have the opportunity to notice mucosal changes that may be pre-cancerous or cancerous, make the patient aware of it and that discovery may save patients' lives. Oral health professionals can make a difference in a world so in need of difference makers and be a hero!

Her course will raise the oral health professional's awareness of different cultural and social oral habits such as chewing 'betel nut', 'chat', 'coca leaf' or 'kola nut' and tobacco use. Knowledge of the use of these oral habits is integral in understanding the adverse effects on people's oral health, human wellness and total health. The course illustrates how geographically remote populations with their unique oral risk habits can have a profound effect on local dental practices as populations migrate worldwide. This global connection and knowledge transfer of what and how oral habits affect oral cancer, disease prevention and oral health can be promoted as a component of overall health.

Participants are powerfully engaged through a visual presentation of cultural oral habits researched globally with unique research from Vietnam. Participant interaction is invited as to the crisis on oral health in the dental practice and to motivate preventive solutions.

Non-communicable diseases, oral health and nutrition challenges in developing countries – the 'common risk factor' approach

Celeste Naude PhD, RD (SA and UK)

Centre for Evidence-Based Health Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, South Africa

Non-communicable diseases (NCDs) are a rising tide in low- and middle-income countries. In 2008, these conditions accounted for about two thirds of all deaths globally, with nearly 80% of NCD deaths occurring in low- and middle-income countries, and approximately 29% of deaths occurring in people younger than 69 years. The World Health Organization has projected that the burden of NCDs will rise disproportionately in lower income populations over the next 10 years.

NCDs are being prioritized within health systems in developing countries due to their increasing burden and high mortality. Although dental caries represent a high burden in developing settings, they are a low mortality condition and are thus often neglected within health systems. Oral health and NCDs share risk factors (diet, tobacco, alcohol, socioeconomic status) and have high co-morbidity (cancer, diabetes, CVD). Furthermore, there is an interdependent relationship between oral health and nutrition. The well-being of oral tissues depends on adequate nutrient intake and in turn, oral health determines the ability to consume food, impacting directly on nutritional status.

Within the framework of general health, NCDs, poor oral health and poor nutritional health are fundamentally linked. All impact negatively on quality of life and increase health care expenses both at a personal level and at a country level. They all affect large numbers of the working-age population in developing countries, impacting on the workforce and productivity of countries.

The adoption of a 'common risk factor approach' moves away from compartmentalising oral and nutritional health as separate from high mortality conditions. Within the 'common risk factor approach', evidence-informed strategies to prevent and improve oral and nutritional health are integrated into policies, programmes and practices aimed at addressing the NCD burden. This complementary and integrated approach has the potential to address the high burden, high mortality conditions, while simultaneously reducing the high burden, low mortality conditions that directly impact on quality of life.

The potential of probiotics for oral health

Svante Twetman

Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark

There is emerging interest in probiotic supplements for oral health maintenance due to recent insights that human biofilms play an important role for health and well-being. Investigations in vitro on metabolic activity, co-aggregation, growth inhibition, bacteriocin-production and adhesion have collectively suggested beneficial effects of probiotic lactobacilli and bifidobacteria in modulating the oral microbial ecology. Clinical trials have indicated that daily intake of probiotic dairy products can arrest root caries and reduce caries incidence, improve general health and diminish the use of antibiotics in preschool children. Likewise, studies have shown that probiotic tablets can act through immune

modulation and reduce gingivitis and level of periodontal inflammation, especially when used as adjunct to traditional scaling and root planning. The lecture will summarize the current understanding and clinical use of probiotics in primary and secondary prevention of oral diseases.

Caries prevention and management: tools for the future

Teresa Butler Duncan RDH, BS

This presentation applies evidence based decision making principles as they apply to effective prevention and management of dental caries. Practical guidelines for designing caries preventive plans based on risk assessment will be given.

Topics to be explored include:

- Caries risk factors and risk assessment
- CAMBRA guidelines and implementation
- Selection of systemic and topical fluorides
- Utilization of fluoride varnish, xylitol, antimicrobials, and calcium phosphate pastes
- Strategies to promote remineralisation.

Evidence in oral health promotion – implications for oral health planning

Shenuka Singh

Discipline of Dentistry, University of KwaZulu Natal, Durban, South Africa

Dr Shenuka Singh explored the debates on evidence-based oral health promotion and examined the practicality of promoting oral health care within a whole system approach.

The use of evidence-based decision-making in health services and planning is a viable mechanism to identify optimal health

benefits; however, barriers to the effective adoption of evidence-based oral health promotion practice, have been identified. 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.

Oral health promotion should be examined taking into account multidimensional influences (social, cultural, environmental) and their interrelationships with a broad range of outcomes, including mental and physical health, illness and disorder, risk and protective behaviors and behavior change, health beliefs and attitudes, and normal development and functioning across the lifecycle. Oral health interventions should be directed at human behavior on the intrapersonal and interpersonal levels, at organization change on the community and institutional levels, and at policy on the systems level.

A multilevel framework for modeling oral health promotion would include macro-influences (population health strategies, economic systems, policy making, social stratification, political processes), meso-influences (communities, workplace, institutions, schools), and micro-influences. The micro-influences on oral health promotion would include the individual's psychosocial skills to cope with ill health, ability to make healthier choices, and adoption of healthy behaviors.

Organizational changes in the health care system require a paradigm shift from practitioner-only focus to focus on health service delivery in a social context, including institution-based health activities, community-based activities for mother and child care (including those that nongovernmental agencies provide), school activities, home and self-care practices in addition to the health system's service delivery.

Thus, the basis for evidence in health activities is grounded in social and organizational systems. This could contribute to sustainable health efforts.

Abstracts for Oral Presentations

Evaluation of health promotion material in a primary health care facility in the Western Cape Province of South Africa

Soefia Amien

South Africa

The aim of this study was to evaluate a set of oral health posters at an antenatal clinic in the Southern Suburbs of the Western Cape in South Africa.

Objectives:

- Analyse the posters against norms in poster construction.
- Determine the demographics of the study population, their feeding and hygiene practices with regard to their children.
- Determine the message as interpreted by the audience of the set of posters.
- Determine the value of the message portrayed for them in the context of their lives.
- Determine the perception of the audience of the poster.
- Determine the initial emotional reaction of the target audience to the poster.

Methodology: A descriptive study using a combination of quantitative and qualitative approaches was used to meet the study objectives. The study population included 50 females attending a primary health care clinic. Administered questionnaires and focus

group discussions were used to collect data. Two color posters depicting early childhood caries (ECC) was evaluated.

Poster 1 conveyed a message of ECC. The central theme was conveyed using bright multiple colors and photographs.

Poster 2 conveyed a message of ECC. The central theme of the poster was conveyed through the use of detailed explanation of ECC and how to prevent its occurrence.

Results: Poster 1: Participants found it easier to interpret messages displayed in picture/photograph format as compared to written format. The story was told in a logical manner. A picture was self-explanatory, portrayed real life situations, but was found to small to be view from 1.5 m. The color purple was found to be attractive by a large percentage of participants but the idea of using red on purple background was not well accepted. The color combination used was not very highly rated. Although purple appeared attractive, combining it with red was not good. The font was well accepted and could be read from 1.5 m.

Poster 2: Participants found the poster had too much writing, was technical, confusing and required too much reading to understand the intended message. The colors used were dull and pictures were described as scary.

Conclusion: If posters are constructed to create awareness, both posters are lacking. This study highlights the importance of pre-testing posters.

The role of the dental hygienist in forensic dentistry

Nancy Barnes

Dental Hygienist, USA

Forensic Dentistry is that part of science that deals with Dentistry and the Law. All the members of the dental field have knowledge and expertise they can contribute to the field of Forensic Dentistry.

Emphasis is placed on the valuable role that dental hygienists and other dental professionals can uniquely and jointly play in gathering, collaborating and interpreting evidence for identifications.

This is brief overview of the aspects that hygienists can become involved in and the skills that they possess through their education, professional practice and dental jurisprudence.

Participants will:

- Learn the basic activities of a Multiple Fatality Team.
- Explore and appreciate the contributions dental hygienists/professionals have made in working with a team on multiple fatality disasters.
- Become acquainted with areas of forensic dentistry and avenues to become involved directly and indirectly with Forensic Dentistry.

Utilizing nature's bio-adaptability of soft and hard tissues

Kimberly Benkert

Dental Hygienist, USA

Orofacial Myology/Orofacial Myofunctional Therapy is the study and therapeutic treatment approach of utilizing the junction between nature's muscular and behavioural forces and the normalizing bio adaptability of the soft and hard tissues in the orofacial environment. This 'Function Junction' takes place between the functional relationships of the orofacial musculature; functional use and movement patterning of the mandible; orofacial para-functional behaviour elimination abilities; resting postures of the tongue, lips, and mandible; establishment of an adequate dental freeway space; and the nasal respiration impact on the hard and soft tissues of the dental and orofacial structures. The Function Junction harnesses orofacial and oromotor forces in a therapeutic retraining manner to eliminate harmful behaviours. Therapeutic exercises are both physical and psycho physiologic. These exercises are the initiating facilitators creating a neuro-muscular impact.

Change occurs by retraining and/or eliminating negative biologic and physiologic forces applied to the orofacial environment, dentition, temporomandibular joint region, and along with retraining movements of the tongue, lips and mandible affecting functional speaking patterns. 'Function' refers to the movements and patterning impact of the orofacial muscle balances and harmony of the oromotor behaviours. These include habituated oromotor movement patterns of the tongue, lips and jaw, in addition to correcting resting postures, establishing the dental freeway space, and facilitating nasal respiration. It also includes the impact of parafunctional habits and orofacial behaviours exerted on the dentition and the surrounding head/neck environment.

Gender variations in determinants of oral hygiene behaviour: a secondary analysis

Yvonne Buunk-Werkhoven

Dental Hygienist, The Netherlands

Objectives: The aim of this secondary analysis was to investigate gender variations related to oral hygiene behaviour (OHB), i.e., gender differences in the level of OHB, gender differences in

the psychological factors as defined by the expanded Theory of Planned Behaviour (TPB), and gender differences in the relationships between the psychological factors and OHB.

Methods: Using an Internet questionnaire and culturally adapted paper-and-pencil-questionnaires in a total of seven populations, 955 adult participants – 274 males and 681 females – were asked about their OHB, and the potential determinants of OHB, including attitudes (ATT), social norms (SN), perceived behavioural control (PBC), oral health knowledge (OHK), and expected social outcomes for having healthy teeth (ESO).

Results: No significant differences were found. Only in three out of six samples, females reported a better OHB, and just in one sample they reported a more positive attitude than males. No interaction effects between gender and the potential determinants on OHB were found. Exploratory regression analyses revealed only a few variations in predictors of OHB between males and females, in that for male's social related aspects as SN, ESO and PBC are relatively important determinants of OHB, whereas among females attitude and OHK are relevant.

Conclusions: All analyses considered, no consistent pattern was found and no decisive factor emerged. However, gender variations in OHB and in the determinants should be considered when designing practical recommendations for improving OHB. Insight in gender variations in the determinants of OHB is relevant to refine preventive approaches to modify OHB for male and women in the desired direction. There is a need of further experimental research in this area for the development of tailored oral hygiene interventions.

Oral care: knowledge and assumptions of early childhood educators

Rugshana Cader

University of the Western Cape, South Africa

Objectives: Dental caries is a problem nationally. The Western Cape is recorded as having the highest incidence of dental caries. This study sets out to determine the oral health care knowledge, assumptions and beliefs of educators of children between the ages 3 and 5 years.

Methods: This descriptive study is of a qualitative and quantitative design. One hundred early childhood educators were randomly selected from schools and crèches in the Western Cape. They were selected on the basis of whether they had a teacher's degree or certificate or were untrained. Data was collected through a questionnaire with open- and closed-ended questions based on the literature. A pilot study was conducted at 10 schools. No changes were made to the questionnaire. The quantitative data was captured and analyzed using SPSS. The qualitative data was categorized into themes from the literature.

Results: The return rate of the questionnaire was 63%. The diploma and certificate educated participants were in the majority (68%). Thirty-eight percent of educators taught children the importance of brushing. 37.5% of educators believed that children should be assisted with brushing. Twenty-eight percent of schools had brushing programs. Thirteen percent of educators believed children should brush three times a day. Eighteen percent of educators were unsure whether to use toothpaste with fluoride. Interventions have been implemented at one of the schools thus far. The shortcomings were addressed such as the importance of teeth and why we brush our teeth. Children's diet in relation to plaque, teeth and decay was identified as one of the factors that showed limited knowledge.

Conclusions: Educators recognized the importance of primary teeth. However, they lacked important information about oral health

care. This shortcoming limited their teaching about oral health care. Oral health care education needs to be included in the teacher qualification curriculum so as to inform what educators teach.

Dentistry and psychiatric illness: challenges to oral care

David Clark

Ontario Shores Centre for Mental Health Services, ON, Canada

Psychiatric illness and its medical management carry significant risks for oral disease. Although mental illness is common, in many cases it is misunderstood, remains unrecognized, or is undertreated. Mental illness and the resulting disabilities create difficulties not only for the patient but also for one's family and friends, not the least of which remains the highly stigmatized nature of the disease itself. Understanding the type, severity, stage of mental illness, along with a patient's own mood, motivation and personal perceptions of oral disease and lifestyle can enhance the knowledge of dental professionals concerning this critical aspect of a patient's medical history and further illustrates how closely mental health and oral health are intertwined. Mental illness must be viewed from a similar perspective as are other major diseases. Dental professionals should be aware of factors such as the reduced rates of compliance with dental treatment, reduced ability to access oral health care, the effects of various psychotropic medications on oral health including xerostomia, caries and periodontal disease and the potential interactions with drugs used in dental practice. Patients with psychiatric illness often bring unique needs and differing priorities to a dental practice, and the dental health practitioner must in turn demonstrate patience, flexibility, empathy, and a non-stigmatizing attitude in caring for these individuals. Enhancing self-esteem and feelings of self-worth for those coping with a psychiatric illness can be a very fulfilling experience that can only serve to continue to break down the stigma surrounding this group of diseases.

Academic detailing for provision of tobacco treatment services in dental practice

Sharon Compton

University of Alberta, Edmonton, AB, Canada

Academic detailing involves in-office education whereby new knowledge and skills can be learned as a team and translated into practice. In medical practice, academic detailing has been effective for implementing new or revised practice protocols or procedures. The dental hygiene appointment provides a teachable moment for discussing patient's tobacco use; however, the service is inconsistently offered.

Purpose: The project sought to increase capacity and ability for dental and dental hygiene practitioners to offer effective tobacco treatment services (TTS).

Methods: Academic detailing (AD) sessions were conducted in 20 urban dental practices located in high tobacco use areas. A mixed methods approach was used for data collection. A Tracking Tool was used to record details about patients who used tobacco. Staff completed questionnaires pre and post AD sessions. Observational assessments were completed at each follow-up visit to determine if the practice has implemented the tobacco history, if resources were visible, and if TTS provided by staff was documented. Randomly selected dental practices and each RDH educator was interviewed upon completion of all AD sessions.

Results: Offices tracked 240 patients who used tobacco and 31% declined any intervention; 11% accepted referral to

Helpline; 7% accepted referral to physician; 14% accepted print resources; and 17% accepted online resource support. Pre-post questionnaires showed support for academic dealing as a desirable learning process for in-office learning. Observations revealed 19% of practices were using the Tobacco Use Assessment Form, 52% of practices were documenting patient's tobacco history; and 11% displayed tobacco-quitting resources in waiting room. Interviews revealed support for AD process in dental practice and offices showed sustained practice change for some protocols.

Conclusion: Academic detailing was a favorable education process that can increase capacity and be used when attempting to change practice protocols in dental practice.

Developing a professional portfolio for career advancement and validation of clinical competencies

Cathy Draper

Foothill College, Journal of the California Dental Hygienists' Association

Objectives: Provide the practitioner with the basic skills and steps for building a professional portfolio.

The highly complex and competitive healthcare environment of 2013 demands professionals who are able to monitor and reflect on their personal growth and development throughout their careers. Healthcare providers around the world are being called upon to provide on-going validation of their clinical competencies and evidence of their abilities in meeting the standards of care within their profession. The single, point-in-time, patient examination is no longer considered an adequate measure of competency for a lifetime of practice. Creating and maintaining a professional portfolio is becoming a requirement for licensure for many healthcare providers.

Broadly defined, the professional portfolio is a collection of evidence, or artifacts, demonstrating an individual's competencies, growth and accomplishments over time. Depending on the particular purpose of the portfolio, the materials demonstrating competencies must be carefully selected and labelled for review by others. Reflection also plays a key role in the well-developed portfolio. The reflective process requires critical thinking and problem solving skills for self-assessment and setting the direction for on-going professional development.

The initial task of creating a professional portfolio can be daunting to entry level as well as seasoned practitioners. Developing a working template to serve as a central depository for career related documents and activities is an ideal starting point followed by formulating a philosophy of practice and establishing professional goals. Oral healthcare providers have a unique opportunity to expand their careers outside of traditional practice settings by promoting their wide range of experiences and expertise as evidenced in a portfolio.

A case for integrating oral health promotion and general health promotion initiatives – a New Zealand teaching perspective

Blanche Farmer

Department of Oral Health, Faculty of Health and Environmental Sciences, Auckland University, New Zealand

This presentation will emphasise the importance of teaching an integrated approach to health promotion to Oral Health Students.

A pilot study examining the relationship between pentoxifylline and salivary flow in patients undergoing radiation treatment

Tanya Gomes

Oral Hygienist, South Africa

Background and purpose: Saliva plays a critical role in maintaining oral and dental health. Xerostomia affects the overall quality of life of a patient. Marx proposed a theory of hypoxia, hypo vascularity and hypo cellularity as the effect of radiation. Pentoxifylline, a derivative of methylxanthine, produces hemorrheologic effects. It lowers blood viscosity, increases tissue oxygenation and improves erythrocyte flexibility.

Patients and methods: Four randomly selected head and neck cancer patients were requested to participate in a study requiring saliva tests during radiation therapy (pre, post and recall) with no set time span. The test consists of four procedures: resting, chewing and acid lasting for a time period of 10 minutes and a glucose pH test that has a time period of 30 minutes. Following the test the dentition was disclosed, a plaque index taken, followed by a prophylactic polish. The tests were then sent to the microbiology laboratory for flow and buffering capacity to be established.

Results: There was an average saliva flow (SF) decrease of 64.5% in resting, chewing and acid between pre and post radiation. When the recall test was conducted, it showed a further decrease of 28.5% in two patients, while two patients exhibited an increased SF of 39.8% in the resting and chewing cycles. The patients with the increased SF were placed on Pentoxifylline after the post radiation test and this might have contributed to the increase. With all the patients the results with the follow up test showed an increase of 50% in the acid test.

Conclusion: Although the tests were not standardized with regards to time and the sample size was small, it has given us some indication that a standardized and controlled study should be investigated further, giving us a further insight to Pentoxifylline and saliva flow.

Service learning as a teaching strategy in the oral health programme: University of the Western Cape

Natalie Gordon

University of the Western Cape, South Africa

The concepts of oral health, general health and quality of life in the context of the profession are core to the education and training of oral hygienists.

Service learning as a teaching strategy integrates meaningful community service with education and student reflection to enrich the learning experience. This methodology supports integration of the multiple roles of academics. These roles include developing authentic learning opportunities for students to meet programme outcomes, conduct research and provide necessary services.

Purpose: Describe a service learning initiative at a primary school in a low socioeconomic area.

Process: The profile of the school and learners indicate the following: parents are unskilled or semi-skilled, mostly farm workers; most learners do not fit main stream schooling; many have learning challenges and other health concerns; oral health problems include dental caries, inadequate personal and oral hygiene.

Learning activities: BOH students visit the school in their second year to do health education and supervised brushing with the learners. At this visit, students are orientated to the school context where they are encouraged to explore the problem, the primary and underlying causes thereof. They have the opportunity

to see the quality of life impact of oral problems, work with children with special needs which may be developmental, social or behavioural. This gives them the opportunity to reflect on their practice and on their role as oral hygienists in the South African context. Learners visit the Dental Faculty where they are treated by BOH third year students as per their scope of practice.

Research opportunities: This process presents research opportunities for departmental staff.

Conclusion: At an exit level students have had authentic learning experiences of integrating community based oral health promotion with clinical practice to improve the oral health of a vulnerable community.

'Bridging the gap' in the 21st century – exploring a western cape cultural tradition

Elna van der Ham

The Implant Clinic Cape Town, South Africa

Objective: The main objective of this presentation is to investigate the phenomena behind the premature removal of healthy upper anterior incisors that has been part of the culture in the Western Cape for many years. The oral hygienist plays an important role in educating the public and my aim is to take this initiative to the corporate world and in partnership, create and awareness and introduce a paradigm shift in the thinking and actions of the young generation toward their dental care and oral health.

Methods: Research into the historical, cultural and psychological origins will be conducted amongst the population. I will design a marketing poster to present to one of the big chain stores to start the education program with their employees. This initiative will also involve the state oral health workers to run training and education programs. Local dentists, oral hygienists and other health care workers can all be involved in restoring the already lost teeth to the population and educate the new generation to respect their oral health and general health. We will reach out to pre-schools, schools, hospitals, retirement homes and various care facilities to bring oral health to the people.

Results: The results of this collaboration between the local population, oral health workers and the corporate world will be to the restoration of quality of life and upliftment of the general public with benefit to all involved.

Conclusion: Education on issues pertaining to oral health is the key to changing the population's cultural, historical and psychological stance to the phenomena of the 'gap' in our Western Cape population. Our aim is to highlight the holistic view that oral health is the vital link to total health.

The effect of loupes on neck pain and disability among dental hygienists

Melanie Hayes

University of Newcastle, NSW, Australia

Objectives: Despite the significant problem of musculoskeletal pain among dental hygienists, there has been little advancement in the application of ergonomic principles in the profession. While the use of loupes is often promoted as an ergonomic solution, there is little published research to robustly support this claim. The aim of the present study, therefore, was to investigate the effect of the use of loupes on neck pain and disability among dental hygienists, using both self-reported and objective outcome measures.

Methods: The study was conducted using an exploratory pre-test post-test design, using a non-equivalent control group. Dental hygienists and third year hygiene students in Australia who were currently experiencing musculoskeletal symptoms and not currently wearing loupes were invited to participate. All participants completed pre-trial data collection, which included the Neck Pain and Disability Scale and a standardized physical assessment using validated and reliable measures. Dental hygienists were allocated to the treatment group, and wore loupes during all clinical care of patients; while the final year hygiene students were allocated to the control group and continued to practice without the aid of loupes. After six months, all participants completed post-trial data collection. Statistical analysis was conducted as a series of mixed ANOVAs with time (baseline versus post-intervention) and treatment (intervention versus control) as the independent variables.

Results: While the analyses revealed no significant interactions between time and treatment ($P < 0.05$), there were general trends of improvement or deterioration for outcome measures. Improvements over time were noted in the treatment group for cervical range of motion and deep neck muscle endurance; however deteriorations were noted for forward head posture and cervical kinaesthetic sense.

Conclusions: Overall, this study suggests that wearing loupes appears to have both positive and negative outcomes in regards to physical well-being. As such, further studies are required to definitively determine the effects of loupes on MSD among dental hygienists, particularly long-term.

Caries-associated determinants in 3-, 5-, 10- and 15-year-olds in Da Nang, Vietnam

Brittmarie Jacobsson

Jönköping University, Sweden

Objectives: To present and describe demographic data, socioeconomic conditions, dental care habits, food habits, knowledge and attitudes towards oral health among children and adolescents in Da Nang, Vietnam.

Methods: A cross-sectional epidemiological study comprised 840 children, randomly selected from six urban and one rural district. Parents (3- and 5-year-olds)/subjects (10- and 15-year-olds) were asked about their attitudes to and knowledge of teeth and dental care habits, using a self-report questionnaire.

Results: More families with younger children had a very poor family economy and were educated at high school level. Children in the 3- and 5-year age groups attended kindergarten all day. Most children, or their parents, reported that they brushed their own or their child's teeth at least once or twice a day. In 3- and 5-year-olds, the parents helped their children with tooth brushing in 71–86%. Fluoride toothpaste was used by 44–78%. Among 3- and 5-year-olds, 60% of the individuals had not visited any dental professional during the last year. The corresponding figures for 10- and 15-year-olds were 20% and 49% respectively. The intake of sweets between principal meals reached 70–80% when calculated once, twice and more than twice a day. Milk with sugar in particular was usually consumed by 91% of the 5-year-olds.

Conclusions: There were insufficient tooth brushing frequencies as well as use of fluoride toothpaste. The intakes of sweets were high. Few children had visited dental professionals regularly. Oral health is an integral part of general health. A healthy, functioning oral cavity is a necessary part of mastication and digestion. As an educational tool, food-based dietary guidelines should play a significant role in nutrition and oral health interventions that should start early in life.

Caries prevalence among HIV infected children attending a paediatric virology out-patients ward in Johannesburg, South Africa

Zorayda Joosab

University of Witwatersrand, South Africa

Introduction: There remains controversy in the literature regarding the caries risk among HIV infected versus healthy children.

Objectives: To determine the caries prevalence and unmet treatment needs (UTN) in a cohort of HIV+ children, between the ages of 4–6 years attending the Charlotte Maxeke Paediatric Virology out-patients ward and to compare these results to children attending early development centers (EDC)'s in Johannesburg.

Methods: Ethics approval was obtained from the University of Witwatersrand. This cross-sectional, descriptive study comprised of a convenient sample of 189 HIV+ children. The comparison group comprised of 459 children who were recruited from EDC's in Johannesburg. The oral health status was determined using WHO guidelines and criteria.

Results: Among the children, between the ages of 4 and 5 years (120 HIV+ and 373 children from EDC's), the caries prevalence in the primary dentition was 72% in the HIV cohort and 44% in the EDC cohort; the dmft was 5.3 versus 2.4 and the UTN was 99% versus 97% respectively. These figures significantly favored children from the general population (children from EDC). Similarly, for 6 years old, caries prevalence in primary teeth (69 HIV+ and 86 EDC) was 58% versus 45%; dmft was 4.2 versus 2.02 and UTN was 100% versus 98% respectively. The HIV+ 4–5 year old children were found to be 1.63 times more at risk to develop caries than children of a similar age group from the general population (RR = 1.63 [95% CI; 1.39; 1.91] [$P < 0.0001$]). Among the 6 year old children, there was no significant difference between the HIV cohort and the general population with regards to caries risk; (RR = 1.28 (95%CI; 0.94; 1.74) ($P = 0.12$)). The mean dmft of the 4–5 and 6 years old was significantly higher ($P < 0.05$) than those attending the EDC's in Johannesburg.

Conclusions: This cohort of HIV infected children had higher caries prevalence, dmft and UTN than the children attending EDC's in Johannesburg.

Oral health education targeting elementary school students

Hye Kyong Kim

Aims: Since the average of life expectancy is extended and our society is rapidly becoming an aging society, not only people's health issue is concerning but also oral health and preventing oral disease is raising subject among the people. Dental disease is almost entirely preventable or, when it is detected early, can be cured quickly and cost-effectively. Therefore, community needs produce more oral health professionals and business to support public oral health welfare. The community needs to develop and implement the necessary institutional infrastructures and understand the principles and methods of oral health education targeted to residents. Developing and implementing this program will help to promote oral health for the community.

Methods: From October 2012 to November 2012, for a 4 week period, a PHP (patient Hygiene Performance) index test was conducted three times, the student's oral health knowledge and attitude were surveyed and it was statistically analysed. The participants were educated by professional dental providers at the same time. In the 1st and the 3rd tests, the research were pro-

cessed by intraoral Plaque-ch pH test either and compared analysed the acidities of before and after professional oral health education.

Results: Oral health education PHP index was analysed for the three tests, the first 733 students participated, the second 754 and the third 759. PHP ability (%) was taken by PHP index. The tests result (PHP abilities [%]) were, the first was [$M = 42.81$], the second was [$M = 53.98$] and the third was [$M = 70.13$].

Comparing the first and the third test, there is definite positive effectiveness of professional oral health education. The Patient Hygiene Performance (PHP) ability (%) was, the 1st was 42.68% and the 3rd was 70.12%. The growth rate for oral hygiene performance ability was increased by 27.43%. The result shows that this program improved students PHP abilities.

Conclusion: After the 3rd professional oral health education, the research shows that the students could improve their oral health performance abilities by proper tooth brushing and dietary control. Therefore, we can conclude that the professional oral health education contributed to improving elementary school student's oral health.

Reasons for choosing dental hygiene as a professional career: a study involving Nepalese dental hygiene students

Ron Knevel

La Trobe University, Australia

Objectives: This descriptive cross-sectional study at three accredited dental hygiene schools in Nepal was conducted to determine the motivation for studying dental hygiene and to investigate the ambition of the students after completion of the course.

This survey is part of a larger study to investigate (cultural) barriers in the functionality of the introduction of dental health service models in a developing country, in this case Nepal.

Methods: A representative group of 100 randomly selected dental hygiene students, at three different dental hygiene schools in Nepal were asked to complete an anonymous short questionnaire. The quantitative data were analyzed using IBM® SPSS® 20. Qualitative data were analyzed using constant comparison.

Results: Several factors influenced the career choice amongst the students, but the findings suggest that serving the community and prestige were the most important initial motives. It appears that the career aspirations of the students are overshadowed by worries about finding a suitable job. A majority of the students (56%) is worried about finding a job. They report that the scope of practice for the dental hygienist is unclear and they raise doubts about the value of their diploma or certificate. Only 25% of the students plan to seek a job immediately after completion of the course, while 69% is planning further studies or going abroad.

Conclusions: Even though the majority of students at the three selected dental hygiene schools is studying with the ambition to become a dental hygienist and to serve the community, the scope of practice and the value of the diploma are unclear to them. They fear finding a job due to the increased number of oral health students (dentistry and dental hygiene) and the lack of jobs in dental hospitals or within governmental settings. To secure their future a substantial number of students prefers further studies or plans to go abroad. A large group of graduates might therefore not join the dental hygiene profession in Nepal at all and eventually might lose interest in the profession. This can have implications for a successful introduction of preventive oral health services in Nepal.

The prophylaxis assistant: a Swiss model with opportunities and risks

Eva Ladrach

Dental Hygienist, Switzerland

The Prophylaxis Assistant has become an irreplaceable asset in the dental team in Switzerland. Although in the past, her position sparked controversy among dental professionals, it has been noted that her work is much appreciated by the patients. Now the vast majority of the dental team members have come to appreciate her contribution in oral health services as well.

The education programs leading to a Prophylaxis Assistant certificate are conducted under the rules and regulations set by the Swiss Dental Association. The continuing education courses for Prophylaxis Assistants are controlled by an education commission of the Swiss Dental Association.

A Prophylaxis Assistant providing patient care within the realms of her education will work mainly with children and adolescents. She provides supportive care services to ensure that her patients learn the bases for maintaining good oral health.

Unfortunately some Prophylaxis Assistants are allowed to work like a Dental Hygienist performing task, unbeknownst to the patient, that only a Dental Hygienist by law is allowed to perform.

A Prophylaxis Assistant is not trained to diagnose and treat periodontal disease. Mal practices through a Prophylaxis Assistant may lead to increased periodontal damage if the disease is not recognized and treated immediately. At the moment it cannot be determined where and to what extent Prophylaxis Assistants are performing tasks in an unethical way.

This presentation will show the contents of the further education, a data collection form the courses in Berne over the last five years and will identify opportunities and threats in the Swiss model.

Resources of wealth and balance in life – essential for oral health among Swedish 19-year olds

Ulrika Lindmark

Jönköping University, Sweden

Objectives: The aim was to explore health oriented resources among 19-year olds and in specific how these health oriented resources interacts with oral health related attitudes and behaviors.

Methods: Participants, 19-year olds living in Jönköping, were strategically selected in connection with the annual examination at the Public Dental Service. A structured questionnaire included background factors and Antonovsky's 13-items Life-orientation questionnaire measuring 'Sense of coherence' (SOC), followed by a thematized in-depth interview. The qualitative method chosen was Grounded Theory (GT). In accordance with GT, data sampling and analyses is performed in a parallel procedure that continues until new data do not bring anything vital into the analysis model. Nine informants (four women) have so far been included in the study.

Results (preliminary): The preliminary analysis model suggests a core category labeled 'Resources of Wealth and Balance in Life' which seemed to be essential for healthy choices influencing oral health related attitudes and behaviors. This core category is built on five interrelated themes describing different dimensions of health related resources. Security and support from family and friends, internal resources such as self-efficacy but also different strategies to cope with everyday life were highlighted as central resources. Values and expectation within life context, your own

experience and needs but also thoughts about future oral health conditions, were important for motivation towards healthy choices. Moreover, availability to community resources such as supermarkets, opportunity for self-cooking and a healthy diet, but also health messages from media, school and dental care as well as the psychosocial environment were described as influencing factors for healthy choices.

Conclusions: The interplay between different external and internal resources were described as essential for healthy choices and oral health. Focusing on such beneficial resources could be a success factor in prevention and oral health promotion strategies.

Low temperature atmospheric pressure plasma: applications in dentistry

Gayle McCombs

Old Dominion University, USA

Low temperature atmospheric pressure plasma (LTAPP) is new field of biomedical research. Plasmas (ionized gasses) are under investigation as a medium with the potential to kill pathogenic bacteria while leaving healthy cells intact. Plasma medicine is a promising medical technology that combines the disciplines of physics, engineering, biology, and health sciences to create new therapies for controlling diseases. Plasma pharmacology, the actually dosing of LTAPP in treatment protocols, represents a major paradigm shift from physical and chemical treatment strategies, to device-based molecular technology. Potential uses of LTAPP in oral healthcare include the inactivation of pathogenic bacteria associated with dental caries, periodontal diseases, root canal disinfection, sterilization, as well as tooth whitening, and implant surface modification. This presentation will highlight some of the significant findings relevant to dentistry and discuss the future of LTAPP in biomedical applications.

Oral cancer prevention and education among Southwest American Indian tribes

Jaselyn Moffet

USA

Objective: To create a sustainable health initiative within Southwest tribal communities that provides preventative oral cancer screenings and education, thus raising oral cancer awareness and health literacy.

Methods:

- Provide oral cancer screenings to tribal members by use of extra-oral/intra-oral exams and VEL scope screening technology.
- Educate tribal members about the harmful effects of tobacco and alcohol on the oral cavity and associated risks for oral cancer.
- Teach and demonstrate the importance of early detection and benefits of performing oral cancer self-examinations.

Results: The results of programme implementation include data obtained from cancer awareness events in tribal communities. Through the involvement of the events programme goals and objectives were met. Eighty nine tribal members were screened for oral cancer. Acquired knowledge was measured by results from pre- and post-questionnaires. Potentially cancerous or pre-cancerous lesions were detected by use of the VELscope and EO/IO exams; referrals for closer evaluation were made as needed.

Conclusions: Sustainability of the cancer public health programme is maintainable by continued interventions, oral cancer education, and in-service trainings for employees of tribal health facilities. Research concludes that oral cancer is now an identified

issue among tribal communities. Health literacy and the identification of risk factors have been addressed. Cancer Support Services has acquired the resources necessary to detect oral cancer and can continue the education process independently. More interventions are needed to reach Southwest American Indian tribes in their entirety, but this programme is valuable and its continuation is expectant.

Dental hygienist's management of peri-implantitis, an issue we all struggle with

Mary Mowbray

Dental Hygienist, New Zealand

Objectives: Many patients today are seeking treatment plans that include implant placement for the rehabilitation of their dentition. In the last 30 years, with over 150 different types of implant systems in the world implant numbers total in the many millions.

The high survival rate of oesointegrated dental implants is well documented. However, it is becoming increasingly clear that the peri-implant tissues around dental implants are susceptible to peri-implant disease which may lead to the implant inevitably failing. Many articles and papers have been written on the maintenance of implants, assuming that the placement and restoration has been restored correctly. Therefore maintenance of these implants, whether cement-retained or screw-retained is relatively easy, provided the patient has good oral hygiene techniques. Problems can occur during the restorative process, after crown placement, lack of or no advice on implant maintenance leading to devastating results in the years following. The final result of incorrect crown cementation may risk the longevity of the implant along with poor home care.

Method: To discuss the background of implant maintenance and causes of mucositis and peri-implantitis which are related to inadequate restoration techniques and home care.

Learning outcomes:

- The aetiology of the disease process.
- Understanding the European Federation of Periodontology definitions for peri – implant pathology.
- The assessment of the disease process.
- Correct radiographic techniques, reading of bone conditions and levels.
- Correct charting the clinical indices.
- Understanding the procedures for foreign body removal.
- Recommendations for post-operative care, using chemotherapeutics and natural products.

Conclusion: Understanding the importance of continuous assessment at recall appointments of the peri-implant tissue using clinical indices, radiographs and visual inspection, will insure optimal management and treatment of compromise oesointegrated implants.

Increasing access to care – a United Kingdom perspective

Sarah Murray

University of London, United Kingdom

In the United Kingdom, Dental Hygienists and Therapists currently undertake treatments under the full written prescription of a dentist.

A report written by the Office of Fair Trading in 2012 recommended that patients should have better choice and access for dental treatment by having 'direct access' to dental care professionals (such as dental hygienists and therapists) for dental treat-

ment without the requirement to see a dentist or having a written referral from a dentist. In order to meet this recommendation, the current Scope of Practice for these clinicians is under review by The General Dental Council.

Objectives: To aid the process of discussion and review being undertaken at a national level, the authors undertook this research with General Dental Council Registrants to identify the training needs and opinions of these dental registrants to inform the change process.

Methods: An online (Survey Monkey) questionnaire was completed from April to October 2012. The questionnaire contained a range of qualitative and quantitative questions. The resulting data was analysed by using the Survey Monkey Data Analysis software.

Results: Initial data from 300 registrants demonstrated that the majority (78%) wished to work in a 'dentist-led practice, in a team environment, seeing patients directly without a prescription from a dentist'. The quality of treatment plans currently received was explored, using a Likert scale, and included aspects such as the provision of a diagnosis, and the provision of an outline or detailed treatment plan with the results showing the majority received these aspects 'some of the time'. Confidence in a range of procedures and training needs was considered with an opportunity to provide free text comments.

Conclusions: The results of this study provide a snapshot of the identified training needs, particularly in the recognition and referral of soft tissue abnormality, updating knowledge of pharmacology, undertaking and reporting on dental radiographs and a requirement for business development skills. A move towards direct access was overwhelmingly supported by this cohort.

Infection control audit-feedback instrument for oral health care in South Africa

Jeanne Oosthuizen

Central University of Technology, South Africa

Objective: Overall health is associated with oral health. Tooth decay, periodontal disease, oral trauma and oral cancer contribute to an excessive disease burden. When visiting or working in oral health care facilities, people are exposed to a variety of infections and injury related risks. The establishment of a working environment in which risks/hazards can be managed and disease transmission prevented, demands standard infection prevention and control precautions. Audit and feedback is commonly used as a strategy to improve professional practice in health care. The objective of this study was to test compliance to best practice in infection control in oral health care in South Africa with an audit-feedback instrument.

Methods: Compliance to infection control was tested in 50 oral health care facilities in Central South Africa during 2012. A purposive sampling strategy was followed, whereby the selected oral health care facilities represented urban and rural; single practitioner, multi practitioner, private clinics, governmental clinics and training institutions.

The electronic audit-feedback instrument assessed 11 infection control compliance domains. The instrument that was administered by a facilitator provided feedback on the status of compliance to infection prevention and control in each facility.

Results: The audit-feedback instrument revealed a lack of compliance across all 11 domains. Notably, infection control training of personnel and maintenance of air and waterlines scored the

lowest overall values of; 28% and 37% respectively, while sharps handling and hand hygiene outperformed all other domains with scores of, 77% and 76%.

Conclusions: These data support the need for an audit-feedback instrument to be used by personnel responsible for executing the procedures of infection prevention and control in oral health care. The instrument was further able to highlight areas of concern in the facilities tested. By addressing such concerns the safety of personnel and patients can be improved.

The impact of peri-implant disease on systemic health: is there a link?

Thabit Peck

University of the Western Cape, South Africa

Peri-implant disease is a rapidly growing condition that affects an increasing number of patients. The immunopathology of the disease together with its potential impact on systemic health will be presented.

The effectiveness of health promotion activities undertaken by oral hygiene students at the University of Witwatersrand

Patience Phakela

University of Witwatersrand, South Africa

Background: As part of the continuous assessment, qualifying Oral Hygiene (OH) students at Wits had to develop a health promoting intervention for a community of their choice that was merited according to their health determinants.

Aim: To measure the effectiveness of a health promotion intervention by OH students at two different sites.

Methods: A descriptive, qualitative report which analysed health promotion interventions was undertaken by two groups of students from Wits. They were assessed using various criteria such as site selection, the type of intervention; adaptation to Ottawa Charter; public health approaches and improvement in knowledge. The total number of students that participated was 14, which was divided into two equal groups (Groups 1 and 2; $n = 7$). Each group had to implement a health promotion activity at a site of their choice.

Results: Selection of site was based on situational analysis of locations in the vicinity of the University. Group 1 started a vegetable garden that contributed to an increase in the nutritional intake of the children at the crèche. Group 2 conducted a workshop on smoking cessation to grade 11 and 12 learners educating them about the effects of smoking on their health. The interventions assessed were related to the following pillars of the Ottawa Charter: education, community participation; strengthening supportive environment. The Public health approach used by both groups was the common risk factor approach: group 1 focused on caries, education and nutrition, whereas group 2 concentrated on educating on the effects of smoking which improved the knowledge of the learners.

Conclusion: The effectiveness of the health promotion interventions was realised by the groups as implementation of these activities brought relief to some of the determinants of health at both sites.

Oral Candida colonization in HIV-positive women: associated factors and changes following antiretroviral therapy

Daveyrose Ralephenya

University of Witwatersrand, South Africa

Objectives:

- To investigate the factors associated with oral colonization of *Candida* species in a cohort of HIV positive women.
- To determine the effect of HAART introduction on prevalence rates.

Methods: The study was conducted in 2011 at the HIV clinic at the CMJA Hospital. A sample of 197 confirmed HIV positive women were enrolled after obtaining written consent. A questionnaire was used to collect data on demographics, personal hygiene and habits, HIV treatment, and history of oral candidiasis. Most recent CD4+ count and HIV viral load were obtained from clinical records. Oral screening was conducted to assess for oral infections, while oral hygiene and dental caries status was documented using plaque and dmfs indices. Concentrated oral rinse samples were collected⁶ and processed in the laboratory for yeast count and identification. The *t*-test or Mann-Whitney *U*-test was used to compare means as appropriate. Categorical variables were compared using the chi-squared statistics or the Fisher's exact test where applicable. A multivariable logistic regression model was constructed with colonization as the outcome variable. Standard procedures for model checking were adopted. For all tests, statistical significance was inferred at $P < 0.05$. The data from a previous study carried out in the same clinic before antiretroviral therapy was introduced was extracted and compared with present data.

Results: Of the 197 patients, 117 (59.4%) were colonized and *Candida albicans* was the most dominant species (71%). The colonized group had a higher rate of concurrent tuberculosis infection when compared to the non-colonized group ($P = 0.03$). Participants not using antiretroviral therapy and those having oral prosthesis were all colonized, $P = 0.003$, 0.022 respectively. Associated factors using logistic regression were dental caries (OR = 1.30; 95% CI = 1.07, 1.60; $P = 0.019$) and diabetes mellitus (OR = 5.52; 95% CI = 1.68, 18.12; $P = 0.005$). The average yeast count, variety of yeasts and colonization rate was higher (81.3%) before antiretroviral therapy was available.

Conclusions: The study showed that dental caries, diabetes mellitus and concurrent TB infection were associated with oral colonization. Wearing of oral prosthesis and not being on HAART were also associated. The carrier rate of oral *Candida* organisms has declined with the introduction of HAART.

Perceived sources of stress among oral hygiene students at the University of the Western Cape

Chrisleen Rayner

University of the Western Cape, South Africa

Objective: To determine the perceived stress among oral health students enrolled for B. Oral Health in 2012–2013.

Methods: A study was conducted in 2012 with registered BOH students ($n = 89$). The following were assessed: demographic background, perceived sources of stress and burnout. A modified Dental Environment Stress (DES) questionnaire which included statements categorised into study, theoretical, preclinical and clinical environment was used to determine the sources of stress. Statements were scored as 'not posing a problem', 'posing a small problem' or 'posing a huge problem'. The Maslach Burnout Inventory (MBI) included 22 statements measuring students'

feelings on a scale of 0 (never) –6 (every day). The MBI include dimensions of Emotional Exhaustion (EE), Depersonalization (DP) and Personal Accomplishment (PA). Data was entered and analysed in SPSS 20.

Results: A 66% response rate. The majority (80%) were female; English (42%) was the most spoken language. The DES item in each category scored as a 'huge problem was': fear of unemployment- 48% (study environment); amount of study load- 70% (theoretical); fear of making mistakes- 61% (pre-clinical); clinical quotas- 95% (clinical). The MBI mean scores were EE = 3.22, DP = 1.53 and PA = 3.70. Differences were found across the year groups for both the DES and MBI. In the theoretical category- 'overloaded feeling due to a large number of modules', 'amount of study load' and 'fear of failing a module or year' were rated as huge problems by all three study years.

Conclusion: The stressors identified and the levels of emotional exhaustion indicate that stress is a factor that may impact on students' learning and development. Considering the limited information available on stress related to oral hygiene students, a follow up study will be done in 2013 with the prospective BOH1 students as well as the cohort of 2012.

Oral health promotion using community radio for horn of Africa refugees in Melbourne, Australia

Julie Satur

University of Melbourne, Australia

Background: People from the Horn of Africa who migrate to Australia as refugees demonstrate poor oral health related to resettlement issues, adaptation to western diet, malnutrition and trauma, and cultural dislocation. Despite enhanced public sector access for refugees, evaluation showed that many eligible people from this background living in Melbourne do not utilise public dental clinics. Evidence indicated that 'own language' ethnic community radio has been a useful vehicle for general health promotion and we hypothesized that Ramadan would be a good time to undertake this work on the basis that people try to self-improve during this time.

Objective: To improve oral health literacy and access to care for Horn of Africa refugees and migrants living in Melbourne. Ethics approval was given by the University of Melbourne Human Research Ethics committee.

Methods: In collaboration with a community ethnic radio station, language specific oral health information was delivered during Ramadan. Key messages tailored to the largely Muslim Ethiopian and Sudanese communities included standard diet and oral hygiene, the use of miswak and chat and dental treatment during Ramadan. A transcript spoken in English was translated and broadcast during three language specific programs, followed by talkback sessions. The programs were evaluated using questionnaires distributed at community breaking of fast dinners during Ramadan and by email surveys with radio subscribers.

Results: The questionnaires ($n = 250$) distributed during August 2012 had a response rate of 37%. Responses showed that the programs had initiated changes in oral health behaviours in 78% of respondents, 90% indicated they learned new information and 58% made dental appointments following the program.

Conclusions: Based on the evaluation of this program we believe that ethnic community radio is a useful medium for oral health promotion in refugee communities and Ramadan is a good time to promote oral health in this way.

The barnacles and the fluffy towel

Lise Slack
Australia

Objectives: Firstly I would like to inspire my fellow dental hygiene colleagues and secondly provide them with fresh ideas to help them to support their patients during the all-important perio and implant maintenance. Thirdly I would like to encourage dental hygienists to find a way to help street children.

Methods: I invented X-Floss and X-Ribbon (available in several international countries including South Africa) for the maintenance of perio and implants. I am a Stellenbosch Dental Hygiene Graduate 1982. The ideas of these products started at university 30 years ago.

Results: Three years ago we started the company iDontix, developed the X-Products, set up factory in China, launched July 2011 in Australia and several other countries since then. We are now ready to enter the pharmacy market in Australia.

Conclusions: I support the charity i-Hope to help rescue street children. My 'love for teeth' comes from my dentist dad who passed away 2 years ago. If I could choose I would become a Dental Hygienist all over again!

Community outreach – begins at home

Margie Steffens
University of Adelaide, Australia

2007 began the exploration of how best to deliver dental care to marginalised and hard-to-reach people in our own community in Adelaide, Australia.

The journey was borne of a common belief that all people should have access to dental care and that it may not ideally be in a traditional setting. That perhaps we needed to investigate the beliefs and self-rated oral health opinions of the homeless population in the Adelaide CBD and compare it with other populations.

With encouragement from the Dean, Professor Johann de Vries, four colleagues from the School of Dentistry, University of Adelaide and I began the task of grant applications, surveys, research, data analysis, writing papers and eventually publications – there is scant information to be gleaned about this group of people in our society; their lives are a transient existence in various stages of homelessness and it was found during the implementation of the second stage of the research that some of the original participants had moved on!

However, the group persisted and have made some significant progress having successfully obtained a grant that enabled a dental clinic to be built in collaboration with an organisation 'Common Ground' that provides tiered accommodation and social services for people trying to 'get their lives back together'. These people have extraordinary tales to tell, and our privilege is now being able to be part of their journey back into society.

Evaluation of substitutes for dental floss for lowers socioeconomic groups

Natasha Swart
University of Pretoria, South Africa

Aim: The aim of this study is to evaluate the effectiveness of the fibres of fruit or vegetable bags as an alternative to dental floss for lower socioeconomic populations.

Methodology: The study sample comprised 40 learners in the age group 8–12 years, randomly selected from children of the Boschkop Primary School. After completion of their dental treat-

ment children were asked to clean their teeth with a tooth brush and toothpaste (to remove buccal, lingual and palatal plaque). Thereafter an oral hygienist professionally cleaned the teeth interproximal using commercially available dental floss (tape) on the left or the right side of the mouth. The contralateral side was cleaned with the fibres of fruit or vegetable bags as the alternative to commercial dental floss. The alternative floss was sterilized prior to their application by the method described by Botha et al. The commercially available dental floss and the alternative floss were alternately used on the left or the right hand side of the mouth. A second oral hygienist (blind study) who was not involved in the cleaning of the teeth then performed a plaque index on the patient. A disclosing agent (two Tone, Young Dental Manufacturing in Missouri) was used to disclose areas on the teeth where plaque was left. The disclosing agent was applied using a cotton bud and the findings were recorded on the form. The data for the left and the right hand side of the mouth were recorded separately and from these visual recordings a plaque index was calculated.

Results: The results show that the mean plaque index for the teeth cleaned with the fibres of fruit or vegetable bags was 18.41 (SD 12.74) and the mean plaque index for the teeth cleaned with the conventional floss was 18.44 (SD 14.04). The two sets of data were compared using a paired *T*-test and the results show that there was no statistically significant difference ($P > 0.05$) between the teeth cleaned with the fibres of fruit or vegetable bags and the teeth cleaned with the conventional floss.

Conclusion: The results of this study show that there is no difference in the plaque index when the teeth are cleaned with conventional floss or with the fibres of fruit or vegetable bags and that the fibres of fruit or vegetable bags can be used as an alternative to dental floss for lower socioeconomic populations.

South African dental professionals' knowledge, attitudes and practices relating to sugar free chewing gum

Glynnis Vergotine
University of Witwatersrand, South Africa

Objectives: To determine the knowledge, attitudes and practices of South African dental professionals regarding the use of sugar-free chewing gum.

Methods: This was a cross sectional descriptive study using a convenience sampling method, conducted between 2011 and 2012. The sample population included registered dentists, oral hygienists and dental therapists practicing in South Africa. Ethical approval was granted by the Wits Human Research Ethics Council. Informed consent was obtained and self-administered questionnaires were disseminated at conferences and returned anonymously. Data was entered and percentages of variables calculated and analysed using a statistical analysis package (spss version 15).

Results: Preliminary data analysis from 154 respondents indicates that 90% consider SFCG beneficial to oral health. Almost 86% recommended SFCG to patients, with oral hygienists (47%) significantly more likely than dentists (22%; $P < 0.05$) to recommend it to most patients. The most common sources of knowledge about SFCG were obtained from magazines (49%), journals (49%) and university training (34%). The effects of chewing SFCG reported by this cohort were: to stimulate salivary flow (97%), reduce halitosis (86%), buffer oral pH (78%), reduce dental plaque (67%) and prevent caries (65%) while, reducing gingivitis (38%) and enhancing remineralisation (43%) were rated as less likely effects. Oral conditions for which the use of SFCG was advised included: halitosis (80%) and xerostomia

(83%), whereas it was not recommended readily for dental caries (52%) and demineralisation (39%). Alternatives to brushing teeth after eating included: rinsing with water (77%) and chewing SFCG (75%), more oral hygienists (82%) than other professionals recommended these alternatives.

Conclusions: The KAP study regarding the effects of SFCG among the categories of dental professionals varied significantly, with oral hygienists more likely to recommend SFCG as an adjunct to improve their patients' oral health conditions. Greater integration of current literature around benefits of SFCG should be included into curricula at universities training dental health professions.

Motivations, understanding and perceived efficacy of the first generation mouth rinses

Lesley Vorster
South Africa

Objectives: The purpose of this study was to gain insight into patients' understanding and motivators for using, not using a first generation oral rinse and the perceived efficacy thereof.

Methods: A mixed method concurrent design was employed. Individual semi-structured interviews were conducted with 101 adults, persons 18 years and older, attending the Tygerberg and Mitchell's Plain Oral Health Centers. Quantitative data was analyzed using the SPSS statistical software package whilst analysis of the qualitative data was achieved using a constructive process of thematic content analysis and selective coding.

Results: The major factor driving use of a first generation oral rinse was prevention and treatment of halitosis. Secondary reasons for use included control of plaque and gingivitis whilst motivators for non-use were found to be embedded in cultural and economic factors. Oral rinsing behavior as a component of grooming behavior was also seen to reflect cultural influences (social conformity) and cultivation of body image as opposed to the maintenance of health. Thus rinsing behavior did not, in general, comply with manufacturer's recommendations, but in instances where appropriate compliance was observable, oral rinses were perceived to be completely effective, enhancing satisfaction.

Conclusions: This study has revealed information that is of value in directing development of oral health interventions motivating for incorporation of a first generation oral rinse, as an adjunctive measure, into the daily oral care regimen. Universal prescription of the optimum three-step oral hygiene protocol, however, is to be avoided. Brushing and flossing remains the most widely accepted mechanism for controlling oral disease, emphasis on developing appropriate brushing and flossing skills remains a priority. Media and manufacturers' also have an ethical responsibility in prevention of misleading marketing that may impact negatively on population oral health outcomes.

Smoking education and cessation counselling by dental hygienists in practice in Ireland

Catherine Waldron
Dublin Dental University Hospital, Ireland

Objectives: The objectives of this study were:

- To assess the extent that Irish registered dental hygienists (IRDH) include education on the detrimental effects of tobacco in the mouth and Smoking Cessation Counselling (SCC) in their work practice.

- To assess how knowledgeable and confident IRDH are in this role.

Methods: Dental hygienists are well positioned to provide SCC however research shows that they may not provide it. An observational cross-sectional study was carried out to gather quantitative data of IRDH and their practice in relation to SCC, using a previously piloted postal questionnaire. Ethical approval and consent was obtained. The questionnaire was sent to all registered dental hygienists (403) with information about the study, taking into consideration all ethical issues. The study was part funded by the Irish Dental Hygienists Association.

Results: The response rate was 77%. Fifty-two percent of IRDH provide SCC on a daily basis. The level of training was high (74–100%) and 51% felt their training prepared them to provide SCC, ranging from 30% pre 1995 to 72% post 2005. Based on the 5A's system of SCC, IRDH providing SCC were confident or very confident providing the first three steps of Asking, Advising and Assessing (70%) but less confident providing the final two steps of Assisting and Arranging (17%). The main barrier to providing care was lack of time (30%).

Conclusions: Despite the inclusion of SCC in the training of dental hygienists, the level of involvement in practice is not as high as it should be. Whilst IRDH appear to be highly involved in the Asking, Advising and Assessing steps of the 5A's system of SCC, their involvement in the Assisting and Arranging steps is low.

Medical history, risk factors and periodontal disease. How does the medical history affect oral health?

Robyn Watson
University of Sydney, Australia

Objectives:

- The participant will be able to understand the ramifications of systemic and genetic diseases on gingival health and how they contribute to the periodontal condition in terms of risk and management.
- The participant will understand the implications for diabetes, smoking, nutritional deficiency, medications, blood dyscrasias, and transmissible diseases.
- The participant will be given tools and indices to evaluate risk factors for periodontal disease.
- The participant will understand the role of risk factors in supportive periodontal management.

Methods: Didactic POWERPOINT and online demonstration.

Results: Participant will be able to apply techniques and knowledge to practice experience.

Conclusions: Indices and tools to measure risk will be introduced as well as methods to take a thorough medical history. These methods aid in ensuring a complete analysis of the patients overall health in order to determine best practice in patient treatment and supportive periodontal therapy.

The biological activity of medicinal plants, active against *Candida albicans* isolates

Candice van Wyk
University of Pretoria, South Africa

Objectives: Crude acetone, water and hexane extracts of seven plant species, used as traditional medicine to treat fungal related diseases or shown to contain antifungal activity, were evaluated so as to identify new sources of chemical entities which can be used in the treatment of oral fungal infections.

Methods: Antifungal activity against *Candida albicans* standard strain (ATCC 10231) and six clinical isolates was determined using the serial microplate dilution method. Antioxidant activity was determined using the TEAC and DPPH assays and cytotoxicity against mouse fibroblast cells.

Results: MIC's below <1 mg/ml were observed for the acetone and water extracts of *Sclerocarya birrea* (stem-bark), as well as the acetone extracts of *Harpephyllum caffrum* (leaves), *Ptaeroxylon obliquum* (leaves) and *Rapanea melanophloeos* (leaves). Bioautography confirmed the presence of compounds with antifungal activity in *S. birrea* and *P. obliquum*. *S. birrea* contained the highest antioxidant activity with the lowest cytotoxicity.

Conclusion: These results implicate that the extracts contain compounds with therapeutic potential against *C. albicans*.

Action plans for older adult oral health developed by an inter professional network

Minn Yoon

University of Alberta, Alberta, Canada

Introduction: Poor oral health status is a widespread problem affecting the increasing number of older adults who are retaining their teeth longer, but who are unable to maintain adequate oral care. This is especially true for those who reside in long-term care facilities where a large proportion of the population is dependent for care.

Methods: A Canadian inter professional symposium was held in November 2012. The 43 symposium participants were from

various stakeholder groups and were involved in addressing older adult oral health (dental hygiene and dentistry researchers and practitioners; nurse researchers and practitioners; Speech Pathology; Occupational Therapy; geriatricians; frontline caregivers; policy makers; long-term care facilities; seniors advocates). The underlying premise guiding symposium activities was to facilitate the bidirectional connection between researchers and knowledge users so that research and evidence in combination with knowledge user experience could inform decisions about policies, practices and future directions in research. Participants engaged in inquiry sessions following targeted topic presentations as well as small strategy group discussions.

Results: Action plans were created to address six areas: enhance geriatric curricula in health professions education base programming; raise public and professional awareness for importance of oral health for older adults; develop and promote standards and evidence-based best practice guidelines; develop innovative care delivery models for older adult oral health in long-term care; engage regulatory bodies in policy change; and reduce financial barriers and increase access to care. Using a knowledge translation framework, the presentation will highlight the bidirectional exchange of knowledge created between the various stakeholders. There was strong consensus by participants that central to achieving the symposium outcomes resulted from a high level of inter professional engagement.

Conclusions: A collaborative inter professional network developing strategies for policy, practice and research can provide a foundation to answer calls-to-action to address disparities and inequities in older adult oral health.

Abstracts for Poster Presentations

amyotc@umkc.edu

Increasing access to oral healthcare services to underserved children through collaborative school based programs using expanded scope of practice dental hygienists and dental hygiene students

Cynthia C. Amyot
USA

Objectives: To describe how collaboration between university, a school district, an expanded scope of practice dental hygienist (ECP-RDH) and a federally qualified health center (FQHC) has resulted in the delivery of comprehensive preventative and restorative oral healthcare to unserved and underserved children on site at their elementary schools.

Conclusions: A change in the dental practice act allowing dental hygienists direct access to children combined with a school-based, place-based approach to care has resulted in the provision of preventative and restorative oral healthcare to children who

have not been able to access the predominantly private practice, fee-for-service dental model in the United States of America.

kristina.edman@ltdalarna.se

The impact of socioeconomic and demographic factors on carious lesions in an adult population 35–85 year of age

Kristina Edman
Sweden

Objectives: The objective of the study was to analyze the relationship between carious lesions and level of education, marital status, and financial conditions for dental care, dental care habits, and medication and tobacco habits in an adult population in the County of Dalarna Sweden.

Conclusions: In conclusion the survey revealed that dental caries was more prevalent in the age groups 75 and 85 and that individuals with a low level of education and limited financial conditions proved to have a higher prevalence of carious lesions.

christian.faverio@gmail.com

Local anaesthetic and the dental hygienist: a necessary development of competencies perceived internationally

Christian Faverio

Italy

Objectives: Research has shown the necessity and the ability of Dental Hygienists to administer local aesthetic for pain control and the reduction of patient anxiety. This work is focused on more recent developments of local anaesthesia in the dental practice, on the safety and effectiveness of the practice and aims to describe the use of local anaesthesia by Dental Hygienists where regulated, in order to create a document which would be useful both from a legislative and therapeutic point of view.

Conclusion: This additional competence contributes to greater efficiency in patient therapy and is also beneficial for the Dental Hygienist and whole Dental practice. For the Dental Hygienist pain control is an ethical and moral obligation and improves the overall satisfaction of the patient (increasing the compliance).

bgitzel@ualberta.ca

Perceptions of health science students and faculty of the value of standardized patients for tobacco treatment training

Barbara Gitzel

Canada

Aims: Graduate health care professionals from the University of Alberta must provide tobacco cessation services to patients as a standard of care. To serve this goal, this project sought to develop scenarios and dialogue for simulated tobacco cessation interviews. Once tested and refined, these scenarios would be used with standardized patients to train students to deliver brief tobacco cessation interventions.

Conclusions: Students reported more confidence in offering tobacco cessation interventions after the simulated intervention. Video-taped, simulated interviews are potentially effective in motivating and training health science students to confidently interact with tobacco users in a brief tobacco cessation intervention. Health sciences curriculums need to incorporate more knowledge on the psychology and physiology of dependencies to support the development of brief counselling skills.

shahrazaad.hassan@wits.ac.za

The efficacy of oral irrigation as an adjunct for improved gingival health: a systematic review of trials

Shahrazaad Hassan

South Africa

Introduction: Oral irrigators are popular with consumers because of their ease of use and claimed benefits as an adjunct for daily tooth brushing. Older systematic reviews of efficacy have not reported favourable findings.

Aim: To assess the efficacy of oral irrigators as an adjunct for tooth brushing in published trials.

Conclusion: The poor quality of trials and high risk of bias, together with variable reporting methods provided inconclusive evidence of superior efficacy for oral irrigators as adjuncts for improved gingival health.

Lena.Hellqvist@kau.se

Dental caries and associated factors in a group of Swedish snus (snuff) users

Lena Hellqvist

Sweden

Objectives: The aim of this study was to investigate the effect of snus (snuff) use on dental caries and to measure the pH fall in dental plaque.

Conclusions: This clinical study revealed no statistically significant difference in caries prevalence between snus (snuff) users and non-users and there were only minor differences regarding caries-associated factors between the two groups.

best0411@hanmail.net

Assessment of risk factors for oral and maxillofacial injuries child and adolescent in Seoul National University dental hospital

Soon-Jung Hwang

Korea

Objectives: It was attempted to understand major features of dental injuries developing in children and adolescents and identify high risk factors of dental injuries in children and adolescents.

Conclusions: Background of dental injury inducing factors are very complicated and diversified, so deep study and analysis are required for its prediction. Therefore, it seems necessary to identify risk factors by phases such as before, at and after the accident, establish strategies to reduce injury development, and develop and utilize necessary programs.

noushinjn@yahoo.com

Periodontal parameters and pre-eclampsia, is there an association? A case-control study in Iran

Noushin Janbakhsh

Iran

Objectives: Pre-eclampsia is one of the most important causes of maternal deaths. There is still a controversy on whether periodontal diseases and pre-eclampsia are associated. This study aims to determine whether there is an association between periodontal parameters and pre-eclampsia.

Conclusions: Periodontal parameters do not seem to be associated with increased odds of pre-eclampsia. This study declares no relationship between periodontal parameters and pre-eclampsia in a population of Iranian women.

noushinjn@yahoo.com

Comparison of efficacy and side effects of two commercial chlorhexidine mouth rinses: alcohol free versus alcohol containing

Noushin Janbakhsh

Iran

Objectives: Mouth rinses are inseparable components of periodontal treatment. The purpose of this clinical trial was to compare the effect of two most commonly available and prescribed chlorhexidine (CHX) solutions manufactured in Iran on plaque index

(PI), gingival Index (GI), stain index (SI) and other side effects of short term use in gingivitis patients.

Conclusion: Both alcohol-free and alcohol containing mouth rinses are efficient in reducing plaque and gingival index, however the alcohol containing seems more efficient and causes less stains, patients should be informed of these potential side effects when choosing rinses.

info@dansktp.dkarak@kolding.dk

Dental hygienists handling the oral health for kids aged 0–18 years oral health of children and youth

Alice Kristensen
Denmark

Objectives: To show the Danish dental hygienists clinical, academic and health education competencies correspond to what the majority of Danish child population needs.

Conclusions: A community's economic benefit but not the least, a huge win for kids.

Children and youth without caries demands or serious orthodontic needs can be handled by dental hygienists.

kimi@ualberta.cascompton@ualberta.ca

Dental hygienists conducting oral health assessments in long-term care facilities: a scoping review

Kimi K. Khabra
Canada

Objectives: The oral health status of residents in long-term care (LTC) facilities remains an issue of high concern. Residents in these facilities tend to have poor oral health and high rates of dental disease placing them at a risk for infections, affecting mastication and impacting nutritional status. Their poor oral health status results from a variety of barriers including reluctance of dentists and dental hygienists to provide care to this population, nursing aides' inadequate oral health knowledge and low utilization of dental hygienists in facilities. The objective is to examine existing literature exploring whether dental hygienists possess the ability to competently conduct oral assessments in long-term care facilities independently of supervision.

Conclusions: Further research needs to be conducted on dental hygienists using different assessment tools including the MDS-RAI in LTC facilities in order for expansion of their role in facilities and ultimately helping to improve oral health status of residents. This review demonstrates that dental hygienists can provide similar quality of assessment to dentists.

eml1@nyu.edu

Trends in accredited dental hygiene programs to meet economic employment forecasts in the U.S.A.

Eva M. Lupovici
USA

Objectives: To assess changes implemented in Accredited Dental Hygiene programs to meet the U.S.A. Labour Department's employment projections of future job growths in the dental hygiene profession to year 2020.

Conclusions: Dental Hygiene Accredited Programs in the U.S.A. have implemented changes to meet forecasts of future job growths in the dental hygiene profession from 2010 and 2020. There has been an increase in the number of programs, opportunity to get a cost effective education, and changed GPA requirements.

clelia.mazza@libero.it

Connection between oral pathologies and pediatric obesity

Clelia Mazza
Italy

Objectives: Do obese children have more probability to develop periodontal infections and caries processes? Does a correct diet full of fruit and vegetables favour oral cavity cleansing and health? The research comes from these questions and its aim to find a link between pediatric obesity and oral diseases.

Conclusions: The calculated DMFT does not obey WHO targets set every 10 years relative to oral health for 2020. The linear regression analysis connects gingivitis with poor oral hygiene and the lack of use of fruits and vegetables rather than obesity of the examined subjects. After home-made oral hygiene instructions and motivation the checked patients showed a marked improvement of periodontal indices confirmed by T-student test too. The treatment of an obese patient must be handled with interdisciplinary perspective to monitor the increase of obesity and dental diseases.

clelia.mazza@libero.it

Retrospective study of follow-up 10 years from diagnosis and treatment of chronic and aggressive periodontitis

Clelia Mazza
Italy

Objectives: Periodontitis is a chronic disease of destructive nature, which involves the progressive loss of the supportive tissues of the teeth. The purpose of this research is to observe the progression of periodontitis over the course of 10 years of diagnosis and treatment of cooperative patients in SPT, and uncooperative patients.

Conclusions: The results of this study demonstrate that consistent and regular periodontal therapy, after causal therapy, albeit it on a limited sample, has led to improve levels of periodontal health and oral hygiene over time. However, given the small number of cases, further studies will be needed to show that the disease progresses independently without implementation of regular periodontal therapy.

Deborah.Mbeje@wits.ac.za

The efficacy of chlorhexidine versus cetylpyridinium in the treatment of halitosis: a systematic review of clinical trials

Deborah Mbeje
South Africa

Objectives: To compare the efficacy of CPC versus CHX mouth rinses for the control of oral malodour.

Conclusion: The lack of computable data and the high risk of bias of included trials suggest that the evidence of efficacy when CPC is compared against CHX is inconclusive

tsholofelo.mokale@wits.ac.za

Oral hygiene management of a patient presenting with a history of Rhabdomyosarcoma

Tsholofelo Beryl Mokale
South Africa

Objectives: (i) To discuss the clinical features and medical history of the patient with Rhabdomyosarcoma. (ii) To describe the effects of Rhabdomyosarcoma treatment on the oral cavity.

Results: Cooperative planning between physician and dental team is very important in these cases in order to minimize the pre and post therapy complications. In order to avoid dental complications, it is very important that all patients receiving cancer treatment be referred to dental department for pre-treatment dental evaluation and assessment. They should be given a well-defined prevention program and follow-up during and after cancer treatment.

muroedev@tmd.ac.jp

Educational environment concerning four-handed dentistry of Japanese dental hygiene schools

Rei Muroga
Japan

Objectives: In Japan, it has been emphasized for dental hygienists to work cooperatively with other dental team members. Four-handed dentistry is one of the important components for dental team working, however, it is not clear how it has been taught in Japanese dental hygiene education. Therefore the purpose of this study was to investigate educational environment of dental team working including four-handed dentistry in dental hygiene schools.

Conclusions: Many of dental hygiene schools had classes on dental team working, but educational items of four-handed dentistry vary in 99 dental hygiene schools. So it can be said that common contents for four-handed dentistry is not established. It is said that good dental team working keeps patients safe and reduces dental team members' stress. It seems to be necessary to set common objectives of four-handed dentistry to foster work-ready dental hygienist. It is also important to provide more practical training with dental students.

nohh@kangwon.ac.kr

Efficiency of professional tooth brushing and dental flossing before ultrasonic scaling

Hiejn Noh, Minjung Kim
Korea

Objectives: The aim of this analysis was to investigate the effect of tooth cleaning with a toothbrush and dental floss by a hygienist before ultrasonic scaling among patients who need scaling for their oral health.

Conclusions: The findings indicated that removing dental plaque biofilm with a tooth brush and dental floss by a hygienist before scaling with an ultrasonic device is more effective both reducing

working time of the dental hygienist and improving patient satisfaction than routine scaling with an ultrasonic device.

Gabonege.Sedibe@ul.ac.za

Effects of co-existing HIV and TB on the oral hygiene status

Gabonege Anna Sedibe
South Africa

Objectives: Human Immunodeficiency Virus (HIV) is a lentivirus that causes Acquired Immuno-deficiency Syndrome (AIDS). Tuberculosis (TB) is a bacterial infection that occurs primarily in the lungs, but can occur in other organ systems in the body. It is spread through airborne particles, when an infected person coughs, sneezes, talks or sings. Oral manifestations and oral hygiene status of patients with HIV and TB have implications for the overall well-being of the patient. The objective is to report a case of the effect that THE co-existing of TB and HIV have on the oral hygiene status and compare it to previously reported cases.

Conclusions: Early awareness and consultation with an oral health practitioner may yield positive results. The effects that HIV and TB have on the oral hygiene status of patients need to be evaluated for proper management.

margaret.steffens@adelaide.edu.au

Oral health for those who care

Margie Steffens
Australia

Objectives: 'Older adults still need to eat and talk comfortably, to feel happy with their appearance, to stay pain free, to maintain the habits/standards of hygiene and care that they have had throughout their lives'.

Conclusion: The Oral Health for Those Who Care package is relevant to a range of health professionals in various settings and can be used in part, to comply with continuing professional development requirements.

agneta.stenebrand@hhj.hj.se

Specific fears, attitudes to dental care, and dental anxiety in adolescents

Agneta Stenebrand
Sweden

Objectives: Dental anxiety has a major impact on oral health and general quality of life. The etiology of dental anxiety may involve a spectrum of factors related to past dental experiences, general and specific fears and other personality factors, but is relatively unexplored in adolescents. The aim of this study was to examine how general fearfulness and attitudes to dental care/personnel were related to dental anxiety in 15-year-olds.

Conclusions: Both individual vulnerability in terms of generalized fear and apprehensions about dental staff, which is linked to experiences of dentistry, appear to be important factors for dental anxiety and may be considered risk factors for dental anxiety in adolescents.

malin.stensson@hhj.hj.se

Oral administration of *Lactobacillus reuteri* during the first year of life – effect on oral health at 9 years of age

Malin Stensson
Sweden

Objectives: The aim of the present study was to study the effect of oral supplementation with *Lactobacillus reuteri* in infancy on oral health after 9 years.

Conclusions: Children who received *L. reuteri* during their first year of life had a lower caries prevalence than children in the placebo treated group at 9 years of age. More longitudinal studies investigating the mechanism of changes in the oral biofilm after administration of *L. reuteri* in this field are needed.

Nina.Sundberg@kau.se

Oral alterations in patients with cancer and assessment of oral health status in oncology care

Nina Sundberg
Sweden

Objectives: The purpose of the study was to describe oral alterations in a group of patients with cancer, treated at an oncology clinic with the instrument Revised Oral Assessment Guide (ROAG). Furthermore, the purpose was to examine the inter-rater reliability of the instrument.

Conclusions: The clinical study suggests that health care professionals in oncology care with systematic education in oral health

could use the instrument ROAG. Early detection of the oral alteration at the patient could variety of measures deployed to promote the patient's quality of life in collaboration with the dental.

usuity@nyc.odn.ne.jp

Text mining analysis for formulating a seamless oral health care system in Japan

Yoshie Usui
Japan

Objectives: Oral health care plays an important role in the prevention of pulmonary diseases, such as aspiration pneumonia, in medically compromised patients. Recently, the intervention of professional oral care has been provided by dental hygienists in Japan for acute patients as well as patients receiving homebound care. However, patients' oral information is not smoothly transferred between dental and medical professionals. Using text mining analysis, we aimed to investigate the status of information sharing between dental and medical providers in order to formulate a seamless oral health care system.

Conclusion: Text mining analysis is useful for coding open-ended questions. The current status of sharing of information between dental and medical providers is not sufficient. These findings suggest that the professional education of dental hygienists should be enriched in order to improve their information sharing ability, thus, the role of organizations educating and training dental professionals is important and should be increased.

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