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- **GUM Bi-Direction** interdental brushes offer unique dual angled cleaning - available in 3 sizes
- **GUM Easy-Flossers** offer convenient and disposable floss handles
- **GUM Flosbrush Automatic** offers a self-dispensing floss handle, with an angled head to easily reach back teeth

* Dentsply Fresh Breath Survey 2008

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Dear OHASA Members and Colleagues

Welcome to a new year and new beginnings.

The Executive Committee has already had their first meeting for the year, to which the branch chairs were invited to participate. This was most informative for them so that they understand what goes into running the Association. I would like to inform you that Natasha has resigned her position as secretariat, but will remain on as Journal Editor and DTO Board Member. Thank you Natasha for your hard work, I appreciate it.

Members of the Professional and Public Relations Committee have been elected. Congratulations to Elna van der Ham - Western Cape Branch, Mart-Marié Potgieter - Eastern Cape Branch, Elaine Johnson - KwaZulu Natal Branch and Louise Fernandez - Gauteng Branch. Thank you Ladies for availing yourselves to take on this mammoth task. They are extremely enthusiastic and have had their first meeting of which you will be informed soon.

Oral Hygiene is most certainly being put on the map. Dr Michael Mol invited Christine de Sousa to expel myths regarding oral health and the recording will be screened on “Hello Doctor” on 16 March 2014 on SABC 2 TV.

SADA 2014 “Beauty and the Beast – Substance abuse” is taking place from the 14th – 16th March, with an Oral Hygiene programme on 15 March. Please register on-line at www.sada.co.za. Branch events will take place throughout the year and the dates have been uploaded to the members section on the OHASA website www.ohasanet.co.za. Please contact your Branch Chair if you have any queries.

Level 3 Frist Aid Courses have also been planned and this is with a HWSETA accredited service provider, which will enable those members who want to register Independent Practice.

The deadline for the OHASA 2013 Journal tests have been extended to the end of March because of postal delays. The National Accreditors Forum have taken a decision to cap the amount of ceu’s awarded to online journal questionnaires at 3ceu’s per questionnaire and 1ceu per article as Associations were abusing this form of continuous professional development.

HPCSA Fees are due by the 31st March, please ensure that your payment is timeously as the HPCSA has had problems with their website and emails. Oral hygienists wishing to take voluntary erasure, should do well in advance and have their acknowledgements from the HPCSA before 31 March and safeguard the documents and correspondence.

To all the Dental Traders – Thank you for all your generous sponsorships – we would not be able to afford all our members the benefits without your input and sponsorships. Wishing you a fantastic 2014.

Thank you to the E-Doc team for their hard work and help with the journal and website.

I truly believe this is going to be another exceptional year for Oral Hygiene in our beautiful South Africa.

God Bless

Stella
The business of Oral Hygiene

With the New Year inevitably comes new hope and ambitious resolutions. Which is a good thing. The New Year provides an indisputable reference point and setting goals helps us to identify important issues to address. And beware the “easy” year where there is nothing to resolve, nothing to change and nothing to challenge: easy leads to lazy, lazy leads to sloppy and sloppy leads to failure.

Therefore from the OHASA journal and editorial committee we look forward to 2014, albeit that we know that this is not going to be an “easy” year.

Since independent practice is now promulgated, we are facing a majority of challenges (trial and error). For the first time in the oral hygiene history of South Africa we are on our own, and should start building our own “independent” identity.

Now more than ever the oral hygiene profession will be in the spotlight, we will have to be responsible for our own actions, no dentist will “cover” for us anymore therefore an increase of possible litigations can also be expected. This starts with thorough record keeping and diagnosing.

Diagnosing for oral hygienists has become known as the “D” word for most practitioners. Dental practice regulations specify that the dentist is the only person legally able to diagnose patients’ conditions. Although this may be legally accurate, the oral hygienist has a legal, ethical, and moral obligation to diagnose the oral hygiene conditions within their scope of practice of patients seen every day. Recall the core values of beneficence and non-maleficence, both terms relate to benefiting the patient. The patient in turn trusts your professional expertise and judgment. Webster’s New World Dictionary defines diagnosis as “the act or process of deciding the nature of a diseased condition by examination of the symptoms.” It is a careful examination and analysis of the fact in an attempt to understand or explain something. Dentists diagnose oral diseases in general, such as canious lesions and their extent, in order to determine causes and recommend treatment that will remedy the condition. The main concerns for dentists are the symptoms, preventing new and recurrent caries, and constructing lost dentition. Why should diagnosis be different for the oral hygienist evaluating the condition of patients’ oral hygiene?

As you learned during your oral hygiene training, the oral hygiene diagnosis, or “process of care”, serves a completely different purpose than the dental diagnosis. It focuses on problems or potential problems related to oral health and disease versus dental disease (Darby & Walsh, 2003). Registered oral hygienists are responsible for identifying the deficient human need as related to oral hygiene. Identifying a possible etiology and designing and planning treatment in order to remedy the patient’s condition is the goal of each oral health practitioner. As a professional, we also deal with patients’ perceptions, beliefs and attitudes, and this requires interpersonal skills and obtaining factual information. Other factors must also be considered if professional services are to be successful. These factors may include the following:

- Recognising the causes (etiology) that resulted in poor oral health
- Identifying the human need the patient is seeking to fulfill
- Patient assessment, such as medical and dental histories
- Recognising abilities or inabilities of the patient to comply with your recommendations
- Prioritizing oral hygiene treatment, follow-up and maintenance

The process for the oral hygiene diagnosis includes other factors worthy of discussion. As defined, examination of symptoms and analysis of facts are required before finalising results. The astute oral hygienist will gather the appropriate data using the medical and dental history along with current information proved by the patient. Using this information, clinicians are able to look for patterns or series of patterns that assist in developing possible etiologies for the patient’s current oral health. Diagnosis takes quality evaluative skills and application of the knowledge gained in University as well as information from continuing professional development (CPD) courses. Registered oral hygienist will want to continuously build and perfect these skills as they gain experience in the clinical setting. In doing so, the chance of misdiagnosis will decrease and patients will benefit from the clinician’s expertise.

Ethically, the clinician must determine the oral health deficit and inform patients. The oral hygiene diagnosis presents accurate information to the patient so that the patient has the opportunity to participate in his or her oral healthcare. It is a valuable tool for the oral hygienist. Use it for processing patient information prior to designing a treatment plan, follow-up and maintenance. Each patient is an individual, and each oral hygiene diagnosis and treatment plan is customised to that individual’s needs. The oral hygiene field is unique and rewarding for many. Each patient, each case and each oral hygienist is unique and should be viewed and treated with that uniqueness in mind.
Research as part of the daily practice for the Oral Hygienist

Dr Shenuka Singh: Senior Lecturer and Acting Academic Leader, Discipline of Dentistry, School of Health Sciences, Chair: Humanities and Social Sciences Research Ethics Com., University of KwaZulu-Natal

The buzz around evidence-based practice has become a world-wide phenomenon, necessitating the need to highlight the role of research in professional practice. Evidence-based clinical practice is defined as a concerted effort to ensure that health decision-making is based on updated, valid and applicable scientific information. This is a dynamic process constantly re-assessing existing clinical norms and practice. Traditional clinical practice such as routine scaling and polishing, the six-month recall system, education on topical fluoride uptake, etc. have all been subjected to systematic reviews to determine the effectiveness of these clinical procedures.

Unrestricted access to the ‘information super highway’ through print and electronic media empowers patients to play a more meaningful role in health and oral health decision-making. This upstream approach to oral health decision-making, in turn, re-defines the role of the oral health practitioner. The traditional role of the practitioner-patient relationship, where the practitioner represents the tower-house of knowledge and therefore knows what is in the best interests for the patient is now challenged.

Therefore, oral health practitioners have to re-examine their traditional roles in the face of a changing society. Continuous professional development (CPD) plays a significant role in contributing to life-long learning, but most of these initiatives are pitched at Level 1 activities. These are attendance driven activities which are not outcome-based. It is questionable to what extent CPD level 1 activities actually contribute to sustainable life-long professional development.

Research on the other hand does not aim to improve evidence-based clinical practice. Health research can be defined as a systematic and planned effort to generate knowledge through the use of scientifically valid research methods, with a strong emphasis on ethical principles in protecting and upholding participants' rights and well-being. It is this knowledge that enables a profession to critically assess its own practice, to ensure innovation and development in pursuit of improved services that would translate to cost benefits to its clients or consumers. All of this is relevant to oral hygiene practice. It is an ethical responsibility to ensure that oral hygiene, as a profession, is capable of generating its own body of knowledge around clinical and community practice, innovative skills and technical support.

However the word ‘research’ generally invokes a more detached notion in most health and oral health practitioners. “It is something out there that has no relevance to our daily practice. We have all the required skills for us to practice as oral hygienists. Research is for the universities and postgraduate students. We are clinicians. Our job is to save teeth!”

Therefore some important questions are posed: is research confined to academic ivory towers and clinical laboratories? How does research impact on the daily lives of oral health professionals? Does this impact extend to the oral hygienist? Are we as oral hygienists, simply driven by the skills obtained in our undergraduate training and nurtured throughout our professional careers?

Research activities do not necessarily mean engagement with huge projects with elaborate data collection methods and intense report-writing and publication. The first step to research is critical reading, to be aware of the latest discussions and debates in oral hygiene and its related fields. However it is also imperative to trace back the development of these latest discussions to establish a chronological trail. Critical reading entails reading with a planned intent to critique the article in question. This approach thus requires a more in-depth engagement with the article that you are reading. Try to establish the author’s central argument or main point. What conclusions does the author reach? What evidence does the author provide to support his or her arguments and conclusions? Is the evidence presented, strong enough to support the arguments and conclusions? Is the evidence relevant and appropriate to the study population? Are there any unstated assumptions about shared beliefs? Can these assumptions be challenged? In what context was the article written. Are there any socio-cultural, educational or political influences that could impact on the generalisability of the result findings?

Critical reading sets the stage for a critical examination of your surroundings as a practitioner. A sustained exposure to critical reading will eventually highlight the knowledge gaps in your current practice. These knowledge gaps then become the source of a research enquiry. This approach to research ensures that study areas eventually selected, are relevant and appropriate and will make contributions to the body of evidence. This avoids duplication of studies (because you are aware of all the current literature in the field), unnecessary exposure of study participants to research that cannot yield meaningful results and maximises your contribution to the knowledge base.

The development of a research proposal should include the aims and objectives of the study, the research methods used, the limitations of the study, the analytical processes used, etc. A research protocol (an approval research proposal) is regarded as the blue print of the study. It highlights the purpose of the study, gaps in the knowledge base that in turn, determine the aim of the study (in terms of what the study hopes to achieve, the objectives (what measurable actions will be taken to achieve the aim)). The research methods focus on the study design (descriptive, retrospective, cross-sectional); study sample (sample population; sampling technique), research instrument (methods of data collections: questionnaire, interviews, focus group discussions). The protocol also needs to include ethical considerations such as autonomy, respect for participants, confidentiality and privacy, informed consent. Other ethical considerations include dissemination of result findings. The researcher also needs to consider budgetary needs and a work plan. It is important that the protocol is reviewed and approved by a recognised Research Ethics Committee.

It is advisable for novice researchers to be mentored by more experienced researchers. Essentially, research activities require a team effort where all members have clearly defined roles in achieving the goals of the study. Thus contextualising research within the everyday clinical or community practice can provide a paradigm shift on how we as oral hygienists, view research. We all have the potential to play leadership roles in our daily practice through our contribution to the research endeavour. Each contribution, no matter how small, adds to the body of knowledge in this ever changing environment.
What OHASA can offer you

Annual Membership Benefits include

- We publish and distribute:
  * The OHASA Journal - official mouthpiece of the Association – a communication tool on everyday oral hygiene and a forum for publishing clinical and scientific articles;
  * Other useful publications for the oral hygiene profession and the public and
- Members can receive six Dentistry South Africa Journals per year at a reduced subscription fee.
- We consult and negotiate on member’s behalf with
  * The Health Professionals council of South Africa;
  * The South African Dental Association;
  * Financial Institutions and
  * Dental Traders.
- Through our branches members can:
  * Attend branch meetings with selected guest speakers where they can air:
  * Attend CPD Activities at reduced registration fees;
  * Enjoy the camaraderie of fellow oral hygienist and
  * Obtain assistance and information from regional branch committees.
- We arrange continuing professional development courses, (including a three-yearly International Congress);
- We negotiate reduced registration fees for congresses, seminars, symposiums etc.;
- We provide members with an OHASA membership card and number as proof to qualify for reduced registration fees;
- We provide members with OHASA business cards at a minimum cost;
- We provide members with a basic employment contract;
- We provide members with a copy of the Basic Conditions of Employment Act;
- We provide members with general advice and regular updated information;
- We negotiate prizes and lucky draws;
- We offer an affordable indemnity package from an international legal company that includes a legal help-line to assist members with profession-related matters;
- Financial planning through Liberty;
- We promote and support public oral healthcare awareness programmes e.g.:
  * National Oral Health Month
  * World Oral Hygienist’s Day
  * Smile Hygiene/Dental Wellness Programme
- Login and password access to restricted areas of the OHASA website
- 2 Full-day CPD Seminars (16 – 18 CEUs) free of charge;
- 4 CPD Questionnaires in OHASA Journal and on-line on OHASA website (12 CEUs)

OHASA/ORAL B Clinical Awards

Anisa Ally - GSK OHASA Winner 2013 - University of KwaZulu Natal

Ms Mahlangu - Oral B Award - University of Limpopo

Oral B Award - WITS
World Oral Health Day- Celebrating Healthy Smiles

World Oral Health Day (WOHD) is celebrated every year on the 20th March. It is an international day to celebrate the benefits of a healthy mouth and to promote worldwide awareness of the issues around oral health and the importance of looking after oral hygiene to everyone - old and young.

It is a day for people to have fun – a day that should be full of activities that make us laugh and smile!

The aim of WOHD is to raise awareness and encourage individuals, families, communities and governments to take action and help reduce the global burden of oral disease.

Why is World Oral Health Day held on the 20th March?
Children have 20 milk teeth
Seniors should have 20 natural teeth at the end of their life.
When expressed numerically, month before day, i.e. 3/20 – the result is what healthy adults should have, 32 teeth and 0 caries …

Good enough reason to celebrate!

Why is WOHD important?
Because 90% of the world’s population will suffer from oral diseases in their lifetime and many of them can be avoided with increased governmental, health association and society support and funding for prevention, detection and treatment programmes.

In addition, World Oral Health Day offers the dental and oral health community a platform to take action and help reduce the global disease burden.

Working together helps us to unite our efforts to prevent the epidemic of caries, gum diseases and tooth loss and help our communities to maintain proper dentition and function for life.

How will OHASA take part?
The Professional and Public Relations committee will make a poster(s) available that can be featured prominently in our practices, at our schools and/or in public places.

We will participate through media and press releases in community newspapers in the week of the 20th to ensure we reach a substantial audience.

As oral hygienists our main focus should still be in educating the public, the prevention of disease and the promotion and improvement of the public’s oral health.

The importance of oral hygiene should be emphasised and people should be empowered to take responsibility for their own oral health, together with oral hygiene and dental visits twice a year.

For more information visit:
www.ohasanet.co.za
www.ifdh.org
www.fdiworldental.org
20th March 2014 World Oral Health Day / Celebrating healthy smiles

BRUSH
For a Healthy mouth!
Motivations, understanding and perceived efficacy of the first generation oral rinses among a cohort of patients attending the Tygerberg and Mitchell’s Plain oral health centers

LR Vorster: BSc, University of the Witwatersrand, BOH, University of the Western Cape
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Abstract

Aim: 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.

Method: 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 analysed, using the SPSS statistical software package, whilst interpretation of qualitative data was achieved using a constructive process of thematic content analysis and selective coding.

Results: Overall response rate was 99% (n=102) with a study sample n=101. 58% (n=101) of participants were currently or had previously used an oral rinse, 73% (n=59) of which were using an oral rinse to prevent halitosis. Secondary motivators included plaque removal (32%; n=59) and treatment of gingivitis (17%; n=59), whilst barriers were embedded in cultural and economic factors. Oral rinsing behaviour as a component of grooming behaviour was also seen to reflect cultural influences (social conformity) and cultivation of body image as opposed to the maintenance of health. Thus rinsing behaviour did not, in general, comply (14% compliance; n=59) with manufacturer’s recommendations, but in instances where appropriate compliance was observable, oral rinses were perceived to be completely effective, enhancing satisfaction.

Conclusion: This study has revealed information that is of value in directing development of patient-specific oral care practices. Universal prescription of the optimum 3-step oral hygiene protocol is to be avoided. Brushing and flossing remains the most widely accepted mechanism for controlling oral disease, emphasis on 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.

Introduction

Periodontal and oral health depends on effective plaque removal. Brushing and flossing is the universally accepted “gold standard” for plaque removal. Despite the large variety of mechanical oral hygiene aids available, it is estimated that only a third of the population of developed countries adequately removes plaque, with this proportion being significantly less in the developing nations. Lack of motivation and/or skills required are the most readily identifiable causes of this problem. This has lead to the development of chemotherapeutic, plaque-control agents, such as the oral rinses, to be used as an adjunct to the mechanical plaque control techniques.

Mouth rinses are defined as “solutions used to rinse the mouth for a number of purposes; namely to remove or destroy bacteria, to act as an astringent, to deodorise and to have a therapeutic effect by relieving infection or preventing oral disease”. According to pharmacological properties, three (3) generations of oral rinses are recognised. A fourth generation is also defined, incorporating all-natural products.

First generation mouth rinses, typically containing essential oils, cetylpyridinium chloride (CPC) or triclosan as the active ingredient, demonstrate bactericidal properties on contact, but have limited ability to exert an effect on the oral flora after expectoration. These first generation rinses reduce plaque scores and gingivitis by 20 to 50%. Due to negligible substantivity (ability of an anti-microbial to bind to anionic groups on the tooth surface, oral mucosa and bacterial surfaces, allowing for sustained release of active ingredients at therapeutic levels over a prolonged period of time), consistent daily use is essential. By contrast, second generation rinses, chlorhexidine containing products, reduce plaque and gingivitis scores by 70% to 90%, have an effective substantivity of 12 to 18 hours or longer and are used over the short-term in the treatment of oropharyngeal infections or immediately following oral surgery and trauma to prevent secondary infection and promote healing.

Very little research has been done with respect to patients’ motivations for, understanding of and perception of efficacy of oral rinsing. Two sources do, however, indicate that popularity is based on ease of use and breath freshening benefits.

Aim and Objectives

The aim of this study was to determine patients’ motivations, understanding and perceptions of efficacy of first generation oral rinses. In order to achieve this aim a number of objectives were identified as follows:

1. To determine patients’ motivators for using/not using a first gene-
ration oral rinse.
2. To determine patients’ understanding of the necessity for oral rinsing.
3. To determine whether patients were satisfied with the results obtained following use of a first generation oral rinse (i.e. patient’s perception of efficacy of the first generation mouth rinses).
4. To determine whether mouth rinses were being used according to manufacturer’s recommendations.

Methodology
Research Design
A mixed method concurrent design was employed, implying that quantitative and qualitative data was simultaneously collected, analysed and integrated. Patients’ motivators for use/non-use, understanding of the necessity for oral rinsing, perceptions of efficacy and manner of use were the variables under investigation.

Sample
Convenience sampling of 102 adult patients, (persons 18 years and older), attending the Mitchell’s Plain and Tygerberg Oral Health Centres was used. Only subjects who had voluntarily agreed to participate were included, whilst those using a second generation mouthwash or above, were excluded.

Data Collection
A semi-structured interview schedule, incorporating both open and closed-ended questions, was developed and initially piloted on a convenience sample of five patients of the study population. The final interview questions selected highlighted the objectives, as well as the initial expected thematic areas. Two researchers were responsible for conducting the interviews. Standardisation of data collection technique was achieved through researcher training and calibration of the schedule, ensuring that the interview was administered in the same manner on each occasion, being sensitive to the understanding and vocabulary of the participants (Figure I: Final, Calibrated Interview Schedule).

Data Analysis
Quantitative data was analysed, using the SPSS statistical software package, whilst analysis of qualitative data was achieved using a constructive process of thematic content analysis and selective coding, (i.e. a process transforming individual responses to the open-ended questions into a series of coded response categories). Analyses of data was validated using ‘inter-rater’ reliability, meaning that both researchers data was separately analysed prior to agreeing on a thematic framework, reducing researcher bias and providing greater insight into theme and theory development. Once the thematic framework was established, researchers then enumerated the number of times a qualitative code occurred. These quantified frequencies identified influential codes.

Ethical Considerations
Ethical approval for the study was obtained from the dental research committee of the University of the Western Cape. Written informed consent was obtained from all participants. Anonymity and confidentiality was assured and the participants were advised that they could stop the interview or withdraw from the study at any point without prejudice.

Results
101 (N) participants successfully completed the interview schedule (51 at Tygerberg Oral Health Centre and 50 at Mitchell’s Plain Oral Health Centre) (Figure II: Participant Demographics – Gender Distribution). Mean age was calculated at 41.65, having a standard deviation of 16.98, mode 35 and median 36 years. A majority (61%) were found to be unemployed, with no participants being located within social class I (Figure III: Percentage of Participants Using an Oral Rinse Within Social Class).

Of the 101 participants, 28 were currently using an oral rinse, 3 used a mouth rinse intermittently and 28 had used a mouth rinse in the past (previously). 42 participants had never used a mouth rinse. Results were recorded according to the four identified objectives. The first two objectives; namely: to identify patients’ motivators for use/non-use and to determine patients’ understanding of necessity
for oral rinsing, were combined as it was found that participants’ understanding of the importance for oral rinsing provided motivation for use. Of the users/previous users 97% (n=59) thought it was important to use, 61% (n=59) had an oral problem, 53% (n=36) of which claimed that these oral problems had influenced their use of the rinse. 68% (n=28) and 67% (n=3) of current and intermittent users respectively were unemployed, whilst 41% (n=70) of previous/non-users were employed.

With respect to these first two (2) objectives, qualitative categories and associated codes were identified and included social conformity (with codes: freshen breath, clean interproximally, remove plaque and food debris and as an alternative to floss), illness behaviour (with codes: dental problem and influence of the media and marketing), normative need (codes: yes or no) and barriers to use (with codes: financial, dental socialisation and subjective side effects). The most frequently recorded codes (73% (n=59) freshen breath, 32% plaque removal, 20% interproximal cleaning) were located within the category of social conformity, with 17% (n=59) falling into illness behavior.

In terms of the third objective, satisfaction levels following use of a first generation oral rinse, the following observations were recorded: 85% (n=59) were satisfied (72% (n=50) of which were brushing twice daily), 76% (n=59) perceived the oral rinse to be effective, 7% (n=59) ineffective and 17% (n=59) somewhat effective. Notably, 100% of satisfied participants (n=50) accepted oral rinsing as an important aspect of the oral self-care regimen. Only 42% (n=59) of current and previous users reported using floss.

The final objective was to determine whether oral rinses were being used according to manufacturers’ recommendations. 58% (n=59) of current and previous users claimed to follow manufacturer’s instructions. Only 14% (n=59), however were actually found to comply with instructions (rinsing< 1 min, twice daily). 50% (n=50) of satisfied users were found to rinse twice daily, 38% once daily and 12% three or more times per day. Qualitative analysis of rinsing behaviour led to identification of a core theme, (cultural ideals of body image), subdivided into response categories termed, social conformity and grooming behavior; the later comprising the codes – convenience, part of hygiene routine or both.

Discussion
The research results indicate that interest in oral rinsing originates from a concern to conform to certain cultural ideals of body image. All people live in groups and all groups encourage conformity. People belonging to the same group tend to think, feel and behave in the same manner; the basis of cultures, norms and traditions. Society in general deems a certain standard of oral health and absence of halitosis as socially acceptable. Consequently, a majority of participants, 73% (n=59) used an oral rinse to freshen breath (“Can’t walk with a mouth that isn’t fresh.”). Other frequently cited motivators for use included to clean interproximally (20%; n=59), removal of plaque and food debris (32%; n=59) and for the treatment of bleeding gums (17%; n=59) (“Sometimes when I brush the gums bleed”).

Widespread use across the social classes, (excluding social class I), was observable. This finding is supported by evidence located in literature stating that oral care procedures and philosophy of conscious self-care and prevention, are seen to be widely diffused in the population, especially tooth brushing. Lack of participants in social class I may be ascribed to the social context within which sampling took place. In general, large numbers of unemployed and economically disadvantaged patients attend the Tygerberg and Mitchell’s Plain oral health centers, as these are public facilities rendering dental services at a minimal, affordable fee.

Of significance was the fact that 67% (n=59) of current and previous users were unemployed. It may therefore be argued that unemployed users were making use of an oral rinse to prevent or control oral disease so as to negate the need for professional care, the latter having financial implications (i.e. unemployment as a motivator for use).

Of those using an oral rinse, 61% (n=59) claimed to have a dental problem, 53% (n=36) stated that this had influenced their use of an oral rinse. The most common oral health problems reported in descending frequency included halitosis, bleeding gums, dental extractions, sore throat and dysgeusia, suggesting that these respondents regarded an oral rinse as a medication, as opposed to a preventive measure requiring routine incorporation into the oral hygiene regimen.

Indirectly, illness behaviour, (a social process in which an individual interprets signs and symptoms, draws on frame of reference, as well as interaction with others, to find a solution to the problem), was found to be influenced by the media, with participants claiming to use an oral rinse in order "reach areas that the toothbrush can’t." A proportion of the sample therefore reported use of an oral rinse as an alternative to flossing. 57.6% (n=59), who were using an oral rinse, were not flossing. This highlights the need to raise awareness that oral rinsing is prescribed as an adjunctive treatment to the standard mechanical plaque control techniques, not replacement thereof. In the interests of protecting and promoting population oral and systemic health, the media must avoid misleading marketing and are to display greater ethical awareness.

On the other hand, barriers appeared to be embedded in economic, cultural and broader social norms. The family has been found to be a major influencing factor in relation to health behaviours. Research indicates that positive oral health attitudes may be attributed to positive oral health practices of parents, with parents playing a central role in the dental socialisation of the child. This finding can be ascribed to Bandura’s social learning theory. 42% (n=101) of the sample had never used an oral rinse. Main reasons quoted, “Grew up not using”, “Don’t know anything about it” and “Only ever used a toothpaste, never thought it was important”.

Lack of knowledge and misconceptions, such as, I only have dentures and therefore don’t need to use an oral rinse, are also features of secondary socialisation (“I have dentures, no need.”). This then is of significance to the oral hygienist as hygienists play a fundamental role in educating people about appropriate oral hygiene practices. A participant is quoted as saying, “Just using normal thing. Toothpaste and toothbrush. Don’t believe the adverts, don’t think that it works. Would like information from other people.”

Economic barriers were the second most commonly defined barrier to use. Analysis of demographic findings, however, indicated that
A 5 star solution for oral health

Antiseptic
Anti-inflammatory
Analgesic
Anaesthetic (local)

Andolex-C

Scheduling status: Proprietary name (and dosage form): ANDOLEX-C Oral Rinse. Composition: Each 15 mL contains: Benzydamine HCl 22.5 mg, Chlorhexidine gluconate 18 mg, Alcohol 9% v/v. Registration number: 31/16.4/0143 [Act 101/1965] Scheduling status: Proprietary name (and dosage form): ANDOLEX-C ORAL GEL. Composition: Benzydamine HCl 10 mg/ g, Cetylpyridinium Chloride 1 mg/ g. Registration number: 33/16.4/0285 (Act 101/1965)
Name and business address of applicant: Inova Pharmaceuticals (Pty) Limited, Co. Reg. No. 1952/001640/07, 15e Riley Road, Bedfordview. Tel. No. (011) 087 0000 www.inovapharma.co.za For full prescribing information, refer to the individual package inserts as approved by the medicines regulatory authority. Further information is available on request from Inova Pharmaceuticals. IN879/13
users were predominantly located in the unemployed category (67%) and social class IV (10.7%) (i.e. people having limited financial means). This characteristic may once again be attributed to the social context within which sampling occurred. As large numbers of unemployed people were sampled, the probability of sampling unemployed persons using an oral rinse increased, clearly highlighting shortcomings of the convenience sampling technique. Under economically challenged situations, it is logical to assume that attainment of the optimum 3-step oral hygiene regimen would be unrealistic.\textsuperscript{11,12} This in turn, prompts the suggestion that what may be defined as ideal oral hygiene practices will vary, depending on the social context under observation. Mechanical plaque removal strategies (tooth brushing and flossing), still remain the most widely accepted mechanism for control of the biofilm and oral disease.\textsuperscript{13} It therefore follows that unemployed participants could better spend money and focus attention on adequate rinsing, as opposed to oral rinsing which provides only a limited and temporary relief of the oral problem, halitosis, in situations, it is logical to assume that attainment of the optimum 3-step oral hygiene regimen would be unrealistic.\textsuperscript{11,12} This in turn, prompts the suggestion that what may be defined as ideal oral hygiene practices will vary, depending on the social context under observation. Mechanical plaque removal strategies (tooth brushing and flossing), still remain the most widely accepted mechanism for control of the biofilm and oral disease.\textsuperscript{13} It therefore follows that unemployed participants could better spend money and focus attention on adequate rinsing, as opposed to oral rinsing which provides only a limited and temporary relief of the oral problem, halitosis, in particular.\textsuperscript{13,14} Once again the importance of the hygienist in effectively educating people with respect to appropriate oral self care practices, in terms of their unique individual needs and consideration of the social context, becomes important.

85% (n=59) of current and previous users were satisfied with the results of oral rinsing, 72% (n=50) of which were found to be brushing twice daily. It may therefore be theorised that those who tend toward more appropriate mechanical self-care practices have a more positive perception of efficacy of the oral rinse. Importantly, all satisfied participants felt that it was important to use an oral rinse, in turn associated with an individual’s norms and values. Oral rinsing satisfaction can therefore be regarded as a measure of the extent to which mechanical control techniques reduce microbial colonisation of the oral cavity linked to that individual’s norms and values.

Similarly, it may be assumed that perceived efficacy is dependent on correct use. In general, correct use of an oral rinse involves twice daily rinsing for 30 seconds. Research findings support this assumption in that 50% (n=50) of satisfied users were found to be rinsing twice daily, 38% (n=50) once daily and 12% (n=50) three or more times per day. Reasons as to why people chose to rinse at certain times influenced rinsing frequency, affecting adherence to recommended use. Reasons cited by respondents as to why they chose to rinse at certain times included convenience, part of the hygiene routine, a combination of these and social conformity (i.e. rinsing prior to social interaction). Once again use and manner of use was being influenced by the cultural ideal of body image.

Conclusion

The major factor driving use of a first generation oral rinse was prevention of halitosis. Secondary motivators included treatment of gingivitis and plaque removal, whilst barriers were embedded in cultural and economic factors. Oral rinsing behaviour as a component of grooming behaviour, 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.

Declaration of interests

The researchers have no conflict of interests to declare.

Reference

Effect of caffeinated soft drinks on salivary flow

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Background: Soft drinks containing caffeine have been associated with more aggressive forms of dental decay. Cariogenicity of caffeinated soft drinks may be attributed to the effect of caffeine on salivary flow. This study assessed whether caffeinated soft drinks produced short-term oral dryness in healthy adults.

Methods: The authors collected saliva on two separate days from 35 participants before and one hour after drinking a soft drink. On one of the days the soft drink was caffeinated and on the other day it was not. Saliva collection involved 15 minutes unstimulated whole saliva, 5 minutes paraffin-stimulated whole saliva and 10 seconds labial minor salivary gland output.

Results: Unstimulated and stimulated flow rates slightly increased and minor gland output slightly decreased one hour after the soft drink consumption, regardless of caffeine content. These changes were not statistically significant. (two-period two-treatment crossover trial using two-stage Grizzle model, p > 0.05). A linear mixed model statistic did not show the caffeine effect on salivary flow rate.

Conclusions: Caffeinated soft drink consumption had no significant effect on salivary flow rate after one hour by any of the three measures employed in this study. Caffeine’s contribution to the cariogenicity of soft drinks is likely by centrally-mediated effects on consumption patterns.

Introduction

Frequent exposure to fermentable carbohydrates has been recognised as the hallmark of a cariogenic diet. In particular, regular consumption of sweetened soft drinks has been associated with an increase rate of dental caries. Less described in literature has been the association between the more aggressive forms of dental caries and regular consumption of caffeinated soft drinks. Caffeine-free soft drinks appear to be less frequently associated with aggressive forms of decay. One possible explanation for this association might be that caffeine tends to promote patterns of consumption deleterious to dental health - more frequent, more prolonged and perpetual. One mechanism by which caffeine could support these patterns in diet is through its effect on salivary flow.

Sufficient salivary flow is necessary to maintain oral health and integrity of the dentition. Saliva acts as a lubricant, washes away residue, contains various host defense systems and helps maintain dental mineral integrity. Hyposalivation is therefore associated with an increased risk of oral diseases, including dental caries. Additionally, a diminished salivary flow is associated with the adoption of deleterious dietary habits, such as sucking on hard candies or using sweetened beverages to combat the sensation of oral dryness.

Caffeine is a central nervous system stimulant with diuretic properties. Caffeine may reduce salivary flow by direct effect on the salivary glands, through effects on the autonomic nervous system, or through diuresis and dehydration. Studies reported an increase in urine production after ingestion of caffeine equivalent to 3-6 cups of coffee. However, others found no effect of caffeine in standard serving sizes on hydration status.

The primary constituent of saliva is water. The degree of hydration is potentially the most important factor influencing salivary flow. Dehydration, or even hypohydration can cause decreased salivary flow. Although negative fluid balance has not been evident when caffeinated beverages are consumed in moderation, whether or not oral dryness is a consequence of caffeine consumption, has not yet been reported.

Children and adolescents who consume large amounts of carbonated soft drinks have high caries experience. The presence of fermentable carbohydrates in the beverage no doubt plays a major role in early initiation and rapid progression of dental caries. What is often overlooked, is that over 60% of soft drinks sold in the United States contain caffeine as a flavour additive. The combination of sugar and caffeine may encourage frequent and perpetual patterns of consumption, leading to early initiation and rapid progression of dental caries. Patients with rampant caries are frequently seen at the University of Minnesota School of Dentistry dental clinics (Figure 1). A common

Figure 1: Rampant caries in a patient who regularly consumed Mountain Dew. Cervical areas of all the teeth had bands of demineralisation wrapped around the gingival area, with cavitated lesions and recurrent caries lesions present.
finding with these patients is the regular consumption of gas colddrinks containing fermentable carbohydrates and caffeine.

The aim of the study was to examine the effect of caffeinated soft drinks on oral dryness. The hypothesis is that caffeinated soft drinks will lead to oral dryness by decreasing salivary flow, as compared to soft drinks without caffeine.

Materials and Methods

The University of Minnesota Institutional Review Board approved the conduct of this clinical study (IRB# 1005M81575).

Subject recruitment

Sample size was determined, using the following mean and standard deviation flow rates: 0.3 – 0.2 mL/min for unstimulated whole saliva, 3.0 – 1.4 mL/cm²/min for labial minor salivary gland secretion and 2.2 – 1.1 mL/min for stimulated whole saliva. Using a = 0.05, 34 participants per group would give 80% power to detect a 25% difference between baseline and post-caffeine stimulated and labial minor salivary gland flow rates and a 33% difference between baseline and post-caffeine unstimulated salivary flow rates.

We recruited 38 healthy adults of both genders, ages 19 - 63. The participants did not take stimulant-containing medications and did not have oral removable appliances. We asked participants to abstain from caffeinated food or drink, starting the night before and the morning of their appointment. Written informed consent was secured from, and demographic data recorded on, each participant.

Study protocol

The saliva collection took place at the same time for each participant on two separate mornings. After baseline saliva collection, subjects consumed 355mL (12 oz) of either caffeinated drink (Mountain Dew; PepsiCo), or caffeine-free drink (Caffeine-Free Mountain Dew; PepsiCo) on the first day of the study, followed by the alternate version on the second day. The order was randomly determined by a coin flip during the first appointment. The soft drinks were poured into unmarked plastic cups so that the subjects were blinded to the caffeine content. Subjects consumed the soft drinks within a 30-minute period and were asked to refrain from eating, drinking, brushing, or chewing gum until after the second saliva collection was performed one hour later.

Saliva collection

Salivary flow rates were measured in this sequence: unstimulated whole saliva, minor salivary gland secretion and stimulated whole saliva.

Unstimulated whole saliva. After swallowing to clear the mouth, participants sat quietly and expectorated any saliva collected in the mouth into a pre-weighed paper cup for 15 minutes. To ensure natural salivary flow, participants were instructed not to think of food, talk, or chew. The weight (g) of the collected saliva was measured and the volume (mL) inferred, assuming salivary density of 1 g/mL.

Minor labial salivary secretion. Secretion from labial minor salivary glands was estimated using a Periotron (Model 8000; Oraflow, Inc.). The participant’s lower lip was gently extended and dried with a gauze square, then a SialoPaper strip (Oraflow, Inc.) was placed on the midline of the labial mucosa for 10 seconds and moistened with a gauze square, then a SialoPaper strip (Oraflow, Inc.) was placed on the midline of the labial mucosa for 10 seconds and moisture content estimated with the Periotron. Three consecutive measurements were recorded and averaged. The Periotron output was calibrated with known volumes of deionised water, using a linear regression technique.

Stimulated whole saliva. After swallowing to clear the mouth, subjects chewed a 5-cm square of Parafilm (American National Can) and expectorated any saliva that developed into a pre-weighed paper cup for 5 minutes. The weight (g) of the collected saliva was measured and the volume (mL) inferred.

Statistical analysis

The effect of caffeinated soft drink on unstimulated, stimulated and minor gland saliva production was analysed, using the two-stage Grizzle model for the two-period twotreatment crossover trial. First, the data was tested for presence of a carry-over effect according to the sequence of consumption, that is, caffeine or caffeine-free on the first day. Then the caffeine effect was estimated using a linear mixed model. Caffeine effect refers to the difference between the average change in flow rate after caffeinated soft drink and the average change in flow rate after caffeine-free soft drink.

Results

Of the 38 subjects enrolled in the study, 3 did not return for the second appointment due to scheduling conflicts. Only 35 completed the study. Table 1 reports demographic and soft drink sequences for the 35 participants.

Table 2 shows salivary flow rates before and after each soft drink was consumed and the caffeine effects. Both unstimulated and stimulated flow rates slightly increased one hour after soft drink consumption, whereas labial minor salivary gland output slightly decreased, regardless of beverage types. The two-stage Grizzle model indicated no carry-over effect presented in the data. Since there was no carry-over effect, caffeine effects were estimated using the linear mixed model applied to the salivary flow rates of both days. No significant difference was found between changes in salivary flow rates after caffeinated or caffeine-free soft drinks (linear mixed model with significance level of 0.05).

Discussion

Caffeine is one of the most widely consumed dietary ingredients in the world. Approximately 80% of the world’s population and 90% of adults in North America consume caffeine daily. Main sources of caffeine consumption are coffee (71%), soft drinks (16%) and tea (12%). These beverages each contain different amounts of caffeine. A standard 8 oz (240 mL) cup of brewed coffee contains 100–200mg of caffeine, while instant coffee and tea contain *90 and 50mg of caffeine, respectively. Cola and many non-cola soft drinks contain about 40mg in a 12 oz (355 mL) can. Mountain Dew contains relatively more caffeine (55 mg) than other soft drinks.

The alarming increase in dental caries seen in some young adults has caught the interest of the news media and has been named “Mountain Dew Mouth”. A recent study by Keast et al. demonstrated that caffeine suppresses sweetness in soft drinks resulting in the need for extra sugar to achieve an equivalent level of perceived sweetness. However, commercial, non-caffeinated sodas have a sugar concentration ranging from 3.1–3.6 g/oz, whereas caffeinated sodas contain from 3.2–3.9 g/oz. This small difference in sugar concentration would not be enough to explain the differences in caries rates seen between regular users of the two types of beverages.
The rapid progress of dental caries among caffeinated soft drink consumers might be a result of habitual consumption, due to a physical desire for caffeine in the beverages. Based on the hypothesis that caffeine causes oral dryness leading to further beverage consumption, we investigated whether a caffeinated soft drink could be related to short-term oral dryness as a possible contributing factor in observed aggressive caries patterns.

The results of this study do not support the hypothesis that caffeine leads to oral dryness, as salivary flow rates did not decrease after consuming a caffeinated soft drink, compared to a caffeine-free soft drink. Following consumption of a caffeine-containing beverage, peak serum levels of caffeine are attained within 15 minutes to 2 hours. It would be expected that one hour after caffeine ingestion, caffeine effects if any, on salivary flow would be detectable. Rather, the flow rates of unstimulated and stimulated caffeine ingestion, caffeine effects if any, on saliva flow would be expected to be decreased one hour after soft drink consumption, regardless of the caffeine content. Minor salivary gland secretion slightly decreased, also regardless of the caffeine content. Any potential diuretic effect of caffeine in the amount consumed in the present study is not reflected in salivary flow rates.

The baseline flow rates measured before caffeinated and caffeine-free soft drink consumption (Table 2), closely resemble the values reported by Rudney et al. and Eliasson et al., and summarised by Dawes. Some variation in the results was natural. Collection of stimulated and unstimulated whole saliva depended to some degree on participant cooperation. However, the participants had no control over their minor gland secretion. Therefore, this method of saliva collection may have been the most objective.

Degree of hydration is a factor that may influence salivary flow. Salivary flow rate decreases during dehydration. However, we found slightly increased flow rates for whole saliva in both caffeinated and caffeine-free groups, one hour after beverage consumption. Although it seems intuitive that caffeine would have a diuretic effect, this decrease may be balanced out by the fluid intake. In addition, the highfructose corn syrup, citric acid, sodium citrate and flavouring agents of Mountain Dew may have increased the saliva flow rates. Interestingly, we found a slight decrease in the flow rate of the labial minor salivary gland in both caffeinated and caffeine-free soft drinks. Reduced minor labial salivary gland secretions have been reported among individuals with subjective oral dryness. Although it is conceivable that the sensation of “dry mouth”, arising from decreased minor salivary gland secretion, could drive individuals to consume more soft drink. In the present study, the magnitude of the reduction was very small (5%–10%).

A review of literature identified associations between low saliva flow and dental disease and between low saliva flow and dehydration, but it was not able to find a direct link between dehydration and dental disease. Whether or not a state of dehydration can be caused by ingested caffeine, has been questioned. A recent review concluded that the caffeine dose in standard servings of coffee or carbonated soft drinks does not have diuretic action. A short-term increase in urine volume was reported with large doses of caffeine intake (250–300 mg, equivalent to 2–3 cups of coffee), but the effect is confounded by higher tolerability in individuals who regularly consume caffeine-containing beverages. Caffeinated beverages consumed in moderation did not cause negative fluid balance, even for athletes and exercising adults. Our study result tends to support the concept that the amount of caffeine in a single carbonated beverage is not high enough to cause a diuretic effect. Recognising that it is possible that caffeine could affect salivary flow by mechanisms other than diuresis and dehydration, such as by direct effects upon the salivary glands, or through effects on the autonomic nervous system, we were still unable to demonstrate any significant effect of caffeine on saliva gland function.

Table 1: Demographics and Sequence of Soft Drink Consumption of Study Participants (n = 35)

<table>
<thead>
<tr>
<th>Ethnicity (N, percentage)</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>8 (23%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>9 (26%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 (3%)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>17 (48%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender (N, percentage)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>18 (51%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17 (49%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (mean – SD)</th>
<th>27.7 – 10.6</th>
</tr>
</thead>
</table>

| Degree of hydration is a factor that may influence salivary flow. Salivary flow rate decreases during dehydration. However, we found slightly increased flow rates for whole saliva in both caffeinated and caffeine-free groups, one hour after beverage consumption. Although it seems intuitive that caffeine would have a diuretic effect, this decrease may be balanced out by the fluid intake. In addition, the highfructose corn syrup, citric acid, sodium citrate and flavouring agents of Mountain Dew may have increased the saliva flow rates. Interestingly, we found a slight decrease in the flow rate of the labial minor salivary gland in both caffeinated and caffeine-free soft drinks. Reduced minor labial salivary gland secretions have been reported among individuals with subjective oral dryness. Although it is conceivable that the sensation of “dry mouth”, arising from decreased minor salivary gland secretion, could drive individuals to consume more soft drink. In the present study, the magnitude of the reduction was very small (5%–10%).

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Table 2: Caffeine Effect and Salivary Flow Rates Before and After Caffeinated and Caffeine-Free Soft Drink Consumption (n = 35)

<table>
<thead>
<tr>
<th>Salivary flow rate</th>
<th>Caffeinated drink Mean (SD)</th>
<th>Caffeine-free drink Mean (SD)</th>
<th>Δ</th>
<th>Before</th>
<th>After</th>
<th>Δ</th>
<th>Caffeine effect</th>
<th>95% CI Caffeine effect</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW (mL/min)</td>
<td>0.34 (0.21)</td>
<td>0.45 (0.21)</td>
<td>0.10 (0.14)</td>
<td>0.38 (0.21)</td>
<td>0.42 (0.23)</td>
<td>0.05 (0.13)</td>
<td>-0.06</td>
<td>-0.12, 0.01</td>
<td>0.073</td>
</tr>
<tr>
<td>MG (L/cm2/min)</td>
<td>6.16 (2.20)</td>
<td>5.80 (2.61)</td>
<td>-0.34 (1.59)</td>
<td>6.23 (2.59)</td>
<td>5.61 (1.98)</td>
<td>-0.61 (1.66)</td>
<td>-0.23</td>
<td>-1.02, 0.55</td>
<td>0.55</td>
</tr>
<tr>
<td>SW (mL/min)</td>
<td>1.35 (0.63)</td>
<td>1.51 (0.69)</td>
<td>0.16 (0.37)</td>
<td>1.41 (0.66)</td>
<td>1.42 (0.62)</td>
<td>0.01 (0.44)</td>
<td>-0.14</td>
<td>-0.32, 0.04</td>
<td>0.11</td>
</tr>
</tbody>
</table>
The physiological effects of caffeine diminish with regular use as tolerance builds up. 12 We did ask each study participant whether they considered themselves heavy “caffeine users.” Six study participants reported that they were heavy caffeine users, while 26 reported that they were not heavy users. Assuming the self-report is accurate, it would be considered unlikely that the lack of effect of the studied beverage on salivary flow was caused by tolerance to caffeine among the study participants.

Manufacturers justify the addition of caffeine to soft drinks as a flavouring agent. A recent study of the effects of caffeine added to novel-flavoured drinks found that, with repeated exposure, the caffeine increased subject preference for the beverages. 13 The results of our study do not support short-term oral dryness caused by caffeine. Therefore, caffeine is unlikely to contribute to cariogenesis via effects on salivary flow. How caffeine in soft drinks affects consumption patterns remains to be demonstrated. We did not evaluate the impact of caffeine consumed on a regular basis. A single dose of caffeine may affect the body differently than caffeine consumed in the primary diet. 14, 15

References
No competing financial interests exist on behalf of any of the authors.

Conclusions
Both caffeinated and caffeine-free soft drinks were associated with a slight increase in unstimulated and stimulated salivary flow rates and a slight decrease in the flow rate from labial minor salivary glands. However, these trends were not statistically significant. Any potential diuretic effects of caffeine in the amount found in a single soft drink, were not reflected in salivary flow.

Acknowledgments
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Author Disclosure Statement
No competing financial interests exist on behalf of any of the authors.

27. Farster V. ‘Mountain Dew Mouth’ drives the media wild. CDS Rev. 2001;94:23.

Source acknowledgement:
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Mary Ann Liebert, Inc.
DOI: 10.1089/jcr.2013.0012
A mouthrinse is necessary to control the remaining bacteria and plaque that’s left in the mouth after brushing and flossing. ², ³

**BRUSHING MISSES 75% OF YOUR MOUTH**
LISTERINE® KEEPS YOUR WHOLE MOUTH CLEAN**

References:
1. Euromonitor International.
Patient access to records

Prof Sudeshni Naidoo, BDS(Lan), LDS(RCS (Eng), MDPH(Lan), DDPH(RCS (Eng), MChD (Comm Dent), PhD (US), PG Dip Int Research Ethics (UCT). Senior Professor and Principal Specialist, Faculty of Dentistry, University of the Western Cape.

A long-standing patient in an established practice requests her dental records and x-rays from the practice receptionist. She was last seen three years ago. Despite an intensive search, the receptionist is unable to locate the file. The patient says that she is entitled by law to have access to her records at any time. The receptionist then informs her that her record might have been destroyed the previous year, since she had not been to the practice for a long time.

Commentary

A patient’s health record is an important medico-legal component of the consultation and the dental practice. The Health Professions Council of South Africa defines a health record “as any relevant record made by a health care practitioner at the time of, or subsequent to a consultation and/or examination or the application of health management. A health record contains the information about the health of an identifiable individual recorded by a health care professional”. 1

The keeping of a health record is compulsory. This is both a professional and a legal requirement. 1-4 A dental record may be used (i) as a basis for planning and maintaining continued patient care; (ii) for documentary evidence of the evaluation and diagnosis of the patient’s condition; the treatment plan and informed consent; the treatment actually rendered, referrals made; the follow-up care proved; and any and all communications with the patient whether written or verbal; (iii) as a record of communication regarding the patient and other health care providers, as well as interested third parties; (iv) to protect the legal interests of all parties involved; (v) to provide data for continuing dental education and research and (vi) for billing, quality assurance and other administrative functions. 5

The HPCSA1 recommends that at a minimum, the following information be kept on record:

- personal identifying information about the patient;
- the bio-psycho-social patient history, including allergies and idiosyncrasies;
- time, date and place of each consultation;
- assessment of patient’s condition;
- proposed clinical management and treatment given;
- medication and dosage prescribed;
- details of referrals to specialists, if any;
- patient’s reaction to treatment, including adverse events;
- test and imaging results;
- times the patient was booked off work and the reasons therefore and
- written proof of informed consent where applicable.

Ownership of records

A patient’s dental records are the physical and legal property of the practitioner. The patient, however, has a qualified right to the information contained in those records and to copies thereof. When making copies or duplicating records, the practitioner has the right to charge a “reasonable” fee. Under no circumstances should records be withheld (potentially compromising a patient’s care) because of financial, personal or other differences. When transferring records, copies should always be sent, never the originals. The only time the original record should leave the practitioner’s custody is under subpoena from a court.

According to the HPCSA guideline,1 where records are created as part of the functioning of a private practice, including the original x-rays or ultrasound or scanned images, such records remain the property of the dentist concerned. In cases where patients are required to pay for records and images such patients must be allowed to retain such records – “unless the health care practitioners deem it necessary to retain such records for purpose of monitoring treatment for a given period. Should the patient, however, require the records and/or images to further or protect an interest (e.g. such as consulting with another practitioner) he or she must be allowed to obtain the originals for these purposes”. Furthermore, as the ownership of records in a multi-disciplinary practice depends on the legal structure of the practice, the governing body of such a multi-disciplinary practice should ensure that the guidelines relating to records are being adhered to.

Accessibility of records

A dentist shall provide any person of age 12 years and older with a copy or direct access to his or her records on request (Children’s Act [Act No. 38 of 2005]). Where the patient is under 16 years of age, the parent or legal guardian may make the application for access to the records, but such access should only be given on receipt of written authorisation by the patient (Access to Information Act [Act No. 2 of 2000]).

No dentist shall make information available to any third party without the written authorisation of the patient or a court order, or where non-disclosure of the information would represent a serious threat to public health (National Health Act [Act 61 of 2003]). Unauthorised disclosure of dental records to third parties may be sufficient to support a breach-of-contract claim. The patient’s right to privacy and the practitioner’s duty to confiden-
ality weigh heavily in balance with the acknowledged ownership rights of the provider. Patient consent is the primary protection against liability resulting from disclosure of information.7

Retention of records
Practitioners should store records as long as possible, and for not less than six (6) years from the date they became dormant. Many indemnity organisations recommend retention of all records for at least 10 to 12 years or longer. However, a balance must be reached between the costs of (indefinite) retention of records (in terms of space, equipment, etc.) and the occasional case where the practitioners’ defence of a case of negligence is handicapped by the absence of records. The value of the record for academic or research purposes, and the risks resulting from the handling or complications of the case, are additional considerations. Furthermore, where there are statutory obligations that prescribe the period for which patient records should be kept, a practitioner must comply with these obligations.1

In the case of minors and those patients who are mentally incompetent, health care practitioners should keep the records for a longer period - for minors under the age of 18 years health records should be kept until the minor’s 21st birthday, because legally minors have up to three years after they reach the age of 18 years to bring a claim. For mentally incompetent patients the records should be kept for the duration of the patient’s lifetime. In terms of the Occupational Health and Safety Act (Act No. 85 of 1993)8 health records must be kept for a period of 20 years after treatment.

Should a dentist in private practice pass away, his or her estate, which includes the records, would be administered by the executor of the estate. Scenarios may include (i) that the practice is taken over by another practitioner - the executor shall carry over the records to the new practitioner. The new practitioner is obliged to inform all patients in writing regarding the change in ownership and the patient could remain with the new practitioner or request his or her records be transferred to a practitioner of his/her choice; (ii) the practice closure - the executor should inform all the patients in writing and transfer those records to other practitioners requested by individual patients. The remaining files shall be kept in safe keeping by the executor for a period of at least 12 months with full authority to further deal with the files as he or she may deem appropriate, provided the provisions of the rules on professional confidentiality are observed.

In the event of a dentist in private practice who decides on closing his or her practice for whatever reason, the practitioner shall timely inform in writing all his/her patients as follows:

• that the practice is being closed from a specified date;
• that requests could be made for records to be transferred to other practitioners of their choice and
• that after the date concerned, the records would be in safe-keeping for a period of 12 months by an identified person or institution with full authority to further deal with the files as he or she deem appropriate, provided the provisions of the rules on professional confidentiality are observed.

Concluding remarks
This case scenario highlights the importance of the ownership, access to and retention of health records. The Promotion of Access to Information Act (Act No. 2 of 2000)4 grants individuals right of access to information that is necessary for the protection of their rights. This means that maintenance of proper and complete records is not only an ethical obligation but also a legal obligation.

References

Readers are invited to submit ethical queries or dilemmas to Prof. S Naidoo, Department of Community Dentistry, Private Bag X1, Tygerberg 7505 or email: suenaidoo@uwc.ac.za
A quantitative study: Oral Hygiene students’ reasons for choosing a career in oral hygiene

Heinca de Vries, Ane Oberholster

I. Abstract
Introduction: Oral hygiene graduates are joining a profession experiencing changes in systems of care; funding and skill mix (Gallagher et al., 2007). Motivation of the 1st, 2nd and final year students in BOH at the University of The Western Cape for choosing a career in oral hygiene is investigated.

Aim: The aim of the study was to determine the reasons that Oral Hygiene students choose a career in Oral Hygiene.

Methodology: A non-experimental comparative-descriptive study design was used for mostly quantitative purposes, however, phenomenological qualitative aspects were included in the study in order to create depth and quality of data. A self-administered questionnaire was used.

Results: Most frequent reasons for a career in Oral hygiene included an interest in the medical field of study, helping people, enjoy working with people on a one-to-one basis rather than in large groups and enjoy working with hands. 76% of respondents said that Oral Hygiene was not their first choice of study. Careers in Health Sciences that were frequently chosen as an alternative profession to Oral Hygiene included Dentistry, Medicine, Physiotherapy, Psychology and Nursing. Corporate careers that were frequently chosen as an alternative profession to Oral-Hygiene included Law, Engineering, Architectural studies, Finances and Management.

Conclusion: Considering the results found in this study, it creates a broader understanding about why Oral Hygiene students are performing the way they do and could possibly provide insight to the future employers of the emerging workforce of the future Oral Hygiene professionals.

II. Introduction
Oral hygiene graduates are joining a profession experiencing changes in systems of care; funding and skill mix (Gallagher et al., 2007).

Research into the motivation and expectations of the emerging workforce is vital to inform professional and policy decisions.

Motivation of the 1st, 2nd and final year students enrolled in B.OH at The University of Western Cape for choosing a career in oral hygiene is researched.

III. Literature Review
In 2008 a study conducted to determine motivation of career choice of final year dental students in Damascus. It was found that main motivations for choosing a dental career were financial independence and status (Mashlah, 2012). A longitudinal study to determine characteristics and study motivation of Danish dental students revealed that the motives for career choice mainly included academic reward and implicit social status (Vigild & Schwarz, 1997). In 2007, a cross-cultural comparison of the attitudes of dental students was done. The sample group originated from three different countries. It was found that the majority of Thai students were motivated by academic prestige, Canadian students’ motivation was mainly the ability to help people and in Japan, students were motivated by academic prestige and social status (Karibe et al., 2007). Professor Walsh stated in an article in 2008 that with the aging population and many medical factors affecting their care, the oral hygiene workforce being trained currently will face many challenges and changes/ adaptations in patient care once they enter the workforce. Lastly, a quantitative study was conducted amongst Kings College final year dental students in order to determine the main motivations of their career choice and views on their professional careers. Features of ‘professional job’, followed by ‘healthcare and people’ were the most important underlying factors influencing choice of career (Gallagher et al., 2007).

IV. Research Aim and Objectives
The aim of the study was to determine the reasons that Oral Hygiene students choose a career in Oral Hygiene.

Research Objectives:
• To determine the reasons of the students for choosing a career in oral hygiene;
• To determine the relationship between reason and variables such as age; gender; race and origin;
• To determine the most common reason(s) for choosing a career in oral hygiene amongst the oral hygiene students and
• To determine additional career interests of the oral hygiene students.

V. Research Methodology

a. Subjects
The target population was the oral hygiene students of the University of The Western Cape’s Dental Faculty enrolled in the degree course (Bachelor of Oral Health). There will be made use of non-probability sampling which would then include only BOH 1, BOH 2 and BOH 3 of the whole dental faculty thus excluding post graduate students. A sample size of approximately 92 was initially decided on, however, after data collection, only 86 of the 92 individuals in the study population participated. Researchers will be excluded from the BOH 3 group.

b. Instruments and Data Collection
A carefully designed self-administered questionnaire, along with a...
detailed consent form was handed to each student of the B.OH classes according to the times scheduled for each class to complete questionnaires.

Before the official data collection commenced, a pilot study was done in order to evaluate respondents understanding of the questions included in the questionnaire to ensure accurate and rich data. Three respondents in each class were randomly handed a questionnaire to fill in. The pilot study was successful and the questionnaires were modified minimally with regards to phrasing of the questions.

The independent variables included age, gender and race. The dependent variable will be the outcome of the questionnaires, thus, the answers given by the subjects.

The questions were designed according to the research objectives and carefully phrased in order to get accurate responses from the population without leading them. Qualitative questions were added and carefully phrased in order to get accurate responses from the subjects.

The qualitative data was analysed through the process of coding. Themes were used to summarise all the ideas and opinions of respondents. These themes were paired to respective quantitative data after analysis that provided more detail to the quantitative analysis.

**Describing the study population**

With regards to the geographical profile of the study population it was found that the most frequently represented profile was a black female of 20 years, originating from urban living circumstance in the Western Cape. The following detail can be provided regarding the study population:

<table>
<thead>
<tr>
<th>Class</th>
<th>Total students in class?</th>
<th>How many participated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.OH 1</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td>B.OH 2</td>
<td>35</td>
<td>34</td>
</tr>
<tr>
<td>B.OH 3</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>86</td>
</tr>
</tbody>
</table>

**Research Design and Strategies**

A non-experimental comparative-descriptive study design was used for mostly quantitative purposes, however, phenomenological qualitative aspects were included in the study in order to create depth and quality of data.

**Data Analysis**

The questionnaires that were completed in each B.OH class had a box where a subject number could be entered manually. This helped the researchers keep track of which questionnaires came from which class whilst still keeping each questionnaire anonymous i.e:

<table>
<thead>
<tr>
<th>Class</th>
<th>Subject number</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.OH 1</td>
<td>1-18</td>
</tr>
<tr>
<td>B.OH 2</td>
<td>19-52</td>
</tr>
<tr>
<td>B.OH 3</td>
<td>53-86</td>
</tr>
</tbody>
</table>

IBM SPSS Statistics version 20 was used to capture and analyse the quantitative data by using descriptive analysis including frequencies and cross tabulations of the various variables. The independent variables included age, gender and race. The dependent variable was the outcome of the questionnaires, thus, the answers given by the subjects.

The qualitative data was analysed through the process of coding. Themes were used to summarise all the ideas and opinions of respondents. These themes were paired to respective quantitative data after analysis that provided more detail to the quantitative analysis.

**VI. Results**

The results of the study are presented in detail and in categories namely Study Population, Question 1, Question 2, Question 3 and Question 4.

**Figure 1**

**Gender of Respondents**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>21%</td>
</tr>
<tr>
<td>Female</td>
<td>79%</td>
</tr>
</tbody>
</table>

**Figure 2**

**Race of Respondents**

<table>
<thead>
<tr>
<th>Race</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>45%</td>
</tr>
<tr>
<td>Coloured</td>
<td>31%</td>
</tr>
<tr>
<td>White</td>
<td>15%</td>
</tr>
<tr>
<td>Indian</td>
<td>8%</td>
</tr>
<tr>
<td>Asian</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Figure 3**

**Origin of Respondents**

<table>
<thead>
<tr>
<th>Origin</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>19%</td>
</tr>
<tr>
<td>Urban</td>
<td>81%</td>
</tr>
</tbody>
</table>

**Figure 4**

**Province or Origin of Respondents**

<table>
<thead>
<tr>
<th>Province</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Cape</td>
<td>55%</td>
</tr>
<tr>
<td>E. Cape</td>
<td>23%</td>
</tr>
<tr>
<td>KZN</td>
<td>15%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>6%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>5%</td>
</tr>
<tr>
<td>N. Cape</td>
<td>4%</td>
</tr>
<tr>
<td>Free State</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Frequency Table**

<table>
<thead>
<tr>
<th>Age of respondents</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>20.73</td>
</tr>
<tr>
<td>Median</td>
<td>20.50</td>
</tr>
<tr>
<td>Mode</td>
<td>20</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0.409</td>
</tr>
</tbody>
</table>

**Question 1**: What is your reason for choosing a career in Oral Health?

This was a closed-ended quantitative question. Respondents had 10 options to choose from and those represented in the graph were most frequently chosen (figure 5). Other options included: Job security in oral health, Parental influences, Influence from friends, First course to be accepted to, Perception of highly paid career, Had correct school subject to meet B.OH application requirements, Had incorrect school subjects to apply for first choice of study. When analysing the graph it could be suggested that the most frequently chosen reasons for a career in oral health, also outlines a fairly accurate representation of the interests that an oral health professional would need considering the basic clinical work that they will do. However, contradicting the ideal profile of interest, more than half of respondents said that B.OH was not their first choice of study, but the interest in the medical field still exists. These most frequently chosen reasons for a career in oral health, also outlines a fairly accurate representation of oral health professionals, but also that of any other patient-care based medical profession.

The 5 reasons for a career in Oral Health that were most frequently chosen, were also cross tabulated with the different B.OH classes in order for the researchers to determine the differences or similarities in answers among the different classes of B.OH. The graph (Figure 6) shows that the B.OH 2 class was significantly represented.
in the most frequently chosen reasons for a career in oral health, whilst B.OH 1 was very similar or very different and inconsistently represented in 5 most frequently chosen reason for a career in oral health. The B.OH 3 class ratios in relation to the other 2 classes were consistently lower in the graph.

To further analyse and relate the most frequently chosen reason for a career in Oral Health, the 5 reasons for a career in Oral Health that were most frequently chosen, were also cross tabulated in figure 7 with the gender of all the respondents irrespective of which class they were in. Each subgroup, male and female, is represented each as an individual population of 100%. Thus the graph reads that 82% of the female population had an interest in medical field of study.

By cross tabulating the 5 reasons for a career in Oral Health that were most frequently chosen were cross-tabulated in figure 8 with the origin of respondents, researchers attempted to determine whether the origin, urban or rural, would be a factor driving respondents to their choice of career in oral health. The results were analysed by representing the whole urban population as 100% and the rural population as 100%. Thus the graph reads that 81% of rural respondents had an interest in the medical field of study, 63% liked helping people, 63% enjoyed a one-to-one basis instead of large groups of people, 69% said it was not their first choice and 63% of rural respondents said that they liked working with their hands.

b. Question 2: Was Oral Hygiene your first choice of study?
This was a closed-ended quantitative question where participants could choose yes or no. If they chose no, a further qualitative aspect was added where they could specify what their first choice was.

It was found that most of the respondents said that Oral Hygiene was not their first choice of study (Figure 9).

When asked to specify, there was a significant interest once again in the medical field. The qualitative data was themed and the most prevalent themes are represented on the graph (Figure 10).

Respondent’s answers were further analysed by cross tabulating the answers with the gender of the respondents. It was found that 89% of the male population said that Oral Hygiene was not their first choice of study while only 72% of females said that Oral Hygiene was not their first choice of study according to Figure 11.

The answers of respondents were cross tabulated in Figure 12 with the different classes of B.OH. The graph represents each class as a complete sample of 100%, thus the results for each class is represented as a percentage of how many in that specific class said yes or no.

c. Question 3: What other occupations or career paths would you be interested in as well?
This was a closed-ended quantitative question where the options were divided in 8 popular health science professions and 8 popular corporate professions of which respondents could choose any 5 alternative careers out of the 16 options. The 5 most frequently chosen alternative careers are represented on the graph (figure 13). Note that the most interest remains in the area of health science studies and that the lowest percentage in health science choices, were still more than the highest percentage in the corporate fields (figure 14).

Cross tabulation was done between the most frequently chosen health science professions and the gender of the respondents. Each graph’s statistic’s represents the male population as 100% and females as 100% and not as a combined population of males and females together. It shows that 100% of males chose both Dentistry and Medicine as an alternative career to Oral Hygiene. Note the difference in interests between males and females in figure 15.

It was found (figure 16) that males have a higher interest in the corporate field than the females however; the females were represented in a consistent low percentage.

Further analysis to describe the data in more detail was done by cross-tabulating figure 17 the most frequent alternative careers to the different classes of B.OH in order to determine the preference of the classes to health science or corporate careers. Each class is represented as an individual population of 100%. Thus the graph reads the percentage of i.e. B.OH1’s response to Dentistry as an alternative career to Oral Hygiene would be 75% of B.OH 1.

On further investigation it was found that B.OH2 had a higher response percentage in corporate careers than the other classes represented as seen in (figure 18).

d. Question 4: In your own words, state your specific reason for choosing Oral Hygiene as a career in no more than 1 sentence. This was a qualitative question that respondents had to fill out by expressing their own opinions and ideas about why they chose Oral Hygiene. By carefully analysing the answer of each respondent, themes could be formulated to categorise similar ideas and opinions in groups. The 5 most prevalent themes are represented on the graph (figure 19). Additional themes included statements in the line of “Incorrect subjects to apply for my first choice of study”, “I chose it because I will have job security in the Department of Health”, “I heard the job pays very well”, “I enjoy working with my hands”, “I had no idea what I should study so I just chose OH”, “I worked as dental assistant before and wanted to be more involved with patients”, “I wanted to be an oral hygienist since I was 12 years old”, “During ortho treatment I noticed the profession”, “I thought I was applying to Dentistry”.

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?

Was Oral Hygiene your first choice of study?
In terms of the objectives and relating them to the results, all objectives were met adequately. The student’s reasons for choosing a career in Oral Hygiene were determined. The most prevalent reasons for choosing a career in Oral Hygiene were determined. The additional career interests of the students were determined.

In relation to the literature and the results of this study, similarities that were significant included “helping people” and “interest in the medical field”. Aspects driving career choice that were very prevalent in the literature but did not at all feature in this study included “academic prestige” and “social status”. Most of the results were expected when considering the background of the participants.

It can be suggested that the background of the respondents had a large role in the fact that Oral Hygiene was or was not their first choice of study. It can be said that many of the student’s whose first choice was in fact Oral Hygiene, had previous exposure to the profession either through family that work in the dental field or by previously working in a dental environment themselves. Frequent general or specialized dental treatment also allowed for introduction to the profession. Students who did not choose Oral Hygiene as their first choice mostly lacked information regarding the profession leading to misconceptions, lacked direction when they had to choose a career and did not get accepted for their first choice of study either due to school subject related matters or just by not getting accepted regardless of school subject related matters. Even though most of the participants did not choose Oral Hygiene as a first choice of career, further analysis showed that the interest, if not in B.OH, exists in other health science careers more than in corporate careers.

VII. Discussion

In terms of the objectives and relating them to the results, all objectives were met adequately. The student’s reasons for choosing a career in Oral Hygiene were determined. The most prevalent reasons for choosing a career in Oral Hygiene were determined. The additional career interests of the students were determined.
It can be suggested that males were more likely to choose alternative medical careers such as Dentistry and Medicine because it is perceived as a dominant profession with status and respect in the medical team. Females were more likely to choose alternative careers that were more submissive and not as dominant and status related. Males were also more interested in the corporate field of studies than the females were. It can also be suggested that the reason for this is due to the primal roles that males perceive themselves to have as i.e. Being the head of the family who must provide and must therefore be in a powerful position to establish the primal male power and dominance (Connel & Messerschmidt, 2005).

Validity and reliability were ensured throughout the study by designing a questionnaire that provided accurate and consistent results. Questions asked were subtly repeated in other phrasing and it was found throughout the data analysis that all the questions of a particular respondent were consistent and of relevance to another. For example, when a respondent chose that they had an interest in Health Sciences when a respondent chose that they had an interest in Health Sciences at a quantitative question, the qualitative questions that follow, confirm that the respondent was truthful and consistent. Validity and reliability were also ensured by having ethically aware researchers who are adequately skilled to accurately conduct such a study. To ensure further validity and reliability, each questionnaire was accompanied by a standard letter of informed consent which each subject signed and submitted along with the questionnaire. The consent form did include surety of anonymity, purpose of the study and weather they agreed with the terms. The official proposal was submitted to the Ethics and Research Committee of The University of The Western Cape by the supervising bodies, as per recommendation by the official research protocol document, approved by Senate and Council in 2009.

As previously discussed, a pilot study was done which also further ensured validity and reliability by testing the data gathering tool.

There were some limitations that challenged the study. The number of the study population decreased due to students who deregistered, failed or did not consent to participation in the study.

It can be suggested to expand the study population by including B.OH students from other universities in South Africa. This could give much more depth to similar studies in the future and due to the easily generalised nature of the study, it can be done by future researchers.

**VIII. Suggestions**

Suggestions to Faculty staff members:

By considering the results of this study, it is clear that there is a severe lack of knowledge concerning a career in oral health and what the course entails. To overcome this knowledge barrier, the faculty could possibly design an educational and marketing strategy that encourages prospective B.OH students to join the course as an internship. This internship should include a comprehensive clinical day where they can assist and observe students who are enrolled as well as an academic day where they may spend time in classes and familiarise themselves with the academics that the course offer.

**IX. Conclusion**

Considering the results found in this study, it creates a broader understanding about why Oral Hygiene students are performing the way they do and could possibly provide insight to the future employers of the emerging workforce of the future Oral Hygiene professionals.

**X. Declaration of interest**

Researchers had no interest in any corporate entities, thus no financial gain or advantages were derived from researching the respective topic. The researchers held no positions in any entities. The funding of the research was exclusively dependant on the researchers themselves. Research was conducted for the sole purpose of educational exploration in the field of research.

**References**

General

Motivations, understanding and perceived efficacy of First Generation Oral Rinses among a cohort of patients attending the Tygerberg and Mitchell’s Plain Oral Health Centres

1. Brushing and rinsing is the universally accepted “gold standard” for plaque removal.
   a. True
   b. False

2. Mouth rinses are defined as ‘solutions used to rinse the mouth’ for a number of purposes namely:
   a. To remove or destroy bacteria
   b. To act as an astringent
   c. Preventing oral disease
   d. All of the above
   e. None of the above

3. First generation mouth rinses demonstrate bactericidal properties on contact but have limited ability to exert an effect on the oral flora after expectoration.
   a. True
   b. False

4. When doing this study, a mixed method concurrent design was employed, implying that quantitative and qualitative data was simultaneously collected, analysed and integrated.
   a. True
   b. False

5. Of mouth rinse users/previous users 79% thought it was important to use, 61% had an oral problem, 53% of which claimed that these oral problems had influenced their use of the rinse.
   a. True
   b. False

6. Motivators to use mouth rinses are as follows:
   a. To clean interproximal
   b. Removal of plaque and food debris
   c. Conformity to certain cultural ideas and body image
   d. a and b
   e. a, b and c

7. Unemployed users were making use of an oral rinse to prevent or control oral disease so as to negate the need for professional care, the latter having financial applications.
   a. True
   b. False

8. In this study 57.6% who were using an oral rinse were not flossing.
   a. True
   b. False

9. Unemployed participants could better spend money and focus attention on adequate flossing and tooth brushing as opposed to oral rinsing which provides limited and temporary relief of the oral problem.
   a. True
   b. False

10. The use and manner of use of mouth rinses are influenced by the cultural ideal of body image.
    a. True
    b. False

Effect of caffeinated soft drinks on salivary flow

11. Sufficient salivary flow is necessary to maintain oral health and integrity of the dentition. Saliva has the following functions:
    a. Acts as lubricant
    b. Contains various host defense systems
    c. Helps maintain dental mineral integrity
    d. a and c
    e. a, b and c

12. Caffeine may reduce salivary flow by direct effects upon the salivary glands, through effects on the autonomic nervous system or through diuresis and dehydration.
    a. True
    b. False

13. The combination of sugar and caffeine in beverages may encourage frequent and perpetual patterns of consumption, leading to early initiation and rapid progression of dental caries.
    a. True
    b. False

14. The hypothesis of this study is that caffeinated soft drinks will lead to oral dryness by decreasing salivary flow, as compared to soft drinks without caffeine.
    a. True
    b. False

15. In this study salivary flow rates were measured in this sequence: stimulated whole saliva, minor salivary gland secretion and unstimulated whole saliva.
    a. True
    b. False

16. Caffeine effect refers to the difference between the average change in flow rate after caffeinated soft drink and the average change in flow rate after caffeine-free soft drink.
    a. True
    b. False

17. The results of this study show that salivary flow rates did not decrease after consuming a caffeinated soft drink compared to a caffeine-free soft drink.
    a. True
    b. False

18. A recent review concluded that the caffeine dose in standard servings of coffee or carbonated soft drinks has a diuretic action.
    a. True
    b. False
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Dr. Mark Hughes
Dentist, London

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Sensodyne® – No. 1 dentist recommended brand for sensitive teeth

Dr. Mark Hughes
Dentist, London

*With twice daily brushing
Reference:
1. Touchstone research February 2012.
A quantitative study: Oral Hygiene students’ reasons for choosing a career in oral hygiene

20. In studies done among dental students from various countries, reasons for choosing a career in dentistry were the following:
   a. Prestige and helping people
   b. Financial independence and status
   c. Academic reward and status
   d. All of the above

21. It was found in this study that 89% of male students said Oral Hygiene was not their first choice of study while 72% of female students said that Oral Hygiene was not their first choice of study.
   a. True
   b. False

22. Aspects driving career choice that were very prevalent in literature but did not at all feature in this study was “academic prestige” and “social status”.
   a. True
   b. False

23. Student’s who’s first choice was in fact Oral Hygiene had previous exposure to the profession through:
   a. Family who work in the dental field
   b. Previously working experience in a dental environment themselves
   c. Frequent general or specialised dental treatment
   d. a, b and c

24. Students who did not choose Oral Hygiene as their first career choice
   a. Mostly lacked information regarding the profession leading to misconception
   b. Lacked direction when they had to choose a career
   c. Did not get accepted for first choice of study due to school subject related matters
   d. All of the above
   e. None of the above

25. A way of overcoming the severe lack of knowledge with regards to a career in Oral Hygiene is to initiate an internship which should include a comprehensive clinical day comprising of assisting and observing.
   a. True
   b. False

Ethical

Patient access to Records

26. A health record is defined as any relevant record made by a health care practitioner at the time of or subsequent to a consultation and/or examination or the application of health management.
   a. True
   b. False

27. A dental record may be used:
   a. As a basis for planning and maintaining continued patient care
   b. As a record of communication regarding the patient and other health care providers
   c. To protect the legal interests of all parties involved
   d. All of the above
   e. None of the above.

28. Records should be stored for not less than six years from the date they become dormant.
   a. True
   b. False

29. In the case of minors and those patients who are mentally incompetent, dentists should keep the records for a shorter period.
   a. True
   b. False

30. The maintenance of proper and complete records is both an ethical obligation and a legal obligation.
   a. True
   b. False

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