DENTAL HEALTH

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GUEST EDITORIAL

Dr Latha Davda

Civilian Dental Surgeon, Ministry of Defence

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As I head towards the dusk of my career in dentistry, I find myself in a deep reflective mode. Maybe the career long habit of reflective practice is a difficult one to shake! On the other hand, reflection is a very human characteristic. For me it is effortless now. As with everything in life, dentistry is also constantly changing. This led me to reflect on what aspects of dentistry have changed in the past 30 odd years, since I graduated as a dentist, and what has remained unchanged.

A lot of things have changed in the past 30 years. A team-based approach is now employed to deliver patient care, making dentistry a rewarding profession for all dental professionals, including the dentist. Clinical dentistry has seen changes mainly led by the use of digital technology in undertaking investigations such as: digital imaging; the use of intraoral scanners; and advances in photography and use of photo editing in patient education. On average, more people are retaining their teeth, which has led to a gradual demise of full dentures and by extension, the skills required to make good dentures. As more practices embrace oral scanners, and laboratories undertake 3D printing of casts, skills such as impression taking and pouring a stone cast may fade away.

In addition, there has been a rise in demand for aesthetic dentistry including adult orthodontics and tooth whitening over these years. The influence of social media is all too obvious in increasing this aesthetic demand. The role of the dental team has changed from being the gatekeepers of dental information to guiding patients to obtaining accurate information on the internet. The increased coverage of implant dentistry seems to give a false impression to the patients that teeth are not that important: if you have the money, you can always purchase implants! It has therefore become ever more essential to educate our patients on preserving and maintaining their natural dentition. A skill at which dental hygienists and therapists excel.

Yet, what has not changed is the rise in more common preventable dental diseases such as caries and periodontal diseases. This may be partly driven by the lack of access to NHS dentistry due to the decrease in government funding leading to an increase in privatisation of dental care. As dental professionals, we are doing more recording of lifestyle risks and taking a multi-risk approach to the prevention of oral diseases. We are taking more of an advisory role by giving diet advice, smoking and alcohol cessation advice, with the hope of empowering our patients to make these changes in their life and improve their oral and systemic health. The days of 'drilling and filling' carious teeth have shifted to repairing chipped teeth and cavities as a result of tooth surface loss. In the 16 to 40 years age group, I see more tooth wear than caries, linked to fizzy drinks, sports drink and stress.

Although the core oral diseases prevail, a lot has changed in technology and dental materials and how we manage dental diseases. Patients have access to all sorts of information, and our role as professionals has changed to guiding them in their decision making on what is best for their oral health. It is really uplifting as I look back, with deep contentment and a sense of achievement, at my career spanning dental education, service in primary care and secondary care and dental research. Dentistry is indeed a great profession which allows one to grow and develop diverse skills and make a difference. I know you dedicated professionals all agree!

FROM THE PRESIDENT

BY **MIRANDA STEEPLES**

In parallel with the season of winter and hibernation, the world of dentistry has also been resting and recharging, and starting to make preparations for 2024.

BSDHT has already had three full planning meetings for OHC2024 and you can follow the progress of these in the monthly BSDHT Bites. You can track what goes into the development of such an event, and what goes on behind the scenes. At a local level, now that spring is here, it is time for the Regional Group study days. These are an opportunity to learn and socialise together, and for you to introduce friends and colleagues to our events which may then lead them into becoming a member as well.

Events

The FMC Northern Dentistry Show saw great BSDHT engagement with presentations delivered by members Sakina Syed and Ben Marriott. Thank you to both of them for flying the BSDHT flag at a national event! 'Refresh and Refine' also took place at this show and was a resounding success once again. Delegates really enjoyed the face-to-face hands-on aspect of the event, and the presenters were pleased with the engagement they had from the delegates. Thanks, as always, to our presenters Avijit Banerjee, Amanda Bloomfield, James Hyde, Aunpam Nandi, and Diane Rochford, and to our trade supporters, GC UK, Listerine, and Optident. We could not offer members these events at an affordable fee without their support.

The British Dental Industry Association (BDIA) Showcase will be held at the end of March. This also enjoys a strong BSDHT presence. I will be presenting with Stella Galer in the Oral Health Theatre, and we will have a stand in the exhibition hall – so do please come and find us! The Office of the Chief Dental Officer, England, will be hosting a roundtable event to which all the professional organisations have been invited. That should be an interesting session, so do please come and hear what everyone has to say, and perhaps give your views as well! I will be joined by Honorary Treasurer, Simone Ruzario, and Honorary Vice President, Debbie Reed, in another session with the OCDO England, where we will discuss skill-mix in general practice, and how it can, and should, work. This promises to be an engaging session where we hear from all the voices in the oral healthcare team.

BSDHT teams

All the teams that keep the BSDHT wheels turning are working hard to make 2024 the best year yet! We celebrate 75 years since the inception of our organisation, formerly BDHA, and there is so much to celebrate. The professions of dental hygiene and dental therapy are represented at meetings, conferences and in the dental press, and we continue to reach out into our communities. Joining in with the '75 hours for 75 years' community volunteer programme is such a lovely way to increase our visibility as a Society, and as professionals, within your local areas.

The Working and Advisory Groups continue to grow and I am looking forward to meeting those people who step forward to join the Council and represent each of those groups. This will diversify the BSDHT Council, and bring even wider consideration to our thinking and planning for the future working of the Society. Following on from the Additional Skills survey undertaken by Claire Bennett and Simone Ruzario, I would like to see the formation of a Working Group to encompass these skills and, once passed at the AGM, welcome a representative from this group onto Council as well. Invitations for volunteers to join this exciting new group will be landing in your inbox soon, so do step forward if this is an area you are interested in. We will need around five committed and enthusiastic people to get this group started – could this be you?

As the clocks spring forwards, and the days get longer and lighter, I feel energised and invigorated to keep working even harder for our Society. I will be out and about with 'Miranda on the Move', and will look forward to seeing you when I am - so do come and say hello!

HAPPY BIRTHDAY BSDHT!

Or happy birthday BDHA as it will always be known by me - as a nonagenarian I am allowed to be nostalgic!

Why did I join the British Dental Hygienists' Association and what did I hope to achieve as President? These two questions were put to me by your Publications Team.

I trained as a mature student at Manchester Dental Hospital in 1967/68. Madelaine Ferry, President BDHA, came to a northern meeting on a recruitment drive. I was impressed and acknowledged the importance of belonging to an association of members. Dental hygienists at that time were very few in number and were isolated in their surgeries - the only two I had ever met had never spoken to another dental hygienist once they had qualified and had never had opportunity to update their knowledge. The majority of meetings were London based - a world away from places such as Newcastle, York, Edinburgh or Bristol!

Once qualified, I contacted fellow dental hygienists working in the North East and we met in York to consider forming a North Eastern Regional Group of BDHA, which we achieved. We had lectures and presentations and, most importantly, we made friends and found contacts - something that we had not had the opportunity to do before.

After being nominated by the Regional Group and elected to BDHA Council, I later became President. I was determined to pass on the success of our Regional Group to other areas of the country, making the same opportunity available to every dental hygienist in the UK. This was not without problems! Dr. Leatherman, our founding Vice President and later Honorary President, vehemently protested that I would water down the BDHA meetings held in London and, in consequence, the credibility of BDHA would be destroyed. I recall protests and even being heckled at some meetings! However, there were also dental hygienists who recognised that there were advantages to BDHA membership, and that by meeting together and having a collective voice within the Association it allowed us to be heard. Maybe I was vindicated. Certainly, there are now twelve very successful groups and I am sure Dr Leatherman would now be immensely proud of BSDHT.

It is many years since I had any active involvement with BDHA/BSDHT as my career changed course and I became involved with social policy and continuing education (my pet subject). I remained in part-time employment until I was 89, when I decided to retire. I have many happy memories and I treasure the lasting friendships I made, most particularly with BDHA Honorary Treasurer Diane Pascoe and BDHA Past President Ann Round.

I have recently been looking at old copies of *Dental Health*, going back to the 60s - so there is quite a collection! What memories they evoke, not particularly for the content (for the articles are in truth very similar - maybe more in-depth research but that goes along with modern dentistry) but for the vast number of dental hygienists (and dental therapists) who have given freely of their time and expertise to submit copy to keep the publication thriving. This willingness to help and give time and expertise goes throughout the Association and now the Society - Council, officers, group organisers -everyone who plays a part, and yes, everyone who attends meetings. At this birthday time we should remember and celebrate just how much we have evolved as a professional organisation.

I am proud to have played a small part in the development of the Association and I wish everyone well for the next 75 years.

Although I will not be at the BDHA birthday celebrations on 6th July, I hope you will all be giving yourselves a good cheer. Well done everyone! Good wishes to you all.

Elizabeth Riding,
Past President BDHA
(1978-1980)

THE FUTURE DENTAL TEAM STARTS FROM DAY ONE

BY JOANNE BOWLES

In 2019 the University of Liverpool, School of Dentistry commenced its fully integrated BDS and BSc dental curriculum. The programme is now about to graduate its first BDS cohort and the purpose of this article is to consider some of the approaches that were taken to change undergraduate education within the dental school, with the aim of enhancing the dental teams of the future.

The University of Liverpool, School of Dentistry has previously run programmes for dental hygienists, dental therapists, and dental students. The programmes were taught very differently with very little integration. However, both the Advancing Dental Care Review of training and education[1], and the General Dental Council's guidance "Preparing for Practice" [2] encourages the development of team working and an appreciation of skill mix. Therefore, to address this need for team working the school wished to have interprofessional education at the heart of its curriculum in keeping with the Centre for the Advancement of Interprofessional Education (CAIPE)[3] definition:

"Occasions when members or students of two or more professions learn with, from and about each other to improve collaboration and the quality of care and services."

Learning together

Dental therapy and dental students are learning together, with all students learning within the scope of practice of a dental therapist[4] during the first three years of the programme. Through this fully integrated learning, the school aims to foster mutual respect, understanding, and team working for the single purpose of enhancing the quality of patient care. The curriculum has been called the 'Centennial Curriculum', named after the 100 years since the school became part of the University of Liverpool. The Centennial curriculum encompasses the programmes of Dentistry (BDS) and Dental Therapy (BSc), with the latter programme name reflecting that the scope of practice of the dental therapist automatically incorporates everything a dental hygienist can do.

The fully integrated BDS/BSc curriculum has now been in the delivery phase for a number of years. There have been two previous graduating BSc cohorts of dental therapists and this summer (2024) the school looks to graduate its first

cohort of BDS students that have been part of this combined curriculum, as well as its third cohort of dental therapists.

For each cohort an average of 88 students are recruited (72 BDS and 16 BSc) with students having different entry requirements and varying backgrounds. When students initially apply via UCAS they apply to either the BSc Dental Therapy programme or the BDS Dentistry programme. Nevertheless, a key innovative approach for the Centennial Curriculum was the full integration of these two separate cohorts of students, with respect to teaching and assessment, to ensure that all students felt part of a single team. Therefore, the first three years of the Centennial Curriculum have been termed the Collaborative Learning Core (CLC) and year groups are known as CLC1, CLC2 and CLC3. Then after three years those on the BSc pathway graduate as dental therapists, and those on the BDS pathway continue on for their final two years, known as BDS4 and BDS5.

During the curriculum development one of the innovative approaches was to allow a very small number of University of Liverpool BSc Dental Therapy graduates apply for a graduate entry route onto the BDS programme. One option allows the students to apply during the third year of their programme via a competitive process known as the 'direct entry' approach and the other route is to graduate, work out in the real world and within a time frame apply via the 'indirect route'. This approach allows for curriculum flexibility and the ability to react to the potential future requirements of workforce expansion as set out in the NHS Long-term Workforce Plan[5].

To widen participation and not limit access to students from the non-traditional A-level route, at the University of Liverpool, there is an alternative pathway that enables access following undertaking a foundation year (year zero) at a local college. If successful, students commence to the programme they chose at the start of the admissions application process, whether this be dentistry or dental therapy. The foundation year is an extremely popular route into being a dental clinician, and positively contributes to the diversity of the student body.

The curriculum learning outcomes termed 'milestones' are fully constructively aligned to the teaching and assessment strategies[6], as well as GDC requirements[2] and QAA levels[7]. These milestones are delivered through integrated components. It is important to highlight that all the learning and assessments undertaken by all the students are the same. Within the first three years there are no differences, it does not matter which pathway a student is on, the standards are all the same.

The integrated programmes follow an outcomes-based curriculum philosophy, designed around the holistic patient journey and the capabilities of a new Liverpool graduate (expectations of our graduates) – whether that be a dental therapist or a dentist. The curriculum is designed to enable early patient contact and for students to be managing their first, in a series, of patient journeys during year one. The patient journeys develop with scope of practice as the students progress through the years of study. The learning and teaching have been created to enable students to observe real-world procedures before they begin to develop the relevant skills in a simulation-based environment (utilising phantom heads and haptics), prior to being deemed ready to undertake the skills on a real patient. This opportunity to observe allows for contextual reflection during their simulation development. Once the current skills have been developed, ratified by the Clinical Safety Panel, and undertaken on a patient, the next set of real-world skills to be developed in the simulated environment are being observed in readiness for the students to be able to undertake the next patient journey. This continues until all aspects of scope of practice are developed.

The profession of dentistry requires continued lifelong learning[8]. An essential concept within the curriculum design was to develop and embed life-long learning behaviours within the students. The teaching and assessment activities embrace a programmatic assessment philosophy[9], to support development through regular reflection, which also requires the development of good psychosocial skills that include a

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growth mind-set[10], self-efficacy[11] and resilience. Therefore, a novel component introduced throughout the centennial curriculum is Personal Development and Wellbeing (PDW), where students actively develop these key psychosocial skills, to help prepare them for the careers ahead.

A further feature of the programmatic assessment approaches[9] is the need to triangulate student data from all forms of assessment to determine readiness for progression[12]. Throughout each year, students receive longitudinal coaching style feedback during all components. Whether this be on their management and leadership and contributions within the problem based learning (PBL) sessions of the Understanding Clinical Practice (UCP) component, or how they could improve their patient treatment next time within the Patient Care Provision (PCP) component. Within the component sessions, observations are made and feedback is provided at the end of the session. Students engage in a dialogue with the member of staff, they are then encouraged to reflect on the feedback given and set goals to develop themselves for future sessions. Data and written comments are captured using handheld tablet computers writing to a database running within a custom application known as LiftUpp™[13], which contributes to the student's continuous longitudinal professional development (CLPD).

Student progression

Progression is determined by a combination of students demonstrating appropriate levels of applied knowledge through standard set end of year academic progress examinations and evidence of appropriate longitudinal clinical development. The latter being established by a Clinical Progression Panel, composed of a panel of experts and an external examiner, who assesses the development and consistency of skills from the large quantities of longitudinal data collected in five domains (Clinical Skills, Professionalism, Management & Leadership, Communication and Applied Knowledge and Understanding) in relation to the relevant milestones.

To support individual personal, clinical, and academic development, each student is allocated a named academic adviser (AA) for the duration of the programme. Students formally meet with their AA each term and also have the opportunity for informal discussions if required at any time during the year. Mentoring from the AA is an essential aspect of the programmatic assessment approach used within the school supporting student development[14].

During times of change there can be difficulties to overcome and often lessons to learn. With an innovative new curriculum there are often many firsts, the school had to follow the design process and try new things. It has been important to ensure staff worked with an open mind and adaptable culture to firstly accept the plans, and then if something did not go as expected, reflect and work together to consider how it could be improved for the next time. It has also been crucial to be honest and open with students, especially those progressing through the curriculum for the first time. Student feedback throughout is invaluable and this positive approach helps to build a staff/student partnership.

As with any new programme GDC approval was required, and so in 2022 the BSc programme was inspected and the final report concluded that there were no recommendations, which is something the school is incredibly proud of, especially as the new curriculum was started and then hit by the COVID-19 pandemic.

It is very early to know the longer term impact of this fully integrated curriculum, but it is hoped that it will enhance the dental teams of the future.

An integrated training approach was conceived by Professor Callum Youngson and then implemented and refined by the current Dean, Professor Vince Bissell. The design, development, and delivery of this curriculum has truly been a team effort. Fitting with the true ethos of the school, the undergraduate programmes are managed by Co-Directors Mrs Joanne Bowles and Dr Laura Gartshore. With the utilisation of a project manager, the staff within the University of Liverpool School of Dentistry have worked with true passion and determination to ensure the long term vision of Professor Luke Dawson has come to life.

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BY **MORWENNA WRIGHT**

TRANSITIONING TO DENTAL THERAPY

After graduating as a dental hygienist in 2022, I began working for an independent practice in a team of eight dentists and four dental hygienists. Like many practices across the UK, our NHS and private waiting lists for new patients wishing to register with the practice were long, with numbers increasing monthly.

Whilst the dentists were working hard to meet their own UDA targets and reduce the waiting list, I knew I could do more to help, both the practice and my personal career progression. I soon began researching dental therapy courses and finally applied for the BSc Oral Health Science programme at University of Essex. This course felt right for my lifestyle: my current practice could serve as my placement where I could practice my new skills under my dentist colleagues' supervision.

Asking for support

At this time, there had been no expression of interest from my employers to recruit a dental therapist. I was therefore apprehensive as to what they would make of the next stage of my career. I subsequently initiated a short discussion with the principal dentist and practice manager to inform them that I had applied to return to formal education and study to become a dental therapist. Fortunately, they were supportive and keen to be informed of my progress throughout the application stage.

Following a successful interview at the university, I staged a second meeting with the management team to discuss potential mentoring while I was a student. The course required two clinical educators (CEs) to supervise my work and deliver tutorials on varying topics, along with case-based discussions from the practice to oversee my progress throughout the placement. This was the first time there had been a dental therapist working on the premises, let alone a student in need of mentorship!

The logistics

Having recognised the benefits of utilising a dental therapist to ease pressure on the dentists, my colleagues undertook courses via NHS Health Education England to learn how dental practices can utilise and support dental therapists and familiarise themselves with a dental therapist's scope of practice. Having previously had experience in mentoring VT dentists, they understood the level of support needed, and felt confident in sharing their knowledge and skills.

The process of organising my diary required a lot of time, from both sides. I began by providing a yearly calendar overview of my university timetable, to establish when I could and could not work as a hygienist. Next, my employers planned the practice diaries, and split my time between hygiene work and therapy training appropriately, ensuring my minimum 14 weekly clinical hours were met. We then gained support from tutors at the University of Essex for clinical targets that needed to be met by the time of completing my course.

Together we compiled a document summarising my scope, my working hours and the days I would need supervision. We also designed a consent form for patients/legal guardians to sign explaining I am a student and that they are happy to proceed with the appointment.

We started with the basics, scheduling in extended time examinations for children and adults; as time progresses

throughout my course, I will begin having extended restoration appointments and deciduous extractions, with close supervision. As my confidence improves and I gain experience, I can shorten my appointments and treat more patients each day.

My practice had not considered a dental therapist position until I discussed this with them, and I was so fortunate to receive such a high level of support and encouragement. The process of organising the year ahead took a lot of time and discussion, from both sides, but I am so excited for the year ahead and cannot wait to develop my skills and expand my scope.

To any colleagues considering taking the leap from hygiene to therapy, I would urge you to open a discussion with your employing dentists and ask if they are willing to support you. The experience can be so mutually beneficial. You never know unless you ask!

Author: Morwenna graduated as a dental hygienist in 2022 from University of Essex. She lives and works on the Norfolk/Cambridgeshire border. She is currently studying for a BSc in Oral Health Science at the University of Essex. She hopes to register as a dental therapist in December 2024.

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BECOMING A CONFIDENT CLINICIAN

BY CAT EDNEY

I was delighted to be asked to present at the OHC 2023 in Bournemouth on the subject of 'Confidence in Practice'. Reflecting on my own journey, from safe beginner to confident clinician, I have learnt that confidence in practice is not just being confident in the work we do, it is heavily influenced by the situation in which we practice and by the people with whom we surround ourselves.

Research suggests that in the UK, on average, 14% of individuals experience mental health issues in the workplace [1] and women are nearly twice as likely to have a mental health problem in full time employment then men.[2] In the dental hygiene and therapy community, 79% of dental therapists and 86% of dental hygienists are women.[3]

Setting out to identify the causes of low confidence in practice, it was important to consider my own lived experience, to offer examples of actions and strategies that dental hygienists and dental therapists could employ in order to improve their confidence in their work. It became evident that my personal confidence and overall career satisfaction has been directly linked to such factors as: how much I feel I am contributing to the practice as a valued member of the team; how much of my full scope of practice I am able to undertake; and also, crucially, how respected I feel as a clinician.

There appears to be a correlation between low happiness scores and high anxiety scores in dental therapists working as dental hygienists or dental hygienists who work to a limited scope of practice.[4] Self-actualisation – the realisation of a person's potential, self-fulfilment, seeking personal growth and peek experiences[5] – is a similar notion to that of working to our full scope of practice.[6]

But what influences our understanding of self-actualisation?

The explosion of social media platforms has played a crucial role in self-awareness. We are all subject to freely available information and can easily share information and achievements quickly and to a wide audience. This can have an impact on our expectations, for better and worse.

We are no longer living in an echo chamber, unaware that our clinical situation could be different – our contracts, pay, conditions, equipment and training are often called into question on social media. However, the flip side of this

Figure 1: **The dental therapist led practice model**

information sharing may be creeping feelings of imposter syndrome. We can all experience feelings of disappointment at being 'left behind' in a world that seems more advanced. It is noticeable that there is a deluge of anonymous posts from those who no longer feel confident to ask very acceptable questions for fear of being found lacking.

Enlightenment

I was a dental therapist working as a dental hygienist – on the 30-minute scale and polish treadmill – happy enough but unfulfilled and looking for a way out of dentistry; I was moonlighting as an online PA, an events planner and a photography sales person! My search for a challenging and exciting role, that was ultimately satisfying, involved much soul searching, investment in myself and some personal risks. I am also ashamed to admit I needed to be pushed: it took some harsh and altogether disrespectful comments from a past colleague to shock me into action! I realised that I would never achieve self-actualisation if I surrounded myself with people who did not believe in me, my abilities or my profession.

This journey took the form of three distinct areas of growth: clinical, personal and financial confidence. The culmination of these three areas of growth is what led me to develop 'The Modern Therapist' – with the dual aim to both improve confidence in and within dental therapists.

Clinical confidence

This area of growth is never ending with a multitude of ways any dental professional can grow their depth of understanding of the clinical application of our work. It became the main area of investment – by undertaking post graduate courses, ensuring that I was in contact with trade representatives, being up to date with my personal development plan and ensuring that I was approaching my CPD with a growth mindset. I set myself regular goals to find out more about the equipment we use, alternatives on the market and the reasons behind the choices my esteemed colleagues made about the equipment they favoured.

Personal confidence

This may have been the hardest area of growth for me as somebody who has always outwardly been an outspoken individual. I struggled to ask for feedback and I worried that my ideas around promoting change in the workplace would be ignored or not taken seriously. However, I found that growth and change come from being uncomfortable and so I sought feedback and mentorship (I still do). I also worked hard to create a culture of open dialogue between myself and my colleagues, often chatting to them about patients, clinical outcomes and treatment plans. To support this, I started taking and posting photographs of my work – these were sometimes critiqued but often were met with

much positivity and I found that they helped me to better communicate with my patients.

In addition, I started to create clinical protocols and patient journeys that would support the use of my full skill set. The aim was to educate my colleagues in ways we could better utilise our team and demonstrate to them the way I felt we could better support our patients. This started with a simple flowchart to explain periodontal treatment under the EFP S3 guidelines[7] and then expanded into the 'therapist – led practice model': a way of working that puts prevention at the core of all patient care and ensures that patients are referred to the right therapist or dentist for them according to their treatment needs (fig1).

Financial confidence

The final and possibly one of the most crucial areas for my personal growth was to have a better understanding of the financial implications of changes I wanted to make to my working arrangements. It was essential to understand the barriers to practices utilising dental therapists like myself and I wanted to be able to answer difficult questions around remuneration. Research also demonstrates that the current popular top-down mode of referral from dentist to therapist or hygienist does not financially incentivise dentists therefore referrals are restricted to only the work that the dentist has accepted is not financially viable for them to undertake – the study goes on to call for organisational reforms and a shift in practitioner worldviews of team working.[8]

I set out to audit the income of each surgery in my practices and create financial models to demonstrate how differently managed practices would have altered income streams. I demonstrated that surgery income depended on the extent to which dental hygiene and dental therapy rooms were limited in the treatments they offered and therefore the income they could generate, driving the message home that if they were able to charge appropriately for the complexity of the work they were doing, the income of the room would no longer be capped, as it historically has been.

I also undertook to be better educated on the implications of different remuneration packages; the difference between hourly rate, per patient rate and employed positions, the tax and NI burden on both employees and employers. There is a strong correlation between financial empowerment and self-worth[9] with low self-worth having the impact of being unable to stand up for oneself, to allow boundaries to be infringed and to negatively impact on one's view of oneself.

A confident mindset

The overall effect of my drive to improve my relationship with my career was to liberate myself from a mindset that I was happy and content with the status quo. I stepped into the same career but this time with confidence - confidence to embrace change, question process and campaign for parity, respect and recognition for a profession that I could no longer imagine being without.

I do not believe that being confident in practice is a monochrome state, but rather it is a state of perpetual growth: confident that you can change and grow; confident that you can continue to learn without compromising your core values. As a professional, confidence is the ability to say, "I don't know" without feeling that the admission takes away from your professionalism, but rather that it defines you as having peek awareness for the sake of your patients.

Thank you to BSDHT and Oral B for inviting me to speak on this subject which has become so close to my heart and resonates so much with 'The Modern Therapist' goal of putting Therapy into Practice.

Author: Cat has a passion for multidisciplinary team working to ensure profitability alongside patient care and engagement. She lectures nationally and has developed hands on dental courses under her training brand 'The Modern Therapist' which aims to educate the profession about the role and integration of dental therapy, and provides gold standard hands on training and ongoing support to dental teams.

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PROFESSIONAL WHITENING V OVER THE COUNTER PRODUCTS

BY MEGAN FAIRHALL

TOP TIPS FOR THOSE NEW TO WHITENING

Product claims suggest that the over-the-counter (OTC) whitening treatments are fast, easy, successful, safe and gentle - with no sensitivity issues. And when recognised consumer mavens like the Good Housekeeping Institute also confer their seal of approval, and allow their logo to be used on selected whitening products they have reviewed, it is little wonder that people confidently gravitate to them. This raises questions: Are these consumer products actually competing with the whitening treatments offered by dental professionals? How can we justify charging a higher cost for this treatment?.

IMAGE COURTESY OF DR ANNA DAVIES, WELLWOOD DENTISTRY & AESTHETICS, PENARTH

Why offer professional teeth whitening?

For me, it is a no brainer! We have a moral duty to educate our patients when it comes to their oral health choices and to alert them to the risks they take when they are misled by miracle products offered on consumer platforms. We also have a huge amount of expertise that we need to highlight to differentiate our services and products.

It is important to educate patients, that products featured on the web, and in various consumer outlets, cannot legally contain more than 0.1% hydrogen peroxide, which means that they have little whitening effect. The ones that might appear to offer very short-term results remove surface stains and make the teeth appear whiter initially, without changing the colour internally. This often raises questions regarding safety: some products are abrasive causing long term damage to the enamel, which may even result in more staining.

There is a grey area around what is actually regulated. The risk of damage to the teeth and gums and the fact that people are back to square one - or worse - with the same discoloured teeth, and less money in their bank accounts, is a problem. Ultimately, it is gratifying when they finally seek professional advice! There is still so much education to do and we need to continue raising awareness. The professional route is first and foremost about duty of care and we only consider patients for whitening if they are dentally fit and have no active disease.

There is also a lack of information when it comes to whitening crowns, bridges, implants and veneers. Patients rarely understand this when they purchase OTC products. No over-the-counter products mention: white spots; discolouration of single non vital teeth; tetracycline, minocycline and doxycycline staining; brown spots; and nicotine-stained teeth. Buyers are seduced by influencers' attractive claims that are not specific to individual needs.

Professional tailored whitening will ensure successful results. In practice, we have standard protocols requiring a full dental assessment in order to provide the patient with a bespoke treatment plan. This ensures that their teeth are whitened prior to the restorations being placed to avoid a colour mismatch.

Sensitivity

Sensitivity is often a reason why people stop whitening. Interestingly, many of these over-the-counter products seem to purposely claim a lack of sensitivity or minimal sensitivity as sales tactics. These unregulated products cannot contain hydrogen peroxide, so of course people should experience no sensitivity but would also achieve no results. In practice, sensitivity as well as enamel protection are addressed in the whitening treatment plan with preventative measures taken if necessary. It is essential that sensitivity is regularly assessed and managed so that patients can complete the whole treatment and get the best results possible.

With tetracycline staining, patients will see noticeable results over time after a long period of whitening, but again this needs to be tailored specifically to be their needs and treated as a complex case and not a standard one. Over-the-counter products are unsuitable: an expensive exercise leaving the individual worse off in every way.

Getting started and building confidence

Despite the fact every patient is provided with an individual whitening plan, it is possible to start with a 'simple' protocol that can work across the board. In this way, clinicians can build their experience and confidence. This is a good first step towards confidently taking on more challenging and ultimately more satisfactory cases.

I have personally chosen to use Philips Zoom whitening (in-chair and home whitening) for the last eight years and the brand has helped me achieve consistently great results for my patients, effectively, safely and efficiently. I would advise my colleagues who are not undertaking whitening in practice to investigate the range of current whitening systems and discuss the various protocols with your employer.

So, whenever patients start a discussion with you about over the counter whitening products, reinforce the message about effectiveness, sensitivity, tailored treatment plans, long-lasting results with minimal top up maintenance. Steer them away from over-the-counter products that do not provide the desired lasting results and could potentially cause damage. It is in their best interests and can also save them a lot of money and disappointment".

Professional in-surgery whitening produces results and creates loyal, happy patients with healthy mouths. It is also a good practice builder.

Author: Megan qualified from the University of Portsmouth in 2010 with a BSc (hons) in dental hygiene and dental therapy. She has since had a multi-faceted career including, working in Harley Street, representing Philips as a KOL, running her teeth whitening training courses, many online webinars and in-person speaker events and more recently becoming a clinical advisory board member and consultant for {My} Dentist. All with the aim to reach and to help inspire as many dental professionals and patients as possible!

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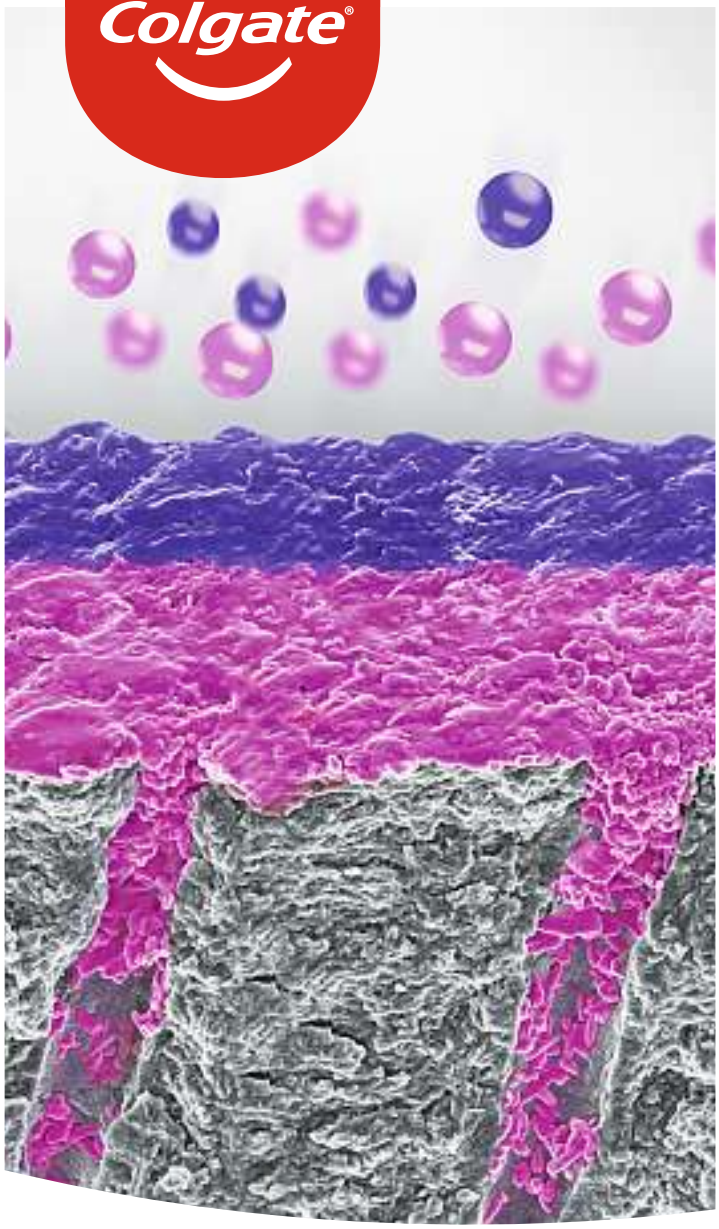
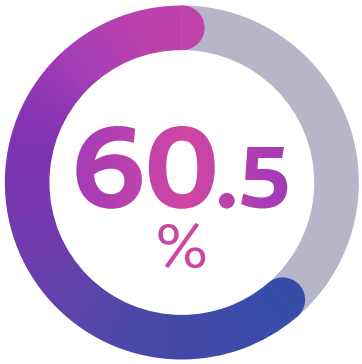
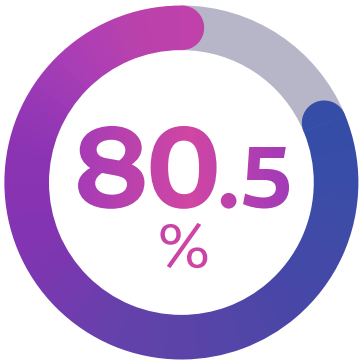


Creative representation of the mode of action

Instant[1] and **long-lasting pain relief**[2] Now with **enhanced acid resistance**[3]



Reduction in sensitivity pain from the first use[1]



Long-lasting reduction in sensitivity pain[2]

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more **occlusion**
vs **competitive technology**[4]

IMPROVED FORMULA

NEW PACK DESIGN

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References: **1.** Vs baseline, Nathoo et al. J Clin Dent. 2009;20 (Spec Iss):123 –130 (when toothpaste is applied directly with a finger tip to each sensitive tooth for one minute.) **2.** With continued use, Docimo et al. J Clin Dent. 2009;20 (Spec Iss):17– 22. **3.** Vs previous formula, in vitro acid resistance after 5 brushings, report by Hines 2021, Data on File, Colgate-Palmolive Technology Center (2021). **4.** PRO-ARGIN technology vs stannous fluoride/sodium fluoride technology, in vitro study, confocal images after 5 treatments. Liu Y, et al. J Dent Res. 2022;101(Spec Iss B):80.

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PROFESSIONAL
ORAL HEALTH

SUPPORTING PATIENTS THROUGH RAMADAN

BY SAKINA SYED

The month of Ramadan begins in March and lasts for 30 days. During this time Muslims fast, abstaining from eating and drinking during the hours between sunrise and sunset. Pregnant women, nursing mothers, the elderly, young children and those with medical illnesses are exempt, however many still choose to fast.

As dental professionals the whole team should be aware of how fasting can affect a person's diet, their oral hygiene and the possible oral complications or situations that can arise.

For Muslims, fasting is believed to offer many health and spiritual benefits. Included are: self-discipline, empathy, kindness, mental strength, charity, compassion and care.

In recent years, intermittent fasting has become a mainstream global health trend. Benefits include:

- Reduced cholesterol levels
- Aiding weight management
- Stabilisation of glycaemic control

- Opportunity for smoking cessation
- Aid prevention of gut microbiome dysbiosis

A sensible and carefully managed diet is essential to avoid overindulgence at both the early morning breakfast, before sunrise, and the evening meal post sunset. Rehydration and replenishment of energy supplies are important during fasting. A sudden change in diet for such a long period can increase cravings for sweeter foods and an unhealthy diet can negatively affect the oral cavity, and the whole body.

A typical fasting day

Most UK based individuals will fast for approximately 15 hours, with an early morning breakfast before 4.30am. They will then refrain from eating or drinking until about 6.30pm. Timings change each year with summer periods of Ramadan being much longer in duration. As the 30 days progress, the timings increase by a few minutes each day depending on when the sun sets. Water can be consumed before beginning the fast and after opening the fast, but not whilst fasting. The entire daily routine can be unbalanced with interrupted sleep patterns and fatigue.

Tooth brushing and interdental cleaning

Brushing of teeth is allowed with toothpaste provided the toothpaste is not swallowed. Some individuals believe that toothbrushing is not allowed because of the possibility of water being swallowed and they do not want to risk breaking their fast so refrain from toothbrushing. It is advisable to brush teeth before the fast begins and before bed with some patients happy to brush again before they start their day later in the morning.

Dietary habits

It is human nature to crave certain foods or drinks when fasting all day, especially as this month brings people together and encourages spending time with friends and family at dinner parties.

Consuming foods and drinks with higher sugar content, or carbohydrates, can be risky and increase the risk of dental caries. It is best to follow a low carbohydrate, medium fat and high protein diet. Traditionally, dates are eaten to open fasts; they are high in fibre and high in potassium. However, they are also very high in sugar and have a high GI index so they release energy quickly which can be useful post-fasting.

Dental appointments

There is no reason why dental appointments cannot be attended whilst fasting. However, many people may not want to visit for treatment in case their fast is broken by swallowing water. If a patient is in pain and needs urgent dental treatment, they should electively complete the treatment and make up for the missed fast at the end of the Ramadan. This needs to be handled sensitively, with empathy and understanding to avoid offending the patient's religious belief but also to stress the treatment is in the best interest of the patient. For some patients, the use of local anaesthetic or any form of water in the mouth whether it is swallowed or not, may not be acceptable and, in such cases, elective treatments may need to be delayed even though local anaesthetics are permissible. Disagreements may arise but it is important to respect the patient's beliefs in an understanding manner to ensure a more comfortable patient journey.

What will break a fast?

- Intentionally eating and drinking
- Smoking (it's the perfect time to offer smoking cessation support)

What does not break a fast?

- Brushing with toothpaste
- Brushing with a miswak stick
- Cleaning interdentally
- A dental examination
- Professional mechanical plaque removal

Miswak stick

A miswak is a stick thought to be one of the oldest types of natural toothbrushes. It is still commonly used in the Middle East and Africa but also becoming quite prominent in the Western world, especially within the month of Ramadan. The sticks are extracted from the Salvadora Persica, or Arak tree. Some people may use it to complement their existing oral hygiene methods. It is 100% biodegradable, natural and very affordable. It is encouraged for use in the holy month as it can help to reduce bacterial plaque. However, it may not be entirely effective on all surfaces of the teeth due to the single length of the filaments on each branch. Some people peel back the stick to open the filaments and others chew the stick for the filaments to separate. Either way electric toothbrushes are still the number one choice for plaque control and technique!

Possible consequences of fasting and effect on treatment delivery

Dehydration and halitosis

This is extremely common when the body is not receiving any food or drink. A state of ketosis results and ketones are

released - chemicals which break down fat for energy. As they mix with plaque bacteria in the oral cavity, they produce a mal odour. This also occurs when an individual is dehydrated.

Dry mouth

Due to a reduction in stimulating saliva, it is common to experience dry mouth and the situation is exacerbated due to the lack of water. It is therefore important to rehydrate when not fasting. In some patients, this can increase their risk of dental decay especially if they are already medically compromised.

Alterations in medication and possible medical emergencies

There is an increased risk of syncope in the fasting patient. Fasting can cause stress on the body and a variation in the circadian rhythm. Not having sufficient time intervals between fasts can affect regulation of the normal body clock and cause fatigue. During a fast, it is recommended to take a nap during the day wherever possible.

There is an increased risk of hyperglycaemia due to dietary changes and changes in drug intake. Glucose monitoring does not break the fast.

Fasting should be sensitively discussed and gently discouraged in patients with poorly managed diabetes or those with frequent episodes of hyperglycaemia or hypoglycaemia. Local mosques and community projects begin campaigns before Ramadan and even run specific diabetes management classes during Ramadan to address this within the local communities.

Dental team members and fasting

There may be colleagues fasting within your dental teams. In dentistry, where attention, focus and precision is paramount, patient care must always be the priority. A good working environment is crucial within a supportive team. Regular breaks should still be taken at lunch to rest the body and mind, ensuring the room is well-ventilated.

Ramadan Kareem from Sakina – (a greeting used to mark the beginning of Ramadan)

Author: Sakina Syed is a dental hygienist and dental therapist practising in private practice at Bupa Dental Care, London Bank and Serene in Knightsbridge, London. She is an ambassador for EMS and the chairperson of the BSDHT London Regional Group.

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REFRESHING MY SKILLS

BY GEORGINA WORSFOLD

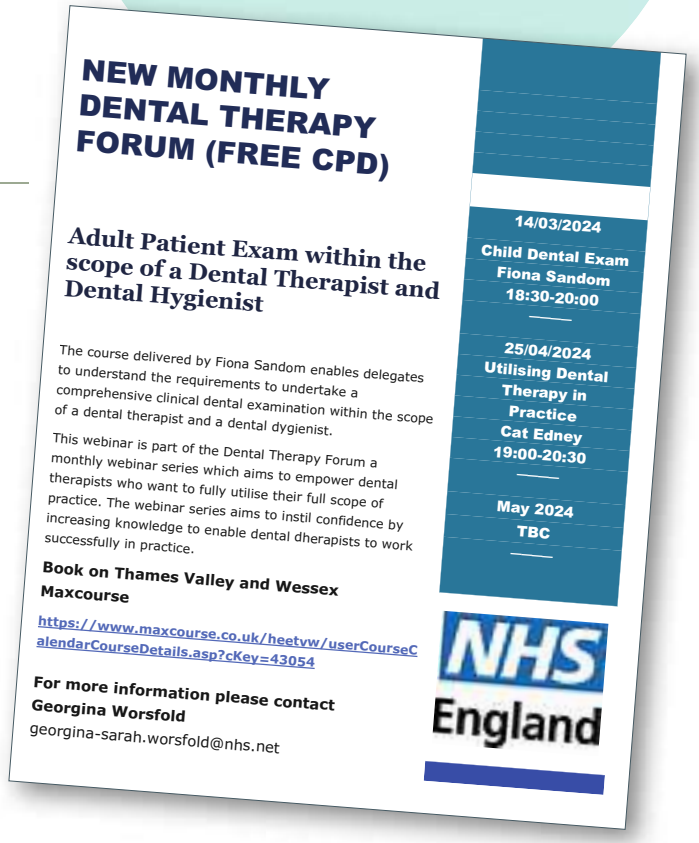
I qualified from the University of Birmingham in 2016 with a BSc in Dental Hygiene and Therapy and began working predominantly as a dental hygienist in private practice. I enjoyed my job, worked with a supportive team and relished the daily interactions with patients. Three years into my role as a dental hygienist I was left feeling as though my therapy skills, which I had worked so hard to acquire, were being wasted. Very occasionally, during school holidays and half terms, I would be referred a young child for some dental treatment, but this was infrequent and not enough to practise my full scope, progress and build my confidence with restorative procedures.

The return to therapy

In 2019, I saw an advert for a dental therapy refresher scheme run by Thames Valley and Wessex Deanery. I applied and I was accepted as one of twelve dental hygienists to be part of the pilot scheme. The pilot scheme was a mix of study days, hands-on phantom head sessions and clinical days. We each buddied up with another therapist and were assigned to an NHS practice with an education supervisor. We then gained the invaluable experience of treating patients in an NHS practice. We were given feedback and had a supervisor on hand to help and support us during the appointments.

After I finished the course, I continued working as a dental hygienist. A relocation and the COVID-19 pandemic scuppered my immediate plans to become a dental therapist. Fuelled with a dedication to (eventually) achieve my goal I continued to search job sites and attend courses to maintain my therapy skills. Finally, an opportunity arose, a locum/temporary full time dental therapy position became available! I took a gamble by quitting my secure dental hygiene position and embarked on a daily three hour round trip with no plans as to what I would do when that job finished in six months' time. The locum position was a success, I enjoyed the work and day by day my experience and confidence grew.

After the locum position ended, I decided to challenge myself and progress my skills further and I joined the Community Dental Service. I now fully utilise my scope of practice treating a wide variety of patients. I also provide treatment using



inhalation sedation and the role has opened my eyes up to the wide variety of opportunities available to dental therapists outside the four walls of a dental surgery. I have been involved in a research project, I have carried out domiciliary visits in care homes and epidemiology surveys in schools. Last year I was awarded a staff excellence award, in recognition and appreciation of outstanding contribution to the Community Dental Service in 2022.

What next?

I have become incredibly passionate about education and workforce development. I now also work for NHE England as a dental tutor and have been responsible for setting up the Dental Therapy Forum which started in February 2024.

The Dental Therapy Forum is a free monthly webinar series which aims to empower dental therapists who want to fully utilise their full scope of practice. The webinar series aims to instil confidence by increasing knowledge to enable dental therapists to work successfully in practice.

Anyone interested can book on the Thames Valley and Wessex Maxcourse:

https://www.maxcourse.co.uk/heetvw/userCourseCalendarCourseDetails.asp?cKey=43054

For more information email: **georgina-sarah.worsfold@nhs.net**

BEING A DENTAL PROFESSIONAL IS A PAIN

BY ANITA HOSTY

The prevalence of general musculoskeletal pain among dental professionals is common and ranges between 64% and 93%. In dental hygienists pain is most commonly felt in hands and wrists (60-70%) while dentists most commonly suffer pain in their back (37-60%) and neck (20-85%). Many risk factors have been identified, including static and awkward posture and working practices. Overall, musculoskeletal problems represent a significant burden for the dental profession.[1-4]

Can you relate to this?

It's Monday morning and despite a manic start, you arrived at work in plenty of time to check your list, patient records and prep the trays prior to the start of the morning clinic. You are ready for the day. It's going to be a good day! However, nothing quite goes to plan and the first patient arrives but needs to return to her car before finally entering your surgery ten minutes late!

To compound this stressful start to the day, this is a new direct access patient: the agreement in the practice is that direct access patients are booked for 40 minutes. This patient was mistakenly booked for 30 minutes and is now late! The patient apologises and you reply politely: "That's ok, we'll do what we can," despite knowing that this will take longer than 20 minutes, and frustrated that you are now going to run late all morning unless someone cancels! Your stress levels begin to rise again.

The morning rolls on and everyone arrives for their appointment, with a couple of patient complaints about the fact that you are running late. Once again, you have very little break at lunch!

As dental hygienists and therapists, we need to treat a set number of patients: as a self-employed clinician, we need to ensure our income; for clinicians who are employed, there is pressure from management to fill 'white space' in the diary and ensure the surgery is making money. In general terms, there are times in our working days when we all feel stressed. However, chronic stress will impact our bodies:

- Our shoulders rise, temporarily or permanently, depending how busy and stressed we feel
- Our muscles tense sometimes going into spasm or putting pressure on a nerve causing chronic pain
- We stop adjusting the patient chair correctly and move our body into uncomfortable positions
- Our posture is unlikely to be in neutral position for any length of time
- We are likely to experience overwhelming fatigue
- We may start speaking faster to speed up the appointment. Only that this doesn't work as patients will not understand and ask you to repeat what you said.

When our body's ergonomics are so compromised, aching all over and feeling exhausted at the end of the day are likely outcomes. For some clinicians this will result in lost working days. Over the long term, incorrect ergonomics may affect the longevity of your career in dentistry.

What can you do?

Good time management will help to relieve much of the daily stress in practice. Being in control of our diaries is one positive step that can help. Appointment times need to be mutually agreed with the practice employer. There is a lot to be considered, including:

- Patient types and their needs vary: new patients; direct access patients; anxious patients; long standing patients of the practice but new to you; patients who require local anaesthetic etc.
- Patient notes: contemporaneous note taking is mandatory. This all takes time.
- Nursing assistance: this is gold standard! However, if you are required to work alone, you should negotiate extra time between patients. You also should be paid for this time spent on decontamination and sterilisation.

No dental professional should be in pain related to their working environment. If you suffer from any musculoskeletal issues, please get in touch.

Help is at hand

Register your interest for a FREE ZOOM webinar:
The LOOSE HANDS programme can help you with musculoskeletal issues:

April:

Monday 15th at 6pm:
https://gymcatch.com/app/provider/2484/events/4836186

Thursday 18th at 7pm:
https://gymcatch.com/app/provider/2484/events/4836187

Take a FREE dynamic stretching class:
https://gymcatch.com/app/provider/2484/packages/pass/4504

Use this code for a free access: **1stFREE**

Contact Anita for a free assessment if you suffer from musculoskeletal issues.

Author: Anita Hosty is a dental hygienist and fitness instructor. She is the creator of LOOSE HANDS – a 3 month ergonomic and fitness programme for dental professionals.

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INSTA: https://www.instagram.com/LOOSE_HANDS_for_dental_pro/

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THE BEST, BY DESIGN

BSDHT PUBLICATIONS PROFESSIONAL DEVELOPMENT FOR OUR MEMBERS

BY ELAINE TILLING

Firstly, a massive thank you to everyone who takes the time to contact us about our publications and a special thanks to all who complete our surveys, which seek to establish how we are doing and how we can do better. This report will give an overview of the results of the last two surveys that were undertaken during and after the 2022 and 2023 annual BSDHT conferences. It will show how we use your feedback to help our publications continually evolve to meet the aspirations of the profession.

The development of our journals and newsletters over the years has been in tandem with our Society's policies and strategic plans to promote and enhance our profession within the health care sector. As such, we are keen to ensure that what is produced meets the needs of our members, whilst attaining the necessary high standards of professionalism and professional development.

We work with printers that have a holistic approach to the printing process, through its procurement and processes to prioritise energy efficiency, reduce waste and control emissions. Sustainability is important to us all.

When we consider the role of *Dental Health (DH)* for our membership, the value of the publication has been the consistently high quality of professional development material. Continued professional development for our members remains the core focus of our publications. Whilst *The Annual Clinical Journal (ACJ)* serves to champion and showcase primary research, undertaken by dental hygienists and dental therapists, within our professional fields, *Dental Health* focuses on general research, updates on regulatory process, and professional news.

General Professional Development

In 2021, the Education Endowment Foundation (EEF) published comprehensive guidance on what makes professional development effective, based on a meta-analysis of over 100 educational research papers. They identified 14 "mechanisms" which are empirically evidenced, general principles about how teachers learn and change their practice. These mechanisms are the building blocks of effective professional development (PD). PD programmes that had none of these mechanisms were found to have had zero effect. When they had all 14, the PD programmes had a significant impact on the professional development of the learners. Organised into four different groups, the mechanisms are:

1. Building Knowledge

- Managing cognitive load
- Revisiting prior learning

2. Motivating Teachers

- Setting and agreeing on goals
- Presenting information from a credible source
- Providing affirmation and reinforcement after progress

3. Developing Teaching Technique

- Instructing teachers on how to perform a technique
- Arranging social support
- Modelling the technique
- Monitoring and providing feedback
- Rehearsing the technique

4. Embedding Practice

- Providing prompts and cues
- Prompting action planning
- Encouraging monitoring
- Prompting context-specific repetition

Whilst the EEF survey was looking specifically at PD within formal educational programmes, we can identify the

mechanisms described to our publications' content. Building knowledge and embedding practice are the mechanisms that our/the BSDHT's CPD format and content seek to address and, as such, the results of our surveys indicate that the membership believes that we are achieving each of the 9 relevant mechanisms.

The Chartered Institute of Personal Development identifies CPD as "helping you develop your professional practice". Whilst the motivation to proactively develop our professional knowledge waxes and wanes – or at least that is the experience of this author! – the easier it is to access CPD offerings, the more likely that they will be accessed.

Survey results and what we do with them!

Reported Reading and Content

Both surveys indicated that over 90% of the respondents read both publications, with high levels of satisfaction with the content. This is really important to us as the publications are a benefit of membership and should reflect the needs of our members. We hope that by our continued monitoring of uptake and acting upon feedback from you, we can maintain this high level of engagement.

CPD

In the 2022 survey, the qualitative feedback where members can express their opinion, revealed that there was some dissatisfaction regarding the CPD hours awarded for undertaking the reflective CPD. It was a new system at the time and like all new processes, can take some time to bed in. As a direct response to the 2022 survey, the team increased the CPD award time from one hour to one and a half hours to better reflect the reported completion time.

The variety and availability of good quality CPD, now delivered via a plethora of platforms, has changed the way

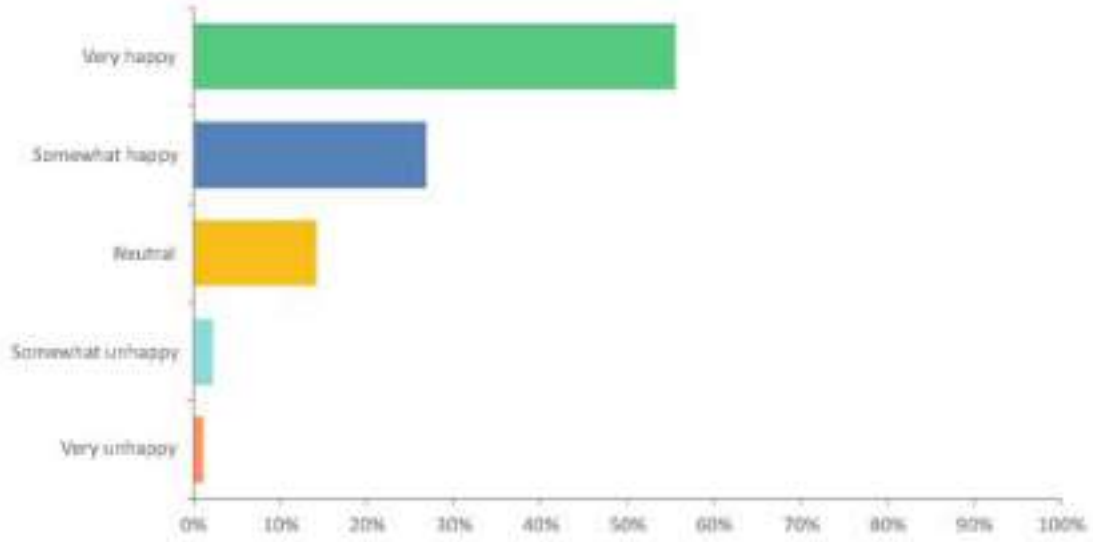
Q1: How often do you read our Dental Health journal?

Answered: 304 Skipped: 2

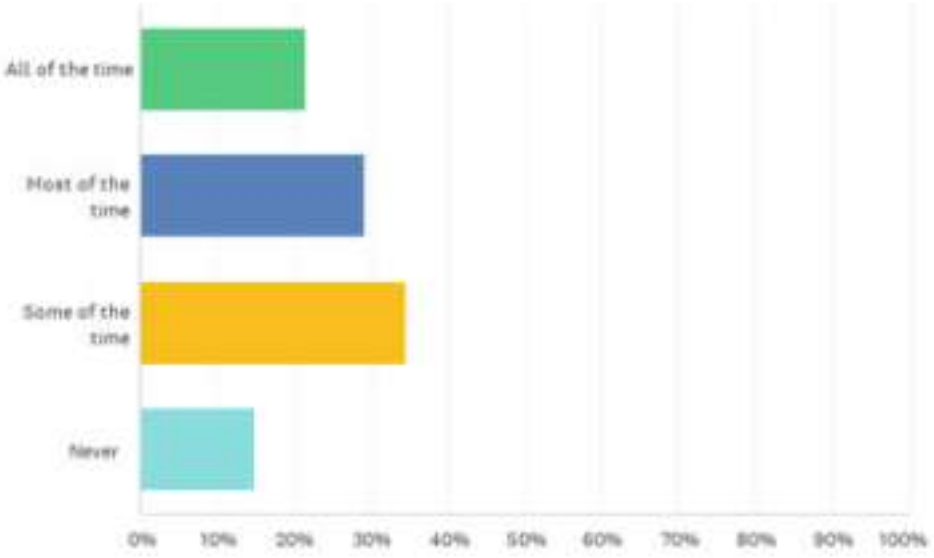
ANSWER CHOICES	RESPONSES	
All of the time	34.54%	105
Most of the time	37.17%	113
Some of the time	27.96%	85
Never	1.32%	4
TOTAL		307

Q4: How happy are you with the range of topics published in Dental Health journal?

Answered: 201 Skipped: 0



Q10: How often do you read The Annual Clinical Journal



we all engage in our personal professional development. Our survey results have shown a decline in the numbers of members engaging in our CPD offering in both the *DH* and the *ACJ*. Whilst less than 30% of those surveyed undertake our CPD regularly, those that do are satisfied with both the content and standards set for evaluation.

Our goal as a team is to increase the engagement numbers for CPD in both publications and we are currently considering a range of additional formats whilst maintaining and growing the existing option.

Setting a benchmark for high level, quality CPD reflects the professional standards of our cadre and as such we will continue to evolve this element for our members. Ensuring that reflective practice is used as the powerful tool for PD that it is designed to be – for those who trained before we called it 'practice'… it is simply what we did in our heads or over a coffee with our colleagues when we thought about a particular patient case or a procedure, with a view to how effective we were or could be if we did it differently. Growing through experience is what we have always done. It is the physical recording of our thoughts that many struggle with but it will soon become the 'norm'. Let's face it, some of us remember having to wear surgical gloves for the first time and doubted that we would ever manage the same level of tactile excellence in sub-gingival debridement that we achieved bare-handed, as we had been taught!

We look forward to hearing more of your feedback in the future so that we can continue to serve the membership.

The 2024 Survey will be out before you know it… please have your say because we are listening!

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- Education sessions applicable to your day-to-day work.
- Two days' of CPD and more than 20 sessions from which to choose.
- Talks from leading speakers from clinical practice, academia and industry.
- A large exhibition of all the key suppliers.
- A chance to meet old friends and make new ones, share best practice, make valuable career contacts, and be reinvigorated by each other.

Furthermore, 2024 marks 75 years since the creation of the BDHA, now the BSDHT, so we hope you'll join us as we come together to celebrate **75 years at the heart of prevention**.

"This year's OHC returns to Yorkshire, to my dental hygiene and therapy roots. I am so excited to welcome you to this beautiful part of the country in this historic year for us. There will be an array of speakers to choose from, trade colleagues to visit, and most importantly, friendships formed and reinforced. This year I will step down from the Presidency of BSDHT and welcome Rhiannon into this special role. Make sure to secure your space to make OHC 2024 even bigger and better than before!"

Miranda Steeples, President

"The team is excited to start developing OHC 2024 following the valuable feedback from Bournemouth. We will try to consider the varied settings our delegates work in each week, from academia to high street practices. Our theme is focussing on our anniversary and will look at how we remain at the heart of prevention within the dental profession. There will be main and parallel sessions to allow for greater choice and a large trade exhibition. Harrogate is a beautiful city and I encourage members to save the date and join us for another great conference."

Rhiannon Jones, President Elect

"This was my first BSDHT conference and I loved it, I didn't expect to laugh so much by meeting new people in high spirits and very positive outlook. It cheered up my spirits and I was eager to get back to clinic with all I learnt."

OHC 2023 delegate

Registration will open on 13 May with a spring sale and discounted fees – look out for more information over the coming weeks.

THE BEHAVIOURAL INFLUENCE ON A PATIENT OF A CLINICIAN'S CHOICE OF TOPIC SPECIFIC WORDS

BY HAFEEZ AHMED

Introduction

It has been recognised that not only does the patient interview need to be empathetic but the discussion content needs to be topic specific.[1] In recent years, clinicians have been encouraged by the General Dental Council to move towards patient-centred care.[2] In addition to this, it has been described that simply "being nice" and maintaining a good relationship with the patient are not sufficient for patient-centred care. Patient-centred care requires detailed topic-based discussions.[3] However, there appears to be no studies reporting on topic-specific words and their influence on patient understanding.

Beyond that, it is accepted that 'effective communication' is essential to behaviour change and was comprehensively covered and discussed in detail in a series of articles by Ruth Freeman in 1999.[4] The importance of effective communication and behaviour change is further underlined by the fact that the majority of dental care requires patients to adhere to advice, otherwise the care is undermined.[5]

It is intriguing that despite the dental profession believing they are actively engaging in effective patient communication the prevalence of periodontal diseases remains largely unchanged. Chronic periodontitis occurs in 45% of the UK population[6] and in 11.2% of the global population[7].

Experience suggests that, when patients find it difficult to make the necessary behavioural changes, it is generally for a variety of reasons, including: they do not fully understand periodontal diseases; they do not appreciate the long-term implications and legacy of the disease; they do not entirely recognise the pivotal role of homecare; or they are individuals who understand all the advice but do not want to change.

A possible solution

In my practice I created a table with a list of 20 topic-specific words and phrases (table 1). The words and phrases were selected from those I heard being used most commonly by patients and dental professionals. On the right-hand side of the list, I placed a Likert-type scale numbered from 1 to 5. My plan was to ask potential participants to rate the words/phrases by circling one number on the scale for each of them, to indicate the degree of perceived encouragement or motivation each word/phrase offered them.

Starting in June 2022, every new patient referred was invited to take part with the aim of compiling 100 lists. By virtue of the referral, all patients had received at least one course of periodontal therapy from the referring dentist. Potential participants were recruited by discussing the purpose of the study with them in the waiting room, following the completion of their initial consultation. The following statements were made as an invitation to take part:

Table 1: **The List, with the words and phrases and the Likert-type scale**

	Word / Phrase					
1	Inflammation	1	2	3	4	5
2	Irritated gums	1	2	3	4	5
3	Irreversible	1	2	3	4	5
4	Results from food packing	1	2	3	4	5
5	Causes swelling	1	2	3	4	5
6	Affects supporting structures of teeth	1	2	3	4	5
7	Causes bleeding	1	2	3	4	5
8	May cause bone loss	1	2	3	4	5
9	Infection	1	2	3	4	5
10	Causes bad breath	1	2	3	4	5
11	Reversible	1	2	3	4	5
12	Gingivitis	1	2	3	4	5
13	Avoid dentures	1	2	3	4	5
14	Periodontitis	1	2	3	4	5
15	Will result in tooth loss	1	2	3	4	5
16	Halitosis	1	2	3	4	5
17	Will cause bone loss	1	2	3	4	5
18	Caused by bacteria	1	2	3	4	5
19	Result in food packing	1	2	3	4	5
20	May result in tooth loss	1	2	3	4	5

"I am conducting a small study in an attempt to identify if some of the words we use when we discuss gum disease with our patients affect their enthusiasm more than other words. Essentially, I want to see if some words create more of a feeling of seriousness and also if some words create a greater feeling of enthusiasm or motivation to act on the advice than other words."

'Motivation' was defined as: "It makes you feel like taking the matter seriously" and "It makes you want to do your part in resolving the matter". Potential participants were also advised : "What I really want to see is if any of the words or phrases makes you feel more like sitting down for 8 to 10 minutes each evening to use floss or inter-dental brushes or wood sticks to clean in-between your teeth and the margins of your gums."

During the discussion, and before the patients agreed to participate, they were given the list so they could see what was being described. They were also given the guidance for the Likert-type scale (table 2). To maintain anonymity, patients were advised that they were not required to put their name on the list - only their age and gender.

Those patients who agreed to take part were then shown to a seat and asked to read the list and rating scale carefully and to confirm their understanding. Reassuringly, a few of them smiled and said: "It's pretty straight forward," others laughed and said: "It's not rocket science."

Findings

One hundred lists were rated between June 2022 and January 2023; a record was kept of the participants, although at no point were their names written on the list. Fifteen patients declined the invitation to take part in the study. Of the reasons given, the two main ones were: "It's not something that I'm interested in" and, "I don't have time."

On the 100 lists that were completed, responses were received for all 20 words/phrases. The gender demographic was split, 61 females and 39 males. The average age was 57 years; the youngest patient was 18 and the oldest was 77.

A mean score for each word/phrase was calculated. The maximum score was 5 - the word/phrase was most likely to encourage/motivate the patient; the lowest score was 1 – the word/phrase was least likely to encourage/motivate the patient. Although it was not the original intention, the Mean Score became known as the "Encouragement Value".

Table 2: The guidance explaining the grading scores

Grade	
1	Least likely to encourage/motivate me to take action
2	
3	
4	
5	Most likely to encourage/motivate me to take action

Table 3: The results present the actual number of patients who circled each score. The mean is represented on the right-hand side and the words/phrases have been listed in descending order of "Encouragement Value".

Word / Phrase	Score Given					Mean Score
	1	2	3	4	5	
Will result in tooth loss	0	0	0	13	87	4.87
Causes bad breath	0	0	0	15	85	4.85
Irreversible	0	0	9	13	78	4.69
Infection	0	0	5	22	73	4.68
May result in tooth loss	0	7	3	25	65	4.48
Will cause bone loss	7	3	4	16	70	4.27
Causes swelling	0	4	16	38	42	4.18
Avoid dentures	0	4	8	55	33	4.17
Causes bleeding	0	8	32	21	39	3.91
May cause bone loss	0	11	18	49	22	3.82
Result in food packing	0	9	31	41	19	3.70
Results from food packing	22	16	22	19	21	3.01
Caused by bacteria	5	44	33	15	3	2.67
Halitosis	18	31	28	15	8	2.64
Irritated gums	18	69	1	10	2	2.09
Affects supporting structures of teeth	57	9	11	18	5	2.05
Periodontitis	53	23	4	11	9	2.00
Gingivitis	55	21	12	7	5	1.86
Inflammation	67	09	13	5	6	1.74
Reversible	69	24	7	0	0	1.38

Discussion

The findings suggest that, in the opinion of susceptible patients with experience of periodontal diseases, certain words when used to describe the disease can, somehow, generate different feelings, with some being more motivational than others. This indicates that patients form different meanings from different words. It also suggests that words can change the way a patient thinks. These points align well with research carried out by Andrew Newberg and Mark Waldman, in their book Words Can Change Your Brain.[8] The authors also propose that the mechanism behind how we process a communication is directly related to the number of words that are used. They claim that 30 seconds of language is all the brain can understand and, accordingly, they encourage fewer words for greater impact.

The findings also revealed a trend: the more severe sounding words scored higher Mean Values. This finding aligns with the consensus that the more immediate and severe the threat, the greater the chance of positive behaviour changes.[9] DeMatteo and DiNicola also found that patients with mildly threatening problems tend not to comply with their therapists' advice. Worryingly, this suggests that some of our patients, irrespective of how we communicate with them, will fail to comply until a stage when tooth loss is inevitable.

In a more recent study, which investigated the collaboration between medicine and dentistry in relation to diabetes management[10] patients reported inconsistency in the information and advice they were given by different healthcare providers. It was suggested that consistency would be beneficial to communication. Diabetes and periodontitis are inextricably linked as chronic inflammatory diseases that adversely influence one another. The creation and use of universal statements as scripts, using the topic-specific words reported by patients as more encouraging, makes sense. The scripts would increase consistency in information sharing and thus increase the potential for a positive impact on a patient's periodontal health.

The short and long term aim of periodontal therapy is to keep the inflammatory response below the threshold of bone loss or further bone loss. This is entirely dependent upon us, as clinicians, persuading our patients to take our advice and follow it.

Compliance is defined as: "the extent to which a person's behaviour coincides with medical and dental advice".[11] Compliance requires that a patient is more than just a passive receiver of information. The estimates of compliance range from 20% to over 80%.[12] Generally, the rates of compliance for long term therapy tend to converge at 50%, regardless of setting or illness.[13] Although we know that patients do not follow oral hygiene recommendations consistently, we do not know specifically why they do not. One reason it is not understood could be that compliance research has been dominated by the perspective of the healthcare professional. These findings offer an insight into these patients' perspectives.

The degree to which a patient complies with oral hygiene instruction is of more importance than the choice of any particular treatment method.[14] The literature shows that compliance in general decreases as treatment time or the complexity of the required behavioural change increases.[14] It is often the case that by the time some susceptible patients appreciate what their type of periodontal disease is and what self-care is necessary to treat, stabilise and maintain it, insufficient bone remains to retain some of their teeth. Therefore, if we are to succeed with a preventative approach, we need to empower patients and achieve compliance at early stages of bone loss.

Around 2006, I had carefully devised the following statements to explain gum disease to my patients in a way I thought would be most effective:

1. Gum disease is an infection that irreversibly destroys the bone that holds your teeth in place.
2. When a significant amount of bone has been destroyed, your teeth will feel loose or wobbly.
3. When insufficient bone remains to support your teeth, they will start to drift or fall out.

A few of the words and phrases I put in the list in this study closely resemble some of the ones in these statements. In fact, it is my use of the above statements with my patients that inspired me to conduct this study. To avoid bias I deliberately avoided using the above statements in the initial consultations during the period of this study.

The above statements might not be to everyone's liking but they are simple, short, topic-specific and to the point. They accurately reflect the seriousness of the condition. I devised them to increase the likelihood of patients fully understanding what is being said, as understanding helps allay anxiety.[15] I appreciate that the statements have a negative tone; however, once patients appreciate the seriousness of their condition positive tones can be introduced by discussing the benefits of resolving the condition. Since using these statements, I have found my patients clearly understand the seriousness of their condition and, almost always, express their gratitude for the unambiguous nature of my communication. The message contains bad news but I deliver it gently with a measured polite firmness aimed at ensuring patients understand the potential seriousness of periodontal infection. [16,17,18]

Conclusion

In respect to the patient discussion, these findings suggest that the information which is conveyed by a single word or phrase does have the potential to affect the communication. Each word has a meaning but more importantly each word creates a mood.

Context

The author is a clinician operating a private referral practice restricted to periodontal care, some minor oral surgery and implant dentistry. On a day-to-day basis, most treatments involve helping patients resolve their periodontal problems. The author is not a researcher, and has no experience of statistical analysis. This opinion paper was prompted by the fact that a poor understanding of 'gum disease' was relatively common amongst patients, despite the fact that they had regularly seen a dentist and/or a dental hygienist. Some of them had received multiple courses of periodontal therapy but still could not demonstrate a good understanding of gum disease. It is hoped that this article stimulates wide-spread debate as to how we comunicate with our patients. It is also hoped that researchers will be inspired to utilise their resources to produce a more robust and in depth study so that we can all learn from best practice.

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BY VARKHA RATTU

THE PERIODONTITIS ENIGMA – UNVEILING THE COMPLEX DYNAMICS BETWEEN THE BIOFILM AND INFLAMMATION

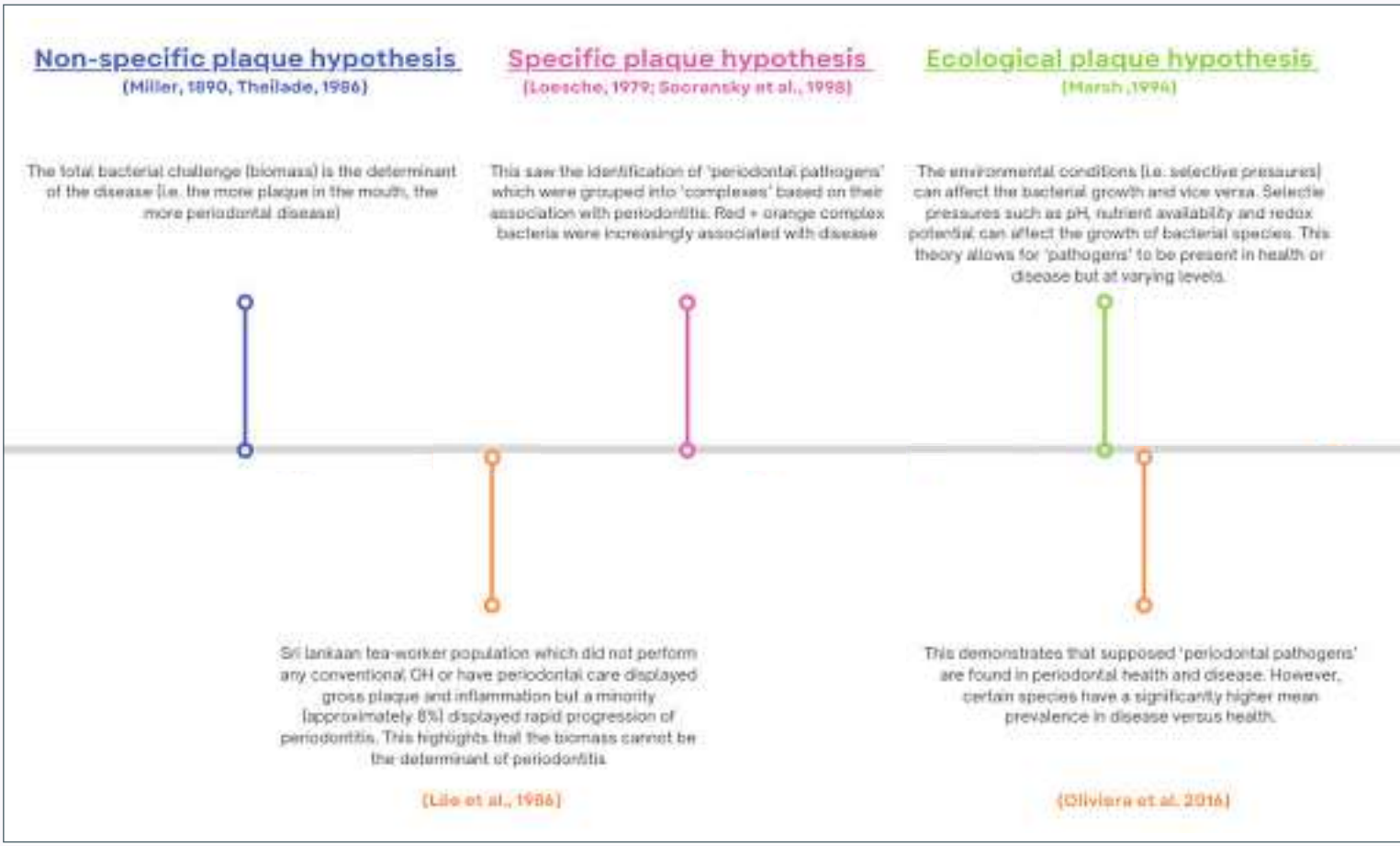
Introduction

Periodontitis, described as a chronic multifactorial inflammatory disease intricately linked to a dysbiotic biofilm, manifests as a gradual destruction of the structures supporting the teeth.[1] Individuals with suboptimal oral hygiene and minimal periodontal care often experience mild to moderate periodontitis, emphasizing that disease risk is predominantly shaped by individual factors rather than bacterial composition.[2] Therefore, whilst a pathogenic biofilm lays the groundwork, it is crucial to acknowledge that its presence alone is insufficient to trigger the disease.[3]

The reduction of bacterial load via traditional debridement leads to a subsequent decrease in inflammation. However, the effectiveness of this concept varies across cases of periodontitis, raising questions as to why this succeeds in some instances and fails in others.[4]

The intricate relationship between inflammation and polymicrobial biofilm stands as a pivotal focal point in comprehending the nuances of the pathogenesis and management

Figure 1: **A summary of the periodontitis hypotheses over the years**



NB: Journal articles with contrasting findings to the hypotheses are highlighted in orange.

AIM

The aim of this paper is to update the reader on the pathogenesis of periodontitis in line with the latest evidence and hypotheses.

LEARNING OBJECTIVES

- To familiarise readers with the various hypothesis describing the pathogenesis of periodontitis and their evolution
- To explain the significance of inflammation in the pathogenesis of periodontitis
- To introduce various factors associated with periodontitis and their plausible mechanisms

LEARNING OUTCOMES

By the end of this article, readers will be able to:

- Demonstrate an enhanced understanding of the pathogenesis of periodontitis in line with the latest evidence and hypotheses
- Understand the significant role of inflammation in periodontitis
- Be aware of various factors which may be associated with periodontitis due to dysregulation of the host's immune-inflammatory response

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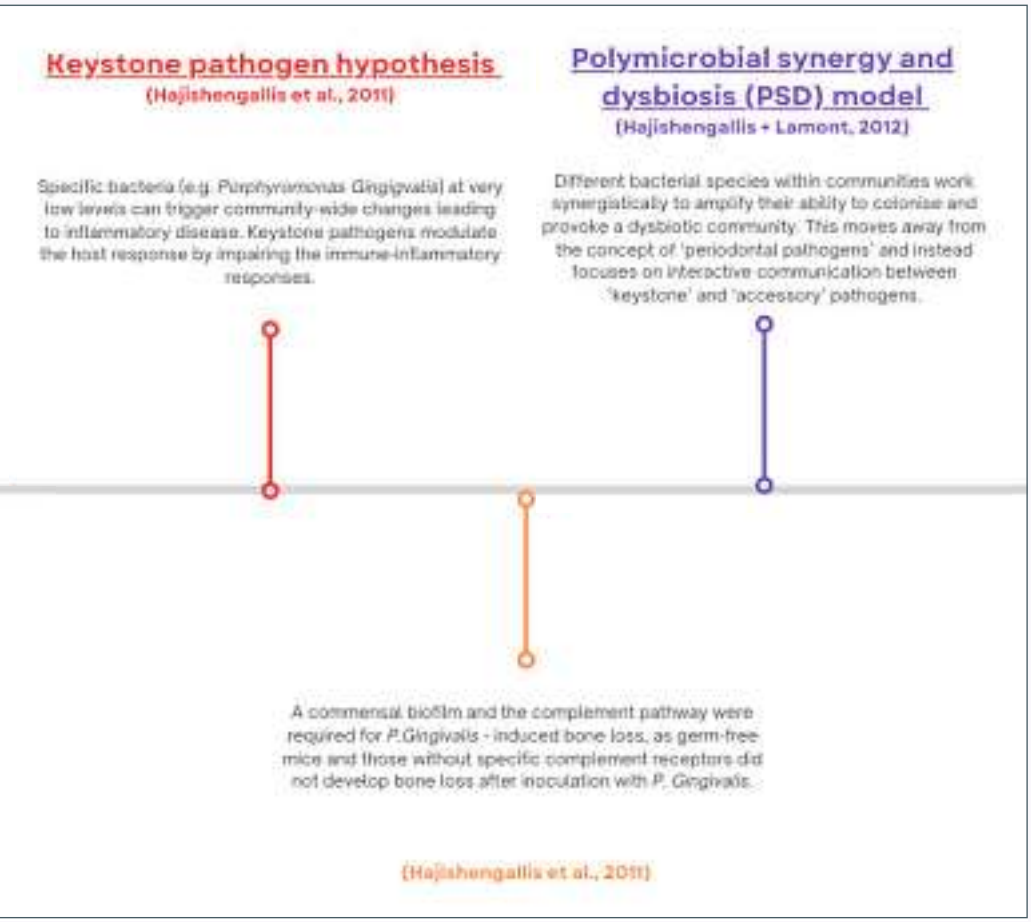
of periodontitis. These two elements, integral to the progression of the condition, exhibit a dynamic interdependence. However, despite strides in periodontal research, the fundamental question endures – does the immune-inflammatory response precede or trail the alterations in the biofilm?

To better address this question, clinicians require an updated and comprehensive understanding of the processes governing disease progression.



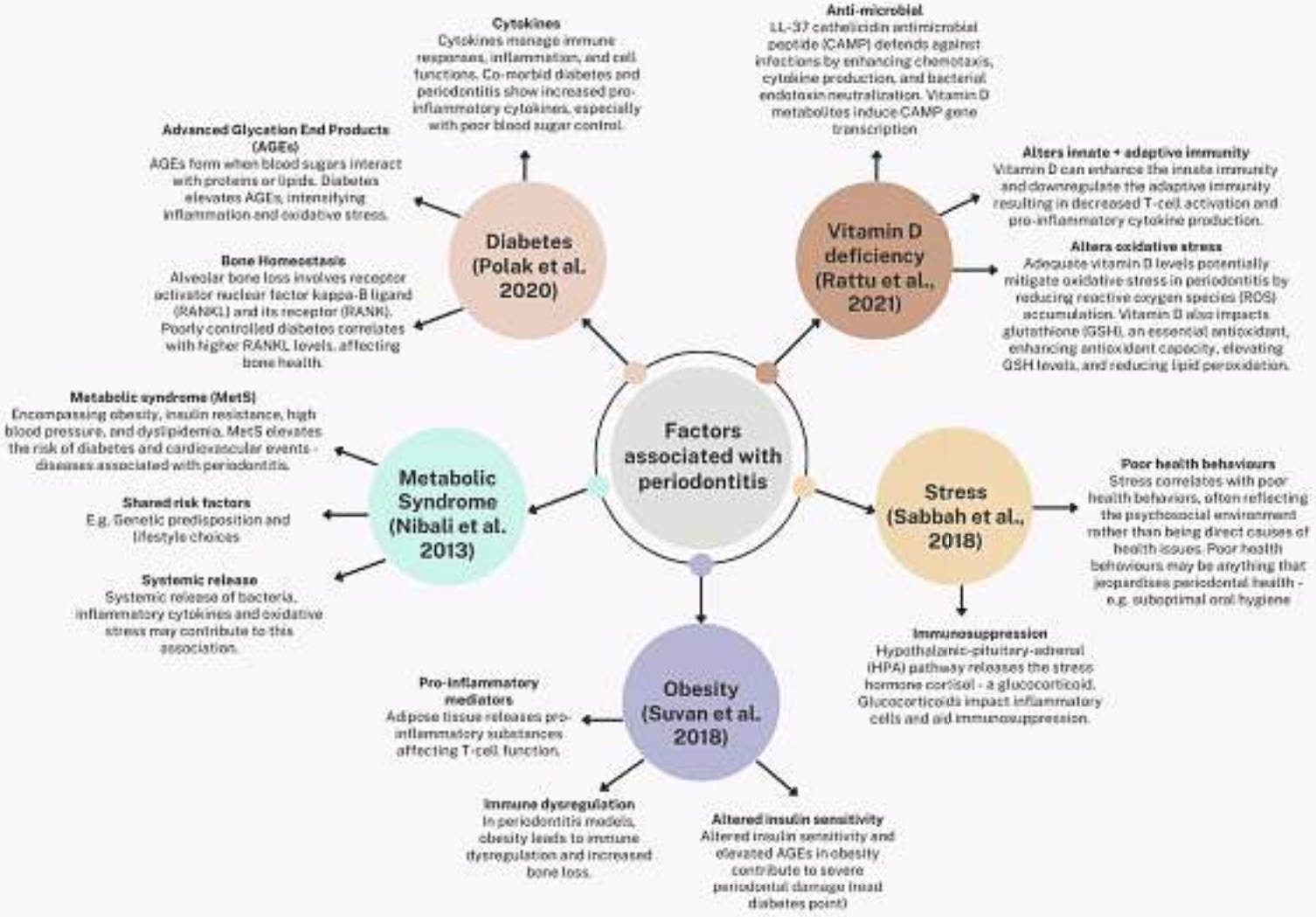
What do we know about the pathogenesis of periodontitis?

Regarding periodontal status, homeostasis may be characterised by a mild inflammation involving the presence of neutrophils in the gingiva. This is delicately balanced by the host. As a result, gingivitis may also be perceived as a steady state of inflammation as it controls the 'bacterial infection' in some individuals, preventing the progression to periodontitis.[5]

The transition from gingivitis to periodontitis is a labyrinthine journey, with the stimulus remaining elusive. Many hypotheses have been generated over the years, which can be seen below summarised in figure 1.

The 'non-specific plaque hypothesis' originated from the idea that the sole accumulation of dental plaque was the causative factor for periodontitis.[6,7] This theory did not consider the varying levels of bacterial virulence. The findings from the landmark Sri Lankan tea-workers study invalidated this theory as they demonstrated that individuals from within a population with limited opportunities for oral care demonstrated gross plaque and inflammation but varying degrees of destruction seen in periodontitis.[8] With periodontitis demonstrating a shift in the biofilm from predominantly gram positive aerobes to gram negative anaerobes, research shifted

Figure 2: **A summary of various factors associated with periodontitis with plausible mechanisms describing their possible association**



its focus to identifying the specific bacteria, or complexes of bacteria, that they considered to be major contributors to periodontitis.[9,10] This identified 'red and orange complex' bacteria as being associated with disease.[10]

The presence of 'putative pathogens' observed in both health and disease scenarios complicates the identification of specific bacteria as the exclusive culprits behind periodontitis.[11,12] The transformation of the subgingival biofilm from a state of periodontal well-being to one associated with periodontitis denotes an ecological shift, characterised by an escalation in biomass and the prevalence of dominant taxa.[11] While particular bacteria may manifest in increased quantities during the disease process, ascribing a direct causative role to them remains uncertain - this is mainly due to the majority of published studies being cross-sectional in design.

An alternative perspective proposes that the heightened prevalence of particular bacteria could be a result of environmental changes mediated by inflammation - a concept acknowledged as the 'ecological plaque hypothesis'.[13] This concept recognises the influence of varied environmental conditions, referred to as selective pressures, on bacterial habitats. The proliferation of bacteria is subject to variations in environmental factors - such as pH, nutrient availability and redox potential - which impact the equilibrium within the communities of the biofilm, leading to a disturbance in their natural balance.[13] This framework permits the existence of 'putative pathogens' in states of health, allowing them to flourish and become predominant community members when favourable microenvironment conditions prevail. For example, in periodontal tissues the heightened inflammation of soft tissues and the development of pockets in gingivitis contribute to the establishment of an anaerobic setting, providing a conducive environment for the proliferation of anaerobic gram-negative bacteria. These bacteria, equipped with proteolytic capabilities, rely on essential amino acids and hemin for their energy requirements. Their adept 'quorum-sensing' capacities empower them to recognise and influence alterations in their environment through advanced chemical signalling systems.[3]

In the wake of the revelations uncovered during the Human Microbiome project, the ecological plaque hypothesis underwent further

refinement in 2011. Hajishengalis and colleagues expanded on the original idea, suggesting that certain microbes existing in low abundance could intricately integrate with the host immune system, leading to a restructuring of the biofilm and subsequent inflammatory diseases.[14] Termed the 'keystone pathogen hypothesis,' this concept starkly contradicted prior notions that inflammation was primarily influenced by the prevalence of dominant species in substantial numbers.[14,15] Instead, this innovative hypothesis proposed that keystone pathogens, for example *Porphyromonas gingivalis*, could incite inflammation even in "low" numbers by disrupting the innate immune system, thereby prompting a shift in the host response that triggers inflammation.[14,15]

With research underscoring the necessity of commensal bacteria in the presence of triggering other bacteria to induce disease[14], a further hypothesis was created.[16,17] The PSD model proposes that microorganisms within communities may often cooperate synergistically, enhancing their capacity to colonise and incite disease. In the realm of the periodontal biofilm, the concept of polymicrobial synergy has been validated through animal model investigations, consistently uncovering increased pathogenicity in mixed organisms compared to single-species infections. This synergistic effect can emerge from diverse interactions among species, encompassing the provision of attachment surfaces for colonisation, nutritional cross-feeding, and the coordinated metabolism of complex substances.[18]

Our understanding of the interaction between inflammation and dysbiosis is reinforced by the identification of inflammation resolution pathways. Initially seen as the cessation of inflammation, the resolution of inflammation is currently recognised as a spectrum of biochemical and metabolic procedures directing inflamed tissues toward homeostasis.[19] It involves molecules that exhibit both anti-inflammatory and pro-resolution properties. These substances not only aid in the engulfment and removal of apoptotic cells and microorganisms by macrophages but also trigger the antimicrobial functions of mucosal epithelial cells.[19] Topical treatment with resolvin E1 (RvE1), a pro-resolution mediator, demonstrated an inhibition and reversal of bone loss in preventive and treatment experiments, respectively.[20] These novel findings surrounding inflammation and its role in periodontitis resulted in the most recent hypothesis – Inflammation-mediated polymicrobial-emergence and dysbiotic exacerbation (IMPEDE) model.[5]

In accordance with the previously discussed theories, IMPEDE continues to propose that gingivitis is marked by the continuous proliferation of mainly commensal organisms, initiating soft tissue inflammation and leading to the formation of pockets. Consequently, there is an increase in microbial diversity within these pockets. Persistent inflammation can induce modifications in the subgingival environment and plaque composition, resulting in the emergence of gram-negative bacterial species. The combination of prolonged inflammation and the anaerobic conditions of the pocket may further enhance the prevalence of specific bacterial species adaptable to this environment, escalating inflammation and causing additional tissue damage.[5] The IMPEDE model proposes that the primary driving force behind the progression of periodontal diseases, from gingivitis to periodontitis, is inflammation and its progressive nature.[5]

How can we put these new findings into practice?

Tailoring our approach in periodontics, a concept otherwise known as 'personalised periodontics,' encompasses an evaluation of an individual's distinct genetic, environmental, lifestyle and pertinent factors to devise personalised prevention and treatment approaches. This methodology strives to enhance periodontal care by addressing specific risk factors and individual characteristics, fostering more efficient and targeted interventions for periodontal health.

Figure 2 presents a mind map of various factors which are associated with periodontitis with a summary of the plausible mechanisms which may result in this association. Diabetes is a well-established risk factor and supported by substantial evidence.[21] Other associations to periodontitis include metabolic syndrome[22], obesity[23], stress[24] and vitamin D deficiency[25] .

The IMPEDE model suggests inflammation as the primary force, directing focus on uncovering ways to reinstate microbial balance by resolving inflammation. Personalised periodontics, which factors in individual elements, could be a strategy for enhancing preventive and treatment approaches, promoting better periodontal well-being. This may require consideration for integrated pathways with our medical colleagues for improved inter-disciplinary care.

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BY SARAH DUERDEN

A CRITICAL REVIEW OF THE EVIDENCE FOR THE USE OF SYSTEMATIC ANTIBIOTICS AS ADJUNCTS IN NON-SURGICAL PERIODONTAL THERAPY

Introduction

Periodontitis is a multifactorial disease affecting the supporting tissues of the tooth including gingiva, periodontal ligament fibres and alveolar bone.[1] The aetiology of periodontal diseases is bacteria.[2] Oral biofilms are structurally organised communities embedded within an extracellular matrix on dental and mucosal surfaces.[3] These biofilms are present in health and provide benefits such as protection, support and are responsible for natural development of host physiology. However, disease can occur when there is a shift associated with the bacterial species balance within the biofilm.[3]

Red complex bacteria are strongly associated with severe chronic periodontitis (CP) and include *Porphyromonas gingivalis (P.gingivalis)*, orange complex is closely associated with the red complex[4] and *Aggregatibacter actinomycetemcomitans* (AA), included within the green complex, is strongly associated with aggressive periodontitis (AgP) and has a less frequent association with CP.[5] *P. gingivalis* appears to be one of the key aetiological factors in the progression and pathogenesis in the inflammatory aspect of periodontitis and is referred to within the keystone pathogen hypothesis, which suggests that bacteria, present in low abundance, can cause an environmental disturbance changing the environment from a symbiotic environment to a dysbiotic environment.[6]

It is advised that treatment for periodontitis follows the British Society of Periodontology (BSP) S3 guidelines which consist of improved oral hygiene and professional mechanical plaque removal (PMPR)[7,8] During the mechanical removal of the bacterial biofilm disruption occurs reducing the bacterial burden and reducing inflammatory responses[8] however, in some cases treatment response is limited[5] leading to a rationale for the use of adjunctive local or systemic antimicrobials to reduce the number of target bacteria in the difficult to access sites.[7] Thus, overcoming the protective nature of the biofilm, suppressing pathogenic bacteria and helping the biofilm to return to a symbiotic state associated with health.[9] Bacterial species found in the biofilm next to the epithelial cell surface of a periodontal pocket include members of the red complex bacteria which are quite susceptible to systemic antimicrobial agents due to their proximity to gingival crevicular fluid and the absence of protective glycocalyx.[10] For systemic antibiotics to be effective against bacteria within biofilms it has been suggested antibiotic strength 500 times greater than the usual dose is required.[11]

Adjunctive systemic antibiotics have been indicated in the treatment of chronic periodontitis (CP) and aggressive periodontitis (AgP).[12] Several antibiotics and antibiotics combinations have been suggested in the treatment of periodontitis including: tetracycline; clindamycin; doxycycline; minocycline; azithromycin (AZ) (categorised as agents which act by inhibiting protein synthesis); amoxicillin (AM) (act by inhibition of cell wall synthesis); metronidazole (MET); and ciprofloxacin (act by inhibition of DNA synthesis).[13] Advantages of systemic antibiotics in the treatment of periodontal diseases include ease of use and moderate cost effectiveness, however, systemic antibiotics can impact on the whole system, cause some adverse effects and pose a danger of superinfections and resistance.[5] Adverse effects range from frequent nausea, vomiting, gastrointestinal intolerance and rashes to infrequent photosensitivity, convulsions/confusion, peripheral neuropathy, furred tongue and intercranial hypertension, depending on which drug is prescribed.[5]

Aim

The aim of this paper is to update readers' knowledge of adjunctive systemic antibiotics and critically evaluate the scientific evidence related to this topic to provide clinical recommendations. The objectives below have been prepared to achieve the aim:

1. Identify keywords and search relevant databases to identify current research articles.
2. Critically appraise and discuss the identified articles to construct an informed conclusion regarding the use of adjunctive systemic antibiotics.

Methodology

Keywords - systemic antibiotics, non-surgical periodontal therapy (NSPT), scaling and root planning (SRP) - alongside each antibiotic name were identified and several databases were searched including Dentistry and Oral Sciences Source and Medline with full text. SRP was identified as a keyword in order to identify all available evidence as, although it is no longer a term used to describe any aspect of NSPT, some papers still refer to this term. Boolean operators AND and OR were used along with truncation to search articles included with each facet and to search words together.[14]

Results and discussion

Various sources of information were located including several recent systematic reviews (SR). Five studies were selected for

critical review (Fig.1). The studies included within the SR's all used antibiotics as adjunctive therapy to mechanical biofilm removal.

Herrara et al (2008)[15] reviewed published studies regarding the role of antibiotics as a monotherapy in the treatment of periodontitis and quality of debridement of the biofilm in relation to the efficacy of adjunctive antibiotics. Results of included studies suggested the use of antibiotic monotherapy in the treatment of periodontitis was not supported and antibiotic effect was increased after disruption of the biofilm. This supports the American Academy of Periodontology (AAP) suggestion, based on the concept of 'good medical practice' that antibiotics should only be used as adjunctive therapy.[16] In relation to the quality of debridement, the analysed studies suggested clinical outcomes could be influenced by the quality of debridement and point of antibiotic administration.[15] However, due to the limited studies available, heterogeneity of the studies and small sample sizes, caution should be taken in interpretation.

Keestra et al (2015)[17,18] carried out two SR's and meta-analysis on adjunctive systemic antibiotics in patients with untreated chronic periodontitis (CP) (forty-three randomised control trials RCT's) and untreated aggressive periodontitis (AgP) (fourteen RCT's). Both reviews included a clearly focused question and study inclusion was limited to randomised control trials (RCT's) in both SR's in line with current evidence suggesting the main study design to evaluate interventions are clinical trials.[19] Detailed search strategies including databases searched and a hand search of the past 10 years of relevant journals was undertaken in both SR's as 'hand searches through back issues of relevant journals can prove valuable'.[19] In line with current guidance, the reviewers used a preferred reporting items for systematic reviews (PRISMA) diagramme [20] and clearly identified the PRISMA within the article. Two reviewers independently screened papers for inclusion, which follows suggestion from Hedegan and Badenoch (2006)[21] that the use of two independent reviewers reduces bias. Due to the heterogeneity within the studies included within the SR's the reviewers in both Keestra et al (2015)[17,18] papers correctly used a random effects model in the data analysis.[22] The meta-analysis for both Keestra et al (2015) papers showed for PPD, CAL and BOP there was a statistically significant result in favour of adjunctive systemic antibiotics at 3,6,9 and 12 months for the mean, moderate pockets and for deep sites. However, the analysis was limited, since most of the included studies only had follow up periods of 3-6 months and although statistical significance was shown at 9 months only 1 study included a 9-month review. The results were slightly better within deeper sites than the shallower sites and no antibiotic was found to be superior overall.[17,18] From the more detailed breakdown of results within AgP AM/MET was the only antibiotic regime which provided results stable for up to 12 months. AZ did not show statistically significant results after 3 months for PPD and at no interval for CAL and had wide confidence intervals (CI) on the forest plot. However, the SR included ten studies for AM/MET and only included two studies for AZ. Also, the number of studies available to be analysed after 3 months was low with only two studies available at the 12-month analysis and small sample sizes throughout. The effectiveness of AM/MET was compared in CP and AgP where results showed a greater improvement in clinical outcomes for AgP.[17,18]

Zandbergen et al (2016)[9] published a SR with meta-analysis on concomitant administration of AM/MET in the treatment of patients with CP and AgP which included twenty clinical studies. A clear focused question was included with primary and secondary outcomes clearly defined. Although no PRISMA diagramme was located within the article, a further document was located which included the PRISMA diagramme. Data was extracted and analysed using either fixed-effects or random methods. The fixed effects model was correctly used only if there were more than four studies and heterogeneity was interpreted to be less than 40% indicating variability within the studies was negligible.[23] The results showed a statistically significant favouring to adjunctive AM/MET in terms of mean PPD and CAL and the results at deeper sites were slightly better than shallower sites. Sub-analysis was performed using periodontal diagnosis where a similar pattern in treatment effect was observed.[9] However, the RCTs within the SR used differing dosage and regimes and it is not clear if these differences influenced the clinical outcomes as the studies with the most increased treatment effect were those with higher dosages.

Zhang et al (2016)[24] performed a meta-analysis on the clinical effect of adjunctive AZ in the treatment of CP which included nine studies where systemic AZ was administered. A clear focused question was not identified, however, relevant keywords related to the topic were searched in several recommended databases and two authors searched and identified the included studies. The results showed a statistical significance in results in favour of adjunctive systemic AZ in mean reduction of PPD and BOP and mean gain of CAL and when the results were separated into shallow, moderate and deep sites a better clinical response was seen in the deeper sites.[24] However, some low-quality studies with small sample sizes were included within the meta-analysis and some studies had wide CI's on the forest plot. Although the results showed

Figure 1: **Papers reviewed**

Herrara, D, Alonso, B., Leon, R., Roldan, S. & Sanz, M. Antimicrobial therapy in periodontitis: the use of systemic antimicrobials against the subgingival biofilm. Journal of Clinical Periodontology. 2008; 35(8):45-66.

Keestra, J.A.J., Grosjean, I., Coucke, W., Quirynen, M. & Teughals, W. Non-surgical periodontal therapy with systemic antibiotics in patients with untreated aggressive periodontitis: a systematic review with meta-analysis. Journal of Periodontal Research 2015; 50:689-706.

Keestra, J.A.J., Grosjean, I., Coucke, W., Quirynen, M. & Teughals, W. Non-surgical periodontal therapy with systemic antibiotics in patients with untreated chronic periodontitis: a systematic review and meta-analysis. Journal of Periodontal Research 2015;50:294-314.

Zandbergen, D., Slot, D.E., Niederman, R. & Van Der Weijden, F.A. The concomitant administration of systemic amoxicillin and metronidazole compared to scaling and root planning alone in treating periodontitis: a systematic review. Biomed Central Oral Health. 2016;16:1-11.

Zhang, Z., Zheng, Y. & Bian, X. Clinical effect of azithromycin as an adjunct to non-surgical treatment of chronic periodontitis: a meta-analysis of randomised controlled clinical trials. Journal of Periodontal research. 2016; 51:275-283.

a statistically significant difference in favour of adjunctive systemic AZ between one and twelve months the overall effect was greatest at one month and decreased over twelve months.[24]

The results within the SR's support previous SR's carried out by Herrera et al (2002)[25] and Haffajee et al (2003)[10] which found adjunctive systemic antibiotics can offer additional benefits to mechanical debridement alone and suggested greater benefit in AgP and deeper sites. However, these results should be interpreted with caution due to the limitations of the reviews, Keestra et al (2015)[17,18] CP article estimated a high risk of bias in over half the papers included and although there was a little more exactitude in Keestra et al (2015) [17,18] AgP and Zandbergen et al (2016)[9] some papers with a high estimation of bias were still included. Also, due to heterogeneity and small sample sizes within the included study populations, no conclusions could be drawn as to which antibiotic to use for each infection, which patients would benefit most, at which point antibiotics should be administered and whether antibiotics should be administered at initial treatment or retreatment. Griffiths et al (2011)[26] carried out a RCT to assess if clinical outcomes were altered if the antibiotics were given at initial treatment or retreatment concluding that at eight months patients who received antibiotics at initial therapy showed statistically significant benefits compared to the group that received the antibiotics at retreatment. However, the initial antibiotics group was assessed eight months after the antibiotic administration whereas the retreatment group was assessed after two months. Therefore, there is potential of time scale skewing in that area.

Although the results within the SR's indicated a statistical significance difference in favour of systemic antibiotics the favouring is small and this raises the question to what point is a value considered clinically significant. The highest mean PPD loss for Keestra et al (2015) CP was -0.49mm, AgP -0.51mm, Zandbergen (2016) -0.47mm and Zhang et al (2015) -0.43mm, however, mean data also includes shallow sites which do not respond as well to systemic antibiotics. Haffajee et al (2003)[10] suggest an attachment level gain of 0.3mm would be equal to seven years of disease progression, however the effects clinically need to be balanced against adverse reactions. Most of the studies included within the SR's found no adverse reactions to the antibiotics and the few studies that did report adverse reactions referenced mild effects with the most common being diarrhoea. However, a small minority of patients do suffer from more serious adverse reactions to adjunctive systemic antibiotics.[25] Bacterial resistance is seen as an adverse reaction with *P.gingivalis* and AA showing an increase in resistance to AM/MET.[27] Hirsch et al, (2012)[28] suggested biofilm bacteria showed more resistance to MET than AZ. The antibiotic regime most documented is AM/MET[7] and there is limited long term research available around adjunctive AZ in the treatment of periodontitis with the most recent published studies regarding AZ being inconsistent.[24] The most common dosage regime for AZ is 500mg once a day for three days, therefore, patient compliance is good due to the short course and AZ also reports low incidence of adverse reactions compared to other antibiotics used in the treatment of periodontitis.[28] Therefore, more research is needed around AZ as a safer antibiotic option.

Within the SR's study populations were not restricted, therefore, confounding factors were not taken into consideration and there was considerable heterogeneity. Confounding factors included systemic diseases, smoking and plaque control, all of which have been indicated as factors in the progression of periodontal diseases.[29] Variability was seen within the type of periodontal condition treated, antibiotic used, dosage and regime, the timing of when the antibiotic was administered, sample size and number of visits taken for mechanical debridement which led to data aggregations within the SR's that may not be optimal. Indirect evidence suggests the antibiotic regime should start on the day treatment starts[7], however, this differed within the studies with some studies not administering antibiotics until the mechanical debridement was over and length of treatment differed within the studies. Also, length of follow up differed among the RCT's, therefore, while the conclusion that statistically significant results in favour of antibiotics were seen, it is not clear how long this effect is maintained. The SR's appraised did not include data longer than 12 months and the two SR's carried out by Keestra et al (2015)[17,18] which hold data for up to 12 months have limited studies included in the twelve-month meta-analysis. No study within the SR's included follow up longer than twelve months, therefore, it is not clear if the result is a long term-maintained effect. Serino et al (2001)[30] carried out a clinical trial over a five-year period to assess the effect of systemic antibiotics in patients with recurrent periodontitis. Seventeen patients were given adjunctive AM/MET and re-examined at one, three and five years. Improvement in PPD and probing attachment level (PAL) was initially seen at one year, was negligible at three years and improvement had been lost at five years. However, the sample was small and over half of the participants were smokers which is a confounding factor in periodontal diseases.[29]

At present there are no definitive guidelines as to the optimal conditions to use adjunctive systemic antibiotics in the treatment of CP and AgP.[31] Due to side effects, and an increase in antibiotic resistance, it is recommended that adjunctive antibiotics are restricted to certain conditions and patients. The studies included to date have referred to CP and AgP when discussing systemic antibiotics in relation to periodontitis which referred to classifications implemented in 1999.[32] However, the 2017 World Workshop classification now exists where the terms CP and AgP have been removed and a staging and grading system for periodontitis was introduced.[32] The papers do refer to moderate or deep sites which would be transferable to the new classification. AgP would now be stage three or four generalised periodontitis and grade C which is rapid progression.

Summary

Recent evidence concluded a statistical significance in favour of adjunctive antibiotics in the treatment of CP and AgP and showed that antibiotics were more effective for deeper sites and for more aggressive disease which is now referred to as rapid progression periodontitis.[32] However, it is not clear how the statistical significance relates to clinical significance and if the result is maintained. Limitations within recent literature is evident and the studies included within the SR's appraised contained a lot of heterogenicity including: sample size; periodontal condition; type of antibiotic and antibiotic regime; time scale taken to perform mechanical debridement; and the time point at which antibiotics were administered. Also, confounding factors are important and may have influenced

the outcomes. Due to antibiotic resistance within the oral biofilm the use of antibiotics should not be a routine treatment for all and should be used on a case-by-case basis.

Conclusion

The aim of this paper was to critically evaluate the scientific evidence related to systemic antibiotics as an adjunct to mechanical debridement and to provide a conclusion relating to clinical implications. After critically appraising some of the most recent SR's it can be concluded that adjunctive systemic antibiotics may have a role in the treatment of periodontitis and may provide greater results in disease of rapid progression and deeper sites. If systemic antibiotics are recommended, they should be used as an adjunct to mechanical debridement and not used as a monotherapy.[16] Due to heterogenicity among the included literature no definitive guidelines can be recommended with regards to type of antibiotic, dosage and time point of administration. Therefore, large scale, well-designed RCT's are needed to confirm the effects of adjunctive systemic antibiotics in the treatment of periodontitis to define the most optimal conditions including antibiotic regime and at which point adjunctive antibiotics are administered paying attention to initial treatment or retreatment. Also, further research is needed around azithromycin due to the safer nature of the antibiotic.

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Duerden S. A critical review of the evidence for the use of antibiotics as adjuncts in non-surgical periodontal therapy. Dental Health 2024;3:43-46. https://doi.org/10.59489/bsdht140

CLINICAL QUIZ

The Arrhythmia Alliance recognises 1st March as 'Pulse Day' and encourages everyone to: **Know Your Pulse to Know Your Heart Rhythm – It could save your life.**

Atrial fibrillation (AF) is the most common heart rhythm disturbance encountered by doctors. NHS 2011 figures suggest AF affects in excess of 1 million people across the UK, although this is considered to be an under-estimation due to delayed detection and diagnosis. It can affect adults of any age, but is more common as people get older; in the over 65-year-old age group it affects about 10% of people. Atrial fibrillation is not a life-threatening heart rhythm problem, but it can be troublesome and often requires treatment.

Q1. List four risk factors for AF.

Q2. List four symptoms for AF.

Q3. List four treatments for AF.

COURTESY OF THE ARRYTHMIA ALLIANCE.
IMAGE COURTESY OF PIQSELS.COM

SEND YOUR ANSWERS TO THE EDITOR BY 30TH MARCH. PLEASE INCLUDE YOUR ADDRESS.

Email: editor@bsdht.org.uk **Postal:** The Editor, Dental Health, BSDHT, Bragborough Hall Business Centre, Welton Road, Braunston NN11 7JG.

ANSWERS TO CLINICAL QUIZ JANUARY 2024

The winner is: **Lauren Barry**

Palpable swelling in the floor of mouth, which was noted during routine soft tissue examination. Radiograph of the swelling revealed a radio-opacity.

Q1. What is the diagnosis?

A1. Salivary stone, sialolith

Q2. What symptoms might the patient complain of at meal times?

A2. Swelling in the right submandibular gland region.

Q3. What treatment is required?

A3. Surgical removal of the stone.

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DIARY DATES

SPRING 2024 BSDHT REGIONAL GROUP STUDY DAYS

Contact: enquiries@bsdht.org.uk

Regional Group	Date	Details	Contact (Group Secretary)	Contact Details
Eastern	Sat, 16th March 2024	Huntingdon Marriott Hotel, Hinchingbrooke Business Park Kingfisher Way, Huntingdon PE29 6FL	Amanda Kestell	easternsecretary@bsdht.org.uk
London	Thu, 18th April 2024	BDA Offices, Wimpole Street, London W1	Theai San	londonsecretary@bsdht.org.uk
Midlands	Sat, 2nd March 2024	Hilton East Midlands Airport, Derby DE74 2YZ	Joanna Ericson	midlandssecretary@bsdht.org.uk
North East	Sat, 20th April 2024	Crowne Plaza Harrogate	Sarah Hunter (Acting)	northeastsecretary@bsdht.org.uk
North West	Sat, 9th March 2024	FMC North of England Show Manchester - Refresh & Refine (NO TRADE)	VACANT	northwestsecretary@bsdht.org.uk
Northern Ireland	Sat, 23rd March 2024	Marlborough Clinic Belfast, 1 Marlborough Park, Belfast, BT9 6XS	Gill Lemon	northernirelandsecretary@bsdht.org.uk
Scottish	Sat, 20th April 2024	Minto Dental Care, 1 Liberton Gardens, Edinburgh EH16 6JX	Emma Hutichison	scottishsecretary@bsdht.org.uk
South East	Sat, 27th April 2024	One Warwick Park Hotel, Tunbridge Wells, TN2 5TA	Sam Davidson	southeastsecretary@bsdht.org.uk
Southern	Sat, 16th March, 2024	Holiday Inn Winchester	VACANT	southernsecretary@bsdht.org.uk
South West & South Wales	Fri, 1st March 2024	Arnos Manor, 470 Bath Road Arno's Vale, Bristol BS4 3HQ.	Chalis Matthews	swswsecretary@bsdht.org.uk
South West Peninsula	Sat, 9th March 2024	Crowne Plaza Plymouth	Lynn Chalinder	southwestsecretary@bsdht.org.uk
Thames Valley	28th September 2024	Venue. Stoke Mandeville Hospital	Keileigh Ierston (Acting)	thamesvalleysecretary@bsdht.org.uk

RECRUITMENT

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