

The Dental Mirror

The cover features a central illustration of a hand holding a globe of the Earth. The hand is rendered in shades of teal and green, with visible brushstrokes. The globe shows continents in brown and green and oceans in blue. A dental mirror is positioned to reflect the globe, with the reflection appearing as a smaller, inverted image of the Earth. The background is a dark, starry space.

The Wider World

Issue #11
July 2022
£FREE

Dentistry | Healthcare | Technology | Politics | Students

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Issue 10
February 2021

Editor-in-Chief

Demi Bains

Deputy Editor-in-Chief

Mariam Bqain

Head News Editor

Sarah Park

Deputy News Editor

Sahithi Chakka

Head Features Editor

Parsa Aghamohammadi

Deputy Features Editor

Halima Ahmed

Head Social Editor

Modupe Osunkoya

Deputy Social Editor

Duniya Majumder

Artistic Editor

Tayyibah Naqavi

Design Editor

Syeda Anjum

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Editorial



Welcome to the 11th Issue of the Dental Mirror on "The Wider World". In this issue we aim to think outside of the dental clinic and appreciate the dental field from a broader perspective.

We often get asked the classic question of "why would you want to look at teeth all day?" when we tell people about our choice to pursue dentistry. To the general public, this is an understandable thought to have, with many people being unaware of the influence of oral health on the rest of the body and its links to many other serious diseases.

With this in mind, we wanted this issue to capture the complexity of dentistry aside from the clinic and emphasise that as much as we may enjoy it, there is a whole lot more to dentistry than drilling and filling! Our writers have brought their knowledge of dental public health forward and taken a closer look at the common risk factor approach, the future of NHS dentistry, and dental care in developing countries. Another particularly interesting topic covered is misinformation in dentistry, where the age of social media can lead users astray with fake news.

Finally, I would like to thank the Dental Mirror team for all their hard work over the past year. Working alongside the team as Editor-in-Chief has been thoroughly rewarding and I look forward to seeing what the next year's team produce!

*Yours, Demi Bains
Editor-in-Chief*



Demi and I felt it was important to dedicate this issue to "The Wider World" to raise awareness about prevention, health inequalities, and tackling preventable diseases that are highly prevalent in our population. This was especially important to us following the COVID-19 pandemic and its devastating effects on both oral and general health.

In this issue, we encourage you all to broaden your understanding, to have a holistic view of dentistry and your patients; Dentistry is an all encompassing field, it is about more than just the mouth and teeth, as oral health is also a reflection of our general health and wellbeing.

In this issue, we cover a plethora of topics from tips on providing very brief advice for smoking cessation, tackling health inequalities and access to dental care, as well as the link between oral health to the rest of the body, and the future of NHS dentistry.

I would also like to take a moment to thank all the members of our Dental Mirror team for spending countless hours seamlessly putting this issue together, our writers and editors for meticulously reading and re-reading every single article, and the design team for hand painting the front cover and sewing the entire issue together. It has been a pleasure being a part of this team and working along side Demi as the Deputy Editor-in-Chief. We also welcome any feedback from students and staff members on our 11th and last issue of this academic year. We all hope you enjoy reading this issue as much as we have enjoyed creating it!

*Yours, Mariam Bqain
Deputy Editor-in-Chief*

The rest of the DM Team!
From left to right:

Top row: Head News Editor, Head Features Editor, Head Social Editor, Artistic Editor

Bottom row: Deputy News Editor, Deputy Features Editor, Deputy Social Editor, Design Editor



Sarah Park



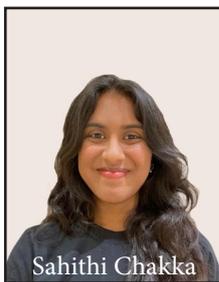
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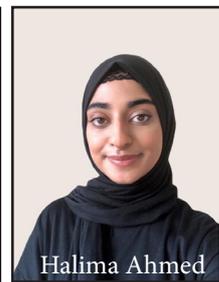
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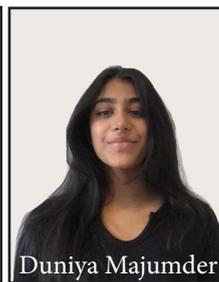
Tayyibah Naqavi



Sahithi Chakka



Halima Ahmed



Duniya Majumder



Syeda Anjum

The Future of NHS Dentistry

The Existing Struggles with NHS Dentistry Coupled with the Effects of Covid-19

Written by **Haleema Rabeea**

Edited by **Duniya Majumder**

In the summer of 1948, the main news headline read 'your new National Health Services begins on 5th July.' The creation of the NHS was a monumental moment in history, where for the first time ever, the provision of dental care was offered free at the point of use. In 1948 Britain, more than three quarters of the population had complete dentures by the age of 18. The launch of the NHS dramatically changed access to healthcare and the improvements in oral health are still being witnessed in the decades that followed. At the time, dentists had concerns regarding how this new system would work and how sustainable its funding would be. The demand for NHS dentistry was very high especially with the substantial treatment needs. In 1951, subsidiary charges were introduced for dentures and other charges for treatment soon followed. NHS dentistry has undergone various reforms since then and concerns over the current commissioning of NHS dentistry through Units of Dental Activity (UDA) rose soon after the introduction of this form of commissioning the service.

The Covid-19 Effect

Following the first national lockdown in March 2020, the provision of routine dental care was suspended causing profound impacts on the provision of dental care with widespread consequences clinically, legally and economically to name a few. It is also important to consider the impact of Covid on provision of other health services nationally and how that could also affect dental health provision directly or indirectly. The consequences brought about by the pandemic to NHS dentistry were already feeding into a system which dental care professionals had concerns over.

The restriction of dental services over the Covid-19 pandemic caused huge backlogs, with a reduction of 6 million adults attending the dentist according to the British Dental Association (BDA). In addition, the loss of regular oral examination presents concerns since dental diseases such as periodontitis and caries tend to be asymptomatic at early stages and are better treated sooner rather than later.

'Dentists need to see a light at the end of the tunnel. Ex-

hausted colleagues are making exit plans while desperate patients are facing yearlong waiting times' (BDA, 2022).

The Covid-19 effect continued and during the Omicron wave, despite staff sickness and patient cancellation, dentists were facing financial penalties for failing to hit the government imposed target of 85% of pre-Covid activity. It was reported by the BDA in February 2022 that NHS dentistry saw almost a thousand dentist leaving the service. In addition, in Scotland, dental schools delayed the graduation of their dental students by a year due to the lack of clinical activity as a result of the pandemic. As such, recruitment and retention of NHS dentists has massively been affected by the pandemic with the long-term effects still unknown.

Is there a light in sight?

A dental contract reform in England is to be expected at some point this year. The BDA have stated that they are in favour of eliminating the UDA system and are in discussions with NHS England on implementing a 'long-term reform.'

'Patients are bottling up problems and oral health inequality is set to skyrocket. Yet far from this crisis being a COVID blip, it now risks becoming a fact of life for families across England' (BDA, 2022).

NHS dentistry, since its introduction in 1948, has provided the population with much needed dental treatment and contributed to marked improvement in population health. Despite the benefits the service has as being free at point of use, oral health inequalities continue to rise and are expected to rise further as a result of the pandemic. As such the need of an equitable way of commissioning NHS dentistry is much needed.

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<http://clipart-library.com/clipart/rainbow-clipart-8.htm> (image)

The Fluoridation Wars

Written by **Samantha Lee**
Edited by **Sarah Park**



Prevention is an important aspect of dentistry and a large element of prevention is the use of fluoride. Despite a shared objective of improving public dental health, there are varying views on the water-fluoridation scheme. This article will be exploring this debate: the good, the bad, and the ugly of water fluoridation.

The British Dental Association (BDA) believes that water fluoridation is the most effective public health measure to reduce the incidence of caries and dental health inequalities (Vital, 2005). Fluoride is found naturally in water, hence drinking-water is the major dietary source of fluoride. It can affect teeth when either topically or systemically, and decreases dental caries by preventing or reversing the progression of existing lesions (Iheozor-Ejiofo, 2015).

When the sugars contained in food are broken down, bacteria in plaque convert them into acid, causing the demineralisation of teeth. Without intervention, this can lead to dental caries. The fluoride ion plays an important role in preventing the demineralisation of sound enamel due to the formation of the strong fluorapatite mineral phase. While the teeth are developing in dentition, F⁻ substitutes with OH⁻ in the apatite molecule and fixes calcium, increasing its stability to the mineral structure and promoting remineralisation (Kanduti, 2016). Thus, the main aim of the addition of fluoride in water supplies is to reduce the incidence of dental caries.

There are multiple systematic reviews with results which support this intervention; extensive evidence shows that communities whose drinking water contain greater concentrations of fluoride have a reduction in the prevalence of dental caries compared to communities that have lower concentrations of fluoride (O'Mullane DM, 2016). Hence, poor oral health and dental care costs have decreased in fluoridated communities.

Improvement of public dental health is an important goal for governments, and despite progress being made, significant health inequalities in communities exist. Inequalities are driven by socioeconomic status, and research by Public Health England (PHE) suggests that deprived groups are likely to have poorer oral health due to several factors, such as difficulties in accessing dental care or finding affordable healthy food. Statistics from PHE in 2019 reported that 34% of children from deprived areas have dental caries, compared to 14% for children from less deprived areas (Public Health England, 2016).

Oral health can be improved through regular tooth-brushing with fluoridated toothpaste, limiting the consumption of sugary foods, and regular visits to the dentist. However, adopting and sustaining these behaviours can be difficult for those at the greatest risk of dental disease. Community water fluoridation is an inexpensive method of ensuring that prevention reaches everyone

within a community, and is the only intervention that improves oral health without requiring sustained behaviour change by individuals.

Though water fluoridation has these important benefits, it does have its downfalls, and those on opposite sides of the debate find it difficult to reach a conclusion.

Dental fluorosis is a widely known disadvantage of fluoride, and one which makes people wary of water fluoridation. Several systematic reviews indicated that fluorosis was found to be more common in fluoridated versus non-fluoridated areas (DenBesten, 2011).

Fluoride intake through fluoridated water is uncontrollable because people ingest different doses regardless of age, health status, and individualised therapy. This cosmetic disorder is caused by excessive fluoride intake during the late secretion to early maturation phase of enamel formation in tooth development (Wei, 2019). It results in a change in the appearance of enamel. Most cases of fluorosis are mild - pearly white flecks, frosty edges or fine chalk-like lines in teeth. More severe forms present with larger white or brown spots, or rough pitted surfaces caused by a hypomineralised enamel surface and secondary staining. The severe form is rare, generally only seen in countries with very high naturally occurring levels of fluoride in groundwater rather than in areas with community water fluoridation schemes. Furthermore, there are some concerns that fluoride may be



Figure 1: Dental Fluorosis

linked to several health conditions. Although systematic reviews of the risks have so far found no conclusive evidence to support these concerns, members of the public still voice their opposition to fluoride due to this.

As with fluorosis, complications can be seen when one ingests very high levels of fluoride. Though rare in adults, acute fluoride toxicity results in gastrointestinal disturbances such as nausea, pain, diarrhoea and vomiting (Aoun, 2018). In severe cases, there is a rare but morbid possibility of progression to cardiac and renal dysfunction. Over 80% of fluoride toxicity is seen in children before the age of 6 years, but this is usually due to the ingestion of fluoridated toothpaste or mouthwashes, not drinking fluoridated water (Ullah, 2017).

In the UK, fluoride levels are carefully monitored and adjusted by the Drinking Water Inspectorate (DWI) (PHE, 2014). Evidence suggests that 1mg fluoride per litre of water is the most beneficial level of fluoride, with a maximum

permitted level of 1.5ppm. Another downside of water-fluoridation is the fact that some consider it mass medicalisation and a violation of individual freedoms. Some suggest that this public health scheme is comparable to medication without consent and believe governments should not interfere with individuals' personal choices towards their health.

Preventative dentistry is vital for improving public oral health. Although caries is multifactorial in origin, it is a largely preventable disease and fluoride is used as a preventive agent worldwide. Several modes of fluoride use have evolved, and its addition to drinking water has been a valuable scheme for reducing inequalities in oral health in several countries. However, water fluoridation is still controversial, and opposition towards the initiative has been growing worldwide due to its ethical considerations, the potential of toxicity and other health conditions.

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Not so brief advice on



Written by **Mariam Bqain**
 Edited by **Sahithi Chakka**

Smoking is one of the leading causes of death as it is linked to the development of largely preventable non-communicable diseases. In 2013, 78,200 people died from smoking related diseases and 17% of those aged 35 years and over, died directly due to smoking. Despite a decrease in smoking rates by 30% over the last two decades, Public Health England (PHE) launched a campaign in 2015 called “Health matters: smoking and quitting in England”, which aims to have a tobacco-free generation by 2025. Additionally, PHE reported that between the ages of 11 to 15, approximately 90,000 of adolescents are regular smokers and nearly 1-in 5-adults are also regular smokers.

Smoking also reinforces health inequalities as the prevalence is greater in lower socioeconomic areas. Furthermore, individuals living in lower socioeconomic areas are less likely to quit smoking than those living in higher socioeconomic areas. Despite 6-in-10 smokers reporting they would like to quit, most of them find quitting to be extremely difficult, especially when dealing with stressful life situations. For example, in 2014, 37% of smokers attempted to quit however only half of them were successful. Therefore, when encouraging smokers to quit, it is imperative that wider social issues are considered, for example the lack of education and health inequalities which increases these individuals’ risk of unhealthy behaviours.

Wider social issues were considered during the government’s development of the “tobacco control plan for England” in 2011. One of their initiatives included helping tobacco users quit for good, in the hopes of improving the individual’s and their family’s health, aiming to reduce health inequalities and reduce the likelihood of their children smoking. This is done through supporting the provision of stop smoking services. However, for these services to be effective, there needs to be greater opportunities being offered for tobacco users which includes advice on quitting and referrals to their local stop smoking services (GOV.UK., 2015). Screening and providing brief advice are evidence-

based interventions that have proved to be effective in identifying tobacco users who may be referred to the appropriate specialist services. An example of this is “VBA”, which stands for Very Brief Advice which is routinely given to promote smoking cessation. This allows healthcare professionals to identify tobacco users and support those who choose to quit. This evidence-based intervention can be effectively delivered in 30 seconds by any healthcare professional. They do not need to have extensive knowledge on tobacco use or dependency, as VBA consists of 3 simple steps:

1. **Ask** and record the patient’s smoking status. For example, ‘do you smoke?’
 - Details about the frequency, number of cigarettes per day, and what they are smoking is not essential.
 - However, if they have recently quit smoking, a good question to ask is “how is it going?”
2. **Advise** your patient on the best way of quitting, which involves a combination of specialist support and medication.
3. **Act** by referring patients to their local stop smoking service, where they will receive specialist support and medication where appropriate.
 - Those who receive expert support and nicotine replacement therapy are four times more likely to successfully quit. If the patient does not wish to stop smoking, we must respect their decision (GOV. UK., 2019)



Health professionals are trained on providing VBA based in their setting, which slightly differs in dental teams, hospitals, community pharmacies, and primary care. A Cochrane review by Rigotti and colleagues concluded that providing nicotine replacement therapy and counselling concurrently showed significantly greater cessation rates compared to only counselling in hospitalised patients (Rigotti, Clair, Munafò and Stead, 2012).

This is a guide that health care professionals are encouraged to use; however, it can be tailored to specific situations. The main points to remember are:

1. The frequency of how often you deliver VBA is left to the practitioner's judgment and may vary between patients, however it must be provided at least once a year.
2. Understand each patient's social history and respect their decision. They may be under immense stress, strain, and therefore have different priorities.
3. It is important to include VBA for smoking cessation as part of a conversation between the patient and the clinician
4. Avoid lecturing patients and use shared decision making to understand what matters to the patient
5. Local stop smoking services can be found by entering the patient's post code at: <https://www.nhs.uk/better-health/quit-smoking/find-your-local-stop-smoking-service/> (NHS.UK., 2022)

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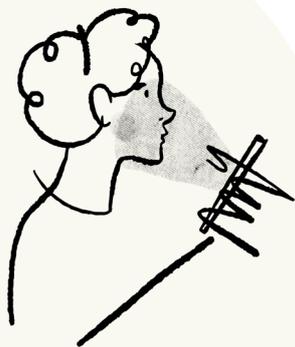
Can my Toothpaste Kill me?

Flossing out the Fake News.

Written by **Duniya Majumder**

Edited by **Sahithi Chakka**

Misinformation is everywhere we look. Flick through facebook to see how an old lady trained her cats to steal from her neighbours (Desti, 2019) or open up WhatsApp for chain messages which claim honey, pepper and ginger will eliminate the effect of Covid-19 (Golding, 2021). Most of the time we can easily debunk this misinformation but issues arise when we encounter fake news.



What is the difference between misinformation and fake news? Misinformation is simply the spreading of false information regardless of intent but fake news is much more dangerous. It is well-crafted, carefully thought out, manipulated articles which purposefully deceive readers for political gain or profit (Molina, Sundar, Le and Lee, 2019). In healthcare fake news is particularly menacing as misleading medical or dental advice puts patients at risk.

A famous example of fake news in healthcare was in 1998 when Andrew Wakefield and his 12 co-authors

published a paper in the British Medical Journal (BMJ) implying a link between the ‘measles, mumps and rubella (MMR) vaccine and a “new syndrome” of autism and bowel disease’ (Godlee, Smith and Marcovitch, 2011). This gave rise to a national vaccine scare with vaccination rates falling to a low of 80% in 2003-4 – 15% below the vaccination level recommended by WHO to ensure herd immunity – and in 2008, for the first time in 14 years, measles was declared endemic in England and Wales (Godlee, Smith and Marcovitch, 2011). Journalist Brian Deer later uncovered that the paper was fraudulent, involved unethical treatment of children and that Wakefield stood to reap financial gain from the MMR vaccine scare (Godlee, Smith and Marcovitch, 2011). The damage done by this one piece of fake news is unfathomable. Millions of parents lost trust in vaccines, hundreds of thousands of children remain unprotected and outbreaks of mumps and measles due a lack of immunisation continue worldwide (Godlee, Smith and Marcovitch, 2011).

In the dental sphere, much of fake news attacks a key chemical which protects teeth: fluoride. In recent years, ‘all- organic’, ‘all-natural’, ‘chemical-free’ products have surged in popularity. Consumers are all about ‘clean-eating’ avoiding all preservatives, additives and chemicals of any kind. It seems it has been forgotten that chemicals save lives. Surgery cannot be performed without anaesthetic drugs, antiseptic chemicals used to clean wounds protect patients from dangerous infections and antibiotic medications fight bacterial-borne illnesses. Nonetheless, a consumer’s fear of chemicals is not unfounded. The thalidomide tragedy (Kim and Scialli, 2011) resulted in thousands of deformed babies and all chemicals are poisonous at toxic levels, even water! However, there is clear scientific evidence behind fluoride preventing dental disease (Marinho, Higgins, Logan and Sheiham deceased, 2003) and an average woman would have to consume a whopping 233 tubes of toothpaste in one day to die from fluoride poisoning (Whitford, 1987). A pea-sized amount on your toothbrush twice a day isn’t cause for concern.

Along with the organic trend, the last few decades have seen an obsession with ‘perfect’, straight, pearly-white teeth. To achieve the desired look for less dosh, patients fly to Europe getting their teeth shaved down to pegs and covered by shiny full-coverage crowns (Darrah, 2020). This extreme treatment of teeth can result in nerve damage leading to the need for a root canal or extraction and these crowns are likely to need replaced every 10-

15 years proving far more costly than treatment in England (Darrah, 2020). It is likely many of these patients will end up with full dentures at a young age (Darrah, 2020). However, on social media this treatment has been sensationalised as a quick and easy solution for a beautiful smile and a lack of reporting means the extent of damage they cause is not widely known. So before you throw away your chemicals or opt for the cheapest treatment because an article says so, look twice and then again because fake news causes real health problems.



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Dentistry in Developing vs Developed Countries:

Greater need for pain relief and functionality compared to aesthetics

Written by **Tayyibah Naqavi**

Edited by **Sarah Park**

The developing world is excessively burdened with oral disease. This is exasperated by poverty, malnutrition, poor living conditions, insufficient government funding to provide health care and an overall lack of education regarding oral health. Such conditions are not only limited to developing nations, disadvantaged populations in industrialised countries also show greater prevalence of poor oral health. Ultimately suggesting the greater need for pain relief and functionality compared to aesthetics in such communities. Being able to identify the underlying reasons for such circumstances is the first step towards providing possible solutions.

Lalonde outlines four factors which impact health, these include: biological factors, lifestyle healthcare services and environment (Hancock, 1986). In developing nations, and disadvantaged populations as a whole, all of these factors, apart from biological, are negatively impacted by low socio-economic status.

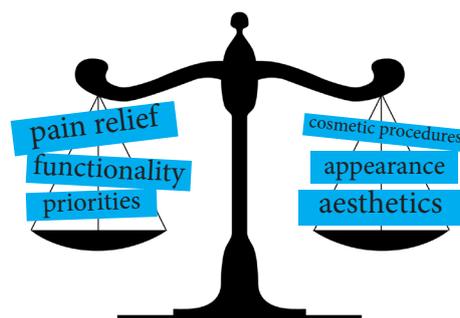
Dr Lembariti, Dr Songpaisan and Dr Anil investigated the oral health needs in developing nations such as Africa, the Indian subcontinent, and Southeast Asia. Such regions were found to have significantly higher mortality rates and low life

expectancies. Up to 60% of these populations are afflicted with malnutrition and 80-85% live in rural areas with inadequate access to dental care and education. Local cultures showed greater amounts of chewing and smoking of tobacco, a major risk factor for periodontal disease. It was found that 50% of males smoke cigarettes in southeast Asia and 90% of all smokeless tobacco users can also be found in Southeast Asia (WHO, 2013). It is often seen that, due to circumstances, oral health is the last to receive political as well as cultural attention (Pack, 1998). It can be contended that the above factors alongside disease, poverty, and illiteracy prolong poor attitudes towards oral health. Unsurprisingly, in all three regions, gingivitis and periodontitis are the most common oral diseases.

Chronic inflammatory periodontal disease is a manifestation of a range of complex processes based on biological and genetic susceptibility. However, it can also be greatly influenced by social, environmental,

cultural, and individual factors (Genco & Borgnakke, 2013). Studies have shown the strong relationship between stress and poor periodontal health. The stress levels in disadvantaged communities due to the poor living conditions is considerably higher than those in developed countries, making them more susceptible to oral disease (Buddenhagen, 1983).

Red swollen gums, mobile teeth and gum recession are aesthetically unacceptable in the western world. Living in less stressful conditions allows one to focus more on appearances, whereas people in developing countries more easily accept the poor condition of their teeth and gums. Those with greater access to education and dental resources are more likely to, not only identify and stabilise disease but to also seek cosmetic procedures to enhance aesthetics. The 2015 cosmetic report from the American Academy of Cosmetic Dentistry (AACD) found that 86% of patients wanted to receive cosmetic treatments to improve their appearance, while the remaining 14% sought restorative or health related treatments (AACD, 2015). This highlights the disparity of needs between developing and developed countries.





Developed countries have health care systems which are well structured around the needs of the country based on research and data. Contrarily, in developing countries, health services, resources and data regarding public oral health is greatly limited. This is further aggravated by the general lack of importance given to oral health by government officials. In developing countries health services are primarily for providing emergency care, most commonly treating periodontal disease and caries, or providing restorative procedures to re-establish functionality (Kandelman, et al., 2012).

Unfortunately, the lack of importance given to oral health in developing countries prevents data collation to form effective health care programs to tackle and meet the basic needs for pain relief and functionality. Developing nations being unable to meet the basic requirements for good oral health leaves aesthetic treatment completely out of the question. Financial constraints also play a role in determining the needs of people in developing countries. Cosmetic procedures are not of high priority when put alongside other issues of day-to-day life such as poor living conditions. This highlights a strong need to improve oral health in communities whilst taking into consideration the complexities of the socioeconomical, environmental and political circumstances.

Furthermore, being able to understand what motivates individuals in different communities is essential in creating effective oral health promoting schemes. This can help achieve the ultimate goal, which is to

increase education around the topic creating positive attitudes towards the importance of maintaining good oral health. By doing so, it can boost engagement and receptiveness, making public health improvements more promising and sustainable as better habits can be passed on to future generations. Although currently there is a greater need for pain relief and functionality rather than aesthetics in developing countries, this does not have to forever be the case, gradually changing people's attitudes will allow them to eventually take responsibility for the prevention of oral diseases, thus improving their overall quality of life.

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EXPLORING THE BARRICADES TO DENTAL CARE

Improving dental care access for lower socio-economic groups in the UK and internationally

Written by **Noor Abdulla**

Edited by **Parsa Aghamohammadi**

What is low socio-economic status? Socioeconomic status (SES) refers to the social, economic, and work status of individuals. Low SES usually refers to individuals with low educational achievement and/or low household income. In 2019, it was calculated that almost twice as many people from lower socio-economic groups struggle to pay NHS dental charges compared to people from higher socio-economic groups (Yonder Data, 2021). Lower socio-economic citizens are therefore twice as likely to avoid dental care due to affordability compared to people of higher socio-economic status.

In the UK, some rules have already been implemented to aid access to dental care for those who struggle to afford treatments. But is this enough? Besides selective entitlement to free dental care, there is also the NHS low-income scheme (LIS) which provides partial help with dental care fees for those who do not qualify for full help but still need aid, for example refugees. With a HC2 certificate, health costs are fully covered for patients with a low SES. Moreover, a HC3 certificate means partial coverage will be provided (NHS, 2020).

When conducting an interview with Dr Shirin Mahmoud, a dentist in the US, about her experiences with patients from lower socio-economic groups, she explained to me the various factors that deter such patients from seeking professional dental care.

Q: From your personal experience, why do you think individuals from low SES in the US neglect their dental care and hygiene?

A: Not all, but many of these individuals tend to avoid going to the dentist until the point of unbearable pain is reached; hence not many encounters are made with these patients, which in turn makes it difficult to keep track of their dental history. This comes to a great disadvantage when determining diagnosis and treatment. One of the main reasons these patients are put off dental care is in relation to dental insurance. In the US, your residential status determines insurance eligibility. Therefore, refugees and asylum seekers only have the option of going to emergency clinics. With non-emergent cases, the refugees tend to neglect their dental care. When avoiding the financial stresses of dental appointments for too long, there is a higher risk of these patients developing problems with their oral health, such as periodontal disease.



According to The Guardian, an estimated 74 million Americans have no dental insurance coverage; many of these millions coming from low SES (Michael Sainato, 2021). Without insurance, treatment prices become less convenient for individuals from low socio-economic groups – for example, with insurance coverage, teeth cleaning is completely covered (up to twice a year); whereas, without insurance each session would cost \$127.

Q: What have you learnt from working with refugees?

A: Much has been brought to my attention with these experiences. When working with refugees, I learnt that dental health was the last of their worries, since they had other hardships on their minds. Repeatedly, I've witnessed traditional 'self-treatment' of these patients. To overcome some dental pains, the refugees would continuously self-apply eugenol (herbal oil used topically to treat toothache) to the region until the pain was no longer tolerable, and professional assistance was required. When volunteering at a refugee clinic in San Antonio, it was highlighted to me that with limited resources (e.g. no translators available at the clinics) communication with patients was made very difficult. Thankfully, I was able to overcome the language barriers with some refugees by liaising in Arabic and Farsi. As well as assisting them with their dental needs, I was also able to answer other queries, to my knowledge, for newcomers to the country. It has definitely been a rewarding journey.

Upon concluding the interview with Dr Shirin, I began to appreciate the importance of communication in the dental field. If communication skills are heightened, wouldn't this encourage low SES patients to visit the dentist more often? Studies have shown that people from lower socio-economic groups generally struggle more with the English language than those from higher socio-economic groups. In the 2011 census, it was discovered that poor English language skills linked to worse health rates (ONS, 2015). Thus it has been made clear that language barriers need to be conquered to encourage these patients to visit the dentist. With establishing initiatives such as easier access to translation services and longer appointments for those who need it, we may see a gradual increase in regular appointment attendance for individuals of low SES.





A: I was fortunate enough to explore dentistry in the clinics of Baghdad where I had the opportunity to shadow Dr Rizgar Mahmoud. Additional to his admirative work, I was particularly inspired by his acts of kindness for those who cannot afford treatments. Once a month Dr Rizgar would travel to rural areas, where all residents are deprived from having a local dentist. Travelling to the city would be too costly for the natives living in the outskirts, so when in need of dental care, their only option is to wait for voluntary aid to arrive. In Iraq, facilities are fundamentally scarce, but this doesn't stop dentists like Dr Rizgar from helping those in need. With no governmental assistance, these dentists are simply driven by their generous nature. For patients in Iraq who can access dental care but struggle financially, there is an option to seek assistance at governmental sites, where free treatment is distributed. Although there is a long waiting list, patients are still able to receive free treatment for non-emergency cases. In Baghdad, dentists like Dr Rizgar would assist low SES patients by referring them to these governmental sites, letting the patients know of their closest location.

In the UK, dentists who are motivated to help others with their acts of kindness take part in voluntary based projects such as 'Restart Refugee Support' and 'Dentaid', providing free emergency dental care for refugees in the UK who are in need of urgent attention. These inspiring programmes accentuate how with graciousness, greatness can be achieved.

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in Paediatric Patients

Can social media be used as a tool for improving oral health in paediatric patients?

Written by **Areej Medhi**

Edited by **Parsa Aghamohammadi**

The ubiquitous accessibility to the internet is one of the defining phenomena of our era, altering the world as we know it. As of January 2021, there are over 4.66 billion active internet users worldwide: 59.5% of our global population (Johnson, 2021). The internet is a critical component of today's modern society and allows millions of people to connect daily. The most prominent form of communication via the internet is through social media platforms. In healthcare, the use of social media and the internet as a tool for professional communication and education is on the rise with many debating the pros and cons of this practice and questioning its credibility in healthcare. It is extremely important to note that, during the COVID-19 pandemic, the usage of social media has grown to the point where it is now ingrained in current healthcare systems (Wong, et al., 2021).

Dental Public Health and Paediatric Dentistry

Dental public health is a specialty of dentistry that focuses on population-level prevention of oral illnesses rather than individual patients. It is made up of various complimentary disciplines and has a wide range of functions and activities (Singhal, et al., 2018). Indeed, there is strong evidence supporting the need for dental public health, particularly in populations facing health inequalities. Public Health England commissioned the National Dental Epidemiology Programme for England: oral health survey of 5-year-olds in 2019 and the report summarised the variations in prevalence and severity of dental decay. Overall, 23.4% of 5-year-old children in England who had their parents' permission to participate in this study showed tooth decay. Geographical location, level of deprivation, and ethnic group all had significant impacts in the frequency and severity

of tooth decay. There was a substantial difference in the frequency of dental decay by ethnic group, with the 'Other Ethnic Groups' (44.3%) and the Asian/Asian British ethnic group (36.9%) having much greater prevalence than the other ethnic groups (Public Health England, 2020).

Consequently, dental decay in young children is still a major public health concern. It can interfere with a child's or adolescent's ability to sleep, eat, communicate, play, and socialise with other children. Pain, infections, a bad diet, and a lack of nutrition and development are some of the other side effects. According to the Global Burden of Disease Study from 2010, poor oral health caused the highest disability in five to nine-year-old children in the United Kingdom (Global Burden of Disease Collaboration, 2013). Poor oral health cost each adolescent aged five to nine years an average of 2.24 hours of

healthy life, surpassing the amount of impairment associated with vision loss (1.64 hours), hearing loss (1.77 hours), and diabetes mellitus (1.54 hours) (Bernabe, 2013) These all have



an impact on a child's early life as oral health is a crucial component of overall well-being. If a child misses school or a parent has to take time off work because their child requires dental treatment, poor oral health has broader implications at school and for families (Locker, et al., 2002). Children's capacity to learn, flourish, and develop is harmed when they are not healthy. "School readiness" can be aided by good oral health. To get the most out of their education, children must arrive at school healthy and ready to learn being emotionally, behaviourally, and socially prepared.

Oral diseases are mostly avoidable, and interventions are needed to produce long-term and sustained gains in oral health and minimise inequities. It is important to tackle the problem early on to minimise any potential damage and improve the quality of life in these individuals.

The Role of Social Media

Dental professionals are mainly accountable for patients' oral health and our first core principle is to 'put patients' interests first' (The General Dental Council (GDC), 2013). Social media is a great way of sharing oral health advice and helping tackle the issue of dental caries in paediatric patients. A single-centre, parallel, randomised controlled research at the University of Pavia's Section of Dentistry looked at the effectiveness of Instagram versus traditional chairside spoken instructions in enhancing oral hygiene compliance and awareness in young orthodontic patients. A total of 40 patients with fixed appliances in both arches were recruited and randomly assigned to one of two groups: intervention (n = 20) or control (n = 20). At the initial consultation, both groups were given verbal instructions and were encouraged to practice good dental hygiene. In addition,



research participants received weekly multimedia content on Instagram for six months. Bleeding, modified gingival and plaque indices were measured at 4 intervals for both groups. The conclusions showed that both groups improved but the intervention group had substantial improvement in these indices and in knowledge. As a result, the authors concluded that Instagram serves as a supplement to orthodontists' traditional verbal incentive for young patients undergoing orthodontic treatment (Scribante, et al., 2021).

A study by the International Journal of Dental Hygiene analysed the reliability, quality, and content of YouTube videos on paediatric oral health instructions. The aim of this was to assess the effectiveness of these videos and assist health practitioners in directing parents to proper information on the matter. Out of 150 videos linked to the search of 'Children's oral health', 40 were selected using the inclusion criteria and analysed. The videos were classified as 'poor' material by content analysis and trustworthiness was moderate. 'Rich content', however, had a greater reliability and trustworthiness score than 'poor content'. The authors concluded that poor content, middling quality, and reliability were found in YouTube videos giving oral health guidance for paediatric patients and their parents. Although the videos did not cover all the identified topic headings, the information contained in them may be valuable and instructional to individuals. Dental hygiene practitioners and dentists, on the other hand, should be aware of the need in this area and devote more time and effort to enhancing YouTube videos on children's oral health in terms of content headings, quality, and dependability (Aksoy & Topsakal, 2022).

Conclusion

The main trend with regards to the impact of social media on the oral health of paediatric patients is a positive one. Despite this, it is evident that the quality of content out there is poor and not up to standard. However, the key message to take from all of this is that the digital world/social media is an ever-growing field, and we cannot avoid it. This field has endless possibilities and tools we can take advantage of to improve oral health in both paediatric and adult patients. It is important that dental professionals start innovating and working towards a better digital dentistry future.

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The Common Risk Factors of Non-Communicable Diseases

Including Oral Health within the Agenda

Written by **Haleema Rabeea**
Edited by **Modupe Osunkoya**

The burden of non-communicable diseases (NCDs) was recognised as one of ten threats to global health by the World Health Organisation (WHO). These diseases are medical conditions which tend to be of chronic nature and result from a combination of genetic, physiological, environmental, and behavioural factors. According to the World Health Organisation (WHO), the main types of NCDs are chronic respiratory diseases, cardiovascular diseases, cancers and diabetes (World Health Organization, 2018). Oral health diseases are chronic and are socially patterned similarly to major NCDs. As such, there is an urgent need to address oral diseases alongside other NCDs as a global public health priority and for the burden of oral health diseases not to be viewed in isolation (Peres et al., 2019).

Transitions to Non-communicable Diseases
OR We are living longer but are we any healthier?

The burden of NCDs continues to rise globally despite the modifiable

nature of many of the risk factors associated. Many countries have gone through or are going through what are known as demographic, epidemiological and health transitions. Those transitions are characterised by longer life expectancies and increasing industrial development. As we live in an increasingly globalised environment and go through these transitions, another 'nutritional transition' is also well underway (Kuate Defo, 2014, Popkin, 2002). Such transitions have

seen a shift from diseases being communicable infectious diseases to non-communicable chronic conditions which continue to challenge health systems globally in how they could be approached and tackled. The associated nutritional transition acts as a risk factor to NCDs, the increase in sugar, fat and processed foods in our diets as countries developed are risk factors leading to NCDs.

Increased Sugar Consumption - A Common Risk Factor

The abovementioned nutritional transition is revealed through data from



the National Diet and Nutrition Survey show an increase in the intake of free sugars exceeding the recommended level of 5% of total energy level (Public Health England, 2020). As seen in Figure 2, the main cause of premature morbidity and mortality of various NCDs is attributed to diet. Various research sources highlight certain diets, those high in saturated fatty acids and free sugars, are associated with NCDs such as obesity, heart disease, diabetes and dental caries (Sheiham and Watt, 2000, Moynihan and Kelly, 2013, Te Morenga et al., 2013).

The Rationale Behind The Common Risk Factor Approach

Since many NCDs share common risk factors, Sheiham and Watt (2000) introduced the 'common risk factor approach.' The rationale behind this approach originates from the WHO 1980s health policy recommendations aiming to create an integrated approach to prevention of chronic disease (World Health Organization, 1980). The common risk factor approach argues for a collaborative approach, not only considering the shared risk factors but also the wider socio-environmental factors that affect those common risk factors. For instance, diet is affected by school and workplace environments, policies such as sugar taxation, socioeconomic status and being able to afford healthy foods and drinks. The collaborative nature of the common risk factor approach aids in avoiding duplication and conflicting messages which in turn increase effectiveness and efficiency. As mentioned above, oral health diseases should not be viewed in isolation and the common

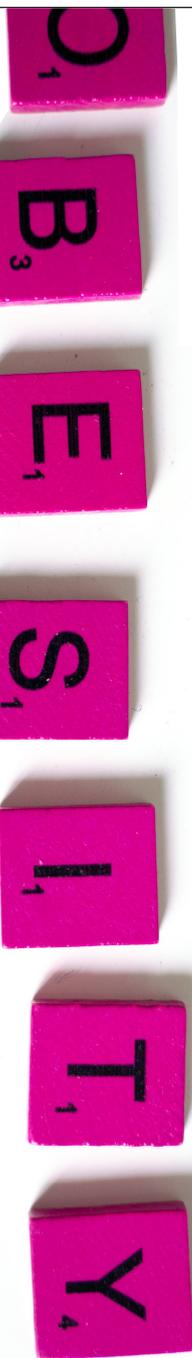
risk factor approach reduces the isolation with which oral health diseases are viewed.

The Common Risk Factor Approach in Practice

It is argued that the inclusion of considering socio-environmental factors as part of the common risk factor approach aids in the delivery of interventions following this approach. Health promotion approaches are sometimes criticised for the lack of cultural understanding of the contexts in which they are carried out, for instance, in certain cultures and countries, grandparents are responsible for feeding children, therefore if there was to be an intervention looking at healthy eating for children within these countries, such cultural consideration would have to be taken into account. Without considering these social and cultural factors and 'what happens to people as ideas move in practices and back,' public health intervention will not achieve the aims they set out to do (Yates-Doerr, 2020). A simple example when it comes to dental health and diet, if delivering a health intervention to a group from a certain culture, to consider using examples of foods and drinks from that culture to illustrate examples of healthy eating practices.

Conclusion

The common risk factor approach is a logical one to follow, especially with the burden of NCDs raising and our diets becoming more fatty and sugary. This burden of NCDs is affecting health services within the NHS despite the preventable and modifiable nature associated with these diseases. As future dental care professionals, we need to understand that oral health should not be isolated from general health and we need to advocate for the inclusion of oral health within general health policies.



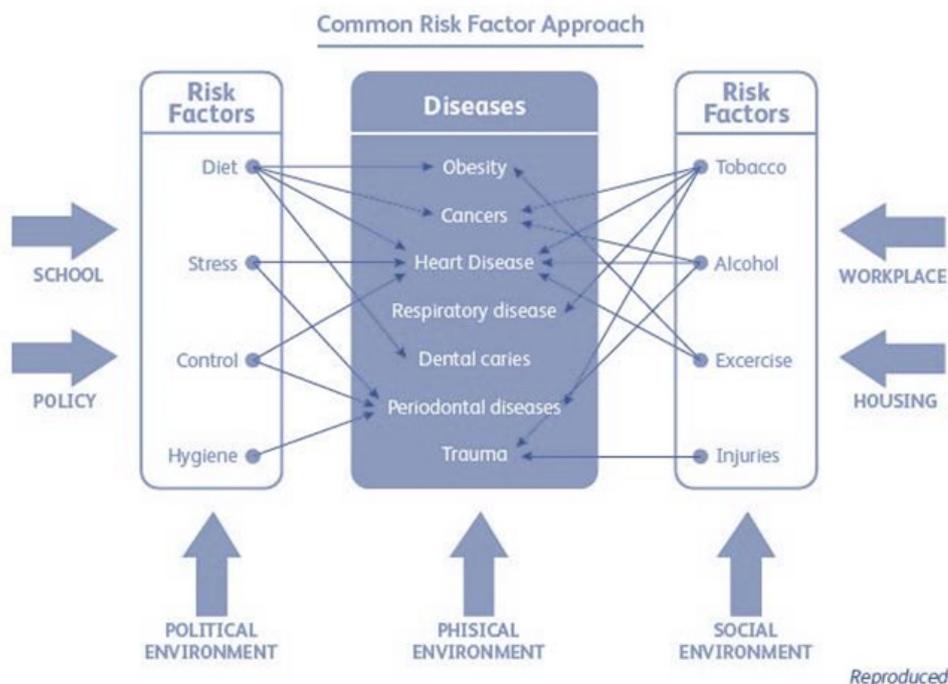


Figure 2: NCDs share a range of risk factors, which are also affected by wider socio-environmental factors (Sheiham and Watt, 2000, Watt and Sheiham, 2012).

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The Implications of Oral Health on The Rest of The Body

Examination of the oral cavity can reveal signs of systemic conditions and allow for early diagnosis and treatment.

Written by **Malikha Khan**
 Edited by **Halima Ahmed**

The mouth is a visible gateway to the rest of the body and can reflect what is happening on the inside. The systemic impact of oral health diseases on the rest of the body is well documented throughout scientific literature and there are over 100 systemic diseases that have oral manifestations. As dental professionals, we must be able to work well within multidisciplinary teams to provide the best care for patients with other medical conditions and create appropriate treatment plans.

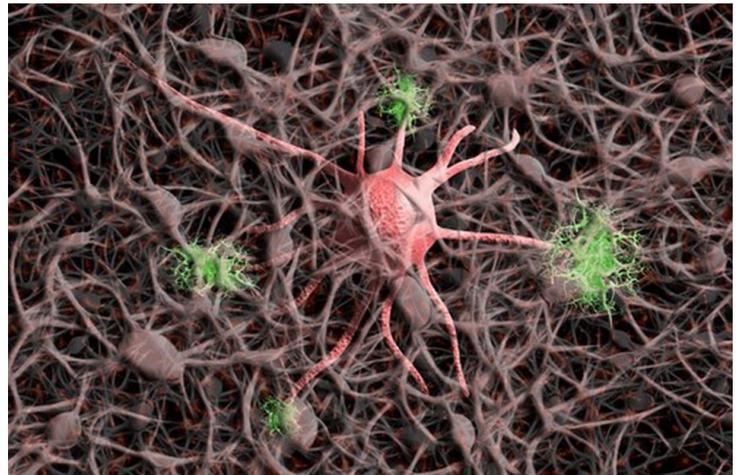
Alzheimer's

Alzheimer's disease (AD) is a neurodegenerative disease characterised by progressive impairment of behavioural and cognitive functions such as memory, comprehension, language, attention, reasoning, and judgment. These symptoms are caused by the formation of extracellular amyloid β -peptide plaques in the brain and intraneuronal neurofibrillary tangles of hyperphosphorylated tau protein, which is thought to lead to the gradual loss of neuronal synapses and eventually neuronal damage (Singh et al., 2016).

Although there is no experimental evidence to show a causal link between chronic periodontitis and the development of Alzheimer's, inflammation is known to play a pivotal role in both diseases and so is considered a definite risk factor for developing AD. In a patient with poor oral health, bacteria and subsequent inflammatory molecules present can travel from the mouth through the bloodstream to the brain. In a study conducted by the Alzheimer's Society, those with AD who suffered from periodontitis declined in memory six times faster than those who did not over the six-month follow-up period. It is unclear, however, whether this is cause or

effect; if the gum disease is triggering the faster decline of dementia, or vice versa (Beydoun et al., 2020).

Two mechanisms have been put forth to try and explain the association between periodontitis and AD. The first theorizes the body's immune response is the contributing factor whereas the other puts forward the idea that the pathogens in the mouth itself result in further complications.



a. According to the first mechanism, periodontopathic microorganisms and the host response cause an increase in the levels of proinflammatory cytokines. These pro-inflammatory molecules are capable of compromising the blood-brain barrier and entering the cerebral regions. This leads to priming/activation of microglial cells and adverse repercussions leading to neuronal damage (Abbayya et al 2015).

b. The second mechanism is thought to be due to invasion of the brain by microorganisms present in the dental plaque biofilm. The microorganisms in the dental plaque can enter the brain either through the bloodstream or via peripheral nerves.

These microorganisms and their products elicit an inflammatory mechanism within the CNS. Inflammation in the CNS results in cognitive impairment, such as that seen in AD (Abbaya et al. 2015).

Diabetes

Diabetes mellitus (DM) is a metabolic disease that results in high blood glucose levels. DM has several categories, including type 1, type 2, maturity-onset diabetes of the young (MODY), gestational diabetes, neonatal diabetes, and secondary causes due to endocrinopathies and other circumstances such as steroid use (Sapra and Bhandari, 2022).

Evidence suggests that periodontal changes are one of the first clinical manifestations of diabetes (Preshaw et al., 2011). The risk of periodontitis is increased by approximately threefold in diabetic individuals compared with non-diabetic individuals. There is also a range of other dental conditions linked with diabetes such as:

- a. Gum abscesses
- b. Caries
- c. Fungal infections, such as candidiasis
- d. Lichen planus which can often present in buccal mucosa
- e. Mouth ulcers
- f. Taste disturbances
- g. Dry, burning mouth due to low saliva levels.
- h. Periodontal disease (Preshaw et al., 2011)

Again, inflammation creates the link between diabetes and periodontal disease. It is a central feature of both diabetes and periodontal diseases, and inflammatory processes are upregulated in the periodontal tissues of patients with diabetes. Both type 1 and type 2 DM are associated with elevated gingival crevicular fluid (GCF) levels of inflammatory mediators, such as interleukin (IL)-1 β and prostaglandin E₂ (PGE₂), when compared to non-diabetic controls matched concerning periodontitis severity (Salvi et al. 1997) (Engebretson et al. 2004) (Mohamed et al. 2015).

Based on the available evidence to date, it is likely that the level of metabolic control influences future periodontal disease risk. This also appears to be the case vice versa; Periodontitis has the potential to adversely affect glycaemic control in both diabetes-affected and diabetes-free individuals. Periodontitis may also be a risk factor for the development of type 2 diabetes in healthy individuals. Interventional studies show that successful treatment of periodontitis can help improve metabolic control in people with diabetes in the short term (Winning and Linden, 2018).

Sjogren's Syndrome

Sjögren's syndrome is a common autoimmune rheumatic disease. The most common symptoms of Sjögren's syndrome are extreme tiredness, along with keratoconjunctivitis sicca (dry eyes) and xerostomia (dry mouth). The hyposalivation facet of this condition can be objectively measured and is typically below 0.1 mL/min at rest (Diep et al., 2021).

Patients with xerostomia suffer not only from a reduced quantity of saliva but also a reduced quality. The whole saliva is made up of two main components (serous and mucous) in addition to numerous other substances such as minerals, antibodies, glycoproteins, bacteria, complex mixes of proteins, lipids and ions. The antibacterial, antifungal, and antiviral agents in saliva also regulate the oral flora and help to prevent oral infections (Bolstad and Skarstein, 2016).

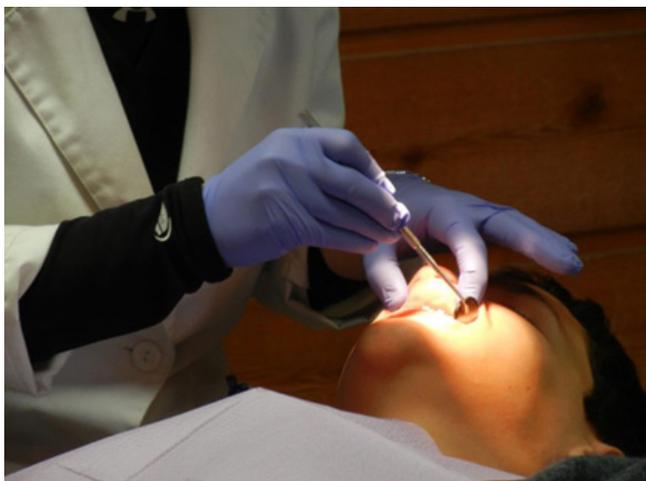
Despite having excellent oral hygiene, individuals with Sjögren's syndrome can experience a plethora of dental diseases. This is because many further complications can arise as a result of low saliva such as:

- a. Difficulty chewing, swallowing or speaking
- b. Decreased taste
- c. Gingival disease
- d. Dental caries: particularly on the root, cervical, or incisal/cuspal surfaces
- e. Periodontal disease
- f. Halitosis
- g. Plaque formation
- h. Oral infections such as candidiasis
- i. Enlargement of salivary glands

Xerostomia can also be a side effect of many medications taken for other systemic conditions. These medications include: diuretics, beta-blockers, tricyclic antidepressants, antihistamines, anticonvulsants and antipsychotics. This emphasises the crucial role of a dentist in taking a thorough medical history as it enables the appropriate diagnosis and management of xerostomia. For example, they may need to liaise with a medical professional to change a particular medication to stabilise oral disease.

Conclusion

With an ageing population and heavier reliance on medications and treatments which cause xerostomia, oral health professionals are likely to encounter a higher incidence of Alzheimer's disease, xerostomia, diabetes and Sjögren's syndrome than ever before. There are many other links between oral health and systemic health - not just the ones mentioned in this article. Dental professionals must be able to manage these multifaceted cases, notice the signs of systemic disease in patients and signpost appropriately.



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SUCCESSFUL RETURN TO CAMPUS

FOR ANNUAL DENTAL CLUB EVENT



Aryana Keissarian played the piano at the Friday dinner, which was held in the Old Library

The Barts and The London Dental Club resumed their flagship Annual Clinical Meeting 2022 as an in-person event on Friday 10 and Saturday 11 June. Generations of alumni reunited on the Whitechapel campus to join students, staff and friends of the Dental School for two days of professional and social networking, lectures, a bustling Trade Show, drinks reception and dinner. Immediate Past President, Dr Asma Qureshi (BDS, 2006), shares her round-up:



Saturday 11th June talks @ Perrin LT



Dr Asma Qureshi and Professor Paul Coulthard



Dr Asma Qureshi



Asma with Dr Amitha Ranauta, President for the Dental Club 2022-23

Having been elected President of the Barts and The London Dental Club in February 2020 and with the outbreak of COVID shortly afterwards, it soon became apparent that in-person events wouldn't be feasible for some time. My presidency was subsequently extended, and I set about navigating the Club through the pandemic with 'Mind the Gap', a three-part webinar series which enabled our global dental alumni community to meet virtually.

It was a huge pleasure to finally be able to welcome 280 guests back in-person and online alongside the Dean, **Professor Paul Coulthard**. My programme - 'Inner Smile' - featured talks with renowned speakers on topics such as dental trauma, prosthodontics, medicolegal matters, life with London's Air Ambulance, craniofacial trauma and taste disturbance. The Slack Medal was awarded to **Dr Sarah Bourne**, Senior Tutor in Dental Radiography, for her long-standing service to the School and the eponymous Evelyn Sprawson Lecture was delivered by double alumnus, **Dr Peter Dean** (BDS, 1975; MBBS 1982) on the story of the Elephant Man and complimented by a rare viewing of the Doniach Gallery.

It was my mission to welcome students so they could benefit from interacting with alumni and I was delighted that we had a record number of student attendees join us. The John Ellis Lecture Theatre was packed for our special careers session, 'Life After Dental School' - thank you to our panellists, **Dr Aditya Naidu**, **Dr Roy Woodhoo**, **Ms Carla Balasuriya**, **Professor Simon Holmes**, **Dr Domniki Chatzopoulou**, and our wonderful BDS4 facilitator, **Milton Justinsuthakaran**. Students from all year groups asked fantastic questions - 90 minutes wasn't enough time to get through them all!

Our Undergraduate and Postgraduate Poster Prize Competition offered cash prizes of £300 and £150 for the two best posters. Congratulations to **Favour Onwudiwe**, who won 1st Prize in the Undergraduate category for 'Childhood Obesity', and runners-up, **Tamam Abid** and **Ema Rutkeviciute** for 'Smokeless Tobacco Cessation'. **Kitichai Janaphan** won 1st prize in the Postgraduate category with 'Periodontal disease as a primary cause of surgical site infection in fractures of the mandible' and **Sing Ying Lim** was runner-up with 'New analysis of Nolla's longitudinal radiographical study'. Well done to everyone who submitted a poster, the quality was outstanding.

We had a lovely dinner in the nostalgic setting of the Old Library where our guests enjoyed a three-course meal. **Aryana Keissarian**, BDS4, set the tone by playing beautiful tunes on the grand piano and I couldn't resist the opportunity to don a white evening gown!

Saturday was a good excuse for another wardrobe change so sporting a royal blue jacket, I introduced sessions on digital implantology, stress and anxiety and a hypnosis panel. After two and a half years of keeping the Dental Club going, a few technical hitches and a six-year-old stage invading nephew, I took my final bow and handed over the presidential reigns to welcome Dr Amitha Ranauta as our new President.

I'd like to say thank you to the Alumni Engagement team, who were instrumental in delivering every aspect of this successful event. My gratitude is also due to Dr Ali Nankali and the UK Dental Courses team who managed our live-stream and enabled alumni who couldn't travel to London to participate remotely. A number of internationally-based prospective postgraduate students also tuned in, which gave us the opportunity to showcase our wonderful Dental School community to future students.

Finally, I'd like to give special thanks to DentSoc for all their support and to you, our amazing students, for getting involved. It has been such a pleasure and honour to get to know you.

We look forward to meeting you again next year.

Best wishes

Dr Asma Qureshi (BDS, 2006)

President of Barts and The London Dental Club 2020-22



Procession of academics before the Slack Medal presentation and the Evelyn Sprawson



At the Trade Fayre

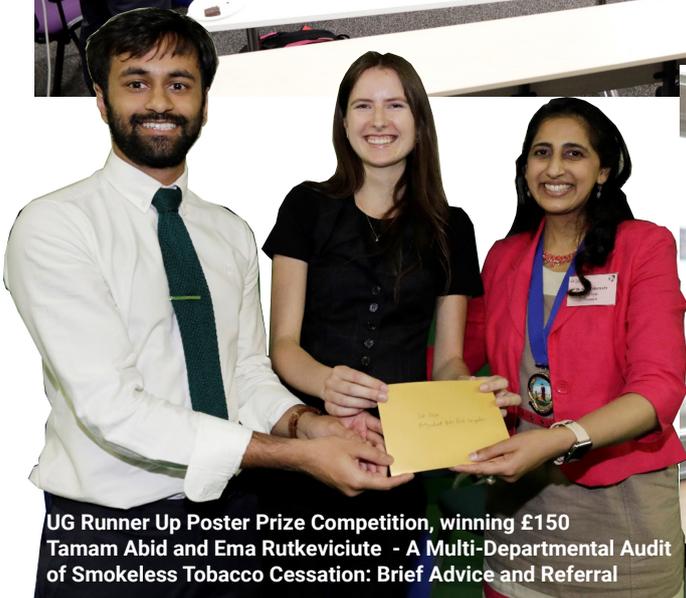


The BDS Class of 2006 had a mini reunion during the dinner

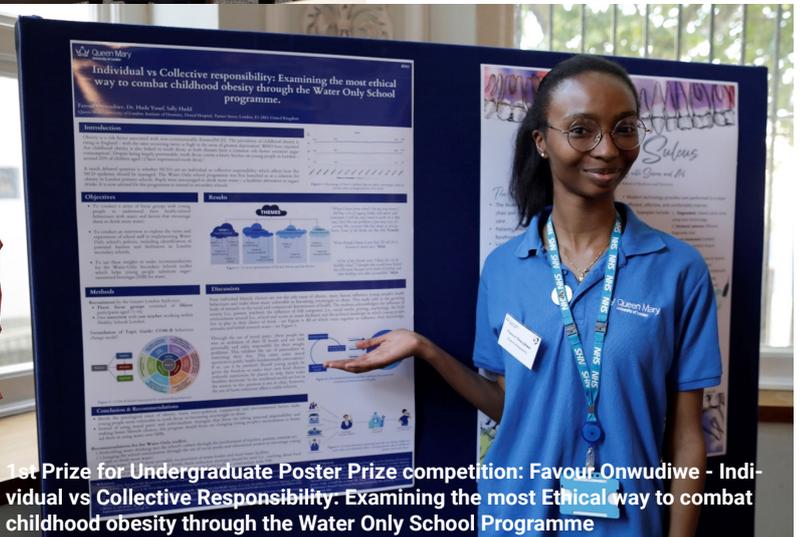


2021 Webinar and Annual Clinical Meeting

The Student Career Session 'Life After Dental School' 11:30am JELT Friday 10th June



UG Runner Up Poster Prize Competition, winning £150
 Tamam Abid and Ema Rutkeviciute - A Multi-Departmental Audit of Smokeless Tobacco Cessation: Brief Advice and Referral



1st Prize for Undergraduate Poster Prize competition: Favour Onwudiwe - Individual vs Collective Responsibility: Examining the most Ethical way to combat childhood obesity through the Water Only School Programme

