Final Report to Funder- Dental professional's experiences of delivering oral health advice to children and their parents/caregivers: Focus groups with dental practitioners and their wider teams.

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Lay Summary

Dental decay in children is a chronic yet preventable public health problem. Effective prevention for children requires the adoption of protective home-based toothbrushing and dietary behaviours from an early age. Dental teams have the opportunity to support parents and children to adopt these behaviours when they visit the dentist. These conversations are a three-way interaction between the child, their parents or caregiver and the dental team member. This is the second report of three looking at dental professional's perceptions of these preventive conversations and how they can support home-based toothbrushing and dietary behaviours.

We aimed to explore dental team members' experience of delivering oral health advice (e.g., toothbrushing and diet) to children and their parents and caregivers. We asked dental team members including dentists, dental nurses, practice managers and receptionists, to discuss their experiences and then summarised these conversations into different themes.

- The first theme identified was the need for essential teamwork, in which team members discussed the benefits and appropriateness of teamwork and utilising the wider skill mix within the dental team. However, team members also expressed frustration at the lack of time and funding for the team to deliver oral health advice. Putting visual displays and

posters in reception could make it easier for reception staff to engage in discussion around oral health with the patients, which can then be followed up by the dentist within the consultation.

- The second theme identified was passion and dedication. It was suggested that due to lack of extra payment for staff to deliver advice, team members such as receptionists and nurses need to be motivated in other ways such as by the difference they can make to patient's lives through better oral health (e.g., reduced pain). The dentists themselves also need to allow nurses and other team members the time to deliver advice alongside their normal duties.
- The third theme identified was communicating the message, in which it was discussed that the way in which oral health messages are delivered is as important, rather than just the content of the messages. Giving children a sense of responsibility for their own oral health can be effective, and for older children, making them aware of the negative effects of poor oral health (e.g. dental decay and tooth loss), especially through the use of visual pictures, can be used to motivate them to improve their oral health behaviours. In order to get the message across to the parents, it was seen as more acceptable to play on emotions such as guilt, especially if they neglect to take advice on board.
- The fourth theme identified was 'school – an ideal environment'. Rather than delivering oral health advice within the dental practice, where fear may distract children, school was seen as a good place to deliver advice, as children are already in the mood for learning, and children who do not visit the dentist can also receive the messages. However, there were frustrations over the lack of support and funding to provide these opportunities within a school setting.
- The final theme identified was 'products – focus on the practicalities', in which dental teams discussed the types of dental care products they recommend (e.g., toothbrushes, toothpaste). Dental team members were aware of the need to be sensitive to what parents can afford when recommending products, especially in more deprived areas. Problems were identified with some products, such as the need to remember to replace batteries of toothbrushes as an extra barrier to brushing behavior. Dental teams recommended starting young children with adult toothpastes rather than flavoured ones, as it may be difficult to get children to switch to an adult toothpaste in later childhood

owing to the taste difference. The use of additional products such as reward charts and timers was seen as positive, as they can help children to develop a habit of brushing for the recommended amount of time.

In conclusion, from the dental team's point of view team work and utilizing the skill mix within the team is essential to allow oral health advice to be delivered. However, there are clear barriers to providing such advice, including a lack of time and funding, meaning that dental professionals need to be motivated by other factors such as the desire to make a difference to children's lives through better oral health. It is important that the way the messages are delivered is considered as well as the content of the messages. Giving children the responsibility of looking after their own oral health, and making them aware of negative future consequences of not caring for their oral health (e.g., dental decay and loss of teeth) are seen as effective ways of making sure the messages get through. Delivering oral health advice within school setting is seen as beneficial as children are engaged for learning. However, the funding and opportunity to provide the advice within schools is lacking. With regards to the oral health products recommended by dental professionals, there is a need to consider whether families can afford more expensive products (e.g., branded electric toothbrushes) before recommending these, even though in some instances they may actually be more effective than cheaper products. The use of visual displays that provide oral health information (e.g., displays showing the amount of sugar in various drinks) could provide a cost-effective way of starting discussions around oral health that can be had with all members of the dental health team (including reception staff).

Executive summary

We aimed to explore the experiences of dental practitioners and their wider teams of delivering oral health advice to children and their parents and caregivers using focus groups involving dentists, dental nurses, practice managers and receptionists. We identified five key themes (see Figure 1). These were: essential teamwork, passion and dedication, communicating the message, school – an ideal environment and products – focus on the practicalities.

Key findings:

- Essential Teamwork - Dental teams identified the importance of delivering preventive advice using a whole team approach, and utilising the wider skill mix within the team. However, team members also expressed frustration at the lack of time and funding to deliver oral health advice and reduced focus on patient care and a shift to 'box ticking'. Thus, oral health advice needs to start right from when patients enter reception, with reception staff facilitating discussion around oral health displays, which can then be followed up by the dentist. However, this may require further staff training and a change in practice philosophy.
- Passion and dedication – Team members need to be dedicated to deliver oral health advice, and this motivation need to come from other sources apart from extra money, due to lack of funding. Motivation mainly came from the difference that delivering oral health advice can make to children's lives if oral health problems are avoided as a result of the advice given. Additionally, dentists need to provide support and co-operation to allow the rest of the team to dedicate time to delivering preventive oral health advice.
- Communicating the message - It was recognized that the way oral health messages are communicated is essential to their effectiveness.
- Communicating the message - With regards to the children themselves, team members felt it is important that the child was made to feel a sense of authority and responsibility for looking after their own teeth, which can be achieved by making sure they follow the advice given, and making oral health care their own choice. Stimulating anticipated regret by communicating negative future implications of current behavior was also seen to be effective, particularly for older children. Interestingly, team members tended to

focus on the negative consequences of not caring for oral health rather than the benefits of good oral health care when discussing motivating children.

- Communicating the message - With regards to communicating the message to the parents, it was seen as more acceptable to play on emotion or guilt, especially when parents are not aware of the serious implications of behavior, or neglect to follow previous advice. It was also seen as essential to create awareness of the importance of good oral health behavior even before birth, by imparting advice on pregnant women.
- Communicating the message – The use of general visual displays in the reception area were seen as effective in grabbing attention and facilitating conversations around oral health with all members of the dental team.
- School – an ideal environment - It was recognized that a dental setting may not always be appropriate for delivering oral health advice, as there may be a pre-occupation with fear, impeding the effectiveness of the messages. Non-dental settings such as schools were seen as more effective, as children are engaged for learning, children who do not visit the dentist can receive the advice, and the children relay the information to their parents, without the parents being defensive about receiving the advice. However, there were frustrations over the lack of support and funding to provide these opportunities within schools.
- Products – focus on the practicalities - Team members recognized a need to be sensitive regarding the cost of oral health products, especially in more deprived areas, influencing the products they recommend. Children tend to prefer the branded and more expensive products, and team members admitted that often these may be more effective than cheaper alternatives (e.g., electric toothbrushes over manual toothbrushes).
- Products – focus on the practicalities – Flaws were identified with some products, such as battery operated electric toothbrushes which may have reduced functionality during low power, requiring patients to remember to replace batteries often. This is another barrier to brushing, as it adds an additional step to remember (buying and replacing batteries) alongside remembering to brush.
- Products – focus on the practicalities – There was general consensus against the use of flavoured toothpaste, due to the difficulty in shifting children onto adult toothpaste when

needed, as children are not used to the mint flavor. The recommendation is to start children on adult toothpaste as soon as brushing starts.

- Products - focus on practicalities – The use of sticker and reward charts and timers was seen as positive, helping children to develop a habit of brushing for the recommended amount of time.

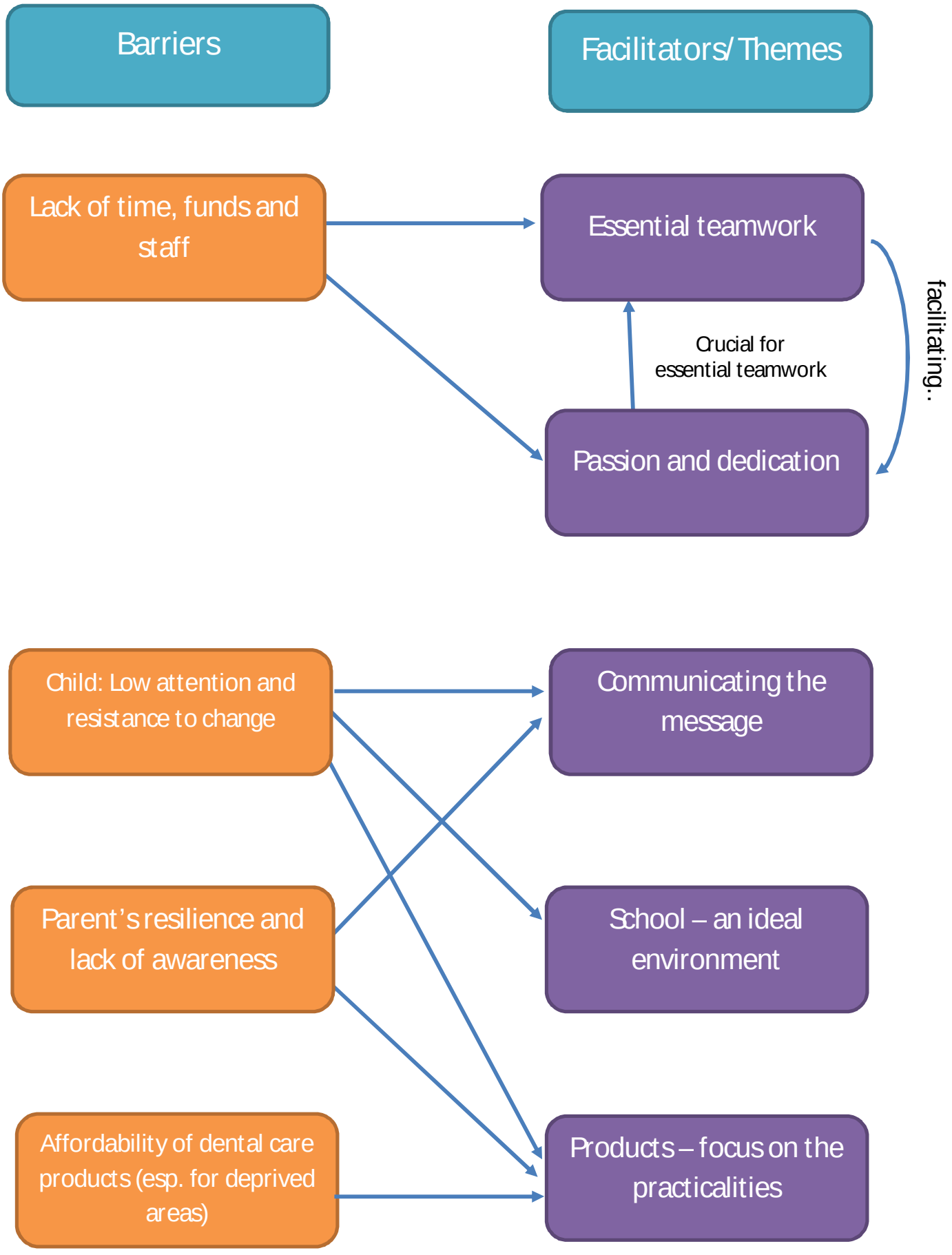

Figure 1: Facilitators/ themes and barriers identified

Introduction

Dental caries is a globally recognised public health problem (Kassebaum et al., 2015). In the UK, reducing caries prevalence in five year olds is a national priority and is included in the public health outcomes framework (Department of Health, 2012). Caries experience is acutely differentiated by social gradients (Wyborn et al., 2012). In England, the contrast is stark; at three-years-old, caries prevalence varied between 2% and 34% for different local authorities (Public Health England, 2013). This variation widened further by five-years-old, from 14% to 54% (Public Health England, 2016). Caries in the primary dentition is the strongest predictor for caries in the permanent dentition (Hall-Scullin et al., 2017). From a young age children with and without caries are set on very different oral health trajectories which dramatically separate across the life course (Hall-Scullin et al., 2017, Broadbent et al., 2008). Consequently, Public Health England and the National Institute for Clinical Excellence strongly advocate preventing caries in young children (Public Health England, 2014, National Institute for Health and Care Excellence, 2014).

In England, treatment of caries is the most common reason for young children (over 30,000 children) to have a general anaesthetic; this alone costs the NHS £36 million a year (Public Health England, 2014). The burden of caries is significant. Caries causes pain and suffering as well as changing what children eat, their speech, quality of life, self-esteem, and social confidence (Public Health England, 2014). Moreover, it has a wider societal impact on education and social participation (Public Health England, 2014). Treating caries accounts for a significant proportion of the £3.4 billion annual spend on NHS dentistry (Public Health England, 2014).

A number of behaviours are associated with the development of caries in children. The two key behavioural risk factors are poor oral hygiene and the consumption of sugars, more explicitly consumption of sweets and infrequent toothbrushing along with accumulation of plaque are associated with poor dental health (Mattila, 2005). Despite this, caries is a preventable disease, with modifiable target behaviours, recommended to reduce their prevalence and ensure good oral health, including twice daily toothbrushing with a fluoride toothpaste (Marinho et al., 2003) and reducing the amount and frequency of free sugars consumed (Moynihan, 2005).

In order to reduce caries incidence in children, both children and parents need to be aware of these behavioural risk factors, and key oral health promotion messages. One route through which children and parents receive advice on oral health is through general dental practitioners, within a dental setting. An evidence-based toolkit for supporting dental teams to provide appropriate evidence based oral health advice has been developed by Public Health England entitled "Delivering Better Oral Health" (Public Health England, 2017).

All general dental health practitioners and their wider team deliver oral health advice to children and their parents in some way, but there has previously been little exploration of dental health professional's experiences of delivering these messages and the barriers to engaging children and their parents and caregivers with oral health advice. These preventive conversations are a three-way interaction between the child, their parents or caregiver and the dental team member. Parents have responsibility for enforcing good oral health behaviours in their children, in order to prevent dental caries with children taking on more responsibility as they grow older.

Within this project, we aim to explore the experiences of oral health promotion within a dental setting from the perspective of dental practitioners as deliverers, and parents and children as receivers of the advice. We aim to gain understanding of dental practitioner's experiences of delivering advice to children and parents, and the experiences of both children and parents when receiving this advice, and how the messages influence oral health behaviour. The current report explores the experiences of dental practitioners and their wider teams with regards to the oral health advice they deliver, and their experiences of engaging the children and caregivers with the advice. We used focus groups to explore these factors with dentists, dental nurses, practice managers and receptionists.

Methods

Ethical Approval

Ethical approval was obtained by the Departmental Research Ethics Committee (DREC), University of Leeds. Ref: 300317/PD/225

Participants and Sampling

Members from the dental team were selected from across Yorkshire and Lancashire. This ensured a wide range of locations, types of dental practice and participants including dentists, dental hygiene and therapists, dental nurses, practice managers and dental receptionist. Four focus groups were undertaken, involving a total of 27 participants. These focus groups included a group of dentists from a wide range of backgrounds practicing in both the NHS and private settings who were attending an evening British Dental Association meeting. We also visited NHS dental practices in Hull and Bradford which included both corporate and privately own practices. The practices were purposively chosen owing to their location and reputation for their strong preventive ethos. In these practices setting the whole dental team was invited to participate in the focus groups.

Analysis

Focus groups were audio-recorded and professionally transcribed in verbatim in order to reflect accurately on the conversations and reflections after the event. Thematic analysis of the transcripts was used which involved ‘careful reading and re-reading’ (Rice and Ezzy, 1999: 258) of research material to identify the main themes. Alongside the pattern identification within the data (Fereday and Muir-Cochrane, 2006), individual or unique cases were noted down. The interviews were repeatedly read, aiming to find commonalities or contradictions among the unique and dominant cases. This was carried out by one researcher (RD) in collaboration with other members of the research team. Sub-themes and overarching themes were subsequently developed and refined by discussion between the research team. All key themes were then reviewed, and redundant themes explored and discounted as appropriate. Final themes were agreed and named and the report produced as a collaborative work between members of the research team. Negative case analysis was also undertaken.

Results

Five themes were obtained from the analysis of focus group interviews undertaken with dental teams. Within each theme, barriers and facilitators are discussed.

1. Essential teamwork
2. Passion and dedication
3. Communicating the message
    - Engaging the child
    - Grasping parent's attention
    - General visual information
4. School- an ideal environment
5. Products- focus on the practicalities
    - Sensitive about cost
    - Flaws in electric toothbrushes
    - Against flavoured toothpaste
    - Sticker charts and timers

Theme 1: Essential teamwork

In this theme, we first discuss the problems related to the delivery of preventive measures, mainly the constraints of time and funding faced by the dentists. A way to tackle this barrier, as perceived and tried by most participants, is by placing a team at work that would be directed at prevention. In this theme we explicate how different members of staff have contributed to the efforts of delivering better oral health.

There are different barriers faced as a result of increasing demand and low availability of staff, funds and the necessary time to dedicate for prevention and treatment. The following extract gives a glimpse of the pragmatic concerns that pose as barriers in delivering the message for prevention:

> …when the contracts changed in 2006, you went from an item of service to the PBS to what the dentists are under now and they're time managed… it's a UDA target and if you know oral health educator in practice that the dentist has got to do all their bit, the soft

> tissue examinations radiographic if necessary in a ten minute booking because… you… that dentist has got a particular high target. You can't then give oral health education within that ten minute appointment. So that's the frustration for the dentist it's not that I've got dentists that don't want to do it, they are restricted with their times and that really frustrates you… (Practice manager)

Although there might be the desire and willingness to talk to the patients about how to take care of their teeth, there is not enough time available for the dentists to do the same. The major barrier as identified by most participants in all the focus group interviews is the UDA target. Problems related to time and funds are linked together, in that dentists have to meet UDA targets within a limited time and on the other, there are no incentives at place to reward them for their efforts:

> …it is a time constraint yes, time and rumination on the NHS, you don't get ruminated for this, it's not motivation it's just when you are on targets, if you've got UDA targets.

There is a lack of separate funding dedicated for preventive measures. Without the necessary incentives and the recognition of the efforts for prevention, not many dental care professionals would be motivated to engage in the delivery of preventive advice:

> …but it is down to the individual dentist how much time they spend trying to educate and they say if you're doing a pilot or prototype an oral health educator in the practice works so much better because again if it's a barrier of the UDA system it doesn't create any… there's no extra income for it even though your income is effectively the same there's a psychological barrier that I'm not earning anything when you're paying for an educator who isn't effectively being rewarded through the NHS. (Dentist)

Given the lack of recognition and reward, a considerable amount of dedication and motivation is required to engage and focus on prevention. Another participant from a different focus group expressed concerns about the reduced focus on 'patient care' and the way it has been replaced with just 'ticking boxes' whilst fulfilling the requirements set out by the overall system:

> …years ago it was all about patient care and I got quite disgruntled when I worked with the community services because I started where you took whatever amount of time you needed for that patient and then all of a sudden it became bums on seats ticking boxes

> and it doesn't matter who you saw, which dentist you saw, how rushed the appointment was just as long as you ticked those boxes patient care just went out of the window.(Dentist)

The participant expressed disappointment with the current dental practices where the general focus has shifted from patient care to merely fulfilling prescribed duties. One of the reasons, as mentioned by many participants, is the pressure of meeting UDA targets. This pressure, as also mentioned by the participant below, leads to a risk of low standard dental practice:

> …for me personally I think we should go back to the original fee per item, to do a root treatment for three UDA's is absolutely ridiculous, I think they should have a blended contract or start right from scratch, these pilots that are going out with the red amber green and what have you but there needs to be change from higher up that will stop all this pressure because what's going to happen is you're going to have dentists that are delivering dentistry that is substandard because they don't have the time to do proper dentistry. (Practice manager)

The participant directed attention to the flaw in the overall system that imposes pressure of time and thus compromising the performance of dentists. A change in this system was perceived to be essential in practicing 'proper dentistry'. However, given the current circumstances, most participants identified teamwork as a way forward in order to ensure good preventive measures are in place. The following extract is a discussion taken from one of the focus groups where they talked about how they delivered better oral health in the clinic:

> P1: that's what I think is really good about here because it all sort of links in from the moment that they come in you've got the reception staff, that's not our main role... it's to make sure patients are booked in and are happy in the waiting room and things like that but again the displays there that sort of triggers it then they will go in and see the dentist and it just all follows on (Nurse).
>
> P3: me and [names the nurse] usually work together I'll let [names the nurse] take a big role in it so she delivers and she's good with kids so we work in a good team, I'll do the exam I'll give them information, she will give them a sticker, she's been here a lot longer as well so I think it is a team effort definitely (Practice manager).

There is a structure that is followed where the receptionist, nurses, dentists and the practice manager put in their effort to grab patients' attention to the preventive measures. The process starts right from the time the patient enters the clinic where they are exposed to information about sugar contents in food and drinks and brushing information delivered through displays in the waiting room. If the dentist gets the time, they are again talked over about how to take care of their teeth after which the nurse delivers extra information on prevention. Such a structure can be followed only when the staff members have the necessary training in delivering better oral health. In the above instance, the nurse took the additional training and hence was well informed about preventive measures. In addition to this, she also expressed passion for such kind of work, although she was not paid extra for her efforts (discussed later in the theme - Passion and dedication).

Some participants spoke about the necessity of training nurses and even receptionists in delivering better oral health:

> P1: well first of all I would put it as mandatory... so well the dental nurse is trained they are actually that is part of their training, when they are a qualified dental nurse including being an oral health educator what we class as a full delivering oral health should I say and I think they should be continuing development (Practice manager)
>
> P2: they need to know the basic information even if they're not delivering the one to one sessions you could have a parent or someone that rings up and says I'm just thinking about toothpaste what's the best toothpaste you can buy. (Practice manager)
>
> P1: same with receptionists not just a dental nurse (Practice manager)

Such training, according to the above participants, would ensure availability of information whenever patients need them. Even in circumstances when the dentist is busy, the additional staff could support the delivery of preventive measures, thus reducing the burden of the dentists and at the same time ensuring that patients do not have to wait to obtain information when needed. However, this is only possible when there are available staff members in the clinic who are at the same time trained with at least the basic information about maintaining good oral health. In the following extract, a Practice manager shared her concern stemming from the fact that she had

hardly any staff members who had the training or the experience and willingness to deliver better oral health:

> At the moment what we do is rely on the dentists a lot […] we would like to provide oral health education but I have to have one member of staff that is willing to do the course and deliver that information. In terms of my practice there's a lot of talk about wages - will they be paid extra to be able to deliver this information and will they have extra benefits (Practice manager)

The same problem associated with the dentists where there is no compensation for the efforts put in prevention, the rest of the staff members in the clinic also question about the wages gained from doing the additional work. This brings us to the next theme – Passion and dedication – where we highlight the essential level of motivation and zeal required to deliver preventive measures, given the lack of material benefits available for such work.

Theme 2: Passion and dedication

While teamwork could be a way forward given the present circumstances of lack of time and funding, members constituting the team also need to have the motivation to perform the role of delivering better oral health. The following discussion taken from an interview with a group of practice managers and nurses gives an interesting insight into the dynamics of trust, reliance, passion and dedication involved in the delivery of preventive measures:

> P2: ...because the dentists are on board with us so they will refer to you whereas [names another practice manager] in her practices hasn't got the beauty of someone like [names a nurse, also a participant in the same focus group] or [names another participant in the focus group who is a nurse], to me they have a vital role within the practice. (Practice manager)

> P1: like I said it's not the fact that I have people that won't I have the staff to send them on a couple of days course to do it but then you've also got to think when you're picking somebody like this it needs to be somebody responsible, somebody who you know you can rely on, I just took someone on recently I am still working out who I can rely on and who I can't and for me there is someone I could rely on which is the head nurse, however she

> has other jobs that I need her to do as well as being in surgery... as well as kind of how much can you put on that one particular person and also you've got other staff that will say 'yeah I'll do it how much more money am I gonna get?' (Practice manager)

> P5: I've been doing it for nearly two years without a pay rise and yeah if they said to be I'm gonna give you a little bit extra money I would but I don't do it for that. (Nurse)

In order to execute a team effort directed towards better oral health, there is a need for the cooperation from all the members in the clinic, including the dentist. In the first part of the above extract, the participant indicated that because the dentists in their clinic also had the passion and interest in this area of work, they directed their patients to additional support made available through other members in the clinic. On the other hand, it is also crucial that the other members could be relied on to take the responsibility of delivering better oral health. There might be availability of staff members, but not the passion and dedication required for such kind of work which would make it impossible to carry out an effective team work directed towards prevention. The nurse in the above extract sets an example of just the kind of dedication required to support the delivery of better oral health, but she too indicated the fact that some extra money from it would have done her good for the amount of time and work she had dedicated for this work. Another nurse from the same focus group added,

> for me its not about the money, I love it when my patients listen and they come in for a month review and they actually listened to what you've said and the mums and dads there as well and they've listened and they're like, 'oh I didn't even know that'. So not only are you giving the education to the kids, you're giving it to the parents as well. (Nurse)

Making a difference to the lives of her patients was significant to her and the fact that patients were engaging with the information delivered by her and responding to it, gave her the boost and motivation to carry on with her work of delivering better oral health. Here, there is a non-monetary reward involved, thus making it feasible to focus on prevention despite the lack of funding. In another focus group interview when the interviewer asked, 'what is more motivating for you to deliver that message?', one of the nurses replied:

> It's just that young children you don't want to see them lose their teeth at an early age... you look up previous generations that have had dentures in their teenage years, so you

> wanna avoid that if possible and you know it's gonna effect their quality of life so I think it's just the job satisfaction when you can make a difference when they are young and if you do it will stand them in good stead. (Nurse)

Such kind of attitude involving thinking for the other and performing a role irrespective of personal benefit is the essential element required in execution of successful team work towards the delivery of better oral health. However, not many have the same kind of dedication in performing work roles that are not compensated. Furthermore, just like in the case of the dentists, lack of time is another factor that is also applicable to the nurses that poses a barrier to perform the role of delivering preventive measures:

> I've got lots of girls that would love to do it but it's whether or not we can release them out of surgery to actually do that. I don't think money is an issue with the girls here as its not been mentioned. Although I have to say when I can, I will address that because I do think they should be rewarded for the extra duties that they take on. But again that depends on the constraints of the budget… but I think really as a company as a whole we do struggle with recruitment and retention of staff that are wanting to do this sort of thing so to me that is a barrier, a huge barrier, but I know there are a lot of nurses that have the qualification, that are really keen to get out there and do it but they can't because they're not released from the surgery. So I think there needs to be a bit more understanding with dentist of the need to do this and to utilise the skills that you have within the team because I think there are lots of skills that are there but we are not tapping in to and it's a shame. (Practice manager)

Passion and dedication are essential elements to make delivering oral health possible in a system where there is lack of additional incentive for such work. However, in addition to this, nurses should also get the time out from assisting the dentist in order to be able to implement their expertise in prevention. Although dentists may not have the time to perform the role of delivering better oral health, there is a recognized need for their support and cooperation so that the rest of the team can dedicate their time and effort for this purpose.

Theme 3: Communicating the message

Teamwork and the willingness of staff members is only the preliminary preparation towards delivering better oral health. The way the message is communicated to the patients and their parents has a critical role in this area of work. Patients do not generally visit the dentist for advice on keeping their teeth clean; rather visit for general check-up and/or treatment. Directing attention to prevention requires good communicative skills that would create awareness and possibly bring a change in behavior. It is found essential that communication takes place both with the children and their parents while at the same time use other means of support to inform and raise awareness. This theme is divided into three parts – engaging the child, grasping parent's attention and general visual information.

Engaging the child:

In order to engage the child with the advice delivered, it is essential that they feel a sense of responsibility and authority. This is both the starting point as well as the consequence of direct communication with the child which in turn ensures that they pay attention and follow what is advised:

> I get obviously small kids to large kids and middle age I do tend to ask them themselves, and I'll say don't look at Mum speak to me and sort of like get them more involved. Rather than speak to the parent, speak to them because obviously some kids, especially at school, when you're talking to them direct, they listen more so one to one sessions are better […]I just sort of do a one to one with them and then obviously if they only brush once a day I then go through why it's important to brush twice a day you know mainly on a night and ask them about their diet, obviously it's harder asking a child about their diet because they will say yes ill have sweets or fizzy drinks so I sort of then go to the parents. (Nurse)

In the above instance, the nurse recommended directly communicating with the child especially for brushing advice. It was only for dietary advice that she found it useful to instead talk to their parents about the restrictions that need to be maintained. Another participant highlighted the fact

that giving a sense of responsibility and control over their own behavior could motivate children to listen to the advice:

> I sort of say' right you're not a baby anymore like your little sister or brother you're a big boy now or a big girl you need to start to look after your teeth more'. It's talking to younger ones… is more difficult than talking to the teenagers, the teenagers can sort of say… you know what you gonna do, it's gonna cost them a fortune in the future do you want dentures like your grandma walking around like this (Nurse)

According to the participant, using scare tactics related to future consequences work for teenagers, and it is easier to make them understand the implications of poor oral health practices. For the younger children, however, she found it hard to build a sense of personal responsibility and motivation for change, whilst building sensitivity towards future concerns.

Contrary to the above, a dentist in another focus group found that, although not for the very young children, those who are eight years and above are capable of understanding and valuing future implications:

> my approach to slightly older kids certainly you would expect an eight year old or above to have that perception that they can improve their own situation. So I would bring it across to them if they have had some decay already, then they have a choice whether they will get more decay and try and put it to them that it is up to them to choose whether they want the benefit of nice teeth and no pain or their perceived benefits of nice goodies and things to eat… and everyday they've got to think about what choice to make so I try and sell it to them that way. (Dentist)

By making it their choice, it is possible to generate a sense of control and authority over their current behavior as well as their future, thus motivating them to make the right choice for themselves. Although such future concerns were perceived by some as incomprehensible for younger children, there are other ways through which the same message can be communicated. A participant suggested a method through which younger children could also be made sensitive to future implications of poor oral health practices:

> …the other thing is when you're seven or eight you don't understand what a denture is you don't understand but I think you should be more… whether it's a poster etc they should say, 'here, if you don't brush your teeth going forward you could end up with no teeth' and showing really bad caries and yes they don't quite understand but if it's in them when they're young you're gonna take more care. (Practice manager)

Future implications if communicated through visual aid can alert younger children, thus motivating a change in behavior. The same method as done with older children where concerns about the future is built in order to change their present behavior, younger children too can respond to the same concern if it is communicated visually rather than verbally. When the future is depicted in visual form, showing images of teeth with caries and gum disease, children are likely to be concerned and be affected by the advice delivered to them. In this way, certain words like 'denture' that are commonly used as scare tactics can be replaced by pictures depicting the same.

Another participant talked about an interesting method that she used to grab children's attention, that which involved breaking down the information, giving rational explanations and practical examples of the use of teeth, thus increasing awareness and at the same time making them value the advice given to them:

> I used to say to the kids, 'right what do you need your teeth for' and I would explain that they need them for eating, particular the little ones used to use the phonics and I would say a lot of words that we use our teeth for and one of them of the t… 't and where do you put your tongue when you say that' and they said behind your teeth and I said 'if you don't have teeth you can't say that word' and I said 'who can give me a word beginning with t' and they all put their hands up and gave me words […] I said 'you need your teeth for talking right? what else do you need your teeth for? Eating, right ok'. I went on to say, 'right these are the cutting teeth if you have a sandwich, you use these front teeth they're really sharp and you go like this and if you've got an older brother and sister that have lost their front teeth they can't bite into things like apples or crunchy stuff because they haven't got the teeth' then I'd explain about the molars and these are the hard working teeth these are the ones that tend to get most of the holes in and then I would show them pictures of decayed posterior teeth. (Nurse)

By breaking down the information into simple examples and explaining the use of teeth, she was able to make the conversation interesting and at the same time informative. While on one hand, they gain awareness of the functions of teeth, on the other, they start fearing that they would lose these vital functions that would in turn negatively affect their daily life. This education along with scare tactics seems to work for younger children enabling advice to be taken seriously and potentially bringing behavioral change.

While it is essential that preventive messages are communicated in different ways for children from different age groups, it is also vital that the child's level of sensitivity and understanding is kept in mind (irrespective of their age):

> I think that's why I do my assessment at the beginning and say to them, 'speak to me, don't let your mum and dad answer' because I want to know what level they're at, whether they know if they're using a manual or electric toothbrush, whether they know what toothpaste they use and they come out with, 'oh yes I do use an electric toothbrush I use this I use that', you sort of know that they have that knowledge and what they are actually supposed to be doing so maybe they need that little bit of a push to get them to fully cooperate. (Nurse)

Gauging the level of the child's awareness and understanding helps mould the message accordingly and tune in to the already existing knowledge and work on the extra bits of information to bring the necessary behavioral change.

A few others suggested that it helps to familiarize oneself with their routine and moulding the advice in a way that would fit into their daily schedule. In this way, rather than following a script of instructions, the child's routine and behavior is explored and the message engraved accordingly:

> …what I do as well is routine. So I'll say to them, 'what time do you get up' … regarding leaving thirty minutes before brushing, especially if they are only brushing once a day on a morning. We will speak about the routine on the night so what time do they go to bed, what time do they have their tea, do they have an evening snack and try to say to them, 'right so you go to bed at eight, you need to brush your teeth say half past seven'. (Nurse)

By understanding their time schedules, it is also possible to gage into the barriers to effective behavioral change. Thus, by framing the advice based on their routine, helps tackle the barrier and at the same time make it convenient for the child to follow the advice.

Participants suggested different ways of engaging the child to the advice for better oral health by, say, giving them a sense of responsibility and control, sensitizing them to future implications of poor oral health practices, breaking down the information and working with their routine. All these methods require a considerable amount of time and dedication. This links it back to the two themes discussed earlier – Essential teamwork and Passion and Dedication—both of which are required in order to use the aforementioned methods to good effect.

Grasping parent's attention

As much as it is essential that advice is delivered to the children directly, there is also the need to make parents sensitive and aware of the required oral health practices. Without the support and motivation from the parents, the child alone would not be able to implement the advice given to them. This is especially crucial in the execution and implementation of dietary advice:

> I had one case […] this young lad and I saw him when he was three and he had decay on lots of teeth and it was apple juice that was doing it to him and his parents just kept giving him the apple juice all the time and it got to point where I thought, 'do you know what I'm going to throw some emotion into this right now because quite frankly this kid needs it because he's not enjoying coming to see me, having fillings every time he comes to see me'. And I didn't cry with the parent, but I got quite like, 'do you realize this is your child and what you're feeding them is doing this' and it worked because I got rid of all the decay and there's been no more (Dentist)

Sometimes parents seemed to neglect the advice given to them about dietary restrictions essential for the children. This occurs mainly when they do not have the awareness and knowledge of the negative consequences of certain behaviour, in this case, a regular intake of juice. Although warned by the dentist, parents may not be convinced of the serious implications of certain dietary habits. It is in those circumstances that some dentists, like the participant above, may feel the

necessity to communicate the message in a harsh tone, whilst accusing and causing a sense of guilt in them.

Similarly, in another focus group a practice manager shared her experience with patient's parents who initially refused to restrict sugary food because they were not convinced that it had serious repercussions to their child's oral health:

> but there are a lot of parents that take on what you say and some parents that say, 'well I ate loads of sweets and it didn't have any harm', and I would come back and say, 'well everyone has different buffing capacity in their saliva and some people their salvia can neutralise acid a lot quicker than others and maybe you're lucky but obviously your child isn't lucky because they have all this decay and what we need to do now is concentrate... as he is obviously more at risk than you'... and I turn it on them the other way that's how I've always done it (Practice manager)

Parents come from different rational standpoint, sometimes refusing to discard their beliefs and change behavior. Simply delivering brushing and dietary advice may not always be enough to bring change in behavior. It may sometimes require that dental care professionals spend the extra time to explain and make them understand the significance of the advice delivered to them. One of the dentists in a focus group expressed the importance of delivering a meaningful advice:

> I think there's sometimes not a connection between the knowledge that they possess to what that knowledge might actually mean. So you can sometimes go through it with them- how long do you brush for? I brush for two minutes and I say, 'ok you know you're gonna get the ticks now don't you? Are you using an adult toothpaste?', ' Yes I am'. But then that's the knowledge, which is great they've got that health knowledge. But do they know why they've got that knowledge? Does that make sense? Do they know what the long-term outcomes are and the sugar in their diet etc etc, can they connect to understanding what decay is, can they connect to understanding gum problems etc? Does that make sense? I think sometimes for me the hardest thing is because if someone gave me some knowledge I wouldn't care about it unless it had some sort of meaning behind it. Does that make sense? So, making oral health education meaningful and really making

> that link between the knowledge to the causes… if that makes sense? Bringing them closer together. (Dentist)

In the above extract, the participant wanted to convey the message that delivering better oral health does not mean just prescribing steps that need to be followed at home. It is also necessary that patients' parents understand why they have been advised to do so, making them realize the negative implications if they do not follow what they have been told.

Using scare tactics is one of the ways some participants attempted to grab the attention of the patients' parents. However, this was mainly done when they were seen to neglect the advice given to them:

> ...you will get some parents that are not interested. They've kicked off when I've said about the juices and they've said, 'oh well if I don't give them juice they're gonna have a paddy'... and I've actually turned round and said, 'look who is the parent here, this child does not go to a supermarket and buy the juice, it's you that does it and if this carries on they're gonna end up with more GA's, hardly any teeth and have difficulty talking and probably going to have problems with their confidence and get bullied at school because kids make fun of them because they can't speak properly or they look different'. (Practice manager)

Parents do not always want to take the responsibility for poor oral health of their children. They tend to express a sense of helplessness and blame their child for their habits. If parents do not really understand the serious implications of poor oral health practices or undervalue oral health as such, they are more likely to give excuses as to why they have not been able to follow their advice rather than seriously considering how they could regulate behaviour. In such situations, using scare tactics might be useful as parents may then start understanding and taking oral health care more seriously.

A few participants proposed creating awareness early on from the time they are pregnant so that they have the requisite knowledge to be able to take care of the child's oral health. One of the dentists said,

> I tell the parents, basically I hunt down pregnant ladies and start hammering how to put toothpaste that type of thing straight away and if they come in I try and get them to book an appointment as soon as the baby's teeth come through and get them at a very young age (Dentist)

Getting the message across to pregnant ladies has been the intention and focus of many dentists who feel the necessity to reach out to the parents and make them sensitive to oral health of children right from when they are born:

> I draw the line at saying breast is best because I just think there's enough people screaming at them from the minute that you're pregnant and it's too much and you see people shut down […] it's good to engage with them to say, 'you're doing a grand job, this is really hard and you're the best mum in the world, but don't get that juice because water is much better, and don't get berry sparkle toothpaste because by the age of three you're gonna be head locking them, so just get them on the adult one straight away and by the way your baby is gorgeous' and that works far better than me yelling. (Dentist)

Rather than preaching and following the prescribed script of instructions for prevention whilst talking to pregnant ladies, the above participant proposed that one should engage in a general conversation and embed the oral health advice in the process. Thus, building a good rapport and then delivering the advice could potentially help impart the knowledge and at the same time reduce the risk of sounding harsh, as if lecturing them about how to take care of their child. This again requires more time and dedication than what is commonly available to a dentist in a general setting. Parents can be directed to an oral health educator who can then allot the necessary time to deliver the advice. However this is not always a simple process because parents may feel challenged and threatened when they are sent for additional support. In one of the focus groups, the interviewer asked, 'how do you have that conversation with parents to say I'm going to send you off to my dental health educator but still reinforce to the parents that that's important'. To this one of the dentists responded:

> ...you're coming to see me for treatment so the time you're in my chair in my time it's too late, it's going to cost you X amount of pounds, your child is going to be in pain with

> injections involved and extractions under GA, go and see this person who is there to help you. (Dentist)

It is in the way that the necessary advice is communicated that determines whether the parents understand and retain the information seriously. In the above extract it can be seen that the simple message – prevention is better than treatment – was explained in a way that would be applicable and meaningful for the parents.

When the interviewer asked about using external support in the absence of an oral health educator in the area, a participant replied:

> …we made that initial approach to social services to try and get that support and we didn't get anywhere with it […] They're going to put a brick through the window, they're that kind of family and so there is anxiety about how you get those messages over, it isn't what you say it's what they hear and how you manage those messages is really delicate because we want them to keep coming back. It's long term gain, it's not short term. (Dentist)

Additional support could be effective when parents need to be given the extra time and effort to bring change in behavior. However, as mentioned earlier, the way this is communicated to them is crucial in determining whether they would take this positively or stand defensively against it.

Overall, it is the way the advice is communicated that determines whether parents would retain the information delivered, consider its serious implications and implement changes in behavior.

General visual information

Along with direct communication of advice on prevention, many participants found that visual cues installed in the clinic helped grab attention of both children and their parents. By displaying different information related to brushing and diet, especially in the waiting room, it was found that patients and their parents noticed and responded to it:

> P5: yeah I've made my own little teeth diagram and laminated it and draw little bugs on them so they can see how they need to brush and things like that. (Nurse)

> P2: we used to have a display, didn't we on how many teaspoons of sugar in certain ingredients and that went down a storm. (Practice manager)
>
> P5: obviously, they've got the diagrams, haven't they? They've got the poster now which a lot of patients have actually said, 'wow I didn't realise how much...' (Nurse)

Such displays appealed and grabbed attention of parents and children thus imparting knowledge without necessarily spending time and effort for each individual patient. Given the current circumstances of lack of time, staff and funding available to support prevention, such displays can be useful in reaching out to the patients and creating awareness related to oral health – like how to take care of their teeth and alerting them of the sugar content in different food and drinks.

Some participants recognized the potential of such displays to reach a wider audience through the few people who view them in the clinic:

> …for me doing the displays on reception what I've noticed is we've even had some grandmas and grandads come in without the children that have actually taken photos of the sugar display on their phone to actually to take out and go show, we can hear them talking and we can hear them say, 'I'm gonna show whoever these photos because I know for a fact that he eats all them sweets' and I think it definitely… visual displays definitely does have an impact. (Receptionist)

Displays, like the sugar ones, were especially found to be impactful and most responded to them and wanted to take it outside the clinic to alert those who were ignorant about it. However, not all individuals are affected in a similar way through such displays and there is a need to use various other resources through which the advice could reach out to different kinds of audience:

> …you have to have various things going on at the same time that all work in collaboration with each other and I think that is important so you can't say that one thing is better than another because what might work for one target group of people will be a waste of time with another. So you need to have lots of things going on, some people might respond well to leaflets other people might respond better to one to one (Practice manager)

Having displays does not mean that dental care professionals can reduce the time spent in delivering direct advice. While displays can potentially increase awareness and knowledge about different aspects of oral health, it is still essential that patients have the direct attention from dental care professionals. Discussion about maintaining good oral health could also be stimulated by the displays:

> I work on reception and its part of my role to do like displays and promotions. So at the moment... I'm not sure if you noticed when you came in... there's a sugar display, so what we try and do is every month we try and do a different sort of topic around sort of preventing. So at the moment we are doing the sugar display, we did the dummies, the juice in bottles on display. The sugar display... nearly every patient makes a comment about it. It's really, really good and obviously hear any patients discuss it with their children, so if we hear any patients doing that we like to get involved. So I sort of listen and if you hear them talking you will sort of say and explain why we've done it, so that's sort of my sort of role so promotion work posters and like I say every month we have different topics that we do to try and fit in with everything. (Receptionist)

Visual information in the form of displays often led to discussions between the child and the parents and sometimes provided avenue for staff members to engage in the conversation and deliver extra information on prevention. In this way, through the combined efforts of different staff members working in the clinic, oral health advice can be communicated to the children and their parents, thus aiming to bring a change in behavior. However, at the same time it is crucial that the members of the team are internally motivated to take responsibility to deliver preventive advice.

Theme 4: School- an ideal environment

In all the focus group interviews with dental care professionals, participants raised the discussion about delivering advice in a different environment other than the clinic, specifically targeting schools. Some participants spoke about their experience of delivering advice in schools and the outcomes they had witnessed from such visits. One of the participants said,

> …going to schools that to me is important because you can build those relationships and you can start breaking down some of those barriers, and you've also got those children that don't go to the dentist and the only time they do go is if they've got toothache which usually needs a GA. So by working in partnership with schools or toddler groups or whatever you can actually increase the access to dental care because then it comes on their agenda… then it's one of those things, the earlier you get in, the better. (Practice manager)

One of the main advantages of visiting schools is the access it provides to those who pay little attention to oral health. As described in the extract above, there are many children who only visit the dentist when there is a problem. Thus, the focus is often on treatment whereas prevention is undervalued and disregarded. Through school visits, there is potentiality to overcome this barrier and increase awareness about the importance of good oral health practices. Furthermore, it increases the chances of reaching out to children at an early age so that good oral health practices are learnt and implemented at the right time before they develop any critical problems.

A change in behavior is more likely to be achieved when advice is delivered in an environment ideal for learning. The comfort that school environment offers to young children allows them to actively engage and retain the information delivered,

> …the kids absolutely enjoy it and it's so interactive, that's what is missing I think, going into school and educating the kids and they will go home and tell their parents off and there will be going I need to do my teeth for two minutes. (Dentist)

The level of interaction that takes place in a school environment was found to be higher than when the same information was delivered in the clinic. Not only do they engage in the discussions, they also take home that information, share it with their parents and are likely to implement the same. Similarly another participant from the same focus group said,

> …when I visited the local school… and a lot of them are my patients so it was quite nice for them to see me in their school setting and I just took a big model of a tooth and tried to be really fun and approachable, whether or not it worked I have no idea but it was good for them and they certainly came back to me at the dentist and they said, 'oh I remember what you said'. (Dentist)

It was rewarding even for the dentist when she saw that they remembered what advice she delivered in the school and discussed the same in the clinic. Such positive outcomes from school visits were also shared by a few other participants. One of the participants shared her experience where she got to witness the positive outcomes of her efforts of delivering oral health advice in a school:

> I've been into my kids school a few times, had the best time of my life, brilliant questions and the kids all went home and I got collared in the playground the next day by all the mums saying they never cleaned their teeth before like that in their life and is it true they can have cheese but not chocolate and nobody knows two minutes, and the spit don't rinse. (Dentist)

In schools children are often encouraged to interact, discuss and raise doubts and questions during the learning process. Oral health advice given in such an environment is likely to generate the same kind of engagement and involvement from the children. In other words, in school, children are naturally tuned to actively take part in discussions and this can be advantageous whilst delivering oral health advice. The responses that were obtained by the participant (in the above extract) suggest that children were retaining the information and at the same time discussing it with their parents. Prior to this, most parents were found to be ignorant of such oral health related information. In this way delivering oral health education in schools could also reach parents, making them aware of their responsibilities and at the same time help deal with their resilience to change:

> yes, they feel you are lecturing to them and it is perceived as though they are being told off as in, 'yes, we love our children, yes, we clean our children's teeth, but now you're telling me I'm not doing it properly'. If you do it in a school environment of course you are less threatening. (Dentist)

As mentioned earlier in the theme Communicating the message, the way the information is delivered to children and parents determines the extent to which they listen and implement changes. In addition to this, the environment can play a key role in determining how parents perceive the advice given to them. The learning environment rendered by schools also helps

parents engage and take the information less defensively and more productively, without necessarily feeling challenged or threatened.

The disadvantage of a clinical setting can be dealt with by delivering the advice in a place that would be more comfortable and ideal for learning:

> …it's interesting because I'm wondering if it's the environment in where you are giving this oral health message so if it's because they're in the dentist they have had a bad experience there before, maybe they're less likely to listen to you maybe if it's in a different environment and there was some sort of prevention system that was set up within the NHS for school visits whether that would be more effective. (Dentist)

Many patients were found to be anxious about dentist visits, mostly when they have had a painful experience in the clinic. Delivering advice in such an environment may not always be ideal as they tend to be preoccupied with their fear. Given the vital role played by school visits in bringing change in oral health practice, the above participant proposed that there should be a system in place making school visits an integral part of preventive campaign. Without the support from NHS, such promotion through school visits may become short lived, as also explained by one of the participants:

> I spent nearly thirty years going into schools and schools wanted you to come in and one of the things that they changed was when I first went into schools we would do the talk we said, 'would you like us to come in' and we would do one on healthy eating or go with something that was on the national health curriculum and they loved us going in. And then our managers then decided that wasn't cost effective and we should be teaching the teachers how to deliver, and all the information we got back from the schools was, 'no, that won't work because the kids will listen to you more because you are a new person rather than it be us all the time', and a lot of the schools actually kicked up a fuss because they wanted somebody new to go in but it's not part of the national curriculum, but if at any point they want to discuss teeth oral health or whatever then they would ask us for advice and we would deliver it. (Practice manager)

Although delivering oral health advice in schools was encouraged by the school itself and was found to be an effective means of reaching out to children, it was not possible to make school

visits a part of a regular scheme because first, it was not cost effective and second, it was not part of the national curriculum.

In conclusion, school was found to be an ideal environment to deliver oral health advice, but making school visits for this purpose was only done occasionally as there are not enough staff, time and funds available for it. This directs attention to the need for government support so that benefits of an environment, like that in schools, can be utilized for the purpose of oral health education.

Theme 5: Products- focus on practicalities

In this theme, we highlight the views shared by different staff members in the dental clinic (like dentists, nurses, Foundation dentists, practice managers and receptionist) about dental care products and the recommendations and advice they give to patients. For convenience, this theme is divided into four sections, namely,

- Sensitive about cost
- Flaws in electric toothbrushes
- Against flavoured toothpaste
- Sticker charts and timers

As far as dental care products are concerned, the focus was on how they would help enable patients and their parents implement the advice delivered to them. Thus, they paid attention to cost, long term use of the products and developing consistent and appropriate oral health practices. We will discuss these elements in this theme under the aforementioned sections.

Sensitive about cost

There is some amount of cost involved in maintaining good oral health and dental care professionals are sensitive about this. The main advice given to the patients is with regard to brushing and diet. It is primarily the brushing advice that was perceived to involve a cost:

> I think electric brushes, that's probably the main one, diet I don't think I've ever heard of any patients well it's going to cost me to live healthier so even though it is expensive I've never heard that one. (Receptionist)

While recommending dental care products to patients' parents, they had to be careful with regard to affordability. Not all parents, especially those in the deprived areas, had the kind of income that would enable them to buy high end, attractive products. Most participants expressed sensitivity to the cost and gave recommendations that would be cost-effective:

> I had some disclosing tablets from before and one of the things parents often say is that disclosing tablets are expensive when you say it's a pound for eight and I show them how to use them then I say, 'if the child isn't allergic to food colouring, you can buy a bottle of food colouring, just get a cotton bud dip into it and wipe over the teeth and it works just as well and it shows where the plaque is'. (Practice manager)

By recommending such home remedies that are cost-effective, parents are more likely to retain the advice and implement the recommended practice. Similarly they are quite often careful while advising about what toothbrushes to use. Although most felt that electric toothbrushes are better than the manual ones, they were sensitive of the additional cost involved in buying the electric ones. Thus, among the different electric toothbrushes available, parents were advised to only look for those that have small heads, without necessarily prescribing a certain brand:

> I always say to them don't buy the expensive ones with the timer and the flashy bits the basic one is absolutely fine but I think unfortunately we are conditioned to think that branded stuff is the best and it isn't. And same with the toothpaste, I always say buy supermarkets' own brand, look at the back as long as it's the right level fluoride that's what you're looking for (Practice manager)

The advice and recommendations were moulded in a way that would appeal to the parents so that they do not feel as if a cost is imposed upon them. Thus, it is essential that the advice for products is tuned with what is practical and possible for the parents:

> I think for me cost is something that you have to factor into it because if you say to parents, 'right you've got to buy an electric toothbrush and this toothpaste', there's no

> point as they don't have that disposable income. So you've got to be realistic. So I always tell them about the food colouring and I always make sure they are not allergic to it first and say this is what we use here but if you want a cheaper alternative, this is what you can use and with the toothbrushes I usually say you need a small headed toothbrush [...] if you see that the bristles are going outwards it's time for a new one that's what I usually say. (Practice manager)

Another participant said,

> ...again you have to look at the demographics of your area and if you're in an affluent area your parents won't think twice about spending three quid on a toothbrush whereas somewhere like here they go to the pound shop and get four for a pound and to me I would say, 'if that's what you can afford, then that's fine as long as it's a small head'. You've got be realistic, are you going to advocate the new something that you know they can't afford so they're not going to do anything at all or give them alternative that they probably are going to access and it's going to make a difference. (Practice manager)

Instead of imposing specific products, the above participant expressed her sensitivity to cost and focused on functions rather than naming any particular dental care product. This is vital whilst dealing with parents from a deprived locality because there are chances that they would not follow the basic oral health practices just because they cannot afford the required products. Their main concern is making sure that patients follow the preventive measures at home even if with the use of a low end product. Some even gave examples of toothbrushes to the parents that are of low cost and yet effective. The extract below shows a discussion that took place in one of the focus group interviews:

> P4: I do point out that the change for life, will get vouchers and things like that and it is worth a look and that'll get them reading it, if nothing else. (Nurse)

> P3: I just google it now and show them that they can get it and the other day she thought it was about £80-90 to get the cheapest one and I said you can get an oral b one for £25. (Foundation dentist)

> P1: a lot of supermarkets have offers on and stuff so they have got a lot cheaper. (Receptionist)

> P3: it's an investment and then you just change your heads every three months and I think the children ones are even cheaper. (Foundation dentist)

Different options were made available to the parents in an attempt to reduce their cost of buying the products. By making parents aware of these options, on one hand, they express their sensitivity to cost and on the other, increase the likelihood that parents would follow and implement oral health advice delivered for their children.

Although participants talked about focusing on cheap dental care products, many expressed how some of the expensive brands appeal to the children, also ensuring that they follow good oral health practices.

> I don't mind brands, I think the money is the issue and I think with the branded you get it all the time where kids will say, 'oh mummy can I have this one it's got mickey mouse on it' and as long as the parents are willing and able to, they are fantastic and it helps motivate the children... (Practice manager)

Many dental care professionals found some of the branded products useful as they had attractive images and sometimes features that would motivate children to follow their advice. The only reason they are careful about recommending such products is the cost. Some of the other participants highlighted the usefulness of some of the high end products, especially when a few such products were displayed in front of them in the interview:

> ...the toothbrushes now, the electric ones are so much better now they've got the timers on them, and it is a lot of money and I think that's where the problem is. (Practice manager)

While pointing at one of the products displayed, one of the participants said,

> ...and there's an app here to download, magic timer that's going to get them interested. (Nurse)

The products were attractive and had additional features that would enable children to time their brushing, making sure they do it for the prescribed two minutes. However, these products were never recommended to the patients whilst delivering the advice because of the cost associated with it. Instead they were directed to products that are cheap and perform the basic functions:

> ...they're cheap you can say, 'go and get one it's 10p' whereas if you say, 'go get them they're £2.50', it's a different message when you've got a really deprived patient group. (Dentist)

By giving the above example, the participant conveyed the difficulty they face in recommending products with added features. They quite often focus on the basic functions and whether or not parents buy a product with more features is left to their own decision.

Interestingly, there was one participant who highlighted a drawback of toothbrushes that had characters in them, which further led to an extended debate about it within the focus group:

> P3: only draw back is that when they get a bit older they don't want this what do you do next? Because that's a bit of a challenge. (Foundation dentist)
>
> Interviewer: you don't think they carry on that habit or build on that habit?
>
> P3: I think you might be temporary, well in my opinion anyway, I think it's good and better than not doing anything at all, but I think there's draw backs to it because this is cars how old would you be to like cars? (Foundation dentist)
>
> P1: it's getting, like you say, a child used to a toothbrush from an early age. It's really good for that and I think for me before I started working here, I've never used an electric toothbrush and then obviously because I started working here, I bought myself one but I would never ever, ever go back to a manual. So I think that probably most people would say that. So I think from a young age to get them used to it from seeing the characters and their favourite characters and getting them to do that, I think it's quite good. (Receptionist)

Characters in toothbrushes may appeal to children only up to a particular age. However, if during an early age, they are habituated with brushing, especially using electric toothbrushes, they are

likely to continue with the same, thus ensuring that good oral health practices are made part of their life. In other words, appealing characters in dental products could potentially enable a good start to a healthy practice that could eventually develop into a habit.

Flaws in electric toothbrushes

Despite the preferences for, and the many advantages of, using electric toothbrushes, there were a few participants who highlighted some of the technical problems that could affect brushing behavior. There were some participants who said that they advised patients' parents not to buy battery toothbrushes. The reason behind this is the recognized flaw in its long term functionality. One of the participants said,

> …one of the things I say is don't buy battery toothbrushes and the reason being, and I know this from obviously what's happened in the practice with me, is when you use the rechargeable batteries, if the charge goes below a certain level, the brush won't work whereas the battery ones if the battery ones running out, it will still make the noise and they think it's working and it's not, the rechargeable ones are the better ones (Practice manager)

The rechargeable electric toothbrushes were considered reliable as they would stop working when it is not charged enough, at which point they can recharge and use it, whereas because battery operated ones continue to work even after it is low on charge, it does not do the job well. Dental care professionals are focused on functions and it is important that children brushed their teeth regularly and appropriately. A flaw in the function would only defeat its purpose.

Another participant spoke about a technical issue where electric toothbrushes were found to run out of charge very quick. This in turn affected their oral health practices:

> I know it sounds really daft but they need to come up with one that charges a lot better because you charge it and within about three days its ran out of charge and I can see people being quite lazy and not actually bothered charging them. (Receptionist)

While being mindful of the pragmatic issues, the participant shared her concern about inconsistent oral health practices stimulated by flaws in dental products. Consumers often look for ease and convenience, especially when buying an electric toothbrush. The frequent running out of charge only means that they would have to put that extra effort to charge them on regular and frequent intervals. This issue was not raised by any other participant in the interviews, but yet a problem that could be faced by many who use electric toothbrushes.

Against flavored toothpaste

An interesting view about toothpastes was shared by participants from all the focus group interviews. All the participants talked about advising against flavoured toothpastes and the reason for this was mostly the same – difficulty faced in transitioning from kids to adult toothpaste.

> I'm always an advocate for not using fruity flavoured toothpaste. Try and get them on mint because as soon as they're too old for the fruit stuff, it's a shock to the system and they stop brushing their teeth because they don't like it. (Nurse)

Although fruity flavoured toothpastes would appeal to younger children and possibly make it easier for parents to make their children brush, in long term this could only pose as a barrier. Children often complained about the strong minty flavour as soon as they are asked to shift to adult toothpaste with higher fluoride content. Many participants have had personal experience of this with their children and also recognised the same problem in their patients:

> It's these fruity favours again isn't it, so because they're very mild, once you, I made the mistake of doing this trying the fruity ones and you buy the fruit ones because you think that's what they want and they still get the right fluoride but it's getting them off of this onto normal standard strength toothpaste, it is a big shock and then with mine my son hated it and said he wouldn't clean his teeth. (Receptionist)

While giving advice on toothpaste, the focus was always on two things: checking the fluoride content and advising against flavoured toothpastes (see Box 1 for more examples from the extracts).

Box 1: Examples from extracts recommending against flavoured toothpastes

..look at the back, as long as it's the right level fluoride, that's what you're looking for. Kids might not like the taste, that's fine, but I actually tell them not to use the flavoured toothpaste because a lot of the children's toothpaste that is flavoured, like the fruity flavour or whatever, doesn't have enough fluoride in it and when they get to seven and they should be on an adult toothpaste, they don't like the taste of it. So I always say, 'never ever start them off on a flavoured toothpaste, just use the normal family one...(Practice manager)

..get them on an adult toothpaste straight away that's my big thing, it's just getting rid of the berry sparkle (Dentist)

..and then obviously just make sure they use the same adult toothpaste from the start (Dentist)

..don't get berry sparkle toothpaste because by the age of three, you're gonna be head locking them so just get them on the adult one straight away (Dentist)

Sticker charts and timers

Participants gave positive responses to stickers and sticker charts as they found that children were quite attracted to it and sometimes helped develop good oral health practices:

> I used to use reward charts all the time and ask the kids to bring them back, 8/10 kids used to bring them back with the stickers on and we used to have little things to give out to fill in on their sticker chart and I think, providing parents are actually supervising it, it does work, but we don't have them where we are now. (Dentist)

There was a high response rate to sticker charts, also helping the child and the dentist keep track of their oral health behaviour. Characters in these charts and stickers were an additional appeal to children and some participants recognised this as a productive additional tool supporting good oral health practices:

> Interviewer: do you think information leaflets or congratulations things or sticker charts, do you think any of those helps motivate the children?
>
> I think sticker charts things like that, certificates, stickers they love things like that and if it's a character that they know then, yes, much better. (Practice manager)

Many others recommended using egg-timers, tooth-timers or other such products to help children time a two minute brushing. Making these products attractive also helped children take interest in using them whilst brushing, thus ensuring that they brush for the appropriate amount of time:

> P1: we have the tooth timers that go down really well. (Receptionist)
>
> P2: the two minute timers and they're all in really bright colours and when the children see that they like that and we explain to the children what they're for and show them and I think that does encourage parents to buy and then they know they've got to do it for two minutes (Practice manager)

Using such attractive timers, just like in the case of toothbrushes, can help children develop a habit of brushing for the recommended amount of time, even after such products stop being appealing to them. Thus, simple products can be made attractive to young children by adding characters and other features and eventually help develop good oral health practices. However, the limitation to such products is the cost, which is the reason why most dental care professionals refrain from advising parents for such products.

Conclusions

This is one of the first studies to explore the experience of dental practitioners and their wider team regarding delivering oral health advice to children and their parents and caregivers when working in the NHS. Different members of the dental team identified the importance and benefits of engaging the whole dental team in delivering preventive oral health messages. Frustration was expressed at the lack of time and funding available to enable staff to provide oral health advice both within and outside the dental practice (e.g., in schools), and there was a suggestion that team members needed to be motivated by factors other than salary such as the positive impact on patient's lives. Visual displays within reception areas were seen as facilitating discussion with all team members, including reception staff. This suggests future interventions aimed at delivering advice may be most effective when delivered across the practice setting (as opposed to just chairside), with discussion and engagement with advice initiated by reception staff and followed up by the dentist within the consultation.

The way oral health messages are delivered was seen as crucial to how effectively children and parents engage with them. Interventions that focus on the child (and so give them a sense of responsibility) and that communicate the negative future consequences of poor oral health care could be most effective. For parents, dental teams may feel more comfortable using emotional appeals, especially when parents fail to follow previous advice.

If recommending oral health products, future interventions need to consider the affordability of products to parents, especially those in more deprived areas. The use of flavoured toothpaste was seen as a barrier to children continuing good oral health practices in later years, as there is likely to be difficulty shifting them onto an adult toothpaste when needed due to change in flavor between children and adult toothpastes. The use of additional products such as rewards and timers was seen as a good way to get children into the habit of brushing for the recommended amount of time.

The results of these focus groups constitute personal experiences of what works for individuals within their practice. Therefore, although it is useful to gain insight into individual experiences, in comparison to the systematic reviews, these experiences are not evidence based. For example, although dental teams suggested that oral health advice may be more effective when delivered in

school rather than in a dental setting, this is contrary to previous evidence which suggests that chairside oral health promotion may be more effective than other methods of health promotion (Kay and Locker, 1998). Therefore, some degree of caution must be exercised when interpreting the results or using these findings to advocate the use of or effectiveness of specific practices, unless triangulated by other evidence. Exploring the experiences of children and parents when receiving oral health advice from dental health professionals and their wider teams will help us to further understand how oral health advice could most effectively be delivered within an oral health setting, in order to develop appropriate materials to support the advice delivered within the dental setting.

A combined paper of focus groups with dental teams, parents, and children within this project is in preparation for publication.

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References

BROADBENT, J. M., THOMSON, W. M. & POULTON, R. 2008. Trajectory patterns of dental caries experience in the permanent dentition to the fourth decade of life. J Dent Res, 87**,** 69-72.

DEPARTMENT OF HEALTH 2012. Healthy lives, healthy people: Improving outcomes and supporting transparency. Download Part 1: A public health outcomes framework for England, 2013-2016. London HMSO: HM Government.

FEREDAY, J. & MUIR-COCHRANE, E. 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. International journal of qualitative methods, 5**,** 80-92.

HALL-SCULLIN, E., WHITEHEAD, H., MILSOM, K., TICKLE, M., SU, T.-L. & WALSH, T. 2017. Longitidutinal study of caries development from childhood to adolescence. Journal of Dental Research, 10.1177/0022034517696457.

KASSEBAUM, N. J., BERNABE, E., DAHIYA, M., BHANDARI, B., MURRAY, C. J. & MARCENES, W. 2015. Global burden of untreated caries: a systematic review and metaregression. J Dent Res, 94**,** 650-8.

KAY, E. & LOCKER, D. 1998. A systematic review of the effectiveness of health promotion aimed at improving oral health. Community dental health, 15**,** 132-144.

MARINHO, V. C., HIGGINS, J., LOGAN, S. & SHEIHAM, A. 2003. Fluoride toothpastes for preventing dental caries in children and adolescents. The Cochrane Library.

MATTILA, M. L. R., P.; AROMAA, M.; OJANLATVA, A.; PAUNIO, P.; HYSSALA, L.; HELENIUS, H.; SILLANPAA, M. 2005. Behavioural and demographic factors during early childhood and poor dental health at 10 years of age. Caries Research, 39**,** 85-91.

MOYNIHAN, P. 2005. The interrelationship between diet and oral health. Proceedings of the Nutrition Society, 64**,** 571-580.

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE 2014. Oral health: approaches for local authorities and their partners to improve the oral health of their communities. Public Health Guidance 55.

PUBLIC HEALTH ENGLAND 2013. National Dental Epidemiology Programme for England: Oral health survey of three-year-old children 2013. London: http://www.nwph.net/dentalhealth/reports/DPHEP%20for%20England%20OH%20Survey%203yr%202013%20Report.pdf.

PUBLIC HEALTH ENGLAND 2014. Commissioning Better Oral Health. London: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321503/CBOHMaindocumentJUNE2014.pdf.

PUBLIC HEALTH ENGLAND 2016. National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2015. A report on the prevalence and severity of dental decay. London: http://www.nwph.net/dentalhealth/14_15_5yearold/14_15_16/DPHEP%20for%20England%20OH%20Survey%205yr%202015%20Report%20FINAL%20Gateway%20approved.pdf.

PUBLIC HEALTH ENGLAND 2017. Delivering better oral health: an evidence-based toolkit for prevention. London.

RICE, P. L. & EZZY, D. 1999. Qualitative research methods: A health focus. Melbourne, Australia.

WYBORN, C., DYER, T. A. & GODSON, J. 2012. The impact of deprivation on the dental health of five-year-olds in Yorkshire and Humber 2007/2008. http://www.yhpho.org.uk/resource/item.aspx?RID=158355. Yorkshire Public Health Observatory.