

Insights Report

THE IMPORTANCE OF DENTAL HEALTH AND ORAL HYGIENE

By: Nuria Serna

Contents

03	INTRODUCTION
05	RESEARCH OBJECTIVES AND QUESTIONS
06	METHODOLOGY
	Research Framing and Literature Review
	Choices of Research Method
	Questionnaire
	Interviews
	Secondary Data
	Methods of Data Analysis & Presentation of findings
14	DISCUSSION
	Data collection overview
	Evaluation
	Research Limitations
28	SUMMARY

BETWEEN 60% AND 90% OF SCHOOL-AGE
CHILDREN EXPERIENCE ONE FORM
OF ORAL DISEASE



INTRODUCTION

Oral health is an important aspect of our lives. It can affect well-being, quality of life and self-esteem (Welbury 2016). If taken for granted, the risk of oral diseases increases significantly, with children and adolescents being mostly affected. In developed countries, between 60% and 90% of school-age children experience one form of oral disease (Devon et al, 2017). For example, healthcare data in England indicates that 23.3% of five-year-olds have a history of dental decay with one or more teeth extracted or filled. For children under the age of four, dental issues such as tooth extraction is a major reason for hospitalization (PHE, 2018). To put this in context, almost a quarter of children in the United Kingdom have tooth decay, with one or more teeth needing extraction or fillings.

On the one hand, it is worrying that one of the most common reasons for admissions in hospitals in children is tooth decay. Even more concerning is that despite recommendations from the Dental Community that children should visit the dentist every six months, just 58.6% saw an NHS dentist in 2018 (NHS Digital, 2019). Of course, this statistic does not account for any Non-NHS dental appointments. However, what is clear from UK health data is that poor oral health has an emotional and financial impact on the community. For example, tooth extraction cost the NHS approximately £50.5 million in the years 2015 to 2016, with the average cost of tooth extraction for under five-year-olds being £836 (PHE, 2017).

The good news is that tooth decay in children is very preventable and prevention begins in early childhood. Regular check-ups and good habits such as tooth brushing at least twice a day, having a low-sugar diet and regular visits to the dentist, are some of the ways to reduce the risk of dental issues.

Despite the simplicity of these habits, recent statistics show that a third of children do not have good habits and parents still fail to ensure that their children have appropriate dental care or treatment (Finlayson et al, 2018). Welbury (2016, p.285) argues that any failure to support a child's necessary "dental care is neglectful" and the potential impact may go beyond their childhood. For instance, children have a higher chance of experiencing other adverse life events such as emotional and heart conditions when parents neglect their dental care (Welbury 2016).

The staggering statistical data about dental negligence and oral hygiene support the critical need for the development of more acceptable and effective interventions that not only effectively communicate the dental issues to parents, but can also prevent further neglect of oral hygiene in children.

This research aims to promote early intervention and improve oral hygiene in the Cardiff community. The study would highlight key factors that have shaped perceptions and beliefs around oral health. The study would also evaluate initiatives currently being implemented in the community. To meet these needs, a quantitative analysis would be performed on parental behaviour and practices concerning oral health. This would be supported by interviews to better understand children's dental health as well as the struggles, barriers, and motivators for parents to implement or maintain good oral hygiene.

Having provided this brief overview, the next section will highlight the research objectives and questions.

ONE OF THE MOST COMMON REASONS FOR ADMISSIONS IN HOSPITALS IN CHILDREN IS TOOTH DECAY

RESEARCH OBJECTIVES AND QUESTIONS

The underlying rationale for this study emerged out of an interest in evaluating the role of diet and dental visits in the oral health of young children. This was exacerbated in the researcher's interest in the potential role graphic communication could play in educating, encouraging and informing the public about the importance of dental health.

This research has the following objectives, to:

- Create an understanding of the key factors that have shaped perceptions and beliefs around oral health.
- Explore, empirically, a community's view on oral health and dental care, focusing on the behaviours and attitudes of families with young children.
- Provide recommendations on how an initiative can be formulated to effectively meet the oral health needs of the community.

By meeting the above objectives, this research aims to provide answers to the following question:

How do we make families more aware of the importance of dental health and oral hygiene?

METHODOLOGY

This section highlights the method that is used to answer the above research question. It also explains how the entire research approach and decisions were made, including data collection, analysis methods, the role of the researcher in regards to the research topic and the usage of theoretical constructs derived from the literature. In this research, the subjects being investigated are separated from the research and knowledge is be gained through observing how the respondents behave and interact.

Yin (2009) argues that it is important to provide a good argument that indicates how rigours the methodological path of research is. Figure one below shows that this research comprised four stages:

- Research Framing, including a review of the literature
- Identifying the Research Methods
- Data Analysis
- Presentation of Findings

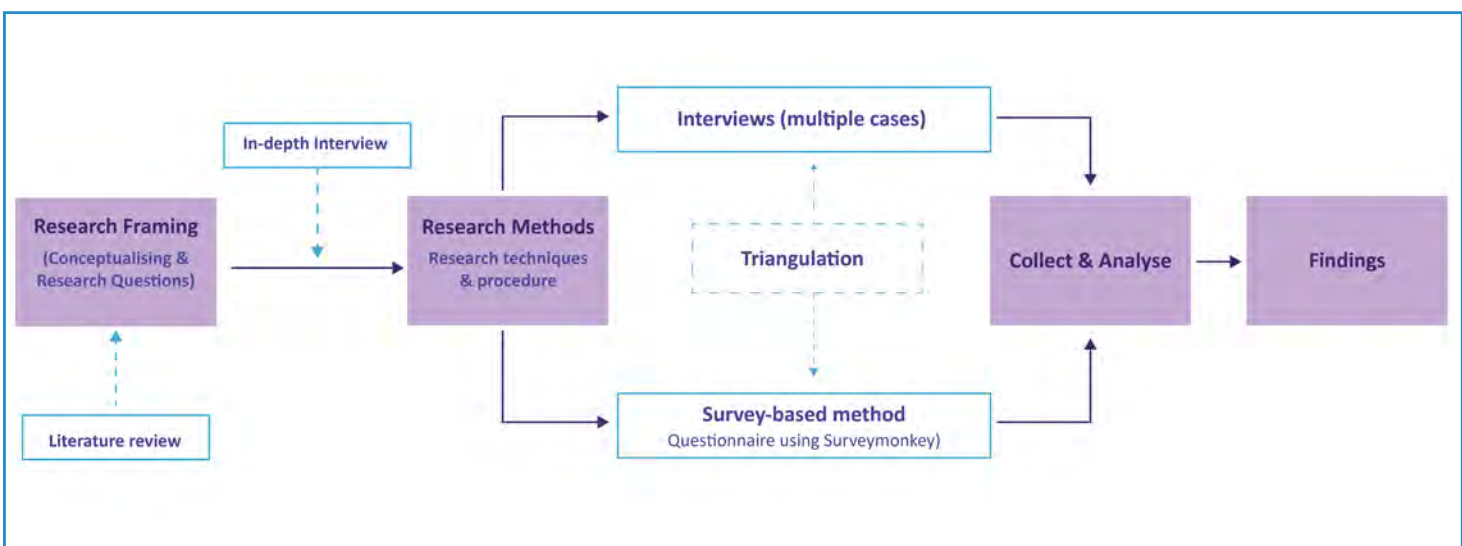


Figure 1: Research Strategy
Source: The author

This phase started with a review of the literature. Here, a structured literature search of articles and journals in databases was performed. Using keywords, articles were identified, examined, and references to other articles were pursued. Creswell (2007) argued that reviewing existing literature prevents duplication of findings, and helps researchers to identify gaps and acknowledge previous studies. The next step was an in-depth interview with a Resident Dental Practitioner. This helped provide an initial understanding of the dental process in the UK. Speaking to a practitioner ensured that the words used in the questionnaire were simple and free of jargon and domain-specific terminology.

As stated earlier, the literature review provided a foundational knowledge of the topic. The literature review helped set out the theoretical construct of the research. For example, it was found that dental care has been run as part of the NHS since 1948 and 60% is public, whereas 40% private. In Gulabivala (2008), the author argued that the organization and management of the NHS dental services are complex and is divided into different regions: England, Wales, Scotland and Northern Ireland. Gulabivala (2008) notes that one of the possible problems is that NHS dentistry has focused on treatments instead of prevention or quality. He, however, acknowledged that oral health in the UK has been showing some signs of improvement, but a prevalence of tooth decay is still high. Public education and prevention methods should be explored to improve oral health. Tooth decay is a multifactorial disease, arising from the association of the link between a person's environment, genetics and attitudes (Clarke & Stavens, 2019). The economic status of different areas of the UK can somewhat be related to the level of poor oral health.

Some studies selected for review provided an insight into the perceptions of the dental system and services in the UK. For instance, Nayee (2018) completed a qualitative pilot study in parenting and oral health behaviours. The study identified two groups of parents: 'prioritisers' and 'non-prioritisers'. The survey results showed that this behaviour ('non-prioritisers') could be attributed to a lack of awareness of preventive dental care. The study noted that a significant percentage of parents in this group had either never been to a dentist or visited for the first time as adults. On the other hand, parents that were categorized as 'prioritisers' reported having positive and enjoyable experiences in the dentist when they were children. Arguably, this might have influenced their behaviour and attitude towards oral health.

The literature also showed that there are currently multiple initiatives to improve oral health. For example, school dental screen programs exist where professionals examine the children's oral cavity. This is followed up by informing the parents about the state of the child's oral health (Donaldson 2001; Morgan 2013). The World Health Organisation (WHO) has also begun implementing different measures such as promote the reduction of free sugar intake, implementing clear nutrition labelling and regulating marketing. They also promote appropriate exposure to and use of fluoride. Additionally, "Designed to Smile" is a Welsh government-funded programme launched in 2009 that focuses on oral diseases prevention by providing dental care equipment and encouraging children to brush their teeth while in school. A recent report from the Cardiff University, stated that despite the current success of the program, there is still need for improvement (Stanton & Chestnutt, 2015). This report also indicated that when parents are involved in children's education, the effect of Designed to Smile program would increase.

In summary, the literature review helped to provide an understanding of some causes of poor oral health, challenges faced by parents with young children and initiatives that improve oral health. Of course, the factors identified from the review of literature were tentative in that they were just guides used to inform the research design.

TOOTH DECAY IS A MULTIFACTORIAL

DISEASE, ARISING FROM THE ASSOCIATION

OF THE LINK BETWEEN A PERSON'S

ENVIRONMENT, GENETICS AND ATTITUDES



Choices of Research Method

There are various options for research methods (Yin 2009) and research paradigms may not be restrained to being either quantitative or qualitative (Creswell 2009). In this study, multiple research methods were used to facilitate and triangulate the findings. Mixed research combines both the subjective and objective approach into a single research context. A quantitative method was the predominant method of choice and a survey was used. Qualitative methods were also useful for triangulation. Interviews, for example, are a powerful tool as it helps a researcher gain knowledge of a domain, including understanding the views, concerns, and challenges faced by professionals when it comes to oral health. The cases that were selected to be included in this study had to be parents with young children or be known for their Dental Health involvement. Thus, the sampling technique is “purposeful sampling” (Patton, 2002). Individuals were selected because they provide a useful manifestation of the phenomenon of interest, which is the potential barriers and motivators regarding a child’s oral health.

A key point from the literature is that dental disease in the United Kingdom is very high amongst children, but also is the neglect of dental care or treatment (Nayee et al 2018). Because of the dichotomy between dental services and oral hygiene, both practitioners and parents with young children were selected as participants for the research.

Interviews

A semi-structured interview schedule was developed. The semi-structured interview schedule was useful in gaining first-hand insights into the opinions, practices, and attitudes of parents in relation to their child's oral health. One dental practitioner and three mothers were interviewed as part of this study. Questions were also asked on how they deal with these challenges as well as how oral health and the interest in dental services can be improved. Other questions included factors that shape perceptions and attitudes towards dental health in the United Kingdom; the processes, problems, and barriers that shape oral health and how can we promote compliance to professional dental advice.

Questionnaires

A Questionnaire was designed and used to obtain data from a general and wide range of respondents. According to Creswell (2009), one of the advantages of using a questionnaire is that participants tend to be more honest with their answers. In this study, the questionnaire was delivered online using "SurveyMonkey" a web-based survey tool. The questionnaire was posted on three Facebook groups formed by parents in Cardiff. Ninety-four people provided a response. This was a very valuable tool for several reasons: it allowed the researcher to maintain confidentiality and reduced the time for analysis because results were provided in the form of statistics.

The questionnaire consisted of ten questions and was distributed to random people from different backgrounds and social status. Careful consideration was given to how the questions were organised to ensure the logical flow. An analysis of the questions will be discussed in the discussion section.

Secondary Data

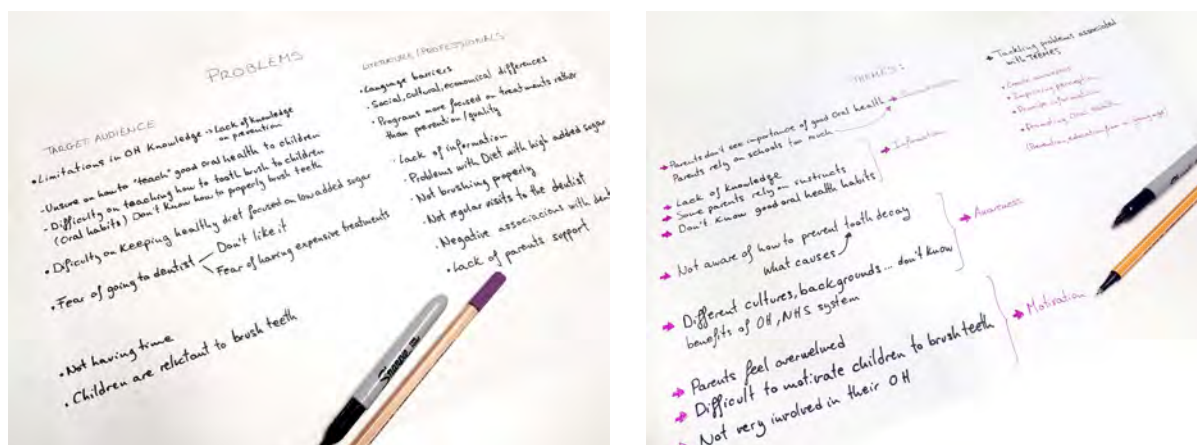
Documentation Material: Documentation materials that were relevant to the phenomenon was gathered. The aim was to triangulate this with the results from primary data. Secondary data include web page materials, documents from dental practice showing their services, documents showing potential causes of tooth decay.



Figure 2: Further sources of documentary materials.
Source: The author

Methods of Data Analysis & Presentation of findings

To analyse the collected data, the first step was to transcribe the interview data. Then, to identify common themes and assemble a list of interrelated factors affecting the examined research phenomenon. Figures three and four are an illustration of how the transcripts were transcribed and categorised.



Figures 3 & 4: Findings analysis and process.

Source: The author

As stated earlier, some themes were predetermined deductively from the literature, whilst others were identified empirically through the collected data. The results of the questionnaire were analysed. 86% of the respondents were females, whereas 14% were males. The age range was from twenty-five to fifty-four of which, half of them were between the ages of thirty-five to forty-four.



DISCUSSION

In this section, the research findings are presented, analysed and evaluated.

Questionnaire:



FIRST VISIT TO THE DENTIST

Age on first visit to the dentist graphic. 63.83% of parents took their child for the first time between the age of one to two years old.

1. Age of child on the first visit to the dentist:

From the figure below, 63.83% of children tend to visit the dentist for the first time between the age of one to two years. Only about a quarter of children (27.66%) are taken to the dentist when they are between zero to six months. This shows that not so many parents know the fact that children should visit the dentist as soon as their first teeth appear.

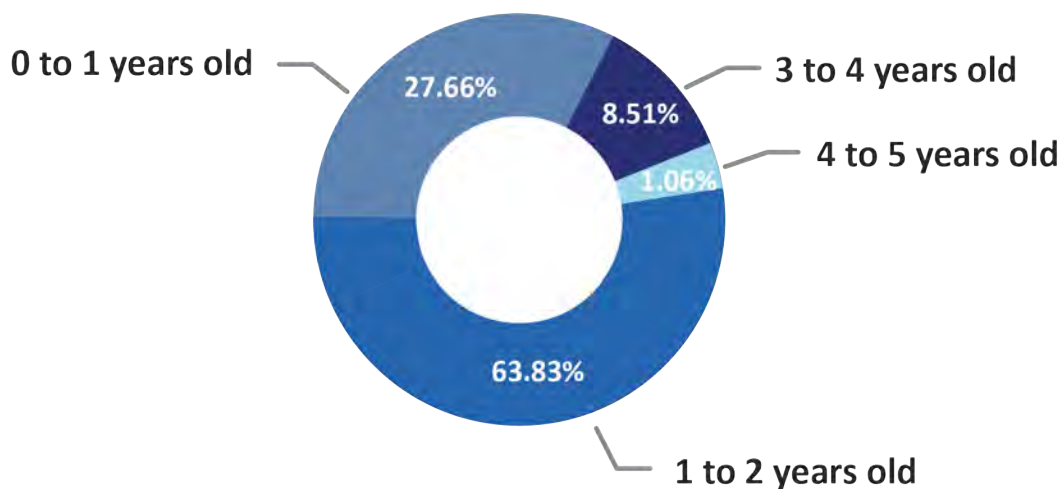
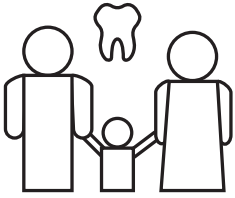


Figure 5: Age on the first visit to the dentist graphic.
Source: The author



FREQUENCY OF VISITS

80% of respondents take their children to the dentist every six months.

2. Frequency of visits to the dentist:

Frequency of children's visits to the dentist was also evaluated. Figure six shows that 80% of respondents take their children to the dentist every six months. This indicates that most parents have good engagement with their children's oral health. Less than a third (20%) of respondents acknowledged taking their children once a year or every two years.

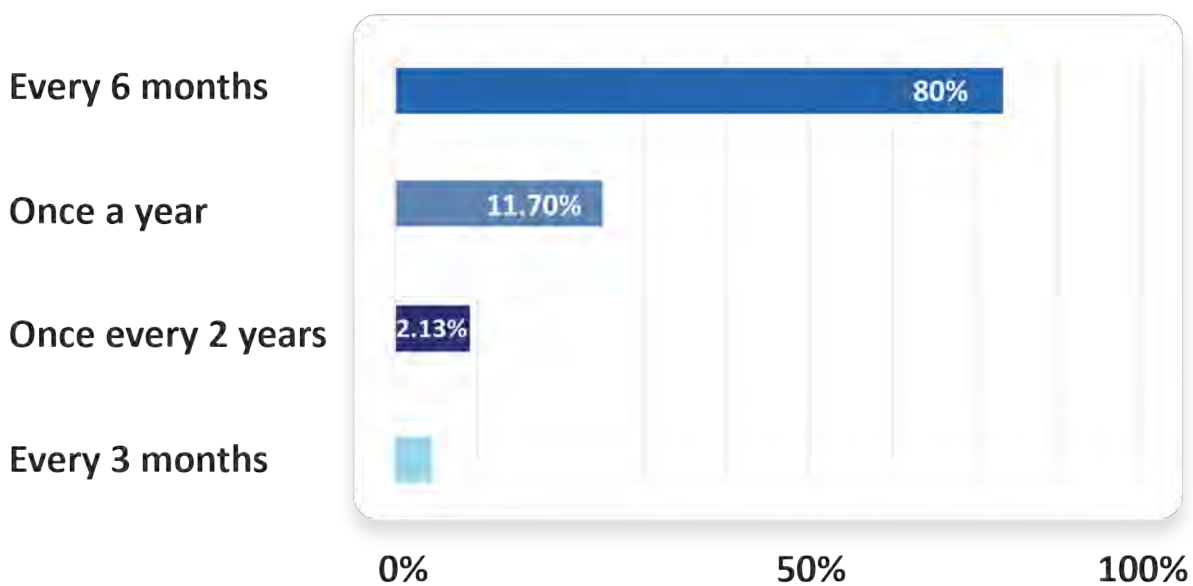


Figure 6: Frequency of visits to the dentist.
Source: The author

3. Awareness of free dental services:

The data in figure seven shows the level of awareness of the NHS dental services being free. 100% of respondents were aware of the services. This means that there is no need to improve awareness on this topic.



Figure 7: Awareness on free dental services.
Source: The author



EDUCATING CHILDREN

96.81% of participants acknowledged to be involved in the education of dental care.

4. Educating children on dental care

Participants were also asked about whether they teach the importance of dental care or not. Figure eight shows that the vast majority, (96.81%) acknowledged being involved in the education of dental care. The reasons why 3.19% of respondents responded negatively was because their children were still very young to understand.

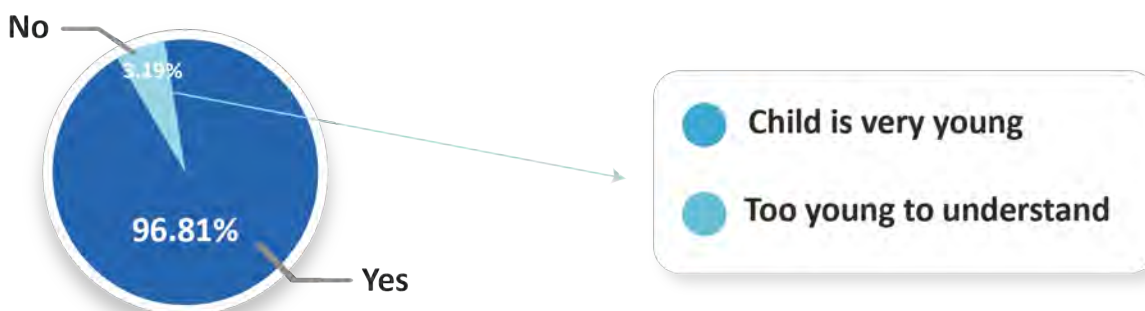


Figure 8: Involvement in education.
Source: The author



DENTAL HEALTH MAXIMIZATION

Tooth brushing in schools and providing education focused on diet are the most important to maximise oral health.

5. Maximising oral health:

In order to explore what is most important to maximise oral health in children, participants were asked to choose one of the options showed in figure nine. The findings demonstrated that, of the statements provided, the most important were: tooth brushing in schools (50% of respondents agreed) and providing education focused on diet (29.79%).

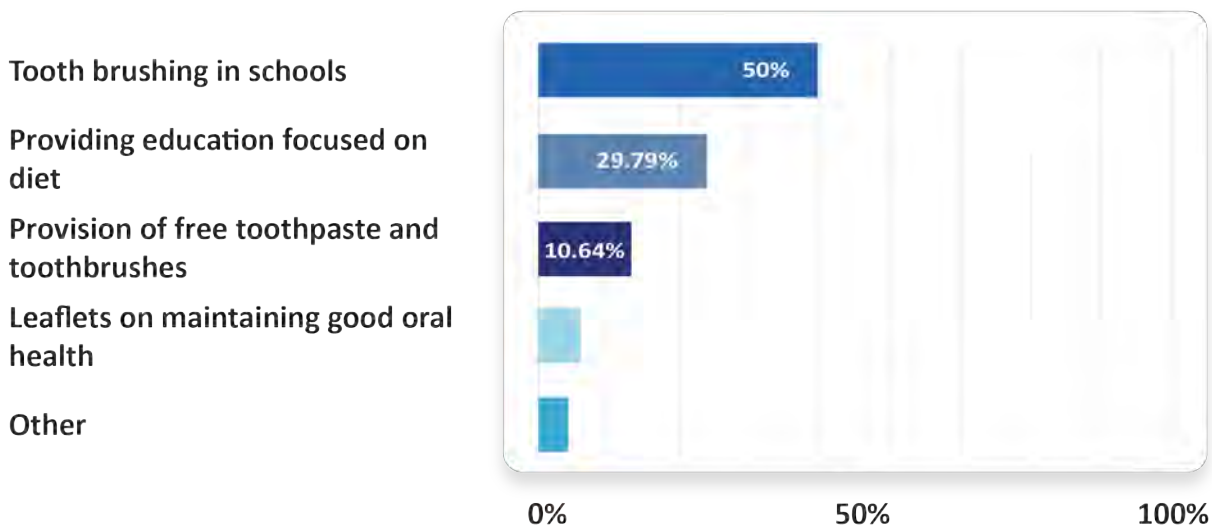
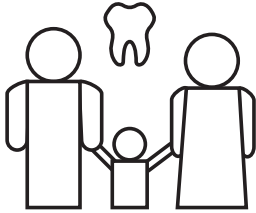


Figure 9: Maximising oral health in children.
Source: The author

The actions least important to maximising oral health in children were: provision of free toothpaste and toothbrushes (10.64%) and leaflets on maintaining good oral health (6.12%). Two respondents indicated that creating a good oral routine from an early age for children was important to maximise oral health.

This shows that most parents rely on school programmes, which can suggest that they might not feel entirely responsible for their child's oral care. Providing more education focused on diet is very important.

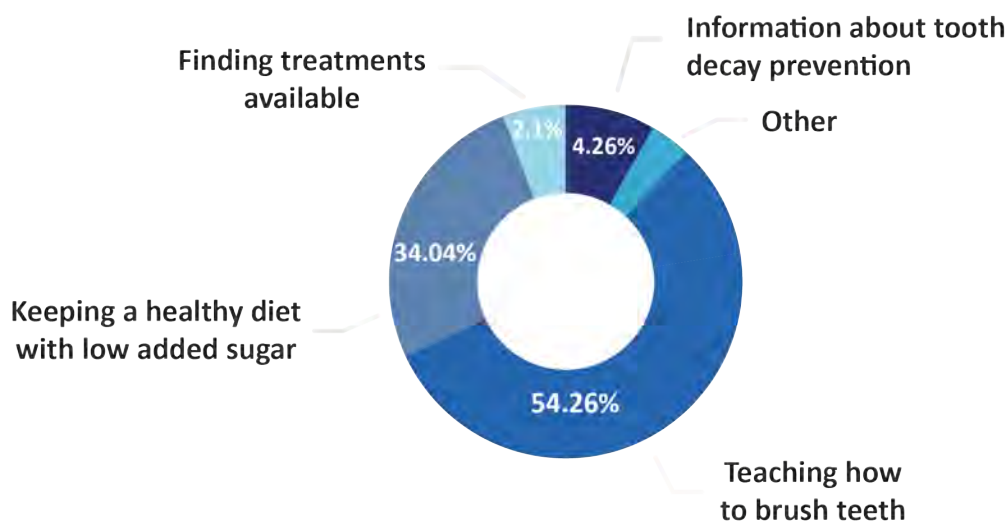


DIFFICULTIES

Teaching children how to brush their teeth was seen to be the major barrier by the majority (54.26%).

6. Difficulty when trying to keep good oral health

In order to explore some potential challenges in implementing or maintaining good oral hygiene, parents were asked what was more difficult when trying to keep good oral health in their children. Teaching children how to brush their teeth was seen to be the major barrier by the majority (54.26%). After this issue, keeping a healthy diet with low added sugar and information about tooth decay prevention had most of the votes as figure ten shows.



Other:
Persuading a reluctant child to brush thoroughly
Motivating children to brush teeth
Peer pressure and other families poor healthy eating

Figure 10: Difficulties to keep good oral health.
Source: The author

7. Dental advice received

One of the aims of the study was to know the level of knowledge on different subjects that relates to oral health. Thus, participants were asked if they had received dental advice about any of the topics shown in figure eleven.

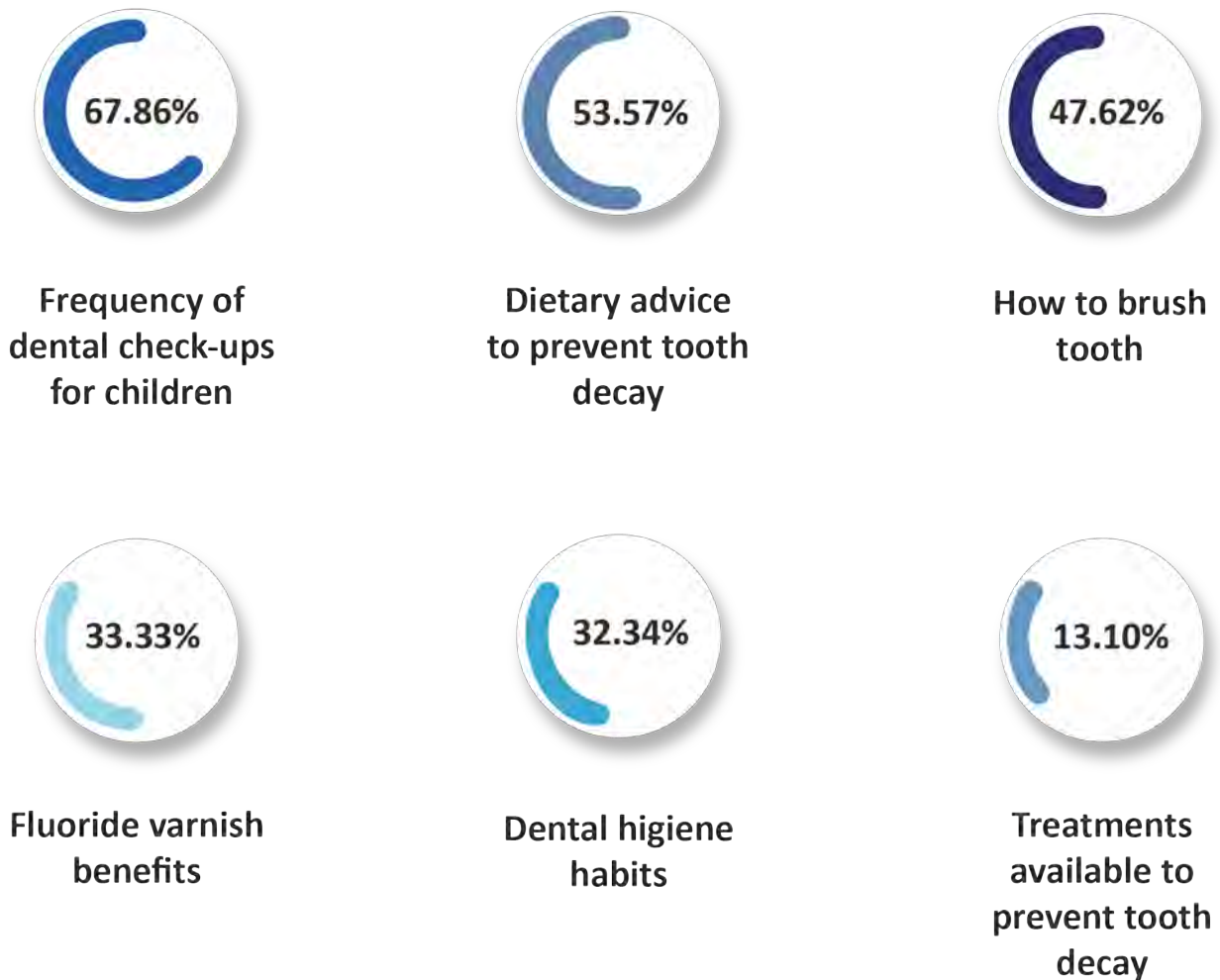


Figure 11: Dental advice received.
Source: The author

The data suggest that most parents (67.86%) received information about the frequency of dental check-ups for children. 53.57% declare to have received dietary advice on how to prevent tooth decay and 47.62% have received information on how to brush teeth.

At the end of the questionnaire, a comment section was provided, where respondents were given the opportunity to provide information on the challenges they face in promoting good dental health in their children. The responses were analysed for repeated themes.

Two themes were identified:

- **Parents' struggle with their children when it comes to making sure they brush their tooth adequately**
- **Lack of knowledge on how to maintain good oral health**



Interviews:

Two categories of people were interviewed for this study:

1. A general dental practitioner
2. Three mothers with young children.



Dr. Andres Rodriguez

General Dental Practitioner at Smileright.
More than eight years of experience, with a Masters in Orthodontics.
Special interests: Orthodontics and restorative care.

Topics for discussion during the interview included:

Oral health initiatives to improve awareness, attitudes and opinions on how the NHS system works, challenges faced when trying to educate parents about the value of oral health and views on preventative health behaviours.

When discussing how to improve awareness, schools and campaigns were mentioned. Andres emphasized different programs such as “Designed to smile” and independent campaigns from universities that are helping to create oral hygiene awareness. However, he mentioned that it is very difficult to ensure families attend dental appointments regularly and keep good oral health habits at home. One of the concerns was that NHS clinics like the one he works for, are not very involved with prevention and they are mainly focused on treatments. Andres reported that there are different challenges when trying to enforce the importance of oral health. One of the issues discussed was language barriers:

“...the rich amount of nationalities we receive daily creates linguistic barriers between the professionals and the carers which sometimes leads to misinformation.”

He also pointed out that some nationalities have different cultural backgrounds which could collide with their NHS guidelines for optimum oral health. Furthermore, there can be cases of neglect or mistrust of the health system. Trying to keep good relationships with parents and ensuring that children with dental problems visit them every three months is a priority.

Another important point was the impact of diet; the practitioner acknowledged that there is an extreme amount of sugar in common day meals.

“It is a daily struggle to re-instate the risks of decays linked to carbonated drinks, juices and sweets that are bought with the pretext of providing a healthy supplement for children.”

Another concern was techniques and obligations. The “bass-modified” technique has been promoted as one of the most efficient ways of brushing the oral cavity.

“Enforcing this technique and convincing guardians or carer’s to also promote it to the children is sometimes one of the biggest challenges we face. Although it is a simple technique, it requires motivation and daily dedication to be fulfilled correctly.”

The main recommendation was to continue promoting regular visits to the dentist and focus more on prevention rather than treatments.

EVEN NATURAL SUGAR FRUCTOSE

AND SUGAR FREE SQUASH ARE ACIDIC

AND CAN CAUSE DENTAL DECAY





Laura Smith

Blogger

“Tooth brushing in schools is key as it teaches children good habits”



Laura Wall

Pianist

“Schools are selling fruit as wholesome and healthy without giving the full information.”



Sharon Honey

Artist

“It is very challenging to know how to clean someone else’s teeth properly”

Interviews conducted to mothers with young children:

These interviewees reflected the study sample. They were asked about their opinions about school programmes, experiences on tooth brushing at home with their child and knowledge on oral diseases prevention.

They all highlighted the importance of supervised tooth brushing in school as tooth brushing is an effective way of encouraging children to maintain good habits.

“...tooth brushing in schools is key as it teaches children good habits. Children follow the norm at home, if parents don’t, then the children won’t. If the child learns it as important at school, they will most likely tell the parents at home. If parents still don’t encourage tooth brushing at home, at least the child will brush once a day at school.”

Continued supervision was also said to be particularly important for maintaining good oral health.

“...children should continue to receive help and supervision in brushing for as long as possible. Not every time you send them to brush do they actually do it.”

Although one of the mothers admitted not supervising her child every time due to limited time or lack of motivation.

“It’s a bit difficult to be able to supervise my daughter every day, sometimes I do not have time or I forget to do it”

Two mothers confessed to not knowing how to clean adequately their children’s teeth and struggling to be successful at it. They reported how extra oral health education would benefit them.

“...very challenging to know how to clean someone else’s teeth properly, when the child is fighting it! Also, should we still brush even when they are really in pain with teething?”

“My son hasn’t put up any battles yet, but I know it’s a struggle for some other parents. He brushes his teeth first and then I do it for him. We tend to sing in the process.”

Lack of knowledge about what can be done to prevent tooth decay was also noted. It was pointed that at dental practices there was not much information about prevention and good oral habits. One of the respondents commented on how schools are forcing parents to only send fruits as a “healthy snack” and not allowing any other kind of food. She was surprised when her two years old daughter had a cavity when she was always eating fruits. Then she was recommended by a dentist to have banana as a fruit stand-alone snack.

“...shocked that my two years old had a cavity when she had always been a fruit monster. The dentist recommended banana as a fruit stand-alone snack. ...also the automatic jugs of juice at kid’s parties, you hardly ever get plain water!”

“...no one ever feels you about how bad fruit is as a stand-alone snack constantly through the day. If you don’t go to the dentist in the first place, you won’t hear that message. Schools are selling fruit as wholesome and healthy without giving full information.”

Three themes emerged from the data collected. As discussed above, interviews and questionnaires were utilised to understand the perceptions and experiences of participants. Data was also collected from documentary sources, including flyers and website information.

Incentives:

Oral health should be a priority when it comes to general well-being, but parents do not feel committed enough to implement a strict oral regime in their homes. It is therefore important to recognise the reasons for this behaviour. In this study, parents stated that they did not feel 100% responsible for their children's good dental hygiene. Some parents also believed that schools should be responsible in educating children on how to brush their teeth. One parent even noted that because of the limited time she has to spend with her child, oral health was not a top priority. This supports the findings of Amin & Harrison (2009), where it was reported that the "stress of life" makes it difficult for some parents to properly prioritise their child's teeth. Of course, the stress of life manifest in ways such as financial needs and employment-related issues. Providing incentives to parents may lead to a major improvement in their behaviour towards their child's dental care and oral hygiene need.

Awareness and Support:

There is a lack of information and knowledge about good dental habits. Some parents are not aware of the key causes of tooth decay or how to prevent it. Likewise, gathering information was said to be difficult, with some parents relying on instincts or common-sense approaches. In order to improve a child's oral health, parents should be aware of the importance of oral health and receive more information about how to behave. Media and advertising can play an important role in their ability to make better choices. Here, media channels can broadcast practical tips or animations that demonstrate oral care techniques. This could lead to positive changes in parental behaviours.

Motivation:

Meeting professional recommendations such as children visiting the dentist every six months or supervising tooth brushing twice a day seems to be a struggle for some parents. The key drivers of this were parental behaviours and the child's temperament. Some parents feel overwhelmed by the child's resistance to brushing their teeth and therefore do not know how to motivate children to keep good habits. This tend to cause a lot of stress and anxiety for not only the child, but the parents as well. This show that parenting strategies has an impact on a child's hygiene routine and enhancing their skills can change oral health behaviours.

In Conclusion, this study demonstrated that there are multiple factors that influence oral health. A finding from the literature was that most oral health issues can be prevented, but there is still a high level of poor oral health among children (Carter, 2019). It has been proved that programs such as 'Designed to Smile', which focuses on prevention have had a great impact on the enhancement of oral health in children (Gething, 2019). However, the study identified several areas that need further improvement.

Research Limitations

There are some limitations to this research. First, the findings from this study cannot be generalized to the entire Cardiff or UK population due to limited data. Second, more insights would have been obtained if everybody contacted for this research provided a response. For example, a number of Professors and Researchers from Cardiff University did not respond to emails. Third, a mixed approach to the research (i.e. using both qualitative and quantitative techniques) might have prevented the researcher from maximizing the potential of any particular method. However, other studies have proven that when data is triangulated using a mixed approach, the results can even be better (Saunders, 2009).

SUMMARY

The aim of this report was to provide insights on parental behaviours, habits and challenges faced related to oral health. The initial question in this study was: How do we make families more aware of the importance of dental health and oral hygiene? After a review of the literature and data collection, the research question was refined. Data was obtained using different research methods such as interviews and questionnaires. This was analysed and interpreted resulting in the identification of key themes. They were: incentives, awareness and support, and motivation.

Different areas for improvement were identified: First, the need to improve the level of engagement of parents. Children follow their parent's habits and rely on adults in determining what they eat, whether they brush their teeth or when they visit the dentist. As cited in Nayee (2018), there is a need to focus on parents that do not find children's oral health a priority. Therefore, it is important to find incentives that will promote good oral hygiene. Likewise, educating and engaging parents using media and advertising channels should also be utilised. Second, the need to create awareness on prevention of oral diseases. Changing habits by promoting education focused on diet low on sugars and helping parents make the right choices is key. Third, issues such as sticking to a routine and difficulty in supervising tooth brushing can discourage parents from promoting good oral hygiene. Therefore, providing motivation to parents can lead to positive habit formation that will benefit their children.

Therefore, the research question has been amended to reflect "how graphic communication can help to change parent's behaviour towards oral health". The next phase would be to explore effective ways to improve their perceptions, awareness and habits.

REFERENCES:

- Amin, M. S. and Harrison, R. L. (2009) 'Understanding parents', *Oral Health Behaviours for their Young Children*, *Qualitative Health Research*, 19(1), pp.116-127. Doi:10.1177/1049732308327243
- Carter, N. and Hill, S. (2010) 'Dental health', *Perspectives in Public Health* 130(6) [Online]. Available at: <https://journals-sagepub-com.ergo.southwales.ac.uk/doi/abs/10.1177/17579139101300060303> (Accessed: 18 February 2020)
- Clarke, L. and Stevens, C. (2019) 'Preventing dental caries in children: why improving children's oral health is everybody's business', *Paediatrics and Child Health*, 29(12), pp.195-198. [Online]. Available at: <https://www.sciencedirect.com.ergo.southwales.ac.uk/science/article/pii/S1751722219302124?via%3Dihub> (Accessed: 16 Feb. 2020)
- Creswell, J.W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd edn. Thousand Oaks, Calif: Sage Publications.
- Devon, C., Kim, J., Duderstadt, K., Stewart, R., Lin, B. and Alkon. (2017) 'Interprofessional Oral Health Education Improves Knowledge, Confidence, and Practice for Pediatric Healthcare Providers', *Frontiers in Public Health*, 5 (2019) [Online]. Available at: <https://www.frontiersin.org/article/10.3389/fpubh.2017.00209> (Accessed: 09 February 2020)
- Finlayson, Tracy, L., Chuang, E., Baek, Jong-Deuk. and Seidman, R. (2018) 'Dental Service Utilization Among Children in the Child Welfare System', *Maternal & Child Health Journal*, 22(5), pp. 753–761. [Online]. Available at: <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=e098469e-9ae1-4b8c-a415-8d5cda392456%40sdc-v-sessmgr03> (Accessed: 12 February 2020)
- Gething, V. (2019) *Written Statement: Designed to Smile - 10 years of improving children's oral health in Wales*. Available at: <https://gov.wales/written-statement-designed-smile-10-years-improving-childrens-oral-health-wales> (Accessed 15 Feb 2020).
- Gulabivala, K. (2018) 'Dentistry in the United Kingdom', *Oral Health and Dentistry in Other Countries*, 85(1), pp.8-18. [Online]. Available at: https://discovery.ucl.ac.uk/id/eprint/10061575/1/Gulabivala_PDFsam_Gulabivala_JACD%2085a%20v2.pdf
- Nayee, S., Klass, C., Findlay, G. and Gallagher, J.E. (2018) 'Parenting and Oral Health in an Inner-city Environment: A Qualitative Pilot Study', *BMC Oral Health* 18(1) [Online]. Available at: <https://link.springer.com/article/10.1186/s12903-018-0584-5>
- NHS Digital (2019) *Report on NHS dentistry drills down to deeper level of activity data for first time*. Available at: <https://digital.nhs.uk/news-and-events/latest-news/nhs-dental-statistics-england-2018-19> (Accessed 09 February 2020).
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. 3rd edn. Thousand Oaks, Calif: Sage Publication.
- Public Health England (2017). *Health Matters: Child Dental Health*. Available at: <https://www.gov.uk/government/publications/health-matters-child-dental-health/health-matters-child-dental-health>
- Public Health England (2018). *Health Matters: National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2017*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/768368/NDEP_for_England_OH_Survey_5yr_2017_Report.pdf
- Saunders, M., Lewis, P. and Thornhill, A. 2009. *Research methods for business students*. 5th edn. Edinburgh Gate, Prentice Hall.

Stanton, H. and Chestnutt, I.G. (2015) 'Beliefs and attitudes of the Community Dental Service staff to the Designed to Smile Programme', Dental Books, Journals 2(3) [Online]. Available at: <http://www.designedtosmile.org/wp-content/uploads/2017/06/2015-D2S-Part-II-Evaluation-Interim-Report-III-November-2015.pdf> (Accessed 16 Feb. 2020).

Welbury, R. (2016) 'Dental neglect, child maltreatment, and the role of the dental profession', Contemporary Clinical Dentistry, 7(3) [Online]. Available at: <http://www.contemplindent.org/text.asp?2016/7/3/285/188535> (Accessed: 08 February 2020)

Yin and Robert, K. (2009) Case study research: Design and methods. Sage publication, INC.

Interviews:

Andres Rodriguez. (2020) Interviewed by Nuria Serna for Insights Report, 07 February.

Laura Smith. (2020) Interviewed by Nuria Serna for Insights Report, 10 February.

Laura Wall. (2020) Interviewed by Nuria Serna for Insights Report, 12 February.

Sharon Honey. (2020) Interviewed by Nuria Serna for Insights Report, 13 February.