

# Special Smiles Dental Project

## Project Evaluation Report

Helping sick children and young people meet their  
healthcare needs, in partnership with parents, carers and  
professionals

Stephanie Chambers

Steve Turner

Ruth Freeman

Oral Health and Health Research Programme

Dental Health Services Research Unit

University of Dundee

**Address for correspondence:**

Dental Health Services Research Unit, Mackenzie Building, Kirsty Semple Way, Dundee DD2 4BF

Email: [r.e.freeman@cpse.dundee.ac.uk](mailto:r.e.freeman@cpse.dundee.ac.uk)



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# Executive Summary

## Introduction

Action for Sick Children (Scotland) (ASC(S)) is a charity that works towards informing, promoting and campaigning on behalf of the needs of sick children and young people, and their families, within the Scottish healthcare system. In November 2007 ASC(S) secured funding for the Special Smiles Dental Project from the Scottish Government. The basis of the project was to evaluate the specially developed play resources and pilot them in schools for children and young people with complex additional support needs in one Scottish Health Board Area over a 2-year-period from November 2007 to November 2009. NHS Tayside was selected. The dental play resources were provided for 8 schools in Perth and Kinross, 11 in Angus and 10 in Dundee. These schools were selected as they had specialist nurseries, primary and secondary schools, sensory services as well as specialist provision for children with additional and complex support needs within mainstream schools. The project was designed to complement the work of NHS Tayside as they implemented the Childsmile programme.

The purpose of the Special Smiles Dental Project was, therefore, to improve the oral health understanding and oral health practices of children and young people with complex and additional support needs by promoting learning through play using dental play resources.

The Special Smiles Dental Project's specific objectives were to:

1. improve the oral hygiene understanding and oral health practices of children and young people with complex and additional support needs.
2. reduce the dental anxiety experienced by children and young people with complex and additional support needs.
3. heighten carers' awareness of the children's and young people's oral health needs
4. develop the ability of those carers to contribute to the children's oral health care

ASC(S) conducted a number of before and after studies in 2008-2009 to evaluate the programme. In August 2009, ASC(S) commissioned the Oral Health and Health Research Programme, the Dental Health Services Research Unit (DHSRU), at the University of Dundee to evaluate the success of the project in meeting their aim and objectives. In

addition, the data collected by ACS(S) was subjected to statistical analysis and interpretation by DHSRU.

## **Section 1 – School and School Staff**

ASC(S) collected baseline information, conducted a before and after study on the use of the Dental Playbox (school) and a qualitative exploration of the staff's views on the content and use of the Dental Playbox in 29 schools. The findings were:

### **1 Assessment of the schools' oral health education: baseline study**

- At baseline schools felt that teachers and staff gave oral health a higher priority than parents and children
- Sixty-three percent of schools felt that the meals and snacks that the children consumed were healthy
- Sixty-three percent of the schools had daily toothbrushing programmes for the children
- Fifty-six percent of schools had a child oral health assessment as part of their education plan for pupils
- Fifteen percent of schools felt that their children would be fearful and resistant to dental treatment
- Schools would welcome the opportunity to take part in the Childsmile programmes.

### **2 Before and after study: School staff**

- Between 1 and 30 oral health education sessions for children were conducted within the school year after introduction of the Dental Playbox
- School staff had increased awareness of the need for effective oral hygiene for their pupils after introduction of the Dental Playbox
- School staff rated the children's understanding of oral health to be greater after introduction of the Dental Playbox.

### **3 School and school staff: Qualitative study**

- School staff were very positive about the use of the Dental Playbox
- Range of materials allowed a wide spectrum of children with complex and additional support needs to be engaged in the oral health education sessions

- The most frequently used materials included role play materials and the large mouth to engage children when demonstrating toothbrushing.

In conclusion the staff felt that there had been an improvement in their understanding of the children's oral health needs and the children's understanding of oral health matters. The staff felt that the role play materials and those used to demonstrate good toothbrushing practice to the children were of particular value, together with the toothbrushes and toothpaste, to enable them to implement toothbrushing within the school environment.

## **Section 2 – Families and Children**

The second section of the report presents the work conducted by ASC(S) and includes the parents and carers evaluation of the Dental (home) Playpack conducted in 2008-2009. This part of the evaluation included 3 studies. These were a 'Before and after' parent study which evaluated the use of the Dental Playpack; a parents qualitative study and a 'Before and after' child study which evaluated the use of the Dental Playbox at school. The findings were:

### **1 Before and after parental study**

- Parents' understanding of their children's oral health needs increased from before to after the use of the Dental Playpack with their children at home
- Parents rated that their children's understanding had increased from before to after the use of the Dental Playpack with their children at home
- Parents' felt that their child's dental anxiety had decreased from before to after use of the Dental Playpack with their children at home

### **2 Parents qualitative study**

- Parents' comments were positive in relation to the Dental Playpack
- Parents felt that the Dental Playpack had reduced child dental anxiety and had allowed the children to access dental care

### **3 Before and after child study**

- Children's oral health knowledge increased after using the Dental Playbox



- There was a slight improvement in the children's oral health practices after using the Dental Playbox

In conclusion the Dental Playpack used at home with children resulted in an increased parental and child understanding of oral health matter and reduced child dental anxiety.

### **Section 3 – Families and children: the cross-sectional studies**

The final section of the Report presents the evaluation of the Special Smiles Dental Project conducted by the Oral Health and Health Research Programme, DHSRU. A cross-sectional study design was adopted and questionnaires were distributed in October and November 2009 to families and children who had and had not experience of the Dental Playbox at school. This work included a cross-sectional study of families with and without experience of the Dental Playbox, dental anxiety qualitative study and a cross-sectional study of children with and without experience of the Dental Playbox. The findings were:

#### **I Cross-sectional parental study**

- Parents rated their children's oral health understanding as poor. This finding is in contrast with the findings from the 'Before and after parent study' (see Section 2). This contradiction may be due to first, that the parents in the cross-sectional study did not have the experience of working with their children at home using the Dental Playpack as those in the 'Before and after study' and secondly, that the parental ratings of child knowledge may be an unreliable indicator of child understanding of oral health (see cross-sectional study of children)
- Parents with children who had experience of the Dental Playbox rated their children's oral health practices more highly. Parents whose children had experience of the Dental Playbox stated that their children ate sweets infrequently and brushed their teeth twice daily
- The parents in this sample had equivalent levels of dental anxiety as the general population. Children with experience of the Dental Playbox were rated by parents as being less frightened of the drill but more frightened of the injection, white coats and choking. These children were also rated by their parents as being more frightened at their last dental appointment

- Parents of children with no experience of invasive dental treatment, and who had experience of the Dental Playbox, were rated as less dentally anxious, and less anxious at their last dental visit, compared with the others.

## 2 Dental anxiety qualitative study

- Many children with complex and additional support needs experienced profound dental fear on account of their cognitive impairment
- For children who had used the Dental Playbox at school, the parents felt that the experience of playing at being a dentist and having the opportunity to hold dental mirrors and probes had assisted them when attending for a dental examination
- The dental centeredness of the schools was also highlighted as being of central importance as this was acknowledged as a factor in reducing the children's dental fear and anxiety. This was felt in part to be due to the Dental Playbox.

## 3 Children who had experienced and used the Dental Playbox in school:

- Had better oral health understanding and knowledge of toothbrushing and healthy foods and drinks
- Felt that they had learned a lot about oral health in school
- Brushed their teeth at least twice a day
- Were less fearful of the dentist and of dental treatment items (except the injection)
- Enjoyed playing and acting as a dentist and practising their toothbrushing on models and puppets

In conclusion there was improved child oral health practices and child oral health understanding. The children who had experience of the Dental Playbox were less fearful of many dental treatment items. While the children experienced an increase in oral health knowledge this was not reflected in their parents' rating of child oral health understanding. This may be due to parents being unaware of the depth of their children's knowledge. Parents felt that the Dental Playbox had increased the dental centeredness of schools which resulted in their children being less frightened of dental treatment and more compliant with dental hygiene regimes at school and at home.

## Overall Conclusions

The findings showed that the Special Smiles Dental Project met its main aim to improve the oral health understanding and practices for children with complex and additional support needs. Oral health understanding improved amongst staff, parents and children, and child dental anxiety was reduced.

The importance of the Dental Playpack was reflected in the findings of the cross-sectional study which showed that while there had been an increase in child oral health knowledge this was not reflected in parental ratings of child oral health understanding. Since parents who had used the Dental Playpack at home with their children recognised their children's oral health awareness it was suggested that parents who did not have this experience were unaware of the depth of their children's knowledge. Parents felt that the Dental Playbox had increased the dental centeredness of schools which resulted in their children being less frightened of dental treatment and more compliant with dental hygiene regimes at school and at home. The use of the Dental Playbox at school and the Dental Playpack at home provided the greatest increases in parental and child oral health understanding and compliance with oral health practices. Therefore the Special Smiles Dental Project must contain both the Dental Playbox (school) and the Dental Playpack (home) as integral parts of its oral health promotion intervention.

## Recommendations

1. The Special Smiles Dental Project must contain both the Dental Playbox (school) and the Dental Playpack (home) as integral parts of its oral health promotion intervention.
2. The Project should be implemented in nurseries and primary schools across Scotland where children with complex and additional support needs attend.
3. The Project should be connected to existing and new core Childsmile toothbrushing programmes to allow the inclusion of children with complex and additional support needs.
4. School and school staff, in nursery and primary schools where children with complex and additional support needs attend, should be provided with ongoing training to enable them to deliver the Special Smiles Dental Project and use the oral health promotion resources appropriately.
5. All parents, and in particular those parents whose children are dentally anxious, should be provided with the home Dental Playpack to reinforce the children's experiences of the Dental Playbox at school.
6. A post-primary school Dental Playbox should be developed for older children with complex and additional support needs.

# Introduction

## **Introduction**

### **Action for Sick Children (Scotland)**

Action for Sick Children (Scotland) (ASC(S)) is a voluntary organisation working in partnership with parents/carers, children, young people, health care professionals and other organisations who work for improvements in the standard of paediatric healthcare provided in hospital and community settings.

ASC(S) is the only charity that works towards informing, promoting and campaigning on behalf of the needs of sick children and young people, and their families, within the Scottish healthcare system. ASC(S) has campaigned for over 30 years to ensure that children and young people receive the highest quality of care when they are ill in hospital, at home, or in the community.

Their work includes:

- Working with others to ensure that health services are planned for sick children and young people in child-centred environments with appropriate numbers of trained staff
- Informing young people, parents and carers of their rights and responsibilities, and empowering them to take part in decisions about the treatment and care of their child
- Raising awareness and representing children's needs and concerns within government, healthcare committees and other non-governmental organisations
- Promoting high quality healthcare services at home and in hospital, while working to obtain equality of services and access across Scotland

### **Dental Playbox Programme**

In 2003, ASC(S) was successful in securing funding for a two-year period from Boots plc to develop and pilot a Dental Playbox (Figure 1). The Dental Playbox is an adaptation to the charity's popular Hospital Playbox. The Playbox is used as an awareness-raising and play-based preparation tool for young children in school, community and home settings who will have, or have had, experience of hospitalisation. Adopting the same principle, the Dental

Playbox contains dressing-up clothes (e.g. dentist and dental nurse uniforms); dental equipment (e.g. mouth mirrors, dental bibs); DVDs and story books to inform the child and parent about going to the dentist; puppets with teeth to practise toothbrushing; and oil of cloves to recreate the environment of the dental surgery.

The Dental Playbox Programme had three distinct aims;

1. to encourage children to go to the dentist
2. to remove/lessen fear or anxiety about dental treatment
3. the promotion of oral health

The ASC(S) evaluation of the initial Dental Playbox Programme suggested that their aims had been successfully realised.

Funding was secured from Boots plc for a further 12 months until April 2007 to allow ASC(S) to investigate the oral health needs of children with complex and additional support needs and to develop a dental resource for use with these children. This work was carried out via a pilot in five schools throughout central Scotland for children with special needs and complex disabilities. ASC(S) consulted and researched a wide range of individuals, organisations and publications in the course of the pilot. As a result of feedback gained, the Project Officer also identified the need for, and developed, a portable Dental Playpack for use at home by parents.

From the development of both the Dental Playbox and Dental Playpack, further funding was sought from the Scottish Government to allow a wider dissemination of the Programme.

### **Special Smiles Dental Project**

With the success of the Dental Playbox Programme, funding was secured for the 'Special Smiles Dental Project'. This two year project was funded by the Scottish Government between November 2007 and November 2009. The Special Smiles Dental Project used the Dental Playbox resources developed by ASC(S) specifically for children with complex and additional support needs. The Dental Playbox resource was introduced into 29 schools across NHS Tayside. ASC(S) provided the schools with the school Dental Playbox and

home Dental Playpack resources and provided teachers and parents with training in their use.

## Context of the Special Smiles Dental Project

### Current Policy

In 2005 the Scottish Executive set out a commitment to improving children's oral health in the Action Plan for Improving Oral Health and Modernising National Health Service (NHS) Dental Services in Scotland. A key principle of the Dental Action Plan was that:

'Services for children and young people should be focused on prevention and meet the oral health needs of those in the most disadvantaged circumstances.'

The *Dental Action Plan* set a series of oral health targets for Scottish children and adults. The children's oral health targets included that:

- 60% of 5 year olds to show no signs of obvious dental disease by 2010
- 60% of 11/12 year olds to show no signs of obvious dental disease in permanent teeth by 2010

The 2008 National Dental Inspection Programme has reported that 57.7% of 5-year-olds have no signs of dental decay (Merrett, *et al.*, 2008). It is expected that the 60% target will be met and exceeded by 2010.

Much of this success has been credited to oral health promotion programmes aimed at children and their parents, most notably the Childsmile Programme. Childsmile is the national oral health programme for children in Scotland, and has been running since 2006. Its focus is on the prevention of dental decay, together with the enablement of child dental registration. This takes place through four streams:

1. a universal core toothbrushing programme;
2. a programme aimed at children 0-2 years to encourage dental attendance;
3. a nursery programme for 3-5 year olds; and
4. a school programme for those in primary education.

In spite of the increased focus on children's oral health, and although all nursery children take part in the core toothbrushing programme, there remains little provision for a specific



programme of activity for children with complex and additional support needs. The *Dental Action Plan* committed to:

‘Establish a comprehensive preventive care system for children and young people, which includes enhanced services for those in most need’ and to ensure ‘that all dental services are child friendly.’

Actions such as this are particularly important for improving the oral health of children with complex and additional support needs; however, at present there is little provision within existing programmes for such children.

### **Oral health of children with Complex and Additional Support Needs**

Epidemiological and research evidence suggests that children with complex and additional support needs have poorer oral health than other children (Desai *et al.*, 2001). It has been suggested that children with complex and additional support needs receive less preventive care and restorative treatment than children in the general population (Bradley & McAlister, 2004; de Jong *et al.*, 2008; Desai *et al.* 2001; Gizani *et al.*, 1997; Mitsea *et al.*, 2001). Reasons put forward to explain this include:

- children being unable to take care of their teeth,
- children refusing to cooperate with carers with tasks such as toothbrushing,
- children experiencing communication difficulties,
- lack of experience amongst dentists in treating children with complex and additional support needs (de Jong *et al.*, 2008),
- many children with complex and additional support needs experiencing dental anxiety which makes dental care difficult to carry out (Connick & Barsley, 1999; Gordon *et al.*, 1998; Nunn *et al.*, 1993).

### **Next Steps**

It was, thus, acknowledged that children and adolescents with complex and additional support needs required a specialised oral health intervention which would raise their awareness and improve oral health practices, and that using a therapeutic play strategy would prepare them for the dental treatment experience. It is with these issues in mind that the Special Smiles Dental Project was designed and the Dental Playbox resources were

introduced into 29 schools in Tayside for children with complex and additional support needs.

The basis of the project was to evaluate the specially developed play resources by piloting them in schools for children and young people with complex additional support needs in one Scottish Health Board Area over a 2-year-period from November 2007 to November 2009. NHS Tayside was selected. The dental play resources were provided for 8 schools in Perth and Kinross, 11 in Angus and 10 in Dundee. These schools were selected as they had specialist nurseries; primary and secondary schools; sensory services as well as specialist provision for children with complex additional support needs within mainstream schools. The project was designed to complement the work of NHS Tayside as they implemented the Childsmile programme.

Each of the selected schools received one Special Smiles Dental Playbox (Dental Playbox) for school use and one Dental Playpack for home use<sup>1</sup>. Training was provided for teaching staff, carers and families in the use of the various resources in nursery, school and home settings. Throughout the project, back-up support was provided by the project staff (35 hour project officer and 20 hour project co-ordinator) in the form of workshops with children; meetings with parents; activity sessions and competitions, and exchange of ideas through regular newsletters.

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<sup>1</sup> Additional resources such as inflatable dentist chairs; disclosing tablets; 2 minute timers for every child and replacement disposable materials were also supplied as required.

## **The Purpose of the Special Smiles Dental Project**

The purpose of the Special Smiles Dental Project is to improve the oral health understanding and oral health practices of children and young people with complex and additional support needs by promoting learning through play using dental play resources.

### **Special Smiles Dental Project Objectives**

The Special Smiles Dental Project's specific objectives are to:

1. improve the oral hygiene understanding and oral health practices of children and young people with complex and additional support needs.
2. reduce the dental anxiety experienced by children and young people with complex and additional support needs.
3. heighten carers' awareness of the children's and young people's oral health needs
4. develop the ability of those carers to contribute to the children's oral health care

### **Purpose of the Special Smiles Dental Project Evaluation Report**

The purpose of the Special Smiles Dental Project Evaluation Report is to assess the effectiveness of the Special Smiles Dental Project ('Project') to achieve its declared objectives and to make recommendations with regard to the role of the Special Smiles Dental Project as a supplementary dimension of the Childsmile Programme for children and adolescents with complex and additional support needs.

## **Ethical Considerations** (Appendix I)

Ethical approval was obtained from the University of Dundee Research Ethics Committee on the 15<sup>th</sup> September 2009 (UREC 9061) for the cross-sectional study. Information sheets for parents about the evaluation and the evaluation questionnaires, together with written consent forms, were provided. Simplified information and consent sheets were provided for all children and adolescents invited to take part in the evaluation. Informed consent was sought from all participants prior to taking part in the evaluation study. Data were anonymised.

## Section I

### School and School Staff

- Assessment of the schools' oral health education: baseline study
- Before and after study
- School and staff: qualitative study

## Section 1 - Schools and School Staff

This section of the report presents the data collected by ASC(S) and includes the school and school staff evaluation of the Special Smiles Dental Project. This part of the evaluation included 3 studies. These were:

- Assessment of the schools' oral health education: baseline study
- Before and after study: School staff

Questionnaires were distributed and completed by staff before and after using the Dental Playbox. This formed part of the evaluation conducted by ASC(S) in 2008-2009.

- School and school staff: Qualitative study

The qualitative material draws on parent and carer comments on Special Smiles Dental Project during the cross-sectional and before and after studies.

### 1.1 Method

#### The Sample

Twenty-nine primary schools which had used the Dental Playbox resource were asked to take part in the evaluation. The staff in the schools who had used the Playbox were invited to take part in a baseline and follow-up questionnaire.

#### Assessment of the schools' oral health education: Baseline study (Appendix 2)

Each head teacher ('School') was provided with a questionnaire at the beginning of the project to determine the priority of oral health within the school setting. They were asked about children's diets, toothbrushing programmes, and children's reactions to dentists.

#### School Staff before and after questionnaire (Appendix 2)

The staff baseline questionnaire investigated their understanding of the oral health needs of children with complex and additional support needs. The questions asked of staff opinions on barriers to good dental hygiene, healthy food and snacks, good oral hygiene practices and awareness of potential dental health problems. The questionnaire also invited staff to rate the children's understanding of their oral health care needs in respect to a healthy diet, toothbrushing and attending the dentist. Three questions relating to oral health care needs

were combined to form a single scale of the staff's perceptions of the children's oral health understanding. The possible range of scores were from 1 (poor understanding) to 5 (excellent understanding). Finally, the questionnaire examined the teaching of oral health in the school setting. After using the Dental Playbox, the staff were asked to complete a follow-up questionnaire to assess the usefulness of the resources. Additional qualitative material was collected from staff on their views of the resources, how effective they believed the resources had been, and whether anything else should be added to the Playboxes.

### 1.2 The Findings: Assessment of the schools' oral health education: baseline study

Twenty-seven of the 29 schools involved in the project responded to the baseline questionnaire. Schools were asked to rate the priority of oral health amongst staff, parents and children (Table 1.2a):

Table 1.2a Schools' ratings of priority of oral health amongst the following groups

	Low (number)	Medium (number)	High (number)	Missing (number)	Total
Staff	5	8	13	1	27
Parents	5	17	2	3	27
Children	15	5	2	5	27

Schools felt that oral health was a higher priority for staff than for parents and children. The results suggested that in most schools, oral health was thought to be a low priority for children and a medium priority for their parents. Schools were also asked to describe the children's diet at school. The results in Table 1.2b show that the majority of schools felt that children's snacks and meals were healthy.

Table 1.2b Schools' perception of children's diet at school

	Poor (number)	Room for Improvement (number)	Healthy (number)	Missing (number)	Total
Snacks	1	8	17	1	27
Meals	3	4	16	4	27

Of the 27 schools, 17 schools conducted daily toothbrushing within the school. Fifteen of which included a child oral health care needs assessment in their education plan or co-ordinated support plan for pupils. Other schools stated that they would welcome the opportunity to begin child toothbrushing programmes in their schools while some schools requested toothbrushes and toothpaste which were provided from the core Childsmile programme. Finally, schools were asked about children’s reactions to going to the dentist. A minority of schools felt that their pupils would be resistant (15%) to dental treatment. Larger proportions of schools (27%) felt their pupils would have no reaction to a dental visit.

### **1.3 The Findings: the Before and After Study: School Staff**

A total of 127 staff returned questionnaires before using the Dental Playbox. Eighty-five staff returned questionnaires after using the Dental Playbox. In total 73 staff returned valid before and after questionnaires.

#### **1.3.1 Number of oral health sessions at school**

Before using the Dental Playbox, the staff were asked how many oral health sessions they had in the school year. The results in Table 1.31 show that the majority of staff did not run any oral health sessions before the project. The staff were asked how many oral health sessions they ran after they were introduced to the Dental Playbox. The majority of staff ran between 1 to 15 oral health sessions in the school year. Four staff used the Dental Playbox 26 to 30 times in the school year.

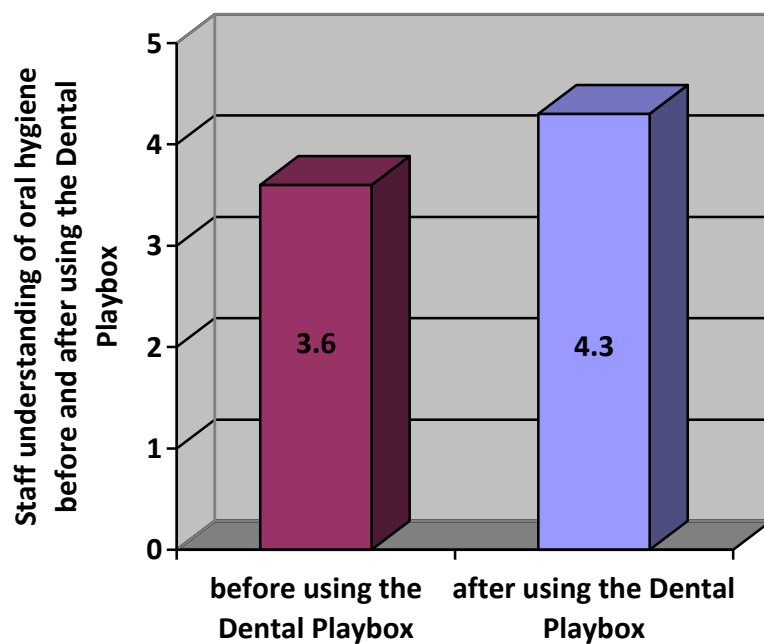
Table 1.31 number of sessions run about oral health in school year

Number of sessions	Number of staff
0	86
1	17
2	9
3	14
4	1

### 1.32 Understanding of oral hygiene: staff perceptions

The staff were asked to rate their level of understanding of the oral hygiene needs for children with complex and additional support needs as an indicator of the success of the Dental Playbox training programme. Four questions were used to assess their understanding of barriers to implementing good dental hygiene, healthy diet, good oral hygiene practices and awareness of potential dental problems. The answers to the four questions were added together and the average taken to form a single score for staff understanding. Scores could range from between one to five. The results showed that before using the play resources, staff rated their understanding as 3.6<sup>2</sup>. After using the play resources it rose to 4.3, (t=-8.72: P<0.001)<sup>3</sup> (Figure 1.32).

Figure 1.32 Staff understanding of oral hygiene before and after using the Dental Playbox



<sup>2</sup> Scores represent a mean value (average value).

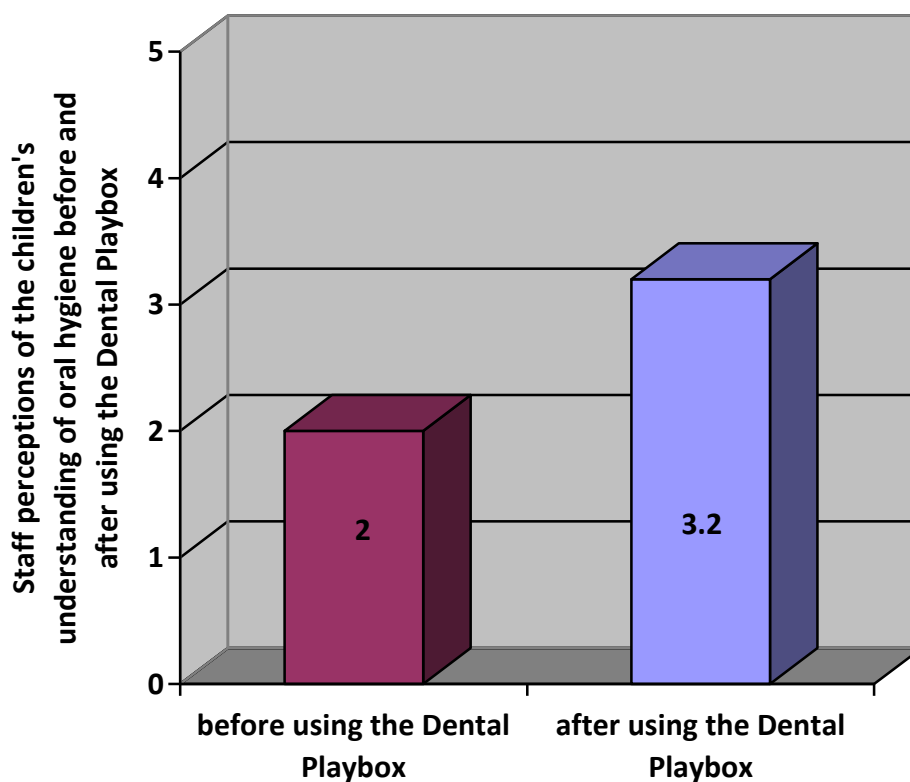
<sup>3</sup> The information in parentheses shows the statistical tests used to produce these results. When the *p*-value is less than .05, we can conclude that these results are meaningful, and unlikely to be the result of chance.



### I.33 Children's understanding of oral health: staff perceptions

The staff were asked to rate children's level of understanding regarding their own oral health. Before using the Dental Playbox, that staff's score for children's understanding was 2.0. After using the Dental Playbox, it increased to 3.2 ( $t=13.72$ ;  $P<0.001$ ) (Figure I.33). This result suggested that the staff felt that the children's understanding improved after using the Dental Playbox.

Figure I.33 Staff perceptions of the children's understanding of oral hygiene before and after using the Dental Playbox



### I.34 The dental play resources: staff perceptions

The majority of staff found the social (88%) and multi-sensory (88%) stories together with the toothbrush chart (78%) helpful in promoting oral health in their pupils.

#### 1.4 The Findings: Schools and staff qualitative study

The Dental Playbox and the Dental Playpack contained a wide variety of resources, covering an age range from 3-18, therefore, not all items were appropriate for all ages. Guidance as to using the resources was included in the Dental Playbox and Playpack to give staff and parents advice on how best to use the materials with their children.

Staff from those schools who did take part in the Special Smiles Dental Project were positive about the Dental Playbox. They spoke of using the resources weekly during a school term or over the school year. Role play materials were most frequently mentioned as being used with the children (Figure 1.4). The puppet and large mouth were used frequently to demonstrate toothbrushing to children. This was felt to be an excellent means of engaging the children and improving their social skills.

Figure 1.4 Children using puppet and toothbrush and dressing up clothes



*Courtesy of the Arbroath Herald*

The following quotes from teachers and staff are illustrative:

‘Using "hands on" practical activities as a means of reinforcement. Children benefitted greatly from role play sessions with props, and from then looking at photos of such sessions to aid reflection and generate discussion.’

'I use the big teeth and toothbrush each day to show some of our more able children how to brush their teeth. They are encouraged to take their own brush from the Bus and put toothpaste on - brush to a familiar song.'

Staff were enthusiastic about the children's reaction to the resources, and found them to be a valuable aid to health promotion within their schools. Illustrative comments are presented below.

'This is a great resource. The children have particularly enjoyed the role play. It has helped to improve knowledge and understanding. It has also helped to develop social skills and hopefully break down barriers when children go to visit the dentist.'

'By the end of these sessions, children were more confident in selecting "healthy" food and, with prompting; they demonstrated their knowledge and understanding of the kinds of food to be eaten to help produce strong, healthy teeth.'

There was a little concern amongst staff in a small number of schools originally approached to take part in the Special Smiles Dental Project that materials may not be appropriate for older children in post primary education. Although the materials were thought to be appropriate for the children's developmental age, schools felt children would not engage with the resources as they would undermine their credibility with their peers. Teenagers may need a different approach in relation to promoting their oral health. A small number of staff were critical of the 'Judy Bear goes to the Dentist' (DVD), commenting, 'Judy Bear video - difficult concept for children to see bear at the dentist who couldn't open his mouth!' A few members of staff were also unaware that more masks and mirrors could be obtained from ASC(S). There was concern that sharing dental mirrors and masks risked infection; however, the sharing of these items was never the intention of the Project, with 5000 replacement items available.

Additional items recommended for the Dental Playbox included more information on children losing milk teeth. One teacher made the observation,

'One child lost a tooth in class and was upset. Could not find any books or information in the box to help explain.'

The majority of staff were positive about the use and range of the Dental Playbox resources, commenting that there were 'lots of levels of difficulty, and that they 'suited a wide

spectrum of children'. One of the greatest benefits of the resources was that they provided the schools with materials that they would not otherwise have access to:

'We can struggle sometimes to get resources which meet the needs of the children we support. It's really useful to get something all made up and ready to use'

## **1.5 Section 1: Summary of findings**

### **1.51 Assessment of the schools' oral health education: Baseline study**

- At baseline, schools felt that teachers and staff gave oral health a higher priority than parents and children
- Sixty-three percent of schools felt that the meals and snacks that the children consumed were healthy
- Sixty-three percent of the schools had daily toothbrushing programmes for the children
- Fifty-six percent of schools had a child oral health assessment as part of their education plan for pupils
- Fifteen percent of schools felt that their children would be fearful and resist dental treatment
- Schools would welcome the opportunity to take part in the Childsmile programmes.

### **1.52 Before and after study: School staff**

- Between 1 and 30 oral health education sessions for children were conducted within the school year after introduction of the Dental Playbox
- School staff had increased awareness of the need for effective oral hygiene for their pupils after introduction of the Dental Playbox
- School staff rated the children's understanding of oral health to be greater after introduction of the Dental Playbox.

### **1.53 School and school staff: Qualitative study**

- School staff were very positive about the use of the Dental Playbox
- Range of materials allowed a wide spectrum of children with complex and additional support needs to be engaged in the oral health education sessions
- The most frequently used materials included role play materials and the large mouth to engage children when demonstrating toothbrushing.



## Section 2

### Families and children

- Before and after parental study
- Parents: qualitative study
- Before and after child study

## Section 2 – Families and children

The second section of the report presents the data collected by ASC(S) and includes the parents and carers evaluation of the Dental (home) Playpack conducted in 2008-2009. This part of the evaluation included 3 studies:

- Before and after parental study  
Questionnaires were distributed and completed by parents before and after using the Dental Playpack at home.
- Parents: Qualitative study  
The qualitative material draws on parent and carer comments on Special Smiles Dental Project during the cross-sectional and before and after studies.
- Before and after child study  
Questionnaires were distributed and completed by children before and after using the Dental Playbox at school

### 2.0 The before and after parental study

#### 2.1 Method

Further information was collected from parents across all 29 schools who took home a smaller Dental Playpack resource to use with their children.

##### Questionnaires: Before and after parental study

Parents were asked to complete a short questionnaire before and after using the Dental Playpack at home. The questionnaires assessed the parents' understanding of their child's oral health needs. Four questions assessed parental understanding of their child's oral health needs. These questions included parents' understanding of the barriers to implementing good toothbrushing, healthy diet and awareness of potential dental problems. These were combined to form a single score with scores ranging from 1 to 5. The participants were asked to rate their children's understanding of their oral health with respect to a healthy diet, toothbrushing and attending the dentist, as well as the children's oral hygiene practices. The questions used a 5-point scale, with 1 meaning 'no understanding', and 5 meaning 'excellent understanding'. These three questions were combined to form a single scale of child understanding. Parents' were asked to rate how

fearful children were of attending the dentist on a 3 point scale ranging from 1 (child was unconcerned) to 3 (extremely anxious). Finally, they were asked for any comments on their use of the resources.

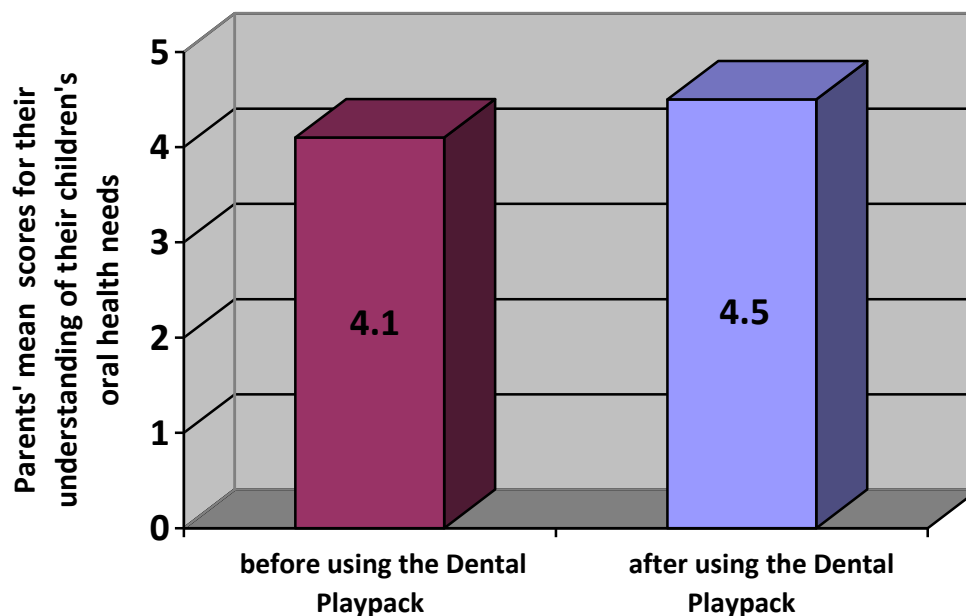
## 2.2 The Findings: The before and after parental study

Eighteen parents filled out a questionnaire before they used the Dental Playpack at home with their child. Thirteen parents returned a second questionnaire after using the Dental Playpack. A total of 13 valid before and after questionnaires were returned.

### 2.2.1 Parents' understanding of their children's oral health needs before and after using the Dental Playpack

Parents' scores for their understanding of their children's oral health needs increased significantly from before their children began using the Dental Playpack, to after they had used the resources. Their scores for understanding rose from 4.1 to 4.5 ( $t=3.1$ ;  $P=0.01$ ) (Figure 2.21). This showed that the parents had a greater understanding of their children's oral health needs after using the Dental Playpack with their children at home.

Figure 2.21 Parents' understanding of children's oral health needs before and after using the Dental Playpack

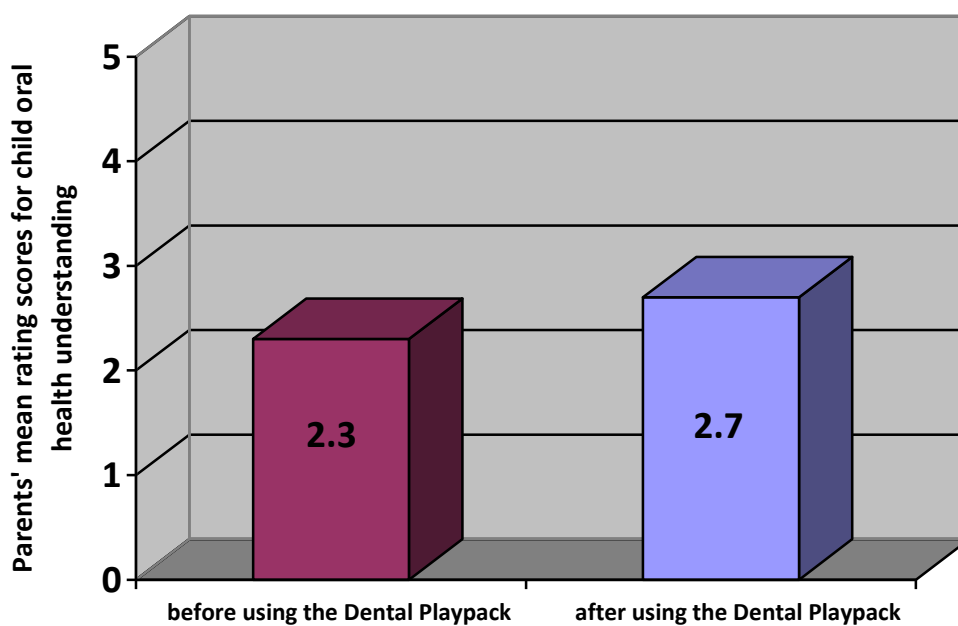




## 2.22 Children's understanding of oral health before and after using the Dental Playpack: parental ratings

Parents reported that children's understanding improved after using the Dental Playpack. Before using the resources, parents rated children's understanding as an average of 2.3. After using the resources, parental ratings of their children's understanding increased to 2.7 ( $t=2.34;P=0.04$ ) (Figure 2.22).

Figure 2.22 Parental rating of child oral health understanding before and after  
Dental Playpack use



## 2.23 Children's oral health practices: Parental perspective

Scores for how often teeth were brushed, children's consumption of sweets and/or fizzy drinks and dental attendance showed very little difference between before and after Dental Playpack use at home.

## 2.24 Child dental anxiety: Parental perspective

There was a significant decrease in the parents' perception of their child's dental anxiety. Before using the Dental Playpack, parents' scores for their child's dental anxiety was 2.1: after using it had fallen to 1.8 ( $P=0.04$ ).

## 2.3 Parents: Qualitative study

Parents taking the Dental Playpack home did so because they reported that their children were particularly anxious about going to the dentist. Examples of the difficulties parents and children experienced are illustrated below.

'P knows she should be going to the dentist, but doesn't like going. She has been going since six months old. As soon as she needed some treatment, everything went wrong. Bit the dentist's finger!'

'J shakes, vomits, bowel movements and becomes very tired, withdrawn and upset when attending the dentist.'

Parents' comments were positive in relation to the Dental Playpack. Two case studies (Box 2.3a and 2.3b) are provided to illustrate the value of the Dental Playpack:

### Box 2.3a CASE HISTORY I

H's mum was advised to borrow the pack from the school. Also obtained some of the equipment used when a child has a fluoride varnish applied which was what the dentist had hoped to do at the next appointment. The social story was also adapted to include the scenario of going to get a fluoride varnish. H used the equipment on herself and others. She also read the story.

At the next appointment, H successfully attended and had a fluoride varnish applied to one tooth. H's mum explained that the Dental Hygienist had observed a big improvement in H's behaviour. Since then, H has had a filling done and the hope is that she will be able to have fissure sealants in the near future.

H's mum felt that it was useful to use the resources at home and reinforce what H had done at school. Being better prepared helped overcome some of her anxieties.

Box 2.3b      CASE HISTORY 2

L is eight years old and has Autistic Spectrum Disorder. L is fearful of many situations and has not been to the dentist since she was two years old. At that time she refused to sit on the chair and tried to run away. L eats quite a lot of fruit and is very happy to brush her teeth.

L used the resources in school and then L's mum borrowed the Playpack which she used at home for a couple of weeks. L was very interested in the resources and enjoyed playing with the Food Bingo game. She had a very good knowledge of which foods were good and bad for her teeth. L did talk about the dentist being "dangerous". We discussed with L about trying to find a dentist who would be able to help her look after her teeth. She spoke about a lady dentist who knew about autism.

Having managed to refer L to a dentist who specialises in supporting children with additional support needs, L successfully attended the dentist. Although she was anxious, she managed to go and sit on the chair and even allowed the dentist to look at her teeth.

## **2.4 Before and after child study**

This section presents the work conducted by ASC(S) and includes the 'before and after study: Child study' of the evaluation of the Dental (school) Playbox by ASC(S) in 2008-2009.

### **2.4.1 Method: before and after child study**

#### Sample

Eleven children from the 29 schools completed the before and after questionnaires.

#### Questionnaire: before and after child study (Appendix 2)

Baseline information was collected from the children. The baseline questionnaire included questions aimed to measure their oral health understanding (knowledge) and their oral health practices (behaviours). The children's oral health toothbrushing knowledge was assessed by asking the children about how many times a day and for how long they should brush their teeth. To assess their knowledge of healthy foods and drinks the children were asked to circle which of six food and drink items were good for their health and teeth. The children's responses to these 8 questions were summed to give a score with a range of 0 – 8, with a higher score showing good understanding.

The same questions were asked to the children after using the Dental Playbox.

## **2.5 The Findings: Before and after child study**

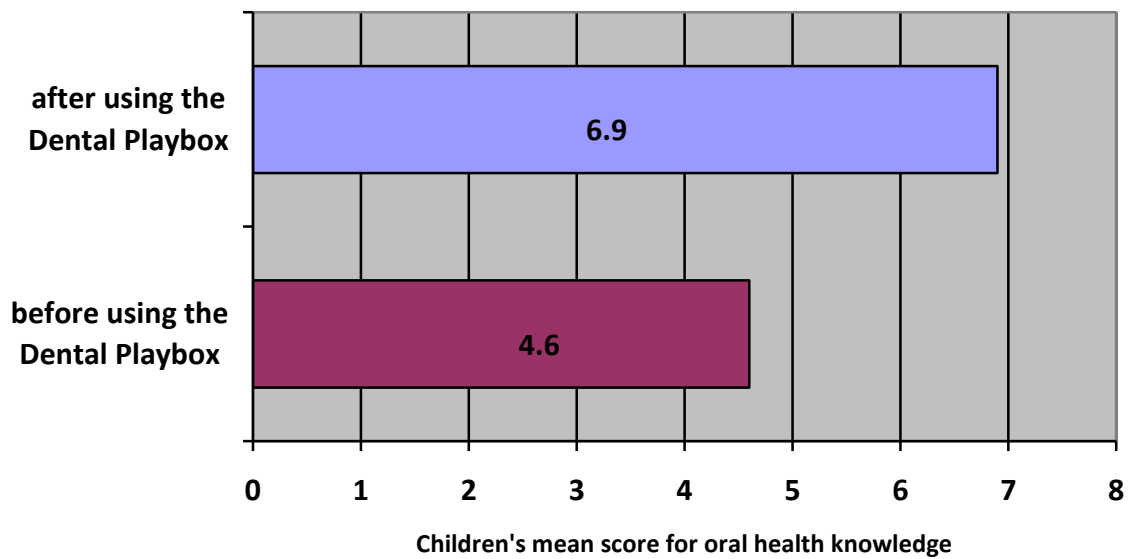
### **2.5.1 Understanding of oral health: Before and after using the Dental Playbox**

Completed questionnaires showed an improvement in children's knowledge after using the Dental Playbox. Before children had used the Dental Playbox, they answered less than five questions out of eight correctly on oral health. After using the Dental Playbox, children answered almost seven out of eight questions correctly ( $t=-4.34$ ,  $P<0.01$ ) (Figure 2.51).

### **2.5.2 Children's oral health practices: Before and after using the Dental Playpack**

The children's oral health practices did not show a significant change from before and to after using the home play resources; however, there was a tendency towards an increase in toothbrushing frequency and an improvement in how children felt about going to the dentist.

Figure 2.51 Children's oral health understanding before and after using the Dental Playbox



### 2.6.1 Section 2: Summary of the findings

#### 2.6.1 Before and after parental study

- Parents' understanding of their children's oral health needs increased after the use of the Dental Playpack with their children at home
- Parents rated that their children's understanding had increased after the use of the Dental Playpack with their children at home
- Parents' felt that their children's dental anxiety had decreased after use of the Dental Playpack with their children at home.

#### 2.6.2 Parents' qualitative study

- Parents' comments were positive in relation to the Dental Playpack
- Parents felt that the Dental Playpack had reduced child dental anxiety and had allowed the children to access dental care.

#### 2.6.3 Before and after child study

- Children's oral health knowledge increased after using the Dental Playbox
- There was a slight improvement in the children's oral health practices after using the Dental Playbox.

## Section 3

### Families and Children

- Cross-sectional study of families with and without experience of the Dental Playbox
- Dental anxiety qualitative study
- Cross-sectional study of children with and without experience of the Dental Playbox

## Section 3 – Families and children: the cross-sectional studies

This section of the Report presents the evaluation of the Special Smiles Dental Project conducted by the Oral Health and Health Research Programme, DHSRU. A cross-sectional study design was adopted and questionnaires were distributed in October and November 2009 to families and children who had and had not experience of the Dental Playbox at school. This work included:

- Cross-sectional study of families with and without experience of the Dental Playbox
- Dental anxiety qualitative study
- Cross-sectional study of children with and without experience of the Dental Playbox

### 3.0 Cross-sectional study of families with and without experience of the Dental Playbox

#### 3.1 Methods

##### Sample

To collect information from parent-carers, nine of the 29 schools included in the Special Smiles Dental Project were selected to represent a range of children of different ages and degree of disability. The schools were asked to distribute questionnaires to parents of children in class that had used the resources, and, where possible, to parents of children who had not yet done so. As far as possible, children in this second group were selected by teachers in order to match age and ability with the children who had already used the Dental Playbox resources. It was hoped that a comparison of these two groups might help to identify possible benefits of the use of the resources in school.

##### The parental questionnaire (Appendix 2)

The same questionnaire was distributed to all parents and carers. It asked parents to rate their children's level of understanding of oral health, their children's oral health practices (including toothbrushing with fluoride toothpaste, diet and dental attendance) and child dental anxiety. They were asked to describe their children's dental treatment experience e.g. fillings. Finally, they were asked to their own understanding of their child's oral health needs and their children's school activities relating to oral health.

Parents were also asked about their own dental anxiety using the Modified Dental Anxiety Scale (MDAS), as it is known that parental and child dental anxiety are related (Themssal-Huber *et al* 2009). This valid and reliable scale assesses dental anxiety on a 5-point Likert scale. Scores range from 5 (no anxiety) to 25 (dental phobia). The mean normative value for the United Kingdom population is 11.6 (Humphris *et al.* 2009). The parents were asked to complete the Child Fear Survey Schedule – Dental Subscale (CFSS-DS) which covers eight aspects of dental care. This has been shown to be a reliable parental proxy in assessing child dental anxiety for all children (Klingberg, 1994). The parents were finally asked to rate their children’s dental anxiety at the child’s last dental visit on a 5-point scale ranging from 1 (not afraid) to 5 (very afraid).

#### Administration of the cross-sectional questionnaire

The relevant local education authorities were contacted in September to inform them of the DHSRU evaluation of the Special Smiles Dental Project. Key staff in each of the 9 schools were contacted. All nine schools agreed to distribute questionnaires to parents via children’s school bags. Parents were given the option of returning the questionnaires to the school via their child’s school bag, or by using an included freepost envelope to return the questionnaire directly to DHSRU at the University of Dundee.

In October 2009 the nine schools distributed questionnaires to 210 parents - 152 whose children who had used the Dental Playbox resource in school (Dental Playbox group), and 58 who had not (‘the ‘control group’). By the end of the first week of December, 88 (42%) parental questionnaires had been returned: 58 (38%) from the Dental Playbox group, and 28 (48%) from the control group.



### 3.2 The Findings: Cross-sectional parental study

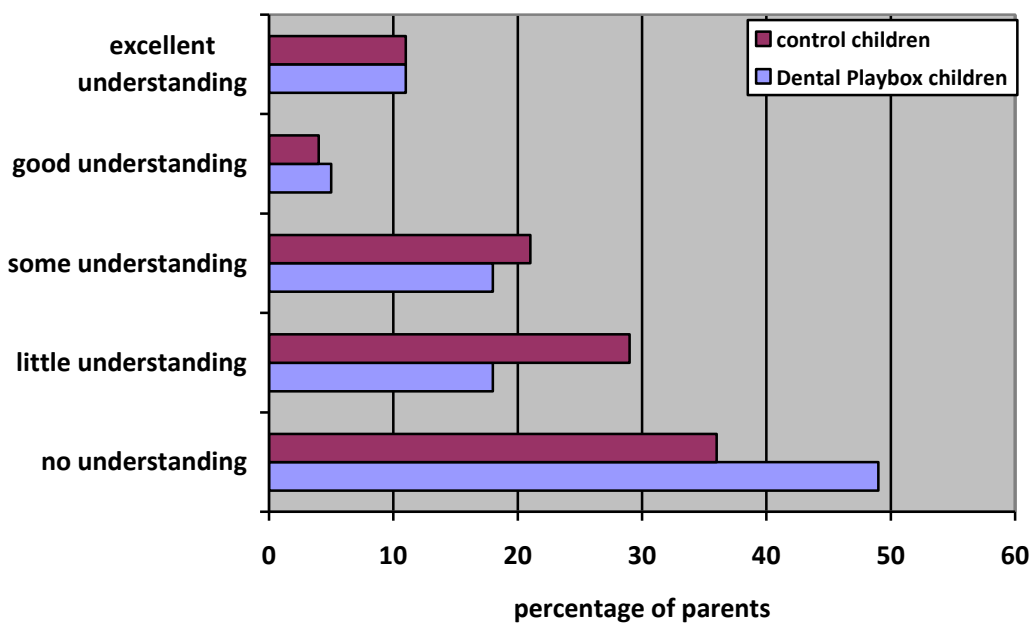
#### 3.2.1 Child oral health understanding: Parental ratings

Parents rated their children's understanding (knowledge) of oral health as low. Thirty-eight percent of parents stated that their children had no understanding of the role of toothbrushing, diet or dental visits upon oral health.

- Parental ratings of child understanding of diet and oral health

Eleven percent of all parents rated their children as having excellent understanding of the relationship between diet and oral health (Figure 3.2.1a).

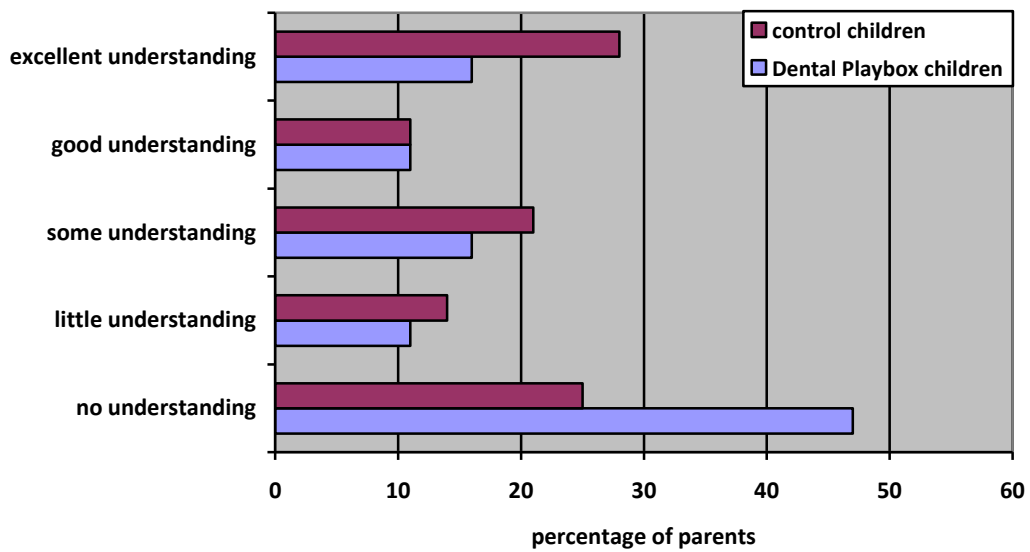
Figure 3.2.1a Comparison between Dental Playbox and control group parents' ratings of child understanding of diet and oral health.



- Parental ratings of child understanding of toothbrushing and oral health

Twenty-eight percent of parents of children in the control group and 16% of parents of children in the Dental Playbox group rated their children as having excellent understanding of the relationship between brushing and oral health (Figure 3.2.1b)

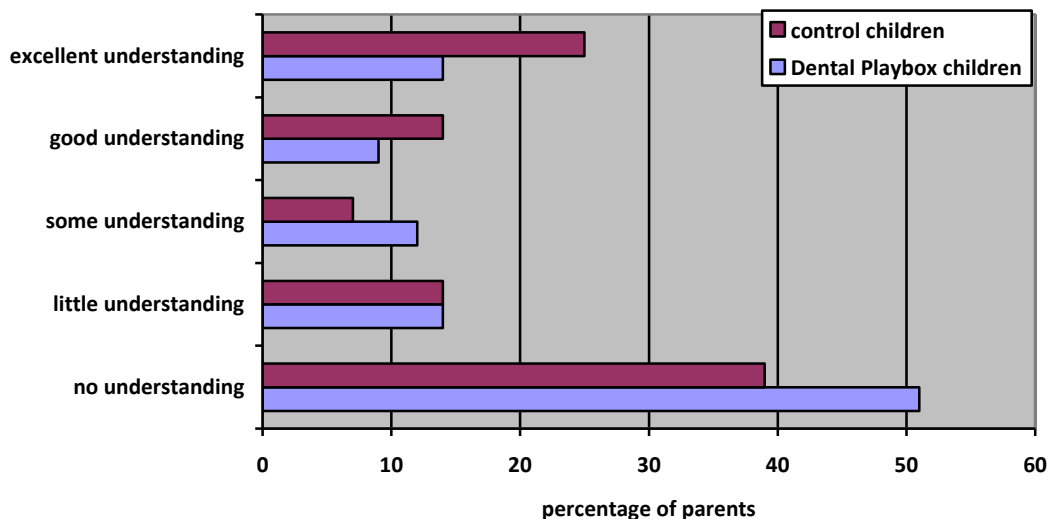
Figure 3.21b Comparison between Dental Playbox and control group parents' ratings of child understanding of toothbrushing and oral health.



- Parental ratings of child understanding dental attendance and oral health.

Twenty-eight percent of parents of children in the control group and 16% of parents of children in the Dental Playbox group rated their children as having excellent understanding of the relationship between brushing and oral health (Figure 3.21c)

Figure 3.21c Comparison between Dental Playbox and control group parents' ratings of child understanding of dental attendance and oral health.



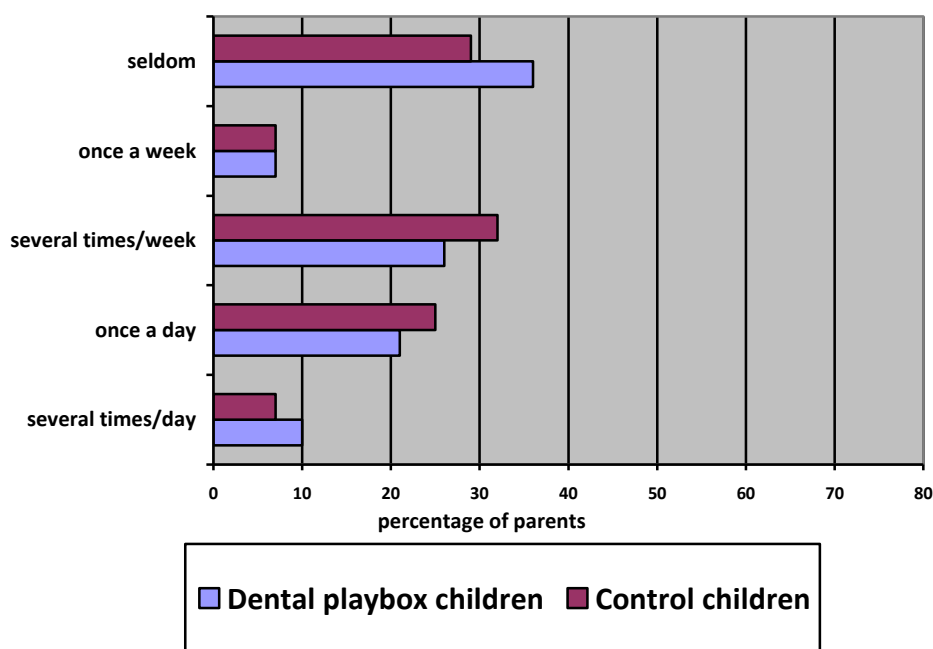
### 3.22 Child oral health practices: parental ratings

Parents were asked about three aspects of their child's oral health practice: frequency of consumption of sweets, frequency of toothbrushing and dental attendance.

- Parental ratings of child oral health practices: frequency sweet consumption

Larger proportions of parents of children who had had experience of the Dental Playbox compared with those whose children had no experience of the Dental Playbox stated that their children seldom ate sweets (Figure 3.22a).

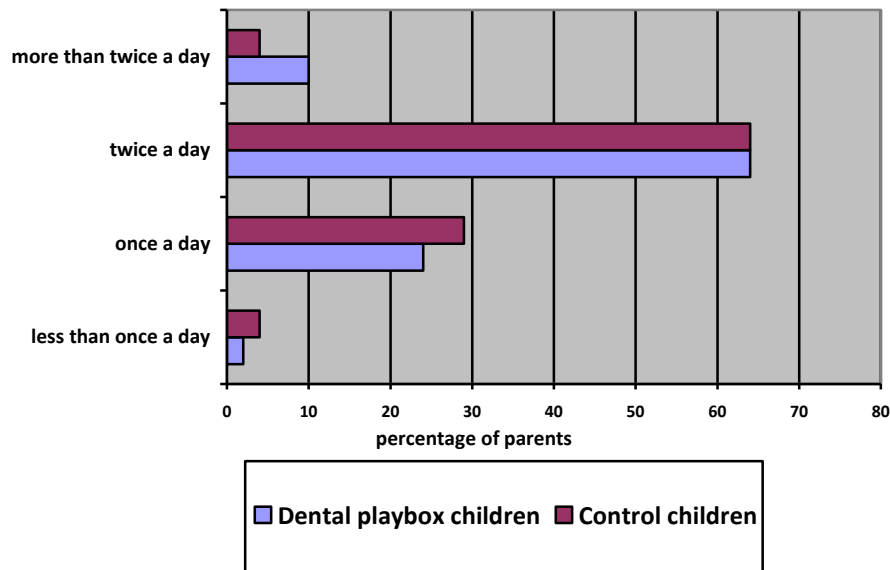
Figure 3.22a Comparison between Dental Playbox and control group parents' ratings of child oral health practices: frequency of sweet consumption.



- Parental ratings of child oral health practices: Frequency of toothbrushing

Sixty four percent of all parents stated that their children's teeth were brushed twice a day. Smaller proportions of all parents (2%) admitted to brushing their children's teeth less than once a day (Figure 3.22b).

Figure 3.22b Comparison between Dental Playbox and control group parents' ratings of child oral health practices: frequency of toothbrushing.



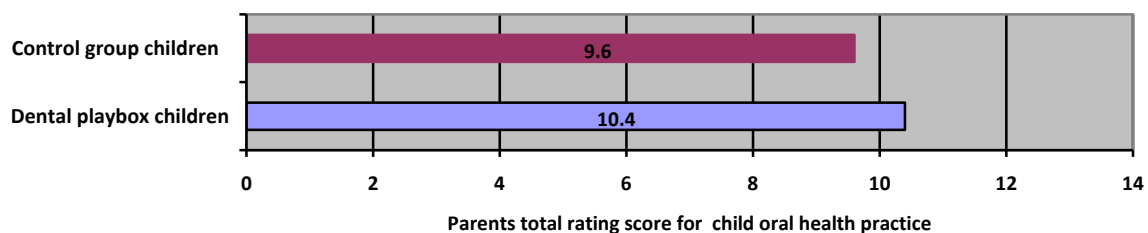
- Parental ratings of child oral health practices: Dental attendance

Ninety-four percent of the parents stated that they had taken their child for a dental visit. Ninety-seven percent were parents whose children had experience of the Dental Playbox and 89% were parents whose children had not had experience of the Dental Playbox (control group).

- Total scores for parental rating of child oral health practices

The responses to the above behaviours were summed to give a total score for parental rating of child oral health practice: higher scores indicating good oral health practice. The parental rating mean scores were high. The Dental Playbox children had higher ratings. This difference between group mean scores was approaching statistically ( $P=0.08$ ).

Figure 3.22c Comparison of parental total rating scores for children's oral health practice



### **3.3 Dental anxiety: parental ratings**

#### **3.31 Parental dental anxiety**

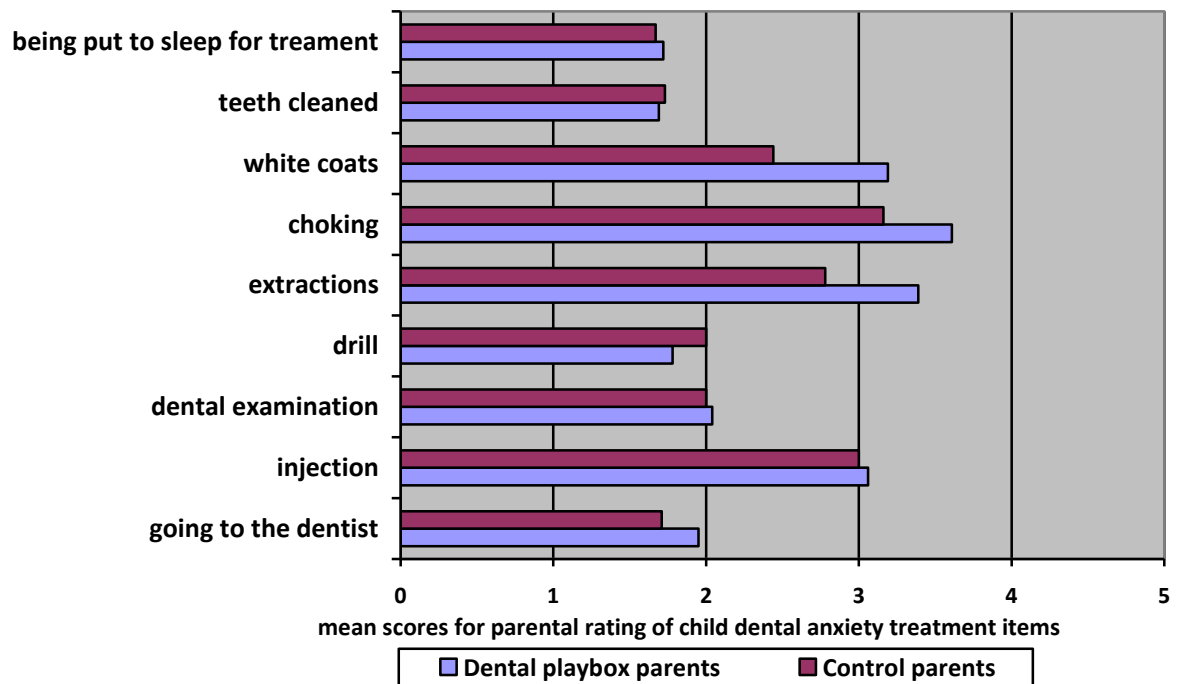
Seventy-four of the 88 parents completed the Modified Dental Anxiety Scale. The mean score for parental anxiety was 11.0 (5.4) which was the same as the general population (Humphris *et al* 2009). The mean score for the Dental Playbox parental group was 11.1 (5.70) and for the control group was 10.5 (4.38) ( $t=0.4$ ;  $P=0.66$ ).

#### **3.32 Child dental anxiety: Parental ratings**

Forty-five of the 88 parents completed the Child Fear Survey Schedule-Dental Subscale (CFSS-DS) as a proxy measure of their child's dental anxiety. The mean score for dental anxiety for the children in the Dental Playbox group was 27.7 (11.2) and for the control group children was 27.5 (11.7) ( $t=0.04$ ;  $P=0.96$ ).

All of the 10 individual dental anxiety items from the CFSS-DS were compared between the Dental Playbox and control groups. Parents of children in the Dental Playbox group rated their children as being more frightened of tooth extractions (having teeth out), choking and being put to sleep for dental treatment compared with parental ratings for control group children (Figure 3.32).

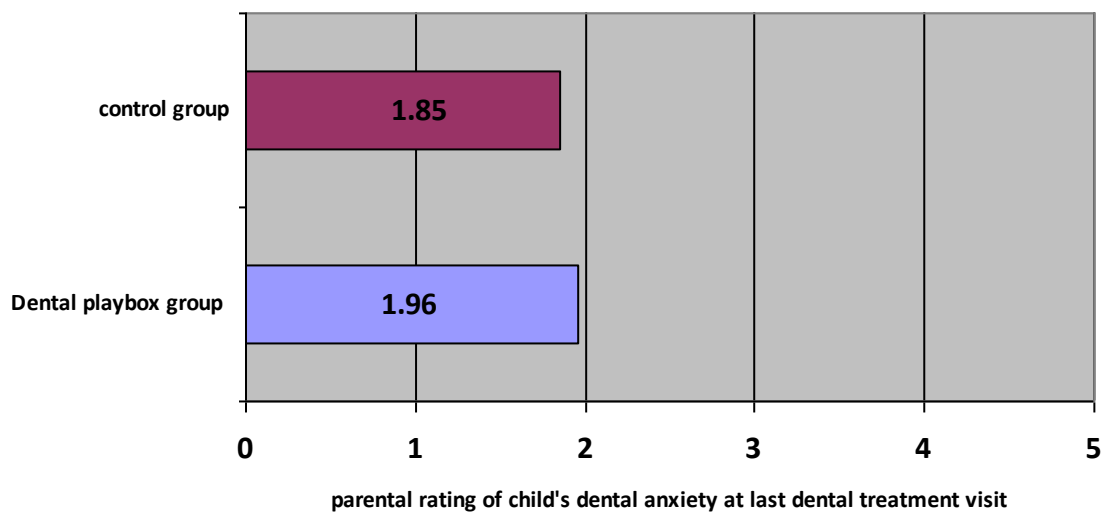
Figure 3.32 Comparison of Dental Playbox and control children's dental anxiety: Treatment items



### 3.33 Child dental anxiety at last dental visit: parental ratings

Parents rated their children’s dental anxiety at their last dental visit as low (1.95). There was no difference between parental rating for children in the Dental Playbox (1.96) and control groups (1.85) ( $t=0.39$ ;  $P=0.69$ ) (Figure 3.33).

Figure 3.33 Child dental anxiety at last dental visit: Parental rating



There was a significant association between parental rating of their child's dental anxiety (CFSS-DS) and parental rating of the child's dental anxiety at the previous dental visit ( $r_p=0.65$ ,  $P<0.001$ ).

### 3.34 Child dental anxiety: Parental ratings by age of child

The mean age of the children was 8.8 years with a range of 3-17 years. Children aged up to 8 years (51% of the children) were designated as younger children, those aged 9 years and over (49% of the children) were designated as older children. Older children were rated by parents as being more frightened (2.2) at their last dental visits compared with younger children (1.8) ( $t=1.39$ ;  $P=0.16$ ).

The children in the Dental Playbox group had an average age of 9.3 years compared with the control children whose mean age was 8 years. Therefore it is reasonable to suggest that Dental Playbox children's anxiety might be rated higher by parents as a consequence of the children's greater dental treatment experience. Significantly larger proportions of children in the Dental Playbox group compared with the control group children had experience of dental examinations ( $\chi^2=4.55$ ,  $P=0.03$ ) and fillings ( $\chi^2=4.05$ ,  $P=0.04$ ).

The parental rating of child dental anxiety in the Dental Playbox and control groups for those children who had not experienced invasive dental treatment (ie fillings) was compared. Parents' mean scores for child dental anxiety and child dental anxiety at the last dental visit for children with no experience of invasive dental treatment was higher in the control group children compared with the Dental Playbox group children (Figures 3.34a, 3.34b).

Figure 3.34a Parental rating of child dental anxiety: children with no experience of fillings

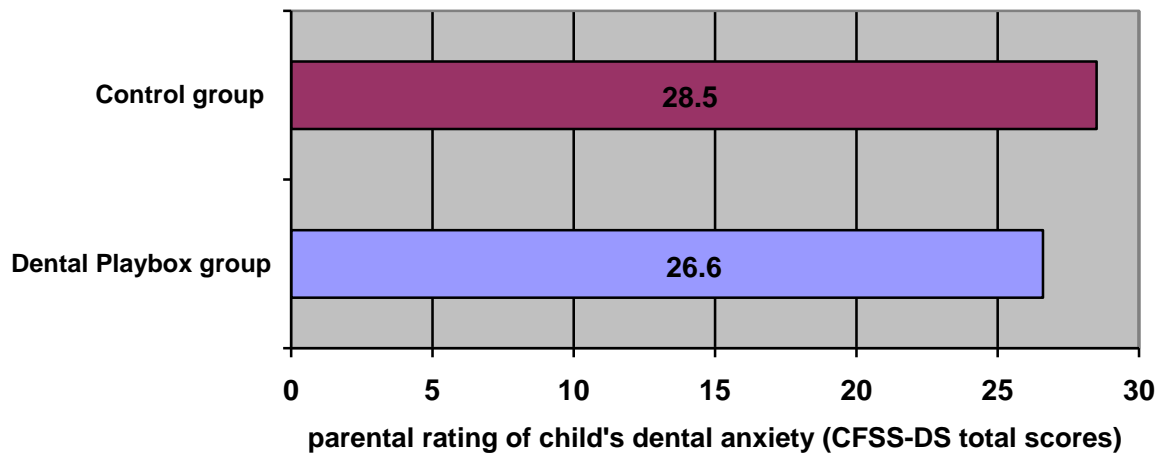
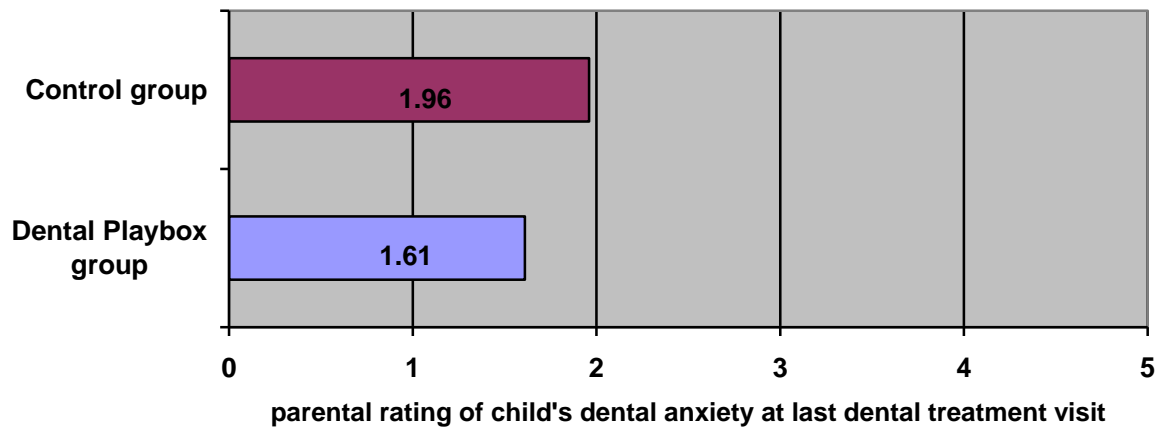


Figure 3.34b Parental rating of child dental anxiety at child's last dental visit: children with no experience of fillings

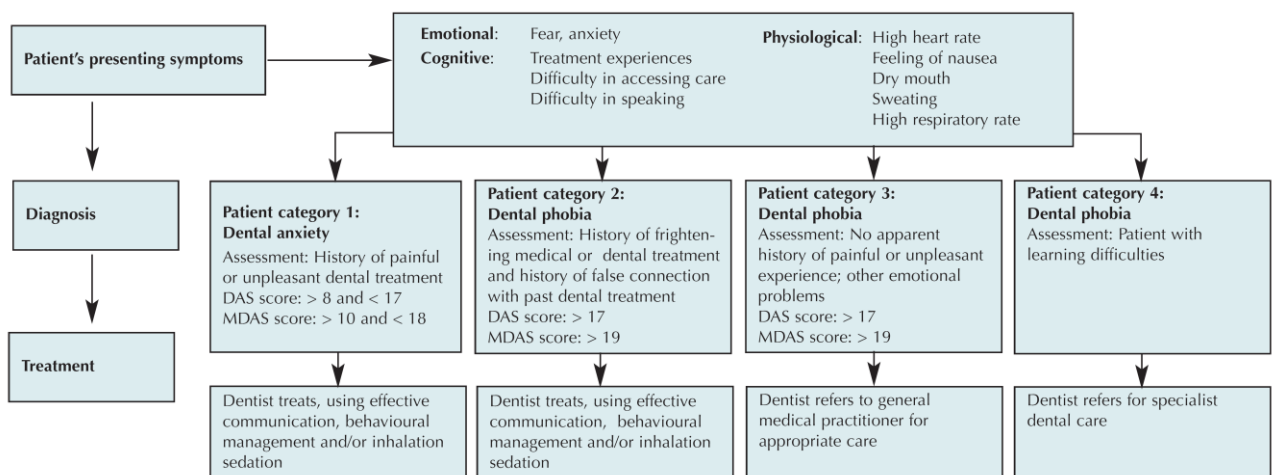




### 3.4 Dental anxiety qualitative study

Dental anxiety is said to be an anticipatory anxiety and a fear of the unknown. Dental anxiety is known to have a multifactorial aetiology (Freeman, 1985) and to be particularly heightened in those who have had a frightening dental experience in the past. Dental phobia is different. Three categories of dental phobia are thought to exist: first mistaking what happens in the dental surgery with something frightening that happens outside the dental surgery – so-called ‘false connecting’; secondly, the dental phobia is a symptom of a wider psychological disorder and thirdly, the dental phobia is associated with complex and additional support needs (Freeman 2005) (Figure 3.4).

Figure 3.4 Classification of dental anxiety and dental phobia



The qualitative data gathered from parents concerning their children’s dental anxiety supported the opinion that children with complex and additional support needs experienced profound dental fear on account of their cognitive impairment. The following comments from parents concerning a 10-year-old boy and 10-year-old girl’s considerable fear are illustrative:

‘J has no understanding of anything. Gets teeth done at Yorkhill . . . special doctors there needed to put him to sleep’

'E has cerebral palsy, epilepsy and diabetes. She also has learning difficulties. Limited level of understanding . . . she is very frightened of any medical or dental situations'.

Despite reassurances from parents and dental staff, together with the use of pre-operative medication, children suffered with panic attacks during treatment sessions:

'My son has to have a GA (gas) even for a filling, and this is terrifying for him. Staff still insist on trying to rub anaesthetic cream on his hand in preparation for an injection, which we always warn them – it will not work, as inevitably he has to be restrained to put the mask over his face to put him to sleep. He hates having cream rubbed on his hand, will physically resist any attempt to inject him, and inevitably, after a lot of unnecessary stress, he is put to sleep with the mask. The best possible route would be to give him the correct dose of pre-op medication, so that he is barely conscious, and is not so anxious. He is quite willing to swallow a pill.'

For children who had used the Dental Playbox at school, the parents felt that the experience of playing at being a dentist and having the opportunity to hold dental mirrors and probes had assisted them when attending for a dental examination:

'The school have also played a huge part in helping N tolerate teeth cleaning. . . contrasting my own childhood experience of intolerant and non-child centred dentists, leaving me with a fear that I would never allow my children to see!'

The dental centeredness of the schools was also highlighted as being of central importance as this was acknowledged as a factor in reducing the children's dental fear and anxiety and this was felt in part to be due to the Dental Playbox:

'Education about health and associated dental health; visits to the base by community health; teeth cleaning at school . . . has *contributed* to P's success at the dentist'.

### **3.5 Section 3: summary of findings**

#### **3.5.1 Cross-sectional parental study**

- Parents rated their children's oral health understanding as poor. This finding is in contrast with the findings from the 'Before and after parent study' (see Section 2). This contradiction may be due to first, that the parents in the cross-sectional study did not have the experience of working with their children at home using the Dental Playpack as those in the 'Before and after study' and secondly, that the parental ratings of child knowledge may be an unreliable indicator of child understanding of oral health (see cross-sectional study of children).
- Parents with children who had had experience of the Dental Playbox rated their children's oral health practices more highly. Parents whose children who had experience of the Dental Playbox stated that their children ate sweets infrequently and brushed their teeth twice daily
- The parents in this sample had equivalent levels of dental anxiety as the general population. Children with experience of the Dental Playbox were rated by parents as being less frightened of the drill but more frightened of the injection, white coats and choking. These children were also rated by their parents as being more frightened at their last dental appointment.
- Parents of children with no experience of invasive dental treatment and who had experience of the Dental Playbox were rated as less dentally anxious and less anxious at their last dental visit compared with the others

#### **3.5.2 Dental anxiety qualitative study**

- Many children with complex and additional support needs experienced profound dental fear on account of their cognitive impairment
- For children who had used the Dental Playbox at school, the parents felt that the experience of playing at being a dentist and having the opportunity to hold dental mirrors and probes had assisted them when attending for a dental examination
- The dental centeredness of the schools was also highlighted as being of central importance as this was acknowledged as a factor in reducing the children's dental fear and anxiety. This was felt in part to be due to the Dental Playbox

### **3.6 Cross-sectional study of children with and without experience of the Dental Playbox**

#### **3.6 - Method**

##### The Sample

Two groups of children from the 9 schools who took part in the ASC(C) evaluation were invited to take part. One group had used the Dental Playbox the other group of children had not, and acted as a control group. Two hundred and ten children were approached and invited to take part. Parents were required to provide their consent for their child to participate in the study. The children were also asked to provide their own consent for participation.

##### The questionnaire (Appendix 2)

All of the children were asked to complete a questionnaire which asked about their oral health understanding (knowledge), their oral health practices (behaviours) and their dental anxiety. The children's oral health toothbrushing knowledge was assessed by asking the children about how many times a day and for how long they should brush their teeth. To assess their knowledge of healthy foods and drinks the children were asked to circle which of six food and drink items were good for their health and teeth. Dental anxiety was assessed using the modified child dental anxiety scale (faces) (MCDASf) (Howard and Freeman 2007). This is a reliable and valid measure of child dental anxiety, suitable for children and young adults with additional support needs. It uses a smiley face response set, and was offered to the schools in this study in five face and three face formats, the latter being more suitable for children with more severe cognitive disabilities. The measure covered eight dental treatment related items, including examination, staff in white coats, injections, drilling, extractions and general anaesthetic. The faces were labelled from 'not worried' (scored 1) to 'very worried' (scored 5). Thus the scale had a range of 8 to 40. Children were also asked to rate the degree to which they were bothered by their mouths, lips and teeth as a measure of oral health related quality of life (Humphris, Freeman, *et al.*, 2005). This scale was on a 3 point scale ranging from 1 (not at all) to 3 (a lot).

## Administration of the questionnaire

The questionnaire was administered and distributed to all children in the classroom setting by their school staff. They were assisted with reading or understanding of the questions but their answers were not influenced by the assisting teacher or classroom assistant.

### 3.7 The Findings

A total of 64 child questionnaires were completed (not always fully) - 46 from the Dental Playbox group, and 18 from the control group. The response rate was 30%.

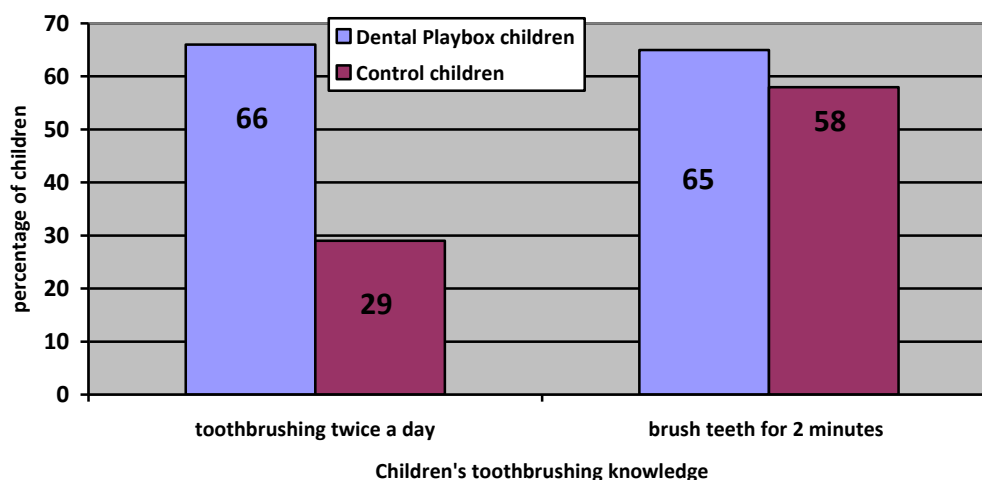
#### 3.7.1 Understanding of oral health

Three sets of questions assessed the children's understanding of oral health. These were their knowledge of toothbrushing frequency and time as well as their knowledge of health and unhealthy foods and drinks.

#### 3.7.2 Children's understanding of oral health: Toothbrushing knowledge

Larger percentages of children who had experience of the Dental Playbox (66%) brushed their teeth twice a day compared with children in the control group (29%). Similarly greater percentages of children who had used the Dental Playbox (65%) knew that they should brush their teeth for 2 minutes compared with the control children (58%) (Figure 3.72).

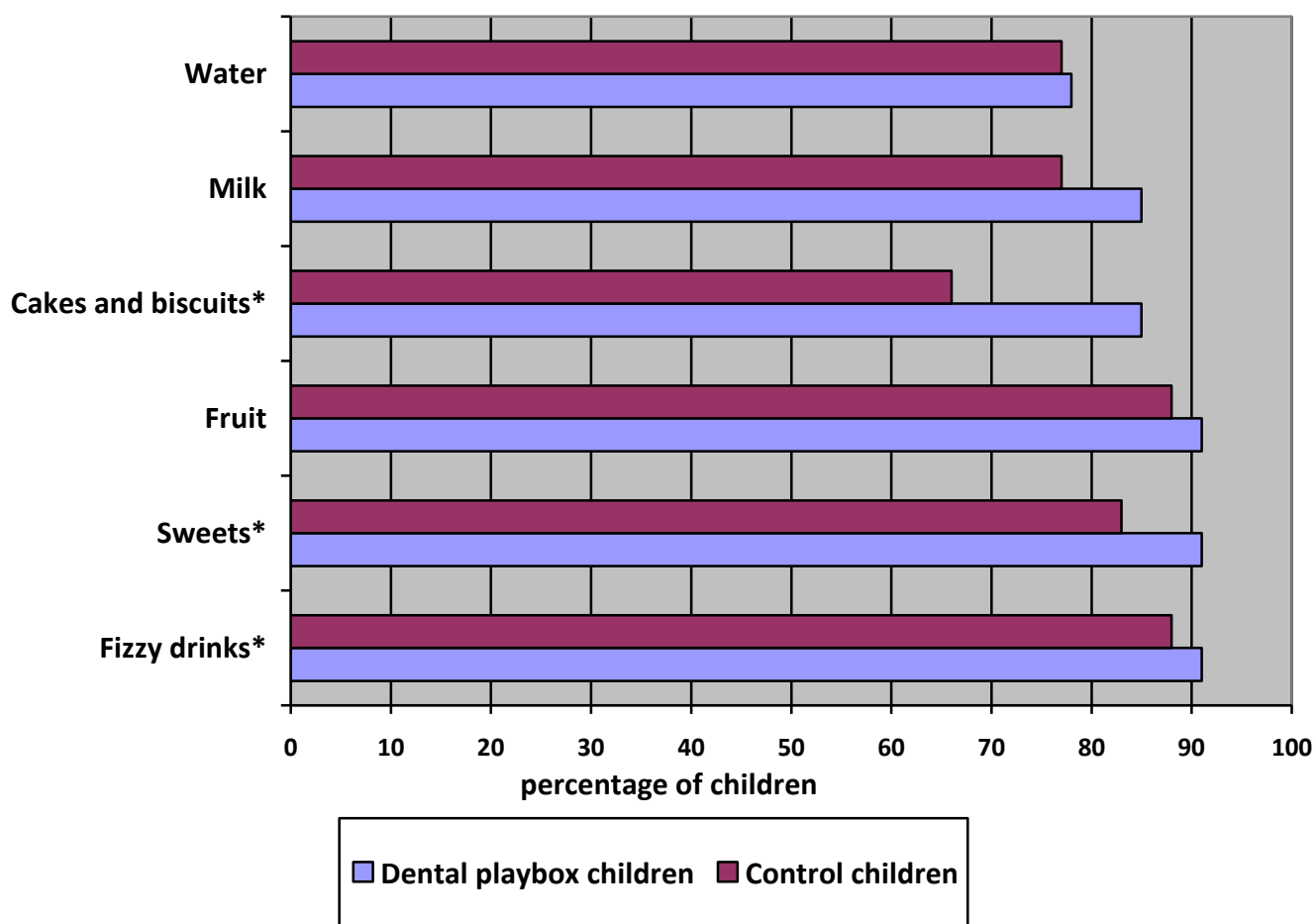
Figure 3.72 Comparison of Dental Playbox and control children's toothbrushing knowledge



### 3.73 Children's understanding of oral health: healthy foods and drinks.

Larger proportions of children in the Dental Playbox group correctly identified that milk and fruit were healthy and good for their teeth compared with the control group. Larger proportions of children in the Dental Playbox group also identified that cakes and biscuits, sweets and fizzy drinks were neither healthy nor good for teeth compared with the control group children (Figure 3.73).

Figure 3.73 Comparison of Dental Playbox and control children's dietary knowledge

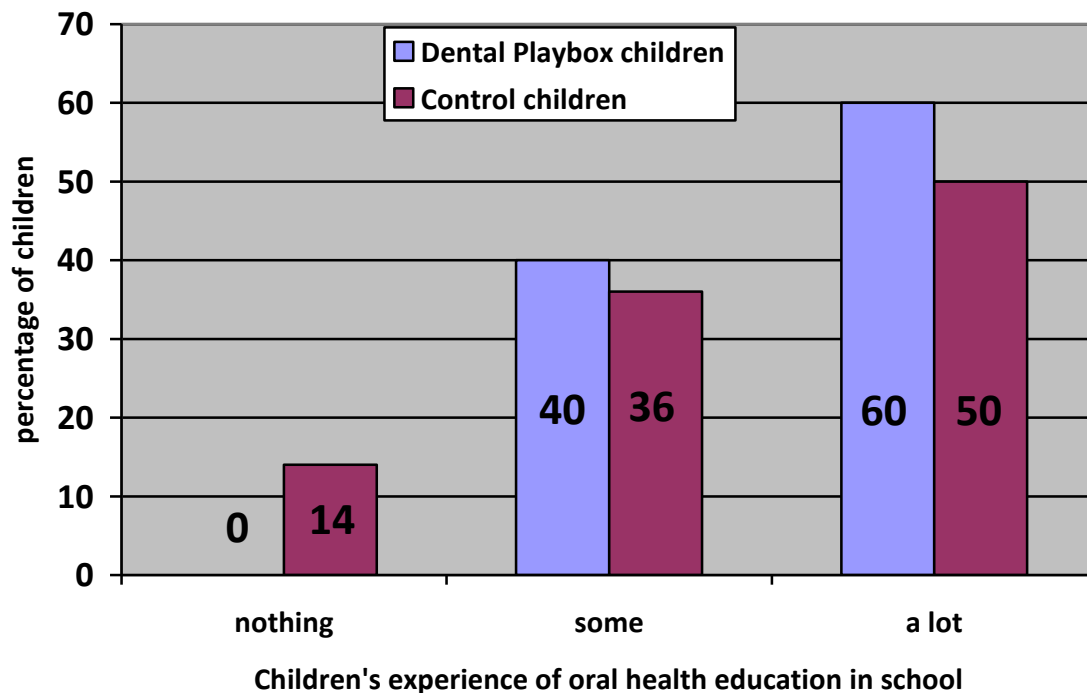


\*Reversed scoring for cakes and biscuits; sweets and fizzy drinks

### 3.74 Children's understanding of oral health: Their experience of oral health education.

Figure 3.65 shows the children's assessment of how much they learnt about oral health in their school. Larger proportions of children who had experience of the Dental Playbox stated that they had learnt a lot at school about oral health.

Figure 3.74 Comparison of Dental Playbox and control children's oral health education



### 3.75 Children's preferences of the Dental Playbox resources

Children were shown eight photographs of materials from the Dental Playboxes. They were asked to tick which resources they remembered and which resources they liked. The two scores were combined and children's preferences are shown in Figure 3.75a. Children gave the highest score to 'Dr Drill and Fill', a 'Play-Doh' based resource, where children role played at being a dentist (Figure 3.75b). Children also liked the dressing up outfits as part of their role play as being dental health professionals. The least preferred and remembered resources were books, dvds and finger puppets.

Figure 3.75a Children's most liked and remembered resources

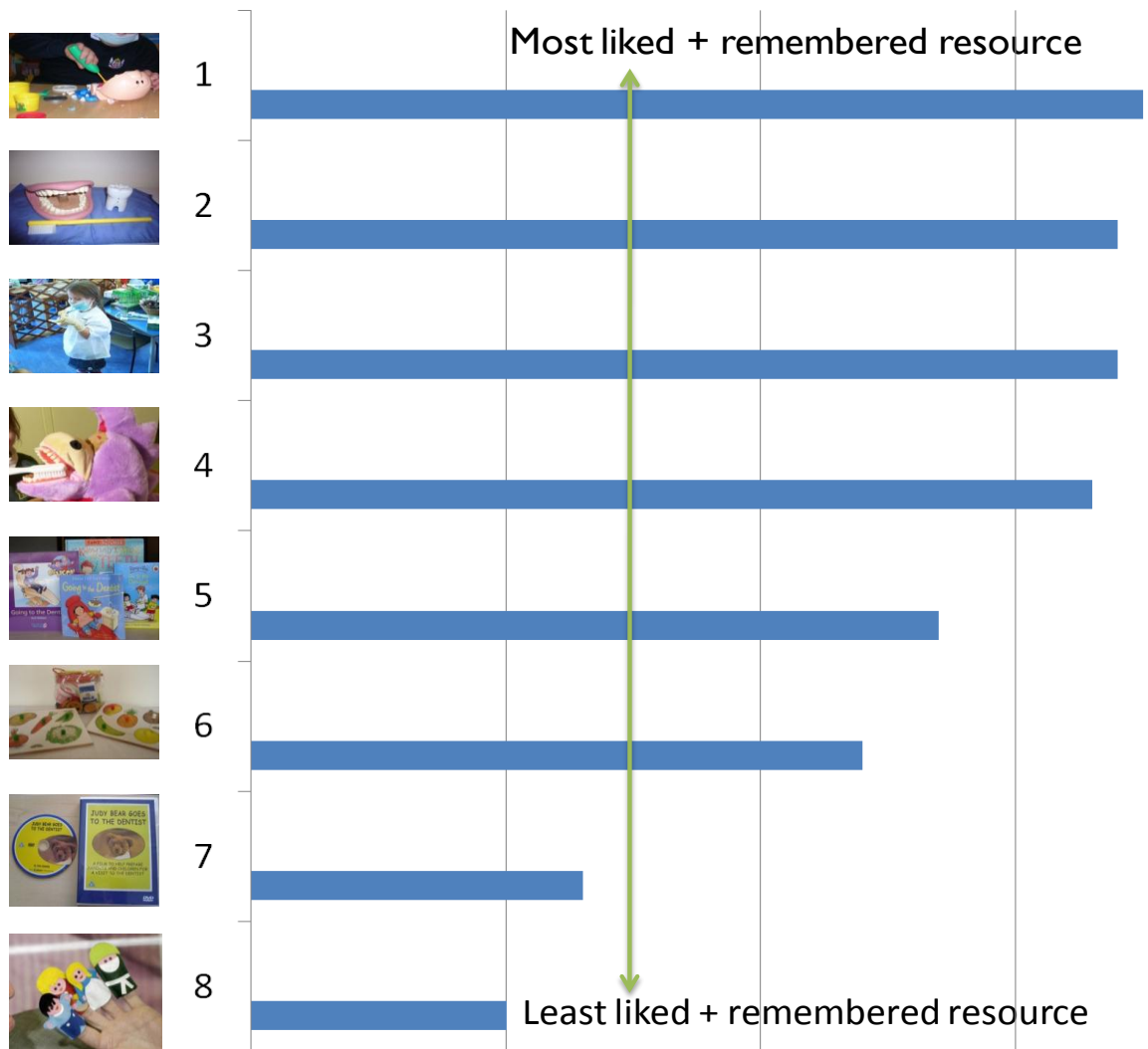


Figure 3.75b Playing 'dentist' with 'Dr Drill and Fill'

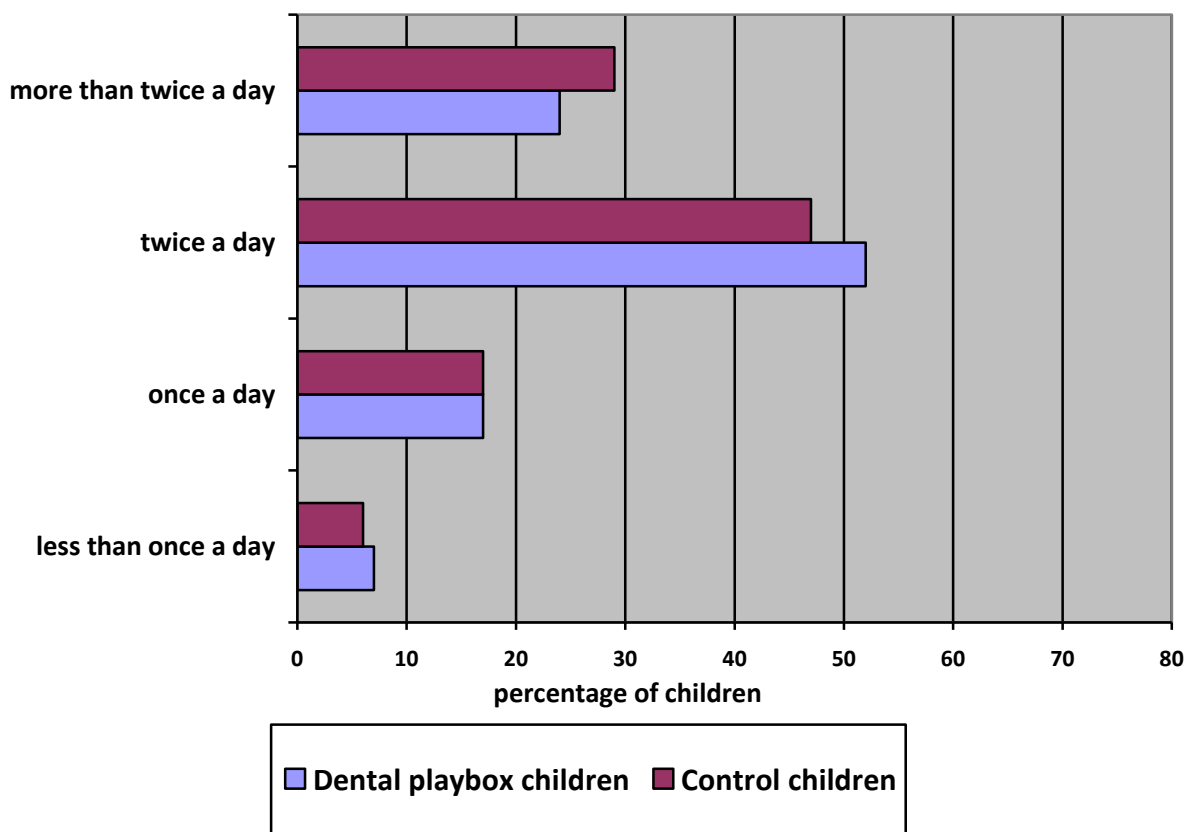




### 3.78 Children's oral health practices: Toothbrushing and dental attendance.

Larger proportions of children from the Dental Playbox group (52%) compared with children from the control group stated that they brushed their teeth twice a day (Figure 3.78). Ninety-four percent of the Dental Playbox children and all of the control children stated that they had 'visited the dentist'.

Figure 3.78 Comparison of Dental Playbox and control children's toothbrushing practices

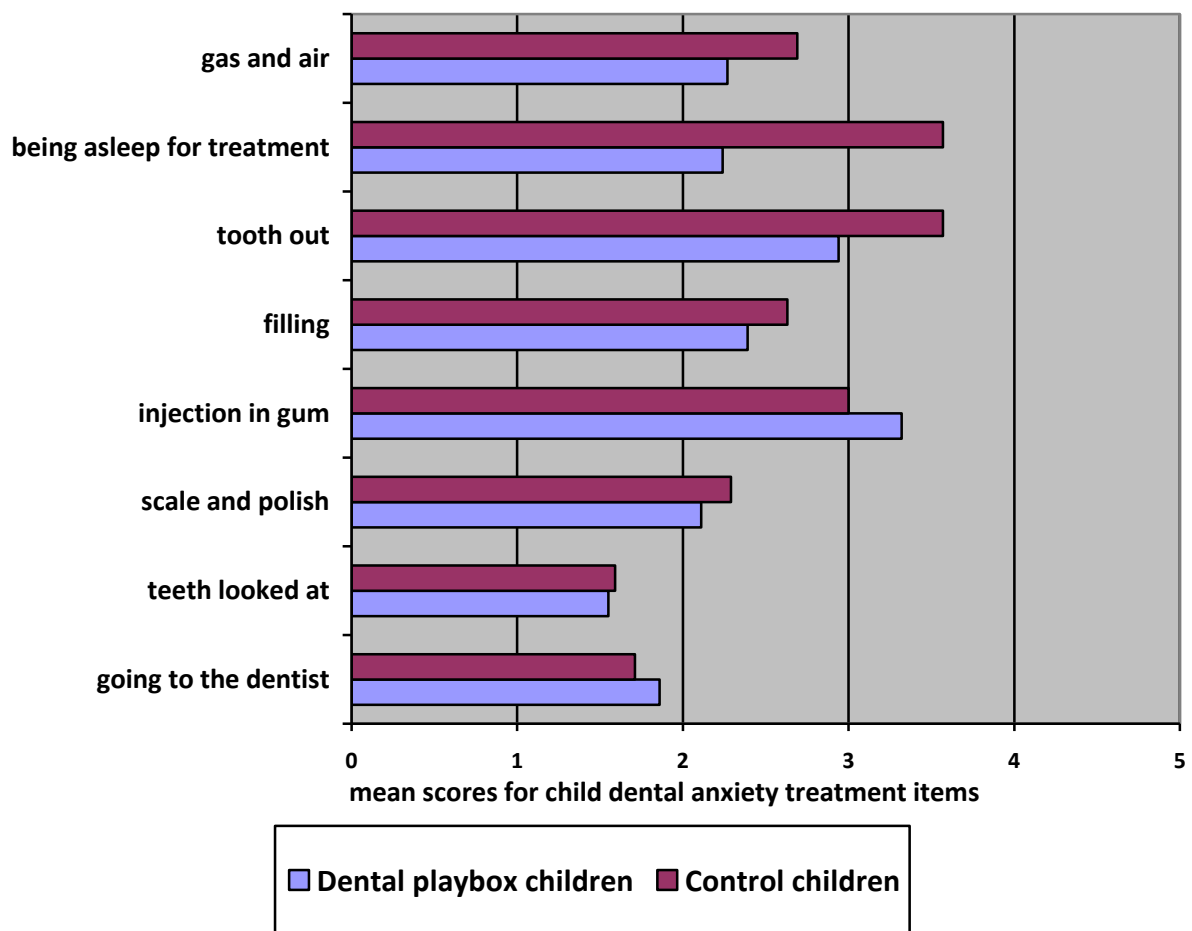


### 3.79 Children's reported dental anxiety

Forty-five of the children completed the dental anxiety part of the questionnaire – the MCDASf. The total mean score for all the children was 20.04 which was similar to the normative mean of 19.77 for child dental anxiety (Howard and Freeman, 2007). The children from the Dental Playbox group were less fearful than children from the control group. The Dental Playbox group children, therefore, had lower total mean scores (18.8) compared with the children in the control group (23.1) for dental anxiety as measured by the MCDASf.

All of the 8 individual dental anxiety items from the MCDASf were compared between the Dental Playbox and control group children. Children in the Dental Playbox group had lower mean scores for fear of the dental examination, scale and polish, fillings, tooth being taken out, being asleep for dental treatment and twilight sleep (gas and air). Children in the Dental Playbox group (2.24) had significantly lower mean scores for fear of 'being asleep for dental treatment' compared with the control children (3.57) ( $t=2.42$ ;  $P=0.03$ ) (Figure 3.79).

Figure 3.79 | Comparison of Dental Playbox and control children's dental anxiety: treatment items



### 3.8 Child oral health related quality of life

Over 60% of the Dental Playbox and control children were not bothered by their teeth. Only 2 of the Dental Playbox children and 1 of the control children were 'bothered' by their teeth.

### **3.9 Summary of cross-sectional child study**

Children who had experienced and used the Dental Playbox in school:

- Had better oral health understanding and knowledge of toothbrushing and health foods and drinks
- Felt that they had learned a lot about oral health in school
- Brushed their teeth at least twice a day
- Were less fearful of the dentist and of dental treatment items (except the injection)
- Enjoyed playing and acting as a dentist and practising their toothbrushing on models and puppets

## Conclusions and Recommendations

## Conclusions

The main aim of the Special Smiles Dental Project was to improve the oral health understanding and oral health practices of children and young people with complex and additional support needs by promoting learning through play using dental play resources.

The findings showed that the Special Smiles Dental Project met its main aim to improve the oral health understanding and practices for children with complex and additional support needs. Oral health understanding improved amongst staff, parents and children, and child dental anxiety was reduced.

The importance of the Dental Playpack was reflected in the findings of the cross-sectional study which showed that while there had been an increase in child oral health knowledge this was not reflected in parental ratings of child oral health understanding. Since parents who had used the Dental Playpack at home with their children recognised their children's oral health awareness it was suggested that parents who did not have this experience were unaware of the depth of their children's knowledge. Parents felt that the Dental Playbox had increased the dental centeredness of schools which resulted in their children being less frightened of dental treatment and more compliant with dental hygiene regimes at school and at home. The use of the Dental Playbox at school and the Dental Playpack at home provided the greatest increases in parental and child oral health understanding and compliance with oral health practices. Therefore the Special Smiles Dental Project must contain both the Dental Playbox (school) and the Dental Playpack (home) as integral parts of its oral health promotion intervention.

## Recommendations

1. The Special Smiles Dental Project must contain both the Dental Playbox (school) and the Dental Playpack (home) as integral parts of its oral health promotion intervention.
2. The Project should be implemented in nurseries and primary schools across Scotland where children with complex and additional support needs attend.
3. The Project should be connected to existing and new core Childsmile toothbrushing programmes to allow the inclusion of children with complex and additional support needs.
4. School and school staff, in nursery and primary schools where children with complex and additional support needs attend, should be provided with ongoing training to enable them to deliver the Special Smiles Dental Project and use the oral health promotion resources appropriately.
5. All parents, and in particular those parents whose children are dentally anxious, should be provided with the home Dental Playpack to reinforce the children's experiences of the Dental Playbox at school.
6. A post-primary school Dental Playbox should be developed for older children with complex and additional support needs.

## References and Acknowledgements

## References

An Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland (2005), Scottish Executive. <http://www.scotland.gov.uk>

Bradley, C, McAlister, T, (2004). The oral health of children with Down syndrome in Ireland. *Spec Care Dentist*; **24**:55-60.

Connick, CM, Barsley, RE, (1999). Dental neglect: Definition and prevention in the Louisiana developmental centers for patients with MRDD. *Spec Care Dent*; **19**: 123-127.

Desai, M, Messer, LB and Calache, H, (2001). A study of the dental treatment needs of children with disabilities in Melbourne, Australia. *Aust Dent J*; **46**:41-50.

Freeman R (1985) A multifactorial aetiology for dental anxiety *Brit Dent J*; **159**; 405-408.

Freeman R. (2005) Points of Care *Journal of the Canadian Dental Association*; **71**: 314-342

Gordon SM, Dionne, RA and Snyder, J, (1998). Dental fear and anxiety as a barrier to accessing oral health care among patients with special health care needs. *Spec Care Dent*; **18**: 88-92.

Gizani S, Declerck D, Vinckier F, Martens, L, Marks, L, Coffin, G (1997). Oral health condition of 12 year-old handicapped children in Flanders (Belgium). *Community Sent Oral Epidemiol*; **25**:352-7.

Howard, KE, and Freeman, R, (2007). Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. *Int J of Paed Dent*; **17**: 281-8.

Themessl-Huber, M, Freeman, R, Humphris, G, MacGillivray S, Terzi N,(2009). The relationship between parental and child dental fear: A structured review and meta-analysis. *International of Paediatric Dentistry 2009 (in press)*



Humphris, G, Freeman, R, Gibson, B, Simpson, K and Whelton H (2005). Oral health-related quality of life for 8–10-year-old children: an assessment of a new measure. *Community Dent Oral Epidemiol*; **33**: 326–32

Humphris GM, Dyer TA, Robinson, PG. (2009). The modified dental anxiety scale: UK general public population norms in 2008 with further psychometrics and effects of age. *BMC Oral Health*; **9**:20

Jong Ad de, Houtem, Cv, Schoof, Mvd, Resida, G and Broers, D (2008). Oral health status, treatment needs, and obstacles to dental care among noninstitutionalized children with severe mental disabilities in The Netherlands. *Spec Care Dentist*; **28**(3): 111-115,

Klingberg, G, (1994) Reliability and validity of the Swedish version of the Dental Subscale of the Children's Fear Survey Schedule, CFSS-DS. *Acta Odontol Scand*; **52**: 255-256.

Merrett, MCW, Goold, S, Jones, CM, McCall, DR, Macpherson, LMD, Nugent, ZJ, Topping, GVA. National Dental Inspection Programme Scotland. Scottish Dental Epidemiological Co-ordinating Committee, 2008.

Mitsea, AG, Karidis, AG, Donta-Bakoyianni, C, Spyropoulos, ND (2001). Oral health status in Greek children and teenagers, with disabilities. *J Clin Pediatr Dent*; **26**:111-8

Nunn, JH, Gordon, PH and Carmichael, CL,(1993). Dental disease and current treatment needs in a group of physically handicapped children. *Community Dent Health*; **10**: 389-396.

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Alice Peters, Fintry Primary, Dundee

Kathy Wiseman, Seaview Pre School Class Monifieth

Lesley Hutt, Frances Wright Pre-school Centre, Dundee.

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# Appendices

Appendix 1: Ethical Approval Documents For DHSRU Study

Appendix 2: ACS(S) Questionnaires

Appendix 3: DHSRU Questionnaires

## **Appendix I – Ethical Approval Documents for DHSRU study**

- Parental information sheet and consent form
- Child information sheet and consent form
- UREC letter



## Action for Sick Children's **Special Smiles** Dental Project

### Parents' and Carers' Information Sheet

We would like to ask you to take part in a research study. The study aims to find out how schools can help children's knowledge and confidence about dental care.

**Action for Sick Children Scotland** - a charity working to improve children's health experiences - recently provided some schools with **dental play resources** (The **Special Smiles** Dental Project).

We want to find out if children using these play resources benefit, and if families are helped to look after their children's oral health. We are comparing results from schools using the dental play resources with results from schools which haven't used them yet. Action for Sick Children Scotland has asked researchers from The University of Dundee's Dental Health Services Research Unit to run the study.

**WHAT IS THE PURPOSE OF THE STUDY?** This study aims to find out

- how children feel about seeing the dentist
- what they know about looking after their teeth and mouth
- how they feel about their teeth and mouth
- what they think of these play resources

This will give us a good idea of how useful the dental play resources have been. Taking part may benefit schoolchildren across Scotland. If we can confirm their usefulness, other schools may wish to use the play resources in the future.

**WHAT WILL HAPPEN DURING THE STUDY?** If you agree to help, it would mean filling in the enclosed short questionnaire to return to the research team at Dundee University via the school or using the Freepost envelope. It will take 5 to 10 minutes to complete.

(please turn over the page)

It would also mean asking your child at school if they would answer some simple questions on the topics listed above. Here is an example:

**7. How worried were you the last time you went to the dentist's?**



1  
Not  
worried



2  
Very slightly  
worried



3  
Fairly  
worried



4  
Worried  
a lot



5  
Very  
worried

Again this will only take 5 to 10 minutes.

**DO I HAVE TO TAKE PART?** No. Taking part is voluntary, and you can change your mind or skip questions you don't want to answer if you wish. Equally, you can tell us not to involve your child at school. Just complete the consent section on the front of the enclosed questionnaire and send it back to us to let us know your decision. Deciding not to take part won't affect you and your child in any way. If your child decides they don't want to help us when we visit the school, we will of course respect that. You can withdraw from the study at any time and without penalty. You don't need to give a reason.

**ARE THERE ANY RISKS?** There are no known risks for you or your child in this study.

**WHO WILL SEE MY ANSWERS?** Everything you tell us will be treated confidentially. Information from the research will be published as a report for Action for Sick Children (Scotland). No individual child, parent or family will be identifiable in this or any other report. Your replies won't be given to the school or to Action for Sick Children (Scotland) in a way that could identify your family. All data will be stored on a password secured computer in the Dental Health Service Research Unit, University of Dundee for five years, and then destroyed in a confidential manner. The University Research Ethics Committee has reviewed and approved this study.

**HOW CAN I FIND OUT MORE?** When we have finished, we will send you a brief report of what we find. In the meantime, Steve Turner, one of the research team at the University, will be glad to answer your questions about this study. You can contact him at [s.turner@cpse.dundee.ac.uk](mailto:s.turner@cpse.dundee.ac.uk), on 07794752740, or through the school.

THANK YOU FOR READING THIS INFORMATION SHEET



Name of School or Centre: ..... Child's name: .....

**Evaluation of Action for Sick Children's Special Smiles Dental Project**

**CONSENT FORM**

**PURPOSE OF THE RESEARCH STUDY**

This study aims to find out how schools can help children's knowledge and confidence about dental care.

We want to find out:

- how children feel about seeing the dentist
- what they know about looking after their teeth and mouth
- how they feel about their teeth and mouth
- what they have learnt about looking after their teeth at school

We are doing this by sending out a questionnaire to parents/carers, which takes about ten minutes to do, and asking children to complete a short questionnaire at school if parents/carers agree. The enclosed Information Sheet gives more details of the study.

Please tick the boxes and sign below to show whether you agree to take part in the research study. Then return this form and the questionnaire in the envelope provided.

I AGREE TO COMPLETE THE **SPECIAL SMILES** QUESTIONNAIRE Yes  No

I AGREE TO MY CHILD BEING ASKED TO COMPLETE A SHORT QUESTIONNAIRE AT SCHOOL Yes  No

Signature of parent/carer \_\_\_\_\_ Printed name of parent/carer \_\_\_\_\_ Date \_\_\_\_\_

Signature of researcher \_\_\_\_\_ Printed name of researcher \_\_\_\_\_



## SPECIAL SMILES PROJECT QUIZ

Level 1



School or Centre: .....

Name: ..... Age: ..... Date: .....

### Evaluation of Action for Sick Children's **Special Smiles** Dental Project

YOU AND



YOUR TEETH

We want to find out what you think about your teeth and seeing the dentist.

Will you help us by answering some questions - it will only take 10 minutes.

It's not like a test - it's about what you think.

Your answers are private - the teacher won't look at them and no one at home will see them.

We will add up everybody's answers to get a full picture.

You don't have to do help us if you don't want to, and you can change your mind if you like - but we hope you will help!

Please tick  one of these boxes to show if you will help

Yes - I will help with this study

No - I don't want to help

Thanks!





School of Psychology

**University of Dundee Research Ethics Committee**

Stephen Turner,  
Dental Health Services Research Unit,  
University of Dundee,  
Dundee,  
DD1 4HN.

15 September 2009

Dear Mr Turner

**Application Number: UREC 9061**

**Title: Evaluation of ASC(S) Special Smiles Dental Project (EvASSDeP)**

Your application has been reviewed by the University Research Ethics Committee, and there are no ethical concerns with the proposed research. I am pleased to confirm that the above application has now been formally approved.

Yours sincerely,

A blue rectangular box containing a handwritten signature in black ink that reads 'Peter Willatts'.

A logo for Peter Willatts, featuring a stylized 'P' and 'W' with a person icon. To the right, there is a digital signature block.  
Digitally signed by Peter Willatts  
DN: cn=Peter Willatts, o=GO,  
ou=University of Dundee,  
ou=School of Psychology,  
email=p.willatts@dundee.ac.uk  
Reason: I am the author of this  
document.  
Date: 2009.09.15 20:59:43  
+01'00'

Dr Peter Willatts  
Chair, University of Dundee Research Ethics Committee

UNIVERSITY OF DUNDEE Dundee DD1 4HN Scotland UK t +44(0)1382 229993  
e psych@dundee.ac.uk www.dundee.ac.uk/psychology

## **Appendix 2 – ACS(S) Questionnaires**

- ACS(S) school baseline questionnaire
- ASC(S) staff questionnaire before using Dental Playbox
- ASC(S) staff questionnaire after using Dental Playbox
- ASC(S) parent questionnaire before using Dental Playpack
- ASC(S) parent questionnaire after using Dental Playpack
- ASC(S) special smiles project quiz for children and adolescents



**SPECIAL SMILES PROJECT  
BASELINE SURVEY**

**Please take a couple of minutes to complete the following survey regarding children who have additional and complex support needs.**

**Name of Centre** ..... **Position Held** .....  
(Head Teacher, Teacher, Nurse, Other)

**Date** .....

1. How would you rate the priority of oral health amongst (Please circle)

Staff      LOW              MEDIUM              HIGH

Parents      LOW              MEDIUM              HIGH

Children      LOW              MEDIUM              HIGH

2. How would you describe the children's diet whilst at school (Please circle)

Snacks      POOR      ROOM FOR IMPROVEMENT      HEALTHY

Meals      POOR      ROOM FOR IMPROVEMENT      HEALTHY

3. Do the children brush their teeth in school?              YES              NO

4. If the children go to the dentist in school or you discuss the dentist, what is their reaction? (Please circle as many as are relevant)

TEARFUL              NO REACTION  
RELAXED              ANXIOUS              RESISTANT

Please describe any particular reactions of individual children

5. Would you include a child's oral health care needs in their IEP or CSP?

YES              NO

6. What priority do you place as a school on the oral health care needs of pupils?

LOW              MEDIUM              HIGH

7. What current practices are in place to promote good oral health in your school?

**Many thanks for completing this survey**









7. How many Social Stories, Multi-Sensory Stories and Toothbrushing Charts have you used and were they helpful?

Resources	Numbers Used	Helpful	Not Helpful	Comments
Social Story				
Multi-sensory Story				
Toothbrushing Chart				

8. Which resources were the most beneficial?

9. What items would you least recommend and why?

10. Were there any other items you would like to have seen included?

Any other comments:

**Many thanks for completing this questionnaire**

In accordance with the Data Protection Act 1998, we will ensure that the information ascertained will only be used to evaluate the Special Smiles Project, will be held securely and will not be disclosed unless necessary consent is given









**YOUR CHILD'S UNDERSTANDING**

2. How would you **now** rate your child's understanding of their own oral health care needs in respect of:

(a) The importance of a healthy diet *(Please circle)*

1	2	3	4	5
<i>(No understanding)</i>				<i>(Excellent understanding)</i>
<u>Please comment:</u>				

(b) The importance of toothbrushing *(Please circle)*

1	2	3	4	5
<i>(No understanding)</i>				<i>(Excellent understanding)</i>
<u>Please comment:</u>				

(c) The importance of attending the dentist *(Please circle)*

1	2	3	4	5
<i>(No understanding)</i>				<i>(Excellent understanding)</i>
<u>Please comment:</u>				

**ORAL HYGIENE PRACTICES**

3. How often are your child's teeth and gums brushed **now?** *(Please circle)*

Not every day                      Once a day                      Twice a day

4. How often does your child have sweets and/or fizzy drinks **now?** *(Please circle)*

Several times      Once a day      Several times      Once a Week      Seldom  
a day                      a week

5. Do you take your child to the dentist? **YES / NO**      If **YES**, how often? *(Please circle)*

Seldom                      Once a year                      Twice a year

6. How would you **now** describe your child's reaction when visiting the dentist? *(Please circle)*

Extremely Anxious                      Slightly Apprehensive                      Unconcerned

Please Comment:

7. Has using the Special Smiles Playpack led you to identify a dental health problem or adapt other aspects of your child's dental health care? **YES / NO**  
If YES, please comment:

8. Did you use the Social Story, Multi-Sensory Story or Toothbrushing Chart and if yes, were they helpful?

RESOURCES	YES/NO	HELPFUL	NOT HELPFUL	COMMENTS
Social Story				
Multi-Sensory Story				
Toothbrushing Chart				

9. Which items did you find the most beneficial?
10. Which items would you least recommend and why?
11. Were there any other items you would like to have seen included?

**Any other comments**

**Many thanks for completing this questionnaire**

In accordance with the Data Protection Act 1998, we will ensure that the information ascertained will only be used to evaluate the Special Smiles Project, will be held securely and will not be disclosed unless necessary consent is given

## SPECIAL SMILES PROJECT QUIZ



School or Centre: .....

Name: ..... Age: .....

Date: .....

1. How often should you brush your teeth? (Circle)

0

NOT EVERY DAY

1

ONCE A DAY

2

TWICE A DAY

2. How long should you brush your teeth for? (Circle)

1

1 MINUTE

2

2 MINUTES

5

5 MINUTES



3. What foods are good for you and your teeth? (Circle)



SWEETS



FRUIT



FIZZY JUICE



WATER



ICE CREAM



CAKES

4. Do you go to the dentist? (Circle)

YES

NO

5. How do you feel when you go to the dentist? (Circle)



HAPPY



DON'T KNOW



SAD

6. How often do you brush your teeth? (Circle)

0

NOT EVERY DAY

1

ONCE A DAY

2

TWICE A DAY

## **Appendix 3 – DHSRU Questionnaires**

- DHSRU Carers' questionnaire
- DHSRU special smiles project quiz for children and adolescents

DHSRU carer's questionnaire



Name of School or Centre: ..... Child's name: .....

Evaluation of Action for Sick Children's **Special Smiles** Dental Project

**CARER'S QUESTIONNAIRE**



**PART 1. This section is about your child's feelings about visiting the dentist, their understanding of oral health, and any recent dental treatment.**

**YOUR CHILD'S FEELINGS. Please show your answers by circling a number in the green boxes**

1. How afraid is your child of:		not afraid	a little afraid	a fair amount	pretty much afraid	very afraid
a)	dentists?	1	2	3	4	5
b)	injections?	1	2	3	4	5
c)	having somebody examine their mouth?	1	2	3	4	5
d)	having to open their mouth?	1	2	3	4	5
e)	the dentist drilling?	1	2	3	4	5
f)	having teeth out?	1	2	3	4	5
g)	choking?	1	2	3	4	5
h)	people in white uniforms?	1	2	3	4	5
i)	having their teeth cleaned?	1	2	3	4	5
j)	going to sleep at the dentists?	1	2	3	4	5

**YOUR CHILD'S UNDERSTANDING**

2. How would you rate your child's understanding of their own oral health care needs in respect of:		no understanding			excellent understanding	
a)	the importance of a healthy diet?	1	2	3	4	5
b)	the importance of toothbrushing?	1	2	3	4	5
c)	the importance of attending the dentist?	1	2	3	4	5

## ORAL HYGIENE

3. How often are your child's teeth and gums brushed?

not every day  1 once a day  2 twice a day  3 more than twice a day  4

4. How often does your child have sweets and/or fizzy drinks?

several times  1 once a day  2 several times  3 once a week  4 seldom  5  
a day a week

5. Do you take your child to the dentist? Yes  1 No  2

If YES, how often?

seldom  1 once a year  2 twice a year  3 more than twice a year  4

## DENTAL TREATMENT

6. Has your child ever had any of the following dental treatments? (please circle all that apply)

tooth out  1 put to sleep for dental treatment  2 injection in the gum  3 none  4

7. When was the last time your child saw a dentist?

In last 6 months  1 7-12 months ago  2 13-24 months ago  3

over 2 years ago  4 Don't know  9

8. Did your child see a:

high street dentist  1 school dentist  2 health centre dentist  3

dentist in the hospital  4

9. What happened at that last visit?

check-up  1 scale and polish  2 fluoride varnish  3 fissure sealant  4 filling  5

tooth out  6 other (please write in.....) don't know  9

10. How was your child at this last visit?

Not afraid at all      A little afraid      A fair amount      Pretty much afraid      Very afraid  
1                              2                              3                              4                              5

If your child was afraid:

b) What do you think made your child afraid?

please write.....

C) Did anything reassure your child?

please write .....

11. How anxious were you about your child's visit to the dentist?

Not anxious      Slightly anxious      Fairly anxious      Very anxious      Extremely anxious  
1                              2                              3                              4                              5

If you were anxious:

b) What made you feel anxious when your child was at the dentist?

please write.....

### SCHOOL ACTIVITIES

12. To your knowledge, what happens at your child's school (or nursery) about oral health?

I don't know what happens      Nothing happens about this      Something happens  
1    2    3

If your answer is 'something happens' – what do you think this involves? (please write in)

**CHILD DETAILS**

13. How old is your child? (please state) ..... years

14. Is your child:                      Male  1      Female  2

**PART 2.** This section covers your feelings about dental care and understanding of oral health.

**YOUR OWN FEELINGS.**

16. Visiting the dentist		not anxious	a little anxious	fairly anxious	very anxious	extremely anxious
a)	If you went to your dentist for TREATMENT TOMORROW, how would you feel?	1	2	3	4	5
b)	If you were sitting in the WAITING ROOM (waiting for treatment), how would you feel?	1	2	3	4	5
c)	If you were about to have your TEETH DRILLED, how would you feel?	1	2	3	4	5
d)	If you were about to have your TEETH SCALED AND POLISHED, how would you feel?	1	2	3	4	5
e)	If you were about to have a LOCAL ANAESTHETIC INJECTION in your gum, above an upper back tooth, how would you feel?	1	2	3	4	5

**YOUR OWN UNDERSTANDING**

17. How do you rate your level of understanding of the following for your child's teeth:		no understanding				excellent understanding
a)	healthy food and snacks?	1	2	3	4	5
b)	toothbrushing?	1	2	3	4	5
c)	being aware of any dental problems?	1	2	3	4	5
d)	difficulties encountered when brushing your child's teeth?	1	2	3	4	5

**Please use this box for any comments you have.**

**Many thanks for completing this questionnaire.  
Please use the enclosed envelope to return the questionnaire and consent form to the school,  
or if you prefer post it direct to the University of Dundee in the envelope provided.**



## SPECIAL SMILES PROJECT QUIZ

Level 1



School or Centre: .....

Name: ..... Age: ..... Date: .....

Evaluation of Action for Sick Children's **Special Smiles** Dental Project

YOU AND



YOUR TEETH

For each question, just circle your answers like this:

Yes

1. How often should you brush your teeth? (Circle your answer)

Not every day

Once a day

Twice a day



2. How long should you brush your teeth for?

1 minute

2 minutes

5 minutes



3. Do you go to the dentist?

Yes

No



4. Which ones are good for you and your teeth? (Circle your answers)



Sweets



Fruit



Fizzy juice



Water



Cakes and biscuits



Milk

5. How often do you brush your teeth?

Not every day

Once a day

Twice a day

More than twice a day





These next questions are about how relaxed or worried you get about the dentist and what happens at the dentist. All you have to do is circle a face to show how you feel.



would mean: **relaxed, not worried**

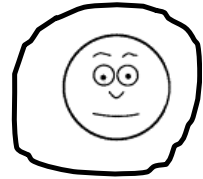


would mean: **fairly worried**



would mean: **very worried**

Just put a circle round the face that best shows how you feel



6. How worried were you the last time you went to the dentist's?



Not  
worried



Fairly  
worried



Very  
worried

Not  
worried

Fairly  
worried

Very  
worried

7. How do you feel about ...

going to the dentist generally...



having your teeth looked at...



having your teeth scraped & polished...



having an injection in the gum...



having a filling...



having a tooth taken out...



being put to sleep to have treatment...



having a mixture of 'gas and air' which  
will help you feel comfortable for  
treatment but cannot put you to sleep...



8. How much do your teeth or mouth bother you in your everyday life?



Not at all



Some



A lot

9. How much have you learnt in school about looking after your teeth?



A lot



Some



Nothing

10. These are pictures of things showing how to look after your teeth. Put a tick next to the ones you have used at school



11. Now put another tick next to the ones you like the best

FINISHED!



THANKS FOR YOUR HELP