Toothbrushing rules: power dynamics and toothbrushing in children.

R Freeman[1], H Whelton[2] , B Gibson[3]

[1]Dental Health Services Research Unit, University of Dundee, DD2 4BF; [2]Oral Health Services Research Unit, University College Cork, Wilton, Cork; [3]Department of Oral Health and Development, University of Sheffield, S10 2TA

Correspondence to: Professor Ruth Freeman, Oral Health and Health Research Programme, Dental Health Services Research Unit, University of Dundee, Dundee DD2 4BF, UK
Email: r.e.freeman@cpse.dundee.ac.uk

Dental caries is a disease of childhood social disadvantage being considered as a marker of family deprivation and relative poverty. School-based programmes such as, 'Winning Smiles' (WS) have been used to promote toothbrushing with fluoride toothpaste in children residing in areas of high social deprivation. Without a clear understanding of the underlying toothbrushing dynamic how could WS achieve its defined aim to promote toothbrushing as a self-care practice in children residing in areas of greatest deprivation? The need to research the dynamics of childhood toothbrushing remained. The aim of this qualitative exploration was twofold, first to explore children's views of toothbrushing and secondly, to reflect, if possible, on the degree to which the children's views and experiences can aid an understanding of the power dynamics of toothbrushing practices in childhood. In order to achieve these aims it was necessary to use a child-centred approach to glean the thoughts, values and opinions of the participating children. The children who participated were aged between 8-9-years-old and resided and attended schools in the most deprived parts of Dublin and Belfast. The data analysis was theoretically underpinned by the work of Foucault and Nettleton. The children had a series of toothbrushing rules which were a conglomerate of 'do's' and 'don'ts'. The rules reflected an element of conflict in the children's behaviour since they described what the children felt they 'should' do ('toothbrushing rules'), as well as what they 'actually' did ('toothbrushing practices'). The toothbrushing rules were mainly based on their parental household rules which the children incorporated into their toothbrushing practices. It is suggested that children incorporate information from parents, school-based programmes and the dentist into their toothbrushing practices. This qualitative exploration has allowed the process of understanding the power dynamics associated with children's toothbrushing to begin. In order to gain a greater understanding from the child's perspective greater time is need to appreciate how children incorporate what appears to be a rather mundane aspect of everyday life into their health repertoire.

Keywords: Child-centred approach, qualitative research, children, toothbrushing, toothpaste

INTRODUCTION

Despite the decline in the prevalence of childhood dental caries, tooth decay remains a significant problem for children. Epidemiological reports consistently show that 20% of children have 80% of the disease (Petersen, 2003) and there is irrefutable evidence that the 20% of children, with the greatest experience of decayed and missing teeth, reside in lower rather than higher socio-economic households (Thomson *et al*., 2004; Whelton *et al*., 2003).

In general, for children the prevention of dental disease rests with their parents' confidence (self-efficacy) to convert their oral health knowledge into the necessary parenting skills to promote oral health in their children. For parents and children residing in areas of high social deprivation the combination of material deprivation together with poor parental self-efficacy is thought to perpetuate the oral health disparities first observed in childhood through adolescence and finally into adulthood (Mattila *et al*., 2005; Peres *et al*., 2005; Pine *et al*., 2004). Thinking in this way allows the proposition to be made that a life-course continuum exists for dental health which parallels that of childhood poverty to adult ill-health (Graham & Power, 2004; Nicolau *et al*., 2005; Thomson *et al*., 2004). In order to counteract these life-course effects children need to be provided with the confidence to develop effective toothbrushing skills to prevent tooth decay (Antunes, Narvai & Nugent, 2004; Patussi *et al*., 2001). School-based programmes may provide children with an opportunity to develop self-care practices (Vanobbergen *et al*., 2004), however, school-based interventions, isolated from the child's psycho-social environment, are unlikely to break the link between childhood deprivation and adult ill-health - as Graham (2002) stated, there must be a coordinated approach between health

and education sectors in order to allow children to develop their own self-care practices.

In response, a school-based fluoride toothbrushing programme called 'Winning Smiles' (WS), aimed at the 20% of children living in areas of greatest deprivation in Ireland, and which incorporated a coordinated approach between health and education sectors, was conceived. WS had evolved from an earlier school-based oral hygiene programme whose aim had been to prevent dental caries. In contrast the aim of WS was to promote toothbrushing as a self-care practice – the off-spin of which was to prevent tooth decay. However, a problem existed as the views of the children, their beliefs about cleaning teeth and fluoride toothpaste, had not been canvassed and concerns were raised that this omission in the development of WS had the potential to reduce the children's self-belief in their ability to brush their teeth. Without a clear understanding of the underlying toothbrushing dynamic how could WS achieve its defined aim to promote toothbrushing as a self-care practice in children residing in areas of greatest deprivation? The need to research the dynamics of childhood toothbrushing remained. A problem, however, existed with regard to how children conceptualised and incorporated parental and professional rules into their own toothbrushing behaviours. While Thorogood (2000) explored the various rules associated with the mouth, some of which related to the sharing of toothbrushes, the dynamics of toothbrushing in childhood were not examined. To date the work of Nettleton (1988, 1991, 1992) remains the most informative.

Power and pain and dentistry revisited

Social scientific discourse on toothbrushing has had its most significant treatment to date in the work of Nettleton (1988, 1991, 1992). Nettleton's (1991, 1992) application of Foucault to the case of dentistry remains a fundamental contribution to understanding the power dynamics at play in the processes associated with toothbrushing. In Nettleton's (1991 1992) view, and following Foucault's theoretical position, power is not something that is possessed by agents such as, in this case, dentists and mothers, rather power is said to constitute individuals rather than dominate them and "*must be analysed as something that circulates; it never resides in any one person's or group's hands*." (Nettleton, 1992; 125). In this respect dentistry may be conceptualised as a disciplinary power that operates through dentists and mothers who, in Nettleton's construction have become constructed as joint agents of dentistry.

However there is a problem with Nettleton's construction - that the disciplinary power is predominately in the hands of dentists and mothers - since her (Nettleton 1991, 1992) work was largely developed from dental texts from the last century which were focused on dentists, adults and parents at the exclusion of children (Marshman *et al*., 2007). Therefore little has been done to explore how children have been constructed from a dental perspective; even less is understood concerning the degree to which they gain disciplinary power to become 'agents' of dentistry and develop their own self-care toothbrushing behaviours. A first step to understand how inequalities may persist throughout the life-course, maybe to conceptualise toothbrushing as a power dynamic associated with the children as the agent of dentistry who internalise parental rules (power) into their own toothbrushing behaviours.

How can Foucault's view of power assist in understanding children's toothbrushing dynamic and behaviours? Foucault's view of power has been subject to some debate. For some commentators there are misunderstandings in the secondary literature (Widder, 2004). The first example of this is the view that power places identities on individuals. The second misunderstanding is an assumption that resistance to placing identities (in this case the adoption of self-care practices) is also an exercise of power and that this resistance is always in opposition to the imposed identity. Such interpretations have been challenged because they fail to appreciate the subtlety of Foucault's schema. An essential element of Foucault's thought is that power works only on condition that it masks itself (Widder, 2004). In addition Widder (2004) argues, in debt to Deleuze, that power does not just produce oppositions and resistances to various identities but that it also works through difference, largely in the production of alternative identities and becoming through processes of internalisation. This notion of power may prove productive for understanding the dynamics of toothbrushing for children and how they convert parental disciplinary power into their own toothbrushing practices.

Nettleton's (1988) work is salient in this regard. She analyses first, how the mouth became subject to the discipline of dentistry secondly, how mothers became identified as either 'natural, 'ignorant', 'responsible' or 'caring' (Nettleton, 1991) with respect to the disciplinary power of dentistry. Secondly, there is a well known exploration of the meaning of power in relation to the discipline of dentistry. In her work on mothers Nettleton states that:

"*Wisdom, diligence and dentistry thus serve to conceptualise and reconceptualise their object of government. Today their object is the thinking, active and productive patient and mother. Dentists now endeavour to support their enrolled agents, listen to their views and try to appreciate their social circumstances*." (Nettleton, 1991, p. 108).

In this quotation it is not clear what exactly is meant by 'enrolled agents'. Later in the same paper Nettleton (1991) states that power operates "*through the dental surgery, the school, the mother, the home, the researcher and the dental patient*" (Nettleton 1991, p. 109). Power is not exercised by individuals over other individuals but power works between individuals. It operates in practices such as toothbrushing through which we submit our bodies (Nettleton 1992). This might seem contradictory but there is an important distinction operating behind Nettleton's use of power i.e. the macro and micro distinction. According to Foucault, power resides in macro agents which are constructions of society but it is also played out in much more subtle ways within everyday practices at the micro level (Nettleton, 1992). This distinction is of central importance if how children internalise parental toothbrushing rules into their own self-care practices is to be understood.

What follows is a social scientific exploration of data collected during an evaluation of the Winning Smiles intervention designed to encourage children from deprived backgrounds to adopt toothbrushing as a self-care practice. The aim of this qualitative exploration was twofold, first to explore children's views of toothbrushing and secondly, to reflect, if possible, on the degree to which the children's views and experiences can aid an understanding of the power dynamics of toothbrushing practices in childhood.

THE DEVELOPMENT OF WINNING SMILES

The Winning Smiles (WS) intervention is a toothbrushing programme to encourage and promote the use of fluoride toothpaste. The intervention is school-based and uses oral health promoters (OHP) to negotiate and discuss the programme with school principals and teachers. The OHP is central to negotiations and discussions with the teachers to allow the Winning Smiles intervention to be introduced into the school.

The initial development of WS followed a process of consultation and discussion over several years involving dental health professionals, OHPs and educationalists. It was recognised that a multi-disciplinary and focussed approach was required if the promotion of fluoride toothpaste and subsequent improvements in oral health were to be achieved. Following these initial discussions the WS programme gradually evolved. The final intervention package included a specific teacher component (Teacher's Notes and workshop presentations) together with a pack for the visiting OHP. The WS intervention package also consisted of:

The Teacher Component

The teacher's notes included an introduction and rationale for the toothbrushing challenge. The presentation of WS as a challenge, in the teacher's notes was to encourage the children to develop health knowledge and toothbrushing skills. The notes also provide the teachers with a content breakdown of the three visits from the OHP. The final part of this component was a series of colour acetate sheets, homework and classroom work sheets, wall charts to record daily toothbrushing and acid attack posters to be used by the teachers, between the OHP visits and to reinforce the oral health messages provided by the OHP.

The OHP Component

The OHP's notes included information on the first steps to be undertaken to obtain agreement and consent to conduct the WS intervention in the school. Following meetings and negotiation with principal and class teachers the OHPs organised a teachers' workshop so that all participants were aware and fully informed of the objectives and their part in the intervention. The next parts of this component are detailed notes on the 3 visits which form the basis of the "Winning Smiles" intervention.

OHP: First intervention visit

After collecting consents the first intervention visit, conducted by the OHP was in four sections:

- *Educational component- discussion and activity on nutrition and oral health*

  The first part consisted of description of the sugar frequency/acid attack and wall charts were used to explain the concept of 'sugar-acid' attack. The children were made aware of the relationship between the frequency of consumption of sugary drinks and foods and oral health. Particular attention was paid to the negative effects of sugary snacks and drinks on their teeth. Children were encouraged to engage in discussions about the meals and snacks they had consumed over the previous 24 hours. They were asked to identify, from the foods and drinks consumed, the number of acid attacks they had experienced. A group discussion on the impact of sugar consumption patterns on their oral health and consequently their general health was encouraged
- *Oral hygiene component- discussion and activity on brushing behaviour*

  The children's oral hygiene regimes were discussed. They were shown how to brush their teeth with reasons given for the specific technique used. The children were advised of the reasons for using fluoride toothpaste and about the frequency and duration required for effective toothbrushing. The children were instructed as to the importance of not swallowing toothpaste, not rinsing and just spitting out the excess. An everyday well-known brand of fluoride toothpaste (at 1450ppm) together with the amount to be used was demonstrated to the children. The children were also shown the correct size of brush they should use (i.e. small head and soft bristles).
- *Plaque scoring*

  The children were provided with a disclosing agent and it was explained to them that it would colour any plaque on their teeth blue and pink. The children were advised that the colour pink would show where they could be more effective at toothbrushing. The children were instructed to swish the disclosing solution around their mouths. The labial surfaces of both upper and lower central and lateral incisors and the buccal surfaces of the first permanent molars were examined and the plaque score sheet marked accordingly. Each child was shown their own problem areas using a hand mirror. Twelve teeth were scored for plaque in total. A plaque score out of twelve was calculated for each child. The fewer teeth with plaque meant the lower the score and the better the child's oral hygiene. This value was taken as baseline for the child's toothbrushing skills.
- *Observation of Toothbrushing Skills*

  The children divided into pairs and observed each other practising their new toothbrushing technique. The class were provided with a wall chart on which to record their daily toothbrushing. The children were advised as to how the chart was to be completed. The teacher was present throughout the session and provided help and

support. Children were instructed to practise their new brushing technique at home and to report everyday on their toothbrushing progress which was marked on the wallchart in the classroom. The wallchart was used as a reminder to both children and teachers to encourage toothbrushing with a fluoride toothpaste.

OHP: Second intervention visit

The second intervention visit was unannounced to the children. During this second visit which was conducted one month later a second visual plaque test and a plaque score were calculated as before. This second plaque score was performed in the same fashion as the first plaque score (see above). The results of the second plaque score were compared to the first and the children were encouraged to continue their good brushing practice. A date for the prize giving (see below) was also organised at this stage. As with the first visit, the teacher was present to provide help, encouragement and support.

Presentation of the awards and prizes

WS used awards to encourage the children to participate in the programme and to compete against each other. The awards served to provide a competitive element to the WS intervention as the better the children brush their teeth in the programme, the better the award given. By including competition in the structure of WS, it encouraged the children to brush their teeth with fluoride toothpaste so that they would perform better in the plaque score and so perform better than their classmates. The awards were presented as follows:

- For every child participating, who did not show an improvement was presented with a certificate
- Every child that showed an improvement was presented with a certificate of achievement
- Every child who achieved 0 in the plaque score was given a medal in addition to the certificate.

Children were also in competition with other classes in the school. The class with the lowest average score for plaque were awarded with a silver cup and rewarded with a homework-free night.

The child -centred approach

The child-centred approach has been recognised as being integral to the planning and evaluation of health interventions for children and it required a change from research on, to research with children (Christensen & James, 2000; James, Jenks & Prout, 1998; Jenks, 1996; Marshman *et al*., 2007). The child-centred methodology is built on four tenets, which are:

- The child as a full partner in the planning and evaluation process
- Encouraging the child to express her views and opinions
- The importance of rapport between researcher and child
- The familiarity of the research setting.

The child-centred approach, thus, recognises children as co-participants and that they bring their skills and perspectives to the research.

In order to achieve this, children must be given and allowed free rein or expression to their thoughts and so communication and in particular language is primary to the child-centred approach. To assist in the communication process methods used are tailored to the child's psychological needs, cognitive ability and social context. The methods used include children drawing pictures, keeping diaries, compiling lists, completing worksheets with or without spider diagrams, sentence completion, telling stories (written and verbal), making models and taking photographs. As in all qualitative research, it is good practice, to be flexible and use different methods as appropriate (James, Jenks & Prout, 1998; Punch 2000, Scott, 2000).

The building of rapport and trust between the researcher and the child enables the child to tell her own story in a manner appropriate to her age and social circumstances (Punch, 2000). This has particular relevance for children with a limited vocabulary or for whom English is a second language. The rapport between child and researcher thus paves the way for a faithful account and accurate interpretation of the child's utterances and accounts.

The setting for the child-centred approach must be familiar. The two most commonly used environments are the school and home. In familiar environments children feel less shy or apprehensive however if the child's perception of the researcher is as critical teacher or reprimanding parent this may have implications for the quality of the information and how the child interacts with the methods of data collection. For instance, it is often common for adults to discredit children's views by saying that they are lying or making up stories – ignoring the rich fantasy life experienced by children. This awareness is essential when researching with children as it allows the researcher to be sensitive and to 'tune in' to the children's world. Mays and Pope (2000) have described this sensitivity as 'reflexivity'. A prior awareness of reflexivity will assist the researcher to respond appropriately to the child's words, experiences and utterances and thus improve the reliability and validity of the qualitative findings.

METHODS

The reserach context

The children who participated were aged between 8-9-years-old and attended primary schools in Belfast and Dublin. All of the children resided and attended schools in the most deprived parts of the cities. Socio-economic status (SES) of children in Northern Ireland is determined by the proportion of children within the school entitled to free school meals (FSM). The Department of Education, Northern Ireland uses FSM entitlement as an aggregate-level measure of relative poverty, low-income and social disadvantage/deprivation – that is as an indicator of SES (DENI 2001). Twenty-five percent of all primary school children, in Northern Ireland are in receipt of FSM and this reflects the percentage of children who live in high social deprivation. The schools chosen to participate in WS had over 50% of the children attending

being entitled to FSM. In the Republic of Ireland parental or guardian ownership of a medical card, a means tested benefit, is used as an indicator of social deprivation (Whelton *et al*., 2003). In the schools chosen upwards of 50% of children's parents were in receipt of a medical card.

The participants

A purposive sampling technique was used to access this population of children who had the social characteristics being examined. This allowed a group of children who shared similar experiences to be identified: they were between 8 and 9-years-old, attending schools in Belfast and Dublin, were living in relative poverty and had participated in WS. All of the children approached agreed to participate. A total of 10 focus groups with 44 children were conducted in Belfast and Dublin. Details of the sample can be found in *Table 1*. All focus groups took place at the schools, usually in spare classrooms or in various libraries. The focus groups were conducted at most two months after the intervention had taken place.

Ethical considerations

Ethical approval was obtained from the local ethical research committees (Approval number: 214/02). The research team visited the schools after meeting with the principal of the school to explain the programme. Children where then asked to take the forms to their parents to have them filled in. Prior to obtaining consent parents and children were encouraged to ask any questions (e.g. matters of confidentiality). The consent forms were collected from the schools after a few days. The forms were checked to see if they were valid and if consent had been given. After this stage it was our policy to ensure that the children had given their verbal consent at all times and also to allow children the right to withdraw at any time. After consent had been achieved arrangements were made with the school for children to participate in a series of focus groups.

Revising in-depth work: adopting a child-centred approach

Although data were collected in a series of focus groups, initially the research team experienced a number of difficulties with this approach. The method of data collection was therefore subsequently refined after initial data collection had taken place. The children had excellent communication skills and were able to manoeuvre the conversation to describe all their interesting and exciting news. It was hard to get them to focus on the theme of the discussion and the approach yielded a lot of data but very little of it was relevant. So for example, in their excitement the children did not take turns to speak and treated the discussions with BG as a welcome interlude from lessons. It, thus, proved impossible to thematise the children's conversation.

The verbatim transcription from Dublin children [Dublin PS 1] is illustrative:

Jack: "We do P.E. We do computers".

John: "Our teacher takes us to the park!"

[All six children get excited and start shouting] "And we played basketball!"

[Loads of talking and general excitement]

Ann [shouting]: "We had loads of sweets to eat and we played basketball."

Jane: "And 'Smarties'."

BG: "Basketball?"

Ann and Jane [in unison], "And a lolly and a bar."

BG: "Did you have a lolly and a bar?"

John [shouting]**:** "Chocolate bars - we just had 'Smarties', lolly and crisps."

BG: "Smarties', lolly and crisps?"

All children [in unison]**:** "And a bar!"

These initial difficulties gave way to a period of reflection, reviewing, refining and the adoption of a child-centred approach. It was at this stage that data collection was paused and after consulting various experts i.e. Allison James, and reviewing the relevant literature, we understood that we had failed to recognise that children bring different skills to the research process. In other words we had failed to consider that children focus better through other mediums. Additionally the recommended size for focus groups especially with younger children was documented to be a maximum of five (Morgan *et al*., 2002). It was decided to use a mixture of techniques to assist the children to remain focused and to talk about teeth, toothbrushing and toothpaste. The techniques used were making lists (*Figure 1*) and drawing pictures (*Figure 2*). Using list making and picture drawing the children were able to communicate their thoughts, feelings and opinions on teeth, toothbrushing and toothpaste. Such techniques have been used elsewhere in studies of children's views of health, cancer and risk (Williams and Bendlow, 1998) and have been recommended as useful for research with children (Morgan *et al*., 2002). This did however come with its own problems. In the few instances where children were anxious about writing or spelling '*hard words*' BG assisted:

BG: "OK Fred, its not a test, you're helping **me** out. Just tell me your toothbrushing rules?"

Fred: "You've got to keep them white!"

[Belfast PS3]

Analysis of the qualitative data

The adoption of a child-centred approach allowed us to focus on the goal of placing the children more centrally in the research. However, it is important to note that in keeping with the child centred literature the data were nonetheless subjected to a degree of interpretation (James, 2007). In this respect it was important for us to recognise that children's perspectives were '*structured, but within a system that is unfamiliar to us and therefore to be revealed through research*' (James, Jenks & Prout, 1998). In particular we were interested in establishing what children thought of the programme but also what the data had to say about the power dynamics of toothbrushing. In particular we were interested in when power seemed to work best and when it met the most resistance. From the perspective of Foucault we recognised that toothbrushing is an everyday discipline, structured by

society (Nettleton 1991). It is not possessed by agents but circulates like a medium. This is the macro/micro distinction referred to earlier. As a consequence of this sensitivity we (BG and RF) were looking for distinctive manifestations of power taken from the children's accounts. We were also seeking to provide an account concerning what mechanisms might be working in the intervention. In this respect we were looking to see if we could map macroscopic agents and the microscopic practices associated with the WS programme. Using a child-centred approach allowed us to appreciate that the child provided a coded message disguised in their apparent nonsense play or ramblings. An interpretation of their drawings, written lists or play provided an insight into what was important in their world (Freud, 1965).

RESULTS

The making list worksheet (*Figure 1*) and picture drawing (*Figure 2*) allowed the children to convey and express their opinions on teeth, toothbrushing and toothpaste as well as their views on WS. In fact what did emerged were a series of toothbrushing rules, regulations and admonishments which reflected a regimented family configuration and macroscopic power structures (Nettleton, 1992). This suggestion was supported, on the one hand, by the children '*disobeying*' their parents' regulations and, on the other hand, their compliance with family rules that ensured their safety and welfare. In Dublin it was common for children to use the language of drugs in their intention to '*never smoke blow*' where as for Belfast children they spoke of family taught techniques used to '*avoid trouble*' (violence). In contrast to the resistance displayed to such macroscopic power structures the WS programme received a very different response as we shall see.

Toothbushing rules

The children's 'toothbrushing rules' were a series of strict 'do's' and 'don'ts'. The 'do's' echoed the dental health education messages the children had heard at school and/or at the dentist: the 'don'ts' echoed parental decrees. The 'do's' included 'brush your teeth two times a day' and 'always use toothpaste when brushing teeth'. While the 'don'ts' included 'don't lie by saying you've brushed when you've not' and 'when you brush your teeth don't spit on the floor!'

It is clear from the data in *Figure 1* that the children were able to give quite detailed accounts of the rules. What is important to note is that the rules themselves were constituted as a series of practices ('don't rush', 'always brush your teeth') that one should and should not do when brushing one's teeth. In the example given the rules do not address any agents rather they focus on the practices the child is supposed to subject themselves to. This was frequently the case in the data and of course there was some variation in the detail with which the parental rules where recalled. In these descriptions the microscopic nature of the dental discipline could be said to be manifested in the fact that the children at one level knew all of the parental rules.

If the rules were apparent as discursive practices that one ought to implement, the macroscopic agents of dentistry also made an appearance. It was at this point that classic hierarchies emerged with respect to the social status of the rule maker. At the top of the hierarchy was the dentist, in the middle was the parent and at the bottom was the child. The rule-makers were adults who could break, modify or revise the rules in accordance with whims, work pressures and/or family needs. Cathy's complaints (Belfast PS 3) that she was not always able to brush her teeth in the morning because of her father's work schedule was illustrative. In families where money was in short supply, children when advised by parents, brushed their teeth using mother's or father's toothbrush.

The children's attempts at making their own rules might at first have appeared to be based on bravado. This was reflected in an apparent flouting of parental household dictates. The conversation between Muriel and Sally highlights the children's wish to be in charge while recognising that

Table 1. Schools and numbers of child participants

School name	Participants[1]
Dublin primary school 1	Focus group 1: 4 girls and 3 boys Focus group 2: 3 girls and 2 boys
Dublin primary school 2	Focus group 3: 2 girls and 2 boys Focus group 4: 3 girls and 1 boy
Belfast primary school 1	Focus group 5: 3 girls and 1 boy Focus group 6: 3 girls and 1 boy
Belfast primary school 2	Focus group 7: 2 girls and 2 boys Focus group 8: 3 girls and 1 boy
Belfast primary school 3	Focus group 9: 1 girl and 3 boys Focus group 10: 3 girls and 1 boy

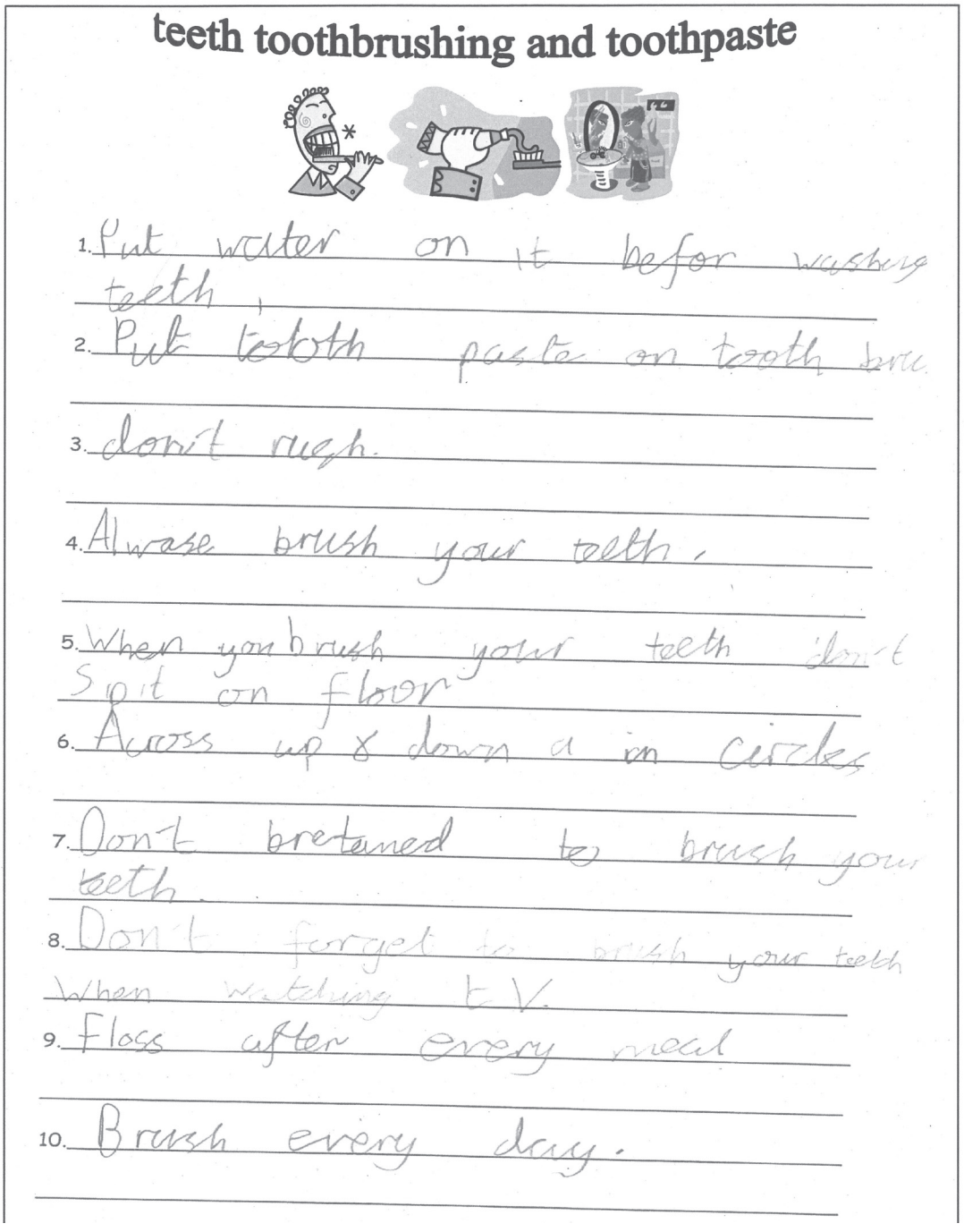
[1]The children's names have been changed throughout to ensure their anonymity

non-compliance was a dangerous path to travel:
Muriel: "You're not allowed to drink fizzy drinks when you get up in the morning but I still drink it [pause and then threatening] . . don't you tell anyone, don't you even think about it!"
Sally: "Her Mammy works in the school."
Muriel: "She does."
BG: "Who makes up the rules then?"
Muriel: "Me."
Sally: "Me."
Muriel: "I know who makes the rules in my house my Daddy and my Mummy but I don't care I always wreck them."
Sally: "I know my Mammy says, 'Keep your room clean', and I mess it up again!"
Muriel: "Do you see when we went to her house her Mummy said not to go up to her room and wreck it and we wrecked it!"
Sally: "My first rule - the Mammy is the maid and she **will** tidy [your room] up for you and the second rule is don't make the bed, the Mammy **will** make it". [Belfast PS2]

Sally may have wished her mother to be her 'maid' but in her description of her drawing she acknowledged her powerful mother (*Figure 2*).

What this points to is that macroscopic structures that involve societal agents are largely ineffectual in enforcing rules such as these (*Figure 1*). As Widder (2004) suggests, tra-

Figure 1 Teeth, toothbrushing and toothpaste worksheet: Henry: Dublin PS1



ditional power manifested in the power of the sovereign over bodies, today's power involves the subtle play of norms and rules that establish degrees of "punishment and reward" (p. 422).

These power structures are found diffusely throughout society "*and, while they work through relations of authority and sub-ordination, they crucially involve the subordinate's participation in his or her own disciplining or subjection*" (p. 422). Widder goes on to state:

"*The pettiness and banality of disciplining – the child made to stand in the corner, the prisoner made to eat dry bread with water, along with similarly puerile rewards for 'good behaviour' – ultimately do little to bring about conformity, though this does little to prevent their regular and frequent use*." (Widder, 2004, p.422).

Widder's (2004) societal-based formulation supports the view of the power of external societal agents (i.e. the parents and parental figures). Widder provides a view of power structures with, it may be suggested, the parent, teacher and dentist acting as sources of external power. It, however, makes no allowance for the internalised power resting within the child and child's wishes to no longer be at the receiving end of the adults' dictates. It is proposed that this tussle results in the children's rule-breaking and despite the apparent consequences. This suggestion has support in Nettleton's (1992:125) dynamic view of power acquisition in that power "*must be analysed as something that circulates; it never resides in any one person's or group's hands*." Continuing on this theme it is postulated that the acquisition of power and the consequent breaking of the parental rules allows children to enter an important phase of their development. Children are able to transform the 'parental rules' into their own toothbrushing practices. It is proposed that this experience heralded the beginning of the slow and gradual process of acquiring the skills and taking ownership to care for their own teeth and bodies (Freud, 1965).

Toothbrushes often acted as markers of identity within the home, acting as markers of who the children are not and hinting at who they were becoming. In this respect toothbrushing functioned beyond the simple rules themselves, indeed embedded within these practices were forms of identity practice. There were several subtle examples of this in the data, as illustrated by the following exchange:

BG: "So what's different about your toothbrush and your mommys?"
Patrick: "Mine has different colours and all."
BG: "What's it look like?"
Patrick: "Mine is green and white."
BG: "Its green and white."
Jill: "Me ma's is all blue and she can't find it."
Jenny: "My toothbrush is that colour, that's a nice colour, a nice blue." [Dublin PS 2]

Patrick's toothbrush has the colours of the Irish Football team which was clearly of significance to him during the focus group. In fact it was common for toothbrushes to act as signs of things children identified with. They also acted as signs of things they did not identify with:

BG: "Do you have Bob the Builder toothbrushes or anything like that?
(All laughing a lot) "Babies."
BG: "Babies toothbrush. What sort of would you like an electric toothbrush?"
"Yeah."
"No."
"Yeah, cause it tickles your teeth and all and goes zzzzzzz."
BG: "Would you like one? Have you ever asked you mommy for one?"
"My cousin already has one."
"I have one it's not working." [Dublin PS 2]

It can be suggested therefore power within the practice of toothbrushing is about becoming who one is and also that this becoming can indeed be towards new forms of identity as suggested by Widder (2004) referring to the influence of Deleuze. It may be suggested that 'hidden' within these exchanges are the children's wishes to be '*in charge*' and to be a '*grown-up*' as part of their emerging identities.

Breaking the rules: admonishments and punishments

Despite the children's resistance to parental regulations they were, nonetheless, fearful of the consequences of doing so:

BG: "What do you think of rules then?"
Steven: "I hate them."
Gary: "They are alright they are good for my teeth."
BG: "When you break rules what happens?"
Claire: "I don't disobey the rules."
BG: "Why's that?"
Claire: "Because you do stuff wrong when you break it." [Belfast PS2]

Or as Harry, exclaimed describing his picture (Figure 3):
"Look his teeth are all broken because he didn't brush them!" [Dublin PS1]

Other children were frightened of '*black teeth*' or '*fillings*' and others like Claire and Gary were fearful of '*stuff [going] wrong*'. It emerged that '*stuff going wrong*' was a visit to the dentist and the extraction of teeth:

"Clean your teeth or you will get holes in them like I did. I got a hole there. I had to go to sleep to get it out."
[Gary Belfast PS2]

For the children, who broke the toothbrushing rules, this was a most frightening experience:

"See me at the dentist there's a big giant hospital thing and I had to get gas in me I had to get knocked out and I had to get me two adult teeth out. And I got left in this coffee room in bed. And I had to get me finger clip thing on me finger. And I had to get me blood pressure on me leg."
[Claire Belfast PS2]

". . when I went to the dentist, right, I was nervous but I wasn't scared. And I was nervous but when then I got it out I was. And you know what me Ma was after doing throwing me tooth out in the bin." [Sidney Dublin PS2]

Sidney's comment allowed another important fear to be ventilated, the lack of opportunity to have their tooth for the tooth fairy. Concerns were raised that a tooth might be 'too rotten' for the tooth fairy to use:

Figure 2 Sally: Belfast PS 2

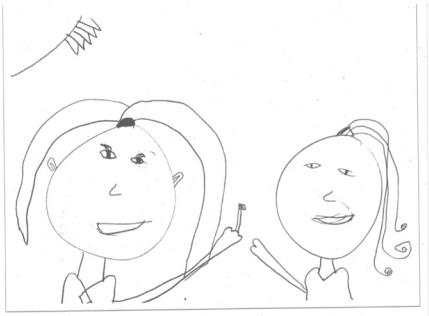


Figure 3 Harold: Belfast PS 1

Jill to Polly: "You had a tooth taken out and it cracked didn't it? (Polly nods). One there and one there (pointing into Polly's mouth). The tooth fairy wouldn't even take it; Polly brought it into us to show it to us. The tooth fairy didn't even use it, it was **so** rotten."
[Dublin PS2]

While the children's toothbrushing rules echoed their family regimes, social circumstances and professional dental health messages; the children's compliance with the rules reflected their awareness of the importance of brushing their teeth. Their toothbrushing rules had a flavour of what they thought they should do (toothbrushing rules e.g. '*brush twice a day*') and what they did (toothbrushing practices e.g. '*brushing teeth without toothpaste*'). This is mirrored in the work of Nettleton (1991) who argues that that discipline of dentistry is a normalising influence. It produces a moral order around which the good and right thing should be done. Failure to do the 'right' thing produces bad mothers (Nettleton, 1991). What our data show is that the same argument can be applied to these children as part of their emerging identities.

The children's opinions on Winning Smiles

The children talked animatedly and reported vivid memories about participating in the WS intervention and in particular disclosing the plaque on their teeth and the competitive nature of the intervention. It seemed that anything that took the children away from their 'lessons' and broke up the school day was perceived as 'fun' because as one child stated 'you don't have to do any work.'

The competitive nature of the WS intervention was a central feature of the intervention for the children. The children's knowledge of healthy foods and drinks was a focus of their rivalry and competition. Foods such as apples and vegetables '*[were] especially good for your body' but'also good for your teeth*.' Children showed their knowledge and prowess by, not only stating, for example, that '*water was healthy*' but by providing an explanation: '*Because [water] helps your insides*'. The children's rivalry was observed in discussions about the amount of pocket money and the money received for doing household chores as well as lively debates between children who enjoyed being in competitions such as dancing festivals:

Edith: "Yes this is a competition."
Audrey: "No its not - well I am in my dress **and then** I am in a competition"
Edith: "Yes it is and so am I!"
Audrey [condescendingly]**:** "….but I'm in a dance competition." [Dublin PS2]

From the perspective of Foucault here can be seen the benefits of the programme. It eventually proved to be effective at reducing plaque and improving hygiene practices after six months. Why? One possibility has been suggested in this paper. Power was masked in the competition and as stated previously, power works most effectively when it masks itself (Widder, 2004).

The competitive element of WS also had a down side. For a small number of children who had difficulties in their writing and spelling, the completion of the WS worksheets may have been perceived as threatening and humiliating. The following interaction between Billy, Sally and BG serves to illustrate this point. Billy's fears about correct spelling and Sally's concerns that other unknown children would read her work were real worries for these children:

BG: "Don't worry about the spelling."
Billy: "But what if you can't understand our language?"
Sally: "Would you get another wee child to read it for you?"
BG: "No."
Sally: "But **how** can you read it?"
BG: "Remember I have listened to what you said so I will be able to understand what you've written."
[Belfast PS2]

The competitive element of WS allowed the children's rivalry to gain expression. While some children were hesitant in expressing their opinions, when encouraged to do so, they were able to provide important contributions to the understanding of their opinions of WS. A good example is of how their description of doing WS work opened up an ambiguous space within their school day – a time when they could interact more freely while still doing a form of school work. The fun and competitive elements ensured that the WS intervention was perceived as enjoyable by the participating children while promoting their oral health awareness.

DISCUSSION

The children's toothbrushing rules were a conglomerate of 'do's' and 'don'ts'. The rules reflected an element of conflict in the children's behaviour since they described what the children felt they 'should' do ('toothbrushing rules'), as well as what they 'actually' did ('toothbrushing practices'). The children unanimously stated that it was first; the dentist, and secondly; their parents, who defined, made and enforced the toothbrushing rules. Although the children feared the consequences of non-compliance with the rules they also experienced a conflict - since on the one hand they realised the importance of compliance – for instance avoiding '*broken teeth*' - but on the other hand to be compliant reinforced their relatively powerless position within the social hierarchy of the family. Therefore, while the ritual of night and morning toothbrushing was embedded in the information given by the dentist, it also reflected the discipline imposed upon the children by their parents' '*household rules*' (Freeman, Ekins & Oliver, 2005).

These findings support Nettleton's (1991) earlier work and opinion that dentistry exists not just as a profession with dentists and clinics but also as a 'discipline' that is incorporated into the everyday lives of the population. Dentistry, according to Nettleton, achieved this by co-opting mothers through defining the '*ignorant*' and the '*responsible*' mother. Mothers needed to learn the '*correct*' method of child rearing, whereas the '*responsible*' mother was the mother who incorporated the resulting parenting '*rules*' and practices. It is through the incorporation of these rules and practices that children make themselves 'subjects' to the power of dentistry. Mothers were of course defined as macro social agents, a blueprint for ther child to gradually: "*assume responsibility for the care of their own body and its protection against harm*"(Freud, 1965, Pg 69).

How successful this strategy was depended on a number of factors. It appears that for example the WS intervention was particularly effective at reducing plaque and improving self-care toohbrushing practices. The reason, we suggest, for this happening was because it masked the power relations within the children's practices (Widder, 2004). Children undertook toothbrushing in the schools as part of a tribal group in competition with others. They willingly made themselves better subjects of dentistry through toothbrushing to try and win the competition. In this respect not only does the account of power given by Widder (2004) and Foucault (1990) fit the programme the further reflections on Deleuze by Widder (2004) seem to explain that the power dynamics in WS were productive whereby people use such disciplines to become something else – in WS they were seeking to become winners. Beyond this it may be possible that the relative success of the WS intervention to capture the children's interest occurred because it tapped into the tribal aspects of childhood. We suggest that it may have done this in two ways. First, it placed children into different groups who were in competition with each other. This connected into their group identity or tribalism with one class in competition with another class and one school in competition with another school for the cleanest teeth. The effect of the programme was therefore to divert their rivalry into learning about their teeth and practising the 'toothbrushing rules'. In this respect the rules were something '*good*', worthwhile and temporarily allied with their identity as the '*rule makers*'. Secondly, the programme was novel for the children as it represented a mix of recreation time with learning time providing a space within the structured context of the school day.

Likewise the data reveal something interesting about agency and toothbrushing practices. In essence the children could comply or resist parental rules by re-defining their own toothbrushing practices. The data indicated that children occupied a space where they could successfully resist the efforts of their caring and protective parents. While the parents' perceived caring and protecting their children as their responsibility their children remained aloof and indifferent to their parents' appeals as illustrated by using their toothbrushing practices as a battleground for defiance – for example '*don't spit on the floor*'. In this respect the macro manifestations of power embodied in the so called agents of dentistry (Nettleton, 1991) was frequently successfully resisted. This has implications for the views of dentists who would seek to admonish parents to urge their children to brush more and brush better. It is obvious that much more subtle parenting practices are required if children are to willingly make themselves subject to the dentists' rules.

The children's defiance was nonetheless observed as a resistance which was often tempered by their knowledge that it was 'good' to brush their teeth. This indicated a degree of success in relation to the incorporation of the toothbrushing rules or the discipline of dentistry in their everyday toothbrushing practices. They did this because it was the 'good' thing to do. For instance the children were concerned about the appearance of their teeth and their wish to be grown-up; it may be that the identification with their caring parents acted as a driver in converting the parental toothbrushing rules into the children's own toothbrushing practices. It is proposed that this pathway paved the way to the '*slow and gradual*' acquisition of their oral health skills (Freud, 1965).

School-based health promotion interventions are common place and more recently the concept of the health promoting school has become central to the implementation of the Ottawa Charter. Intrinsic to the philosophy of the health promoting school is the need to provide children with the necessary knowledge (rules) and practical (practices) skills for health. In the context of the school setting, skills acquisition is a reflection of increased autonomy and empowerment. It may be suggested that the competitive element of WS allowed the children to express their developing autonomy and empowerment as illustrated in their increased oral health-related knowledge. Furthermore, it is possible that such skills acquisition acts as an additional influence upon the transition of rules into practice. Thus the social context and the setting of the school environment allowed the children, in this investigation, to develop their toothbrushing skills (rules and practices) through increasing their autonomy and empowerment. The children's sense of identity was reflected in relation to

their views on toothbrushes. What we found was that children positively engaged with the type of toothbrushing they wished to have as a way to express amongst other things, their Irish identity. This finding mirrors important work on the subject of children as consumers which argues that we all too often focus on children as objects of the producers of consumer goods and not enough on how they consume these goods and what it means for them (Martens, Southerton & Scott, 2004). This raises an interesting challenge for the view that children are vulnerable to the vagaries of consumer advertising (Chestnutt & Ashraf, 2000). Perhaps we have not taken child toothpaste consumption seriously as a mode of children's emerging identities and how health promotion may be able to explore ways of tapping into the personal and identity related energy of children.

There are some limitations to the work presented here. These are in relation to tracing all of the children's comments back to their specific worksheets (Christensen and James, 2000). At times this proved impossible since the discussions were often too lively to trace particular voices and since there was only one person (BG) present during data collection. BG did however attempt to trace the most relevant comments by taking notes and spending time at the end of each focus group noting down the important aspects of the conversation. These notes included, where possible, linking specific comments to specific worksheets. This problem could have been remedied by conducting follow-up interviews and perhaps attending the schools as a participant observer but time and resources did not allow this to happen.

The preconceived ideas based on an adult-centric view on how to run a focus group led to initial difficulties encountered by BG. This, however, allowed a time to reflect, consider the literature on childhood studies and adopt a child-centred approach. Therefore the advantage of this approach was the establishment of rapport with the children. The rapport between BG and the children enabled the children to express their thoughts about the tasks, drawings and the intervention itself (Mallinson, 2003). The children clearly experienced a great deal of fun during the research. The new approach involved understanding that children bring different skills and perspectives and that these need to be accounted for when planning to do research with them (Marshman & Hall, 2008).

This exploration has begun the process of understanding the power dynamics associated with children's toothbrushing. To gain a greater understanding of the child perspective, more time is needed to appreciate how children incorporate what appears to be a rather mundane aspect of everyday life into their health repertoire – how they convert and integrate the toothbrushing rules into their own toothbrushing practices as they slowly and gradually acquire '*responsibility for the care of their own bodies*' (Freud, 1965).

REFERENCES

Antunes, JLF, Narvai, PC, Nugent, ZJ. Measuring inequalities in the distribution of dental caries. *Community Dent Oral Epidemiol* 2004 **32:** 41-48.

Chestnutt IG, Ashraf FJ. Television advertising of foodstuffs potentially detrimental to oral health: a content analysis and comparison of children's and primetime broadcasts. *Community Dental Heath* 2000 **19:** 86-89.

Christensen P, James A. *Research with children: perspectives and practices*. Routledge: London, 2000.

Foucault M. Disciplinary power and subjection. In S. Lukes (Ed.), *Readings in social and political theory*. New York: New York University Press, 1986.

Foucault M. *The History of Sexuality Vol. 1, An Introduction*, tr. Hurley R. New York: Vintage Books, 1990.

Freeman R, Ekins, R, Oliver M. Doing best for children: an emerging grounded theory of parents policing strategies to regulate between meals snacking. *Grounded Theory Rev* 2005 **4:** 59-80.

Freud A. *Normality and pathology in childhood*. Harmondsworth: Penguin 1965.

Graham H. Building an inter-disciplinary science of health inequalities: the example of life-course research. *Soc Sci Med* 2002 **55:** 2005-2016.

Graham H, Power C. Childhood disadvantage and health inequalities: a framework for policy based on life-course research. *Child: care, health develop* 2004 **30:** 671-678.

James A. Giving voice to children's voices: practices and problems, pitfalls and potentials. *Am Anthropol* 2007 **109:** 261-272.

James A, Jenks C, Prout A. *Theorizing childhood*. Cambridge: Polity, 1998.

Jenks C. *Childhood*. London: Routledge, 1996.

Levin KA, Currie C. Inequalities in toothbrushing among adolescents in Scotland 1998-2006. *Health Ed Res* 2009 **24:** 87-97.

Lupton D. *The imperative of health: public health and the regulated body*. London: Sage, 1995.

McLeod JD, Shanahan MJ. Trajectories of poverty and children's mental health. *J Health Soc Behavior* 1996 **37:** 207-220.

Mallinson S. Listening to respondents: a qualitative assessment of the Short-Form 36 Health Status Questionnaire. *Soc Sci Med* 2003 **54:** 11-21.

Marshman Z, Gibson BJ, Owens J, Rodd HD, Mazey H, Baker, SR et al. Seen but not heard: a systematic review of the place of the child in 21st-century dental research. *Int J Paed Dent* 2007 **17:** 320-327.

Marshman Z, Hall MJ. Oral health research with children. *Int J Paed Dent* 2008 **18:** 235-242.

Martens L, Southerton D, Scott S. Bringing children (and parents) into the sociology of consumption: Towards a theoretical and empirical agenda. *J Consumer Culture* 2004 **4:** 155-182.

Mattila ML, *et al*. Will the role of family influence dental caries among seven-year-old children? *Acta Odontologica Scandinavica* 2005 **63:** 73-84.

Mays N, Pope N. Qualitative research in health care: Assessing quality in qualitative research. *Br Med J* 2000 **320:** 50-52.

Morgan M, Gibbs S, Maxwell K, Britten. Hearing children's voices: methodological in conducting focus groups with children aged 7-11 years. *Qualitative Res* 2002 **2:** 5-20.

Nettleton S. *Power, pain and dentistry*. Milton Keynes: Open University Press, 1992.

Nettleton S. Protecting a vulnerable margin: towards an analysis of how the mouth came separated from the body. *Sociol Health Illness* 1998 **10:** 156-169.

Nettleton S. Wisdom, diligence and teeth: discursive practices and the creation of mothers. *Sociol Health Illness* 1991 **13:** 98-111.

Nicolau B, Marcenes W, Allison P, Sheiham A. The life course approach: explaining the association between height and dental caries in Brazilian adolescents. *Community Dent Oral Epidemiol* 2005 **33:** 93-98.

Patussi MP, Marcenes W, Croucher R, Sheiham, A. Social deprivation, income inequality, social cohesion and dental caries in Brazilian school children, *Soc Sci Med* 2001 **53:** 915-925.

Peres MA, Latorre M, Sheiham A, Peres KG, Barros FC, Hernandez PG et al. Social and biological early life influences on severity of dental caries in children aged 6 years. *Community Dent Oral Epidemiol* 2005 **33:** 56-63.

Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century-the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol* 2003 **31 Suppl 1:** 3-23.

Pine CM, Adair PM, Petersen PE, Douglass C, Burnside G, Nicoll AD et al. Developing explanatory models of health inequalities in childhood dental caries. *Community Dent Health* 2004 **21:** 86-95.

Punch S. Research with children: The same or different with adults? *Childhood* 2002 **9:** 321-341.

Scott J. Children as respondents: the challenge for quantitative methods. In: Christensen P and James A (Eds). *Research with children: perspectives and practices*. London: Routledge, 2000.

Thomson WM, Poulton R, Milne BJ, Caspi A, Broughton JR, Ayers KM. Socio-economic inequalities in oral health in childhood and adulthood in a birth cohort. *Community Dent Oral Epidemiol* 2004 **32:** 345-353.

Whelton H, Crowley E, O Mullane D, Cronin M, Kellerher V. North-South survey of children's oral health 2002 - preliminary results. Department of Health and Children: Dublin, 2003.

Widder N. Foucault and Power Revisited. *Euro J Polit Theory* 2004 **3:** 411-432.

Williams SJ, Bendelow GA. In: *The Body in Everyday life*. pp. 103-123. London: Routledge, 1998.

Willow C. Bread is free: children and young people talk about poverty. Children's Rights Alliance and Save the Children Fund London, 2002.

Vanobbergen J, Declerck D, Mwalili S, Martens L. The effectiveness of a 6-year oral health education programme for primary schoolchildren. *Community Dent Oral Epidemiol* 2004 **32:** 173-182.