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Opportunities and challenges to promoting oral health in primary schools

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Inequalities in oral health in areas of socio-economic disadvantage are well recognised. As children spend a considerable proportion of their lives in education, schools can play a significant role in promoting children's health and oral health. However, to what extent schools are able to do this is unclear. The aim of this study was therefore to investigate opportunities and challenges to promoting oral health in primary schools. ***Methods*** A purposive sample of 20 primary schools from socially and economically disadvantaged areas of Cardiff, UK were selected to participate in this qualitative study. Data were collected through semi-structured interviews conducted with head teachers or their nominated deputies. ***Results*** General awareness of health and oral health was good, with all schools promoting the consumption of fruit, water and milk and discouraging products such as carbonated drinks and confectionaries. Health promotion schemes were implemented primarily to improve the health of the children, although schools felt they also offered the potential to improve classroom behaviour and attendance. However, oral health was viewed as a separate entity to general health and perceived to be inadequately promoted. Successful health promotion schemes were also influenced by the attitudes of headteachers. Most schools had no or limited links with local dental services and, or oral health educators, although such input, when it occurred, was welcomed and highly valued. Knowledge of how to handle dental emergencies was limited and only two schools operated toothbrushing schemes, although all expressed an interest in such programmes. ***Conclusion*** This study identified a positive predisposition to promoting health in primary schools. The challenge for the dental team, however, is to promote and integrate oral health into mainstream health promotion activities in schools. The paper also makes recommendations for further research.

Key words: Children, deprivation, healthy eating, health promotion, inequalities, oral health, schools.

Introduction

Although the oral health of older children in the UK has improved in recent decades, dental decay, particularly in younger children, remains a significant problem (Watt *et al.*, 2001; Tickle, 2006). A recent national survey has shown that 52% of all five year olds in Wales have tooth decay of a sufficient severity to warrant a filling or extraction by the time they start school (Harker & Chestnutt, 2005). Dental decay is also greatest in areas of social and economic disadvantage (Watt and Stillman-Lowe, 2001), where a threefold difference in levels of decay are apparent between the least and most affluent areas (WOHIU, 2002).

The importance of an environment conducive to health and the adoption of health promoting behaviours is of course obvious, and this particularly applies to schools where children spend a significant proportion of their early life. This has now also been recognised at a national and international level. For example, in 1995 the World Health Organisation (WHO) launched a Global School Health Initiative aimed at developing health promotion in schools, capable of strengthening their ability as a healthy setting for living, learning and working. This Health Promoting Schools (HPS) initiative seeks to mobilise and strengthen health promotion and education activities through schools to improve the health of students, staff, families and communities (Kwan *et al.*, 2005). In the UK, the regional and national government has also recently published consultation papers on action on food and fitness for children and young people. These propose the extension of healthy school schemes to all Local Education Authority (LEA) maintained schools by 2010 (WAG, 2005).

Many of the elements within the healthy schools initiative, such as fruit tuck shops and water coolers, will inherently act to safeguard oral health. Furthermore, such initiatives also offer other potential benefits such as reducing overweight and obesity and improving attention and behaviour in children (Warwick *et al*., 2005; Hyland *et al*., 2006). Research has shown that school-based initiatives do have the potential to improve health and oral health (Health Education Authority, 1999). Recently, healthy eating in schools has gained public and political prominence in the UK when celebrity chef, Jamie Oliver, examined school dinners in a highly publicised television series. However, to what extent primary schools, particularly in deprived areas, are able to promote health is currently unclear. For example, do schools face particular problems in developing healthy eating and drinking policies and, or toothbrushing programmes?

The aim of this qualitative study was therefore to identify opportunities and barriers to promoting health and oral health in nursery and primary schools in Cardiff, UK.

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Methodology

A qualitative research approach, using semi-structured interviews, was used to conduct this study. This allowed for a more open ended and responsive form of data collection than more highly structured methods, such as questionnaires (Oppenheim, 1992; Chestnutt *et al*., 2003).

A semi-structured interview schedule was developed by the research team and piloted in three schools to establish if it was understandable and its ability to address the aims and objectives of the study, prior to the main data collection stage. All interviews were conducted by PG or DC using the agreed interview schedule. Areas explored in the interview schedule included opinions and practices in relation to health promotion issues, snack and food policies (e.g., in relation to 'tuck' and lunchboxes), milk schemes, breakfast clubs, vending machines and tuck shops, confectionary related rewards, handling of dental emergencies and links with oral health educators/dental services.

Sample and participants

All state primary and nursery schools (n=34, 31 primary, 3 nursery) in recognised socially and economically disadvantaged areas of Cardiff, UK were purposively invited, by letter, to participate in the study. Of these, 20 (59%) schools (18 primary, 2 nursery) agreed to participate. While the participating schools were typical (in size and composition) of those in areas of social and economic disadvantage, it cannot be assumed that they are representative of all schools in such areas of Cardiff.

Interviews were conducted with head teachers or their nominated deputies. Respondent demographics are shown in Table 1. All interviews were recorded and conducted in the head teacher's office of the participating schools. Interviews lasted between 20 and 50 minutes and were conducted from November 2005 to February 2006.

Data analysis

All interviews were recorded and transcribed verbatim. Data were then analysed using a process of thematic content analysis. This involved reading and re-reading interview transcripts in order to identify and develop themes and theories emerging from the data (Glaser and Strauss, 1967). In total, four central themes (with several sub-themes in each category) were identified.

Data were also validated through a process of 'inter-rater reliability'. This involved two members of the research team (PG, IC) independently reviewing and exploring interview transcripts, data analysis and emerging themes, before agreeing completely on a final thematic framework.

Results

The benefits of 'healthy schools'

There was a good level of awareness of the importance of health promotion in all schools and all had, to varying degrees, implemented healthy eating policies. This essentially involved promoting 'healthy products' in school, such as fruit and water, and actively discouraging, or even banning, 'unhealthy products' such as confectionaries and carbonated drinks.

Healthy eating and drinking schemes operated in schools

All schools operated a variety of healthy eating schemes. For example, all schools operated 'healthy' or fruit only tuck shops, or alternatively, were encouraging parents to only provide their children with healthy mid-morning snacks, such as fruit. All schools also provided free milk every day for the pupils and none operated vending machines, primarily because they felt they were inappropriate for primary school children, but also because they could potentially be counter-productive to health promotion, given the products traditionally sold in such machines.

Half of the schools encouraged children to drink water throughout the day (from water fountains and, or their own water bottles) and most others were considering setting up such a scheme. Half of the schools were also operating a free Welsh Assembly Government (WAG) supported breakfast club, although most other schools also expressed an interest in the scheme.

Reasons for promoting healthy eating and drinking

Healthy eating and drinking was promoted for a variety of reasons, although primarily because of the potential benefits to children's health, which was seen as particularly important in deprived areas. Most respondents also felt that this approach probably had a positive impact on children's behaviour, attention, and ability to learn, although none had actually quantified this. Breakfast schemes were also perceived to provide a useful social function and had had a positive impact on attendance and punctuality. However, some schools had also been influenced to promote healthy eating by 'peer pressure'

Table 1. Demographic details of participants

Number of Participants	20
Gender of participants	Female (13) Male (7)
Position in school	Head teacher (18) Deputy head teacher (1) healthy schools coordinator/nursery teacher (1)
Length of time in this position	1-24 years (median, 9 ½ years)

from neighbouring schools. Health promotion initiatives were thought to make schools more attractive to parents of potential pupils, which they felt was important in a competitive market:

"The benefits of operating a healthy eating policy for children is obviously their health and all the benefits that come with that. For the school it's good to be seen to be promoting in line with what the nation wants. We want our children to be healthy and to be in school more often and to grow up to be healthy. We want to be a popular school and we want parents to send their children here. We are living in that climate at the moment where we are in competition with each other and to be honest we want that. So there are benefits all around".
(Head Teacher, primary, school 12).

Each 'healthy project' was seen to support and promote the other and, together with physical activities in school such as sports, were considered to represent a 'joined up' approach to health promotion in general. However, although responsibility for most initiatives were delegated to other members of school staff, a significant factor in the implementation and success of initiatives was the attitude of the head teacher.

Approaches to health promotion

Healthy eating was promoted in all schools, through newsletters and positive reinforcement in the canteen, at break times and during assembly. Health, oral health and healthy eating had also been incorporated into the school curriculum and were formally taught in Personal and Social Education (PSE), food technology and science classes.

Respondents were informed of health promotion initiatives from a variety of sources, such as the school nurse, meetings and official LEA correspondence. However, a significant source of information and support came from the Welsh LEA 'healthy schools initiative', which helped to promote and support health promotion in the schools visited.

Challenges to promoting health in schools

Promoting health presented schools with a variety of challenges and contributed to the multitude of demands placed on already busy schools. For example, running a fruit tuck shop created practical and logistical problems:

"Apples tend not to be the same size, so you have children saying his apple is bigger than mine. So we have to be careful with the apples and sort them when they arrive in school. The big ones we cut up and give to the nursery children. We did try bananas before Christmas but 20p worth of banana is only half a banana and it's quite difficult to explain to a 4 year old why they only have half a banana but their friend has got a whole apple. So it got too confusing, so we just stick with apples now".
(Head teacher, infants, school 15).

Implementation and management of healthy eating schemes

Most schools had provided support staff with 'non-contact time' to run healthy projects and emphasised the importance of staff support if projects were to be successful. However, implementing such initiatives also presented schools with a variety of other challenges, associated with the process of change. Schools had minimised such problems by implementing changes gradually and initially piloting schemes for several weeks to establish their feasibility. Some schools had also set up projects like fruit tuck shops in partnership with the children, as they felt giving the pupils a sense of 'ownership' probably also increased the likelihood of project success.

Reaching those most in need

Some respondents felt that, although projects such as breakfast clubs worked well in practice, they were not always reaching the 'right children':

"We implemented the free breakfast scheme to target children who were coming to school without breakfast in the morning. Although there are still some children whose parents are perhaps not organised enough to provide breakfast for them or even to get them here by 8:30 to eat ours. So it tends not to be the children you'd really want to see. Occasionally the staff will give them a piece of toast at 9 am, as they arrive. I think it would help if we had a wider take up and were able to target the children we really feel need it.

I think the only way of targeting those children would be if breakfast become part of curriculum time. If you had a sort of nurture group set up where it was almost like an alternative curriculum, where you have children with very challenging behaviour and I think we could modify it".
(Head Teacher, primary, School 7).

Due to the time and effort required to set up and run projects successfully, many respondents emphasised how reluctant they were to implement schemes, such as breakfast clubs, if they were only supported or funded for the short term. All respondents also stressed how important parental support (which was generally positive) and responsibility was in promoting children's health. For example, despite providing advice, schools had little or no control over what parents put in their children's lunchboxes.

However, all respondents felt that, although most initiatives were time consuming and challenging, if they were in the best interest of the children, they were ultimately worth the effort.

Striking a balance

All respondents recognised the importance of healthy eating but were also aware of the need to 'strike a realistic balance' as to what children consumed in school. For example, all schools allowed, although did not encourage, children to share birthday cake with their classmates, as they felt this reflected reality and sharing and eating together also served a useful social purpose. All schools

also operated non-food reward systems, such as star charts, but many still occasionally used confectionaries as rewards for special occasions (e.g., Christmas), good behaviour or attendance. Respondents felt this created a 'mixed message' but all felt that the occasional treat was not only acceptable it was also realistic.

Whilst all schools were promoting healthy eating, they also felt that they could not dictate to parents what they should feed their children; e.g., lunchbox contents. All respondents felt that it was more appropriate to encourage parents to provide healthier foods rather than being seen as a dictatorial, which they felt would probably be inappropriate, ineffective and possibly counter-productive:

"I have a strong belief about what children should and shouldn't eat but I think there's a freedom issue here. We encourage healthy eating, but don't enforce it. What parents feed their children is up to them. I wouldn't force them down that road as it's not going to work. They'll feed their children what they want, but parents do need to take responsibility for what they give their children".
(Head teacher, primary, school 11).

Dental and oral health issues

Although schools generally had a positive predisposition to promoting health, oral health was often viewed as a distinct, separate entity to general health. For example, school admission forms recorded general medical information about the children but not dental information.

Awareness of how to handle dental emergencies, such as dental trauma, varied and was often limited to just contacting the parents. Only five respondents were aware of the practice of placing displaced teeth in an appropriate solution. Only two schools operated toothbrushing schemes, although most expressed an interest in setting up such programmes. Most schools had little or no links with local dental services or oral health educators. However, several schools were participating in a fissure sealant programme and, consequently, had far greater awareness of and involvement with oral health professionals.

All respondents also felt that dental health was not promoted as much as general health and maintained that oral health professionals therefore needed to take a more proactive approach in promoting oral health in schools. This was perceived to be particularly important since, despite teaching oral health in PSE and science lessons, all respondents believed that input from oral health professionals was a highly valued and effective way of delivering oral health education to children:

"I think it's good to have visiting experts deliver oral health education. I still remember them coming to my school and giving us those blue things for your teeth. The fact that I can remember 35 years later shows it's had an impact on me and I would hope it would be the same for the children now. Children like anyone different coming in and they tend to take it in more if it is somebody different, rather than their teacher.

Also they often bring in visual aids and toys for the younger ones and that has more of an impact. I think they've got the right approach to make sure they take it on board. Children don't see cleaning their teeth as a priority, I don't think. If they can get away without cleaning them I'm sure most would. So anything we can do to promote it helps".
(Head teacher, primary, school 12).

Discussion

The findings show that respondents recognised and were committed to creating a health promoting environment in school and identified health as an important aspect of their role. The influence of international schemes, such as the WHO's Health Promoting Schools (HPSs), and national schemes, such as the healthy schools initiative, have clearly helped to raise awareness and facilitated a healthy school environment (Kwan *et al.,* 2005, Schagen *et al*., 2005). The fact that none of the participating schools had a traditional tuck shop selling 'sweets, crisps and fizzy drinks', is a remarkable turn around from the likely situation a relatively short time ago. Evidence does suggest that schools can play an important role in promoting health and reducing inequalities, providing health promotion information is supported by healthy food choices in school (Acheson 1998; Kwan *et al.,* 2005; Valentine, 2005; Warwick *et al*., 2005).

It was apparent, however, that much of the success in initiating schemes, such as fruit tuck-shops, was heavily dependant in the commitment and attitudes of headteachers and their staff. There was also a sense that that participants often thought they were 'reinventing the wheel' and the study supports their suggestion that more opportunities to learn from the successes and failures of other schools would be particularly helpful.

This study also revealed some unexpected drivers for adopting health promotion activities, such as 'peer pressure' from other schools. Other reasons for promoting healthy eating and drinking in schools, such as the potential to improve behaviour, attention, punctuality and attendance, have also been reported in other studies (Warwick *et al*., 2005).

Sustainability, particularly in relation to pilot studies with short-term funding (e.g., free breakfast scheme), is something that planners of such projects need to bear in mind. While concerns over 'the nanny state' were generally dismissed, participants were also realistic in where their responsibilities for the health of children ended and those of parents began. 'Striking a balance' in terms of eating policies in schools was also a common point.

Viewing oral health as a distinct and separate entity from general health is, of course, an age old problem. However, while the teeth and mouth are perceived as separate from the rest of the body, there is a risk that oral health promotion will be marginalised (Freeman, 2002). There is, therefore, a need to interact with other stake-holders to provide an integrated approach to health promotion that will permit the targeting of those in greatest need (Freeman, 2002). There is also an urgent need for further research in this area to establish how this approach could be best achieved and to evaluate the impact of such an approach on the target population.

Nonetheless, many of the health promoting initiatives in schools, such as fruit tuck shops or the ready availability of drinking water are positive steps in the prevention of tooth decay. However, what was perhaps

less encouraging was that links to dental services and knowledge of how to handle dental emergencies were not always clear. In those schools where more senior classes were participating in the Welsh Assembly Government's fissure sealant programme, teachers were more aware of links to dental care.

Teachers held positive views on the benefits of oral health professionals visiting classes and talking to children directly. A study by Warwick *et al* (2005) also found that school children also value such visits from external experts. However, this view contradicts the current evidence on which oral health education activities are based. A move to a 'training the trainers' approach has been viewed as the way forward by oral health professionals (Lee *et al.,* 2003). In the past decade, a number of systematic reviews have questioned the long term benefits of classroom based health education (Sprod *et al.,* 1996; Kay and Locker, 1997). Consequently, the disparity between the perceived benefits of traditional oral health education in class between teachers and dental professionals requires further empirical consideration.

What is clear from systematic reviews is that the provision of fluoride is a key element in the prevention of tooth decay (Kay and Locker, 1997). In the absence of fluoride present at sufficient levels to prevent decay in the public water supply, this will rely heavily on toothbrushing with a fluoride containing toothpaste. In areas of high decay prevalence, where children may not be encouraged to brush their teeth twice daily at home, in-school toothbrushing schemes provide a potential means of increasing contact of tooth surfaces with fluoride. At this time, Wales does not have a dedicated national oral health strategy. This study suggests that in-school toothbrushing schemes may be viable, given the interest expressed by participants.

Finally, study participants highlighted that children's medical history are recorded on school entry but dental or oral health history are not. Therefore, incorporating dental information on school admission forms may be a simple practical step that may, simultaneously, raise awareness of oral health and identify children in need of immediate care.

However, given the size and nature of the sample group, the findings should of course be treated cautiously, particularly as all of the schools visited were positively predisposed to health promotion, having received significant support and investment from the Welsh Assembly Government. Furthermore, it is also worth considering how the findings would compare if the other 14 schools/ nurseries had participated in the study.

Conclusion

This study has provided a variety of information on issues relevant to the promotion of health in general and oral health in particular in schools. The health promoting schools (HPSs) and healthy schools initiatives have clearly had a positive impact on the health related attitudes and practices within the schools visited. The study also demonstrated that teachers were positively predisposed to school based toothbrushing schemes and valued traditional classroom based oral health education. However, the profile of oral health within schools could be raised further, simply by modifying school admission forms to incorporate data on dental information. What is also clear from this and other studies is the continued perception that oral health is somehow disparate to general health. There is, therefore, a pressing need to develop a more holistic approach to the promotion of the health and well being of children.

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