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Welcome to the fourth issue for 2012.

We continue with the proud tradition of independent publishing and offer an eclectic mix of articles: Stickers - A popular health promotion resource; Children's eating habits; Mindfulness-based interventions; Improving young children's lifestyles in Lancashire; School-based interventions supporting loss and grief and children's health choices.

The journal, published since 1983, is aimed at those involved with education and health who are concerned with the health and wellbeing of young people. Readers, in the UK, come from a broad background and include: primary, secondary and further education teachers, university staff, and health-care professionals working in education and health settings. Readers outside of the UK share similar backgrounds. The journal is also read by those who commission and carry out health education programmes in school and college.

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A series of reports showing trends from 1983. Recent reports are 'Young People's Food Choices', 'Young People and Smoking' and 'Young People and Illegal Drugs'. Latest data come from a sample of over 629,000 young people mostly between the ages of 10-15 from across the UK. Report are priced from £10-£15 including post and packaging (comb bound or saddle-stitched stapled).

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Philip Gilligan and Martin Manby with Debra Gibson and Alison Hodgkinson

Healthy Heroes: Improving Young Children's Lifestyles In Lancashire; an evaluation of a challenge based schools' programme

Healthy Heroes was developed by the Healthy Schools Team in Lancashire in 2009 - 2010. Local funding sources were enhanced by a grant from the National Healthy Schools Programme funded by the Beacon Healthy Schools Peer Parenting Support Programme in England from 2008 to 2010. Programme evaluation was extended using Beacon funds.

This article provides a background to the project and describes an evaluation of the programme.

Literature review

Steeply rising trends in the prevalence of obesity in children in England and Wales have been widely documented (Jotangai et al, 2005). The Department of Health has set out a strategy to reduce the proportion of overweight and obese children (under 11 years) to 2000 levels by 2020 (DoH, 2008). The belief that children currently eat too much and exercise too little is widespread. The BMA has identified fizzy drinks, sugar and chocolate as three elements in the diet of children aged 7 - 10 which need to be reduced (British Medical Association, 2005). Eisenmann (2006) found that consumption of fast foods, soft drinks/energy dense foods, reduced consumption of milk and an increase in snacking were contributory factors in increases in obesity. Mackett and Paskins (2008) found that children were walking to school and playing outside less.

Multi-component interventions aiming to increase physical activity levels and improve children's eating behaviours and diet have been widely recommended (NICE, 2006; Harris et al, 2009). The national MEND (Mind, Exercise, Nutrition… Do it!:) programme has also encouraged child-focussed and intensive multidisciplinary programmes, and has strongly promoted parental involvement (Swain, 2009). MEND programmes were found to improve the psychological wellbeing of obese children, a trend reinforced by the findings of Fraser et al (2010). Although public awareness of the importance of a healthy diet and physical activity is increasing (MRC Human Nutrition Research, 2007), rising trends in childhood obesity are proving stubbornly resistant to change, particularly in low income households.

Family environment is known to exert a major impact on children's food preferences and lifestyles (Muller et al, 2005). Schools play a key role in the provision of physical activity opportunities (Storey, cited in Kahan, 2008). Schools provide a natural setting for education about healthy food choices (Foster et al, 2008). Warren et al's (2008) study focussing on obesity in 5 - 7 year old children in Oxford evidenced a significant improvement in nutrition knowledge, and an increase in fruit and vegetable consumption in all children; but no significant changes in rates of overweight and obese children were seen. Blom-Hoffman et al (2008) found that school based programmes were enhanced by time efficient and enjoyable home based activities. Cartoon models have been shown to be effective with children (Woolner, 2000).

Brown and Summerbell's review (2009) recommended a combination of diet and physical activity as the most effective strategies in preventing school age children becoming overweight.

The prevalence of obesity in children under 11 years in North West England follows the main national trends, with levels of obesity in the reception year of about 10% (national prevalence figure, 9.6%), and increased levels

(18.9% for boys and 15.6% for girls) in year 6, compared with a national figure of 18.3%.

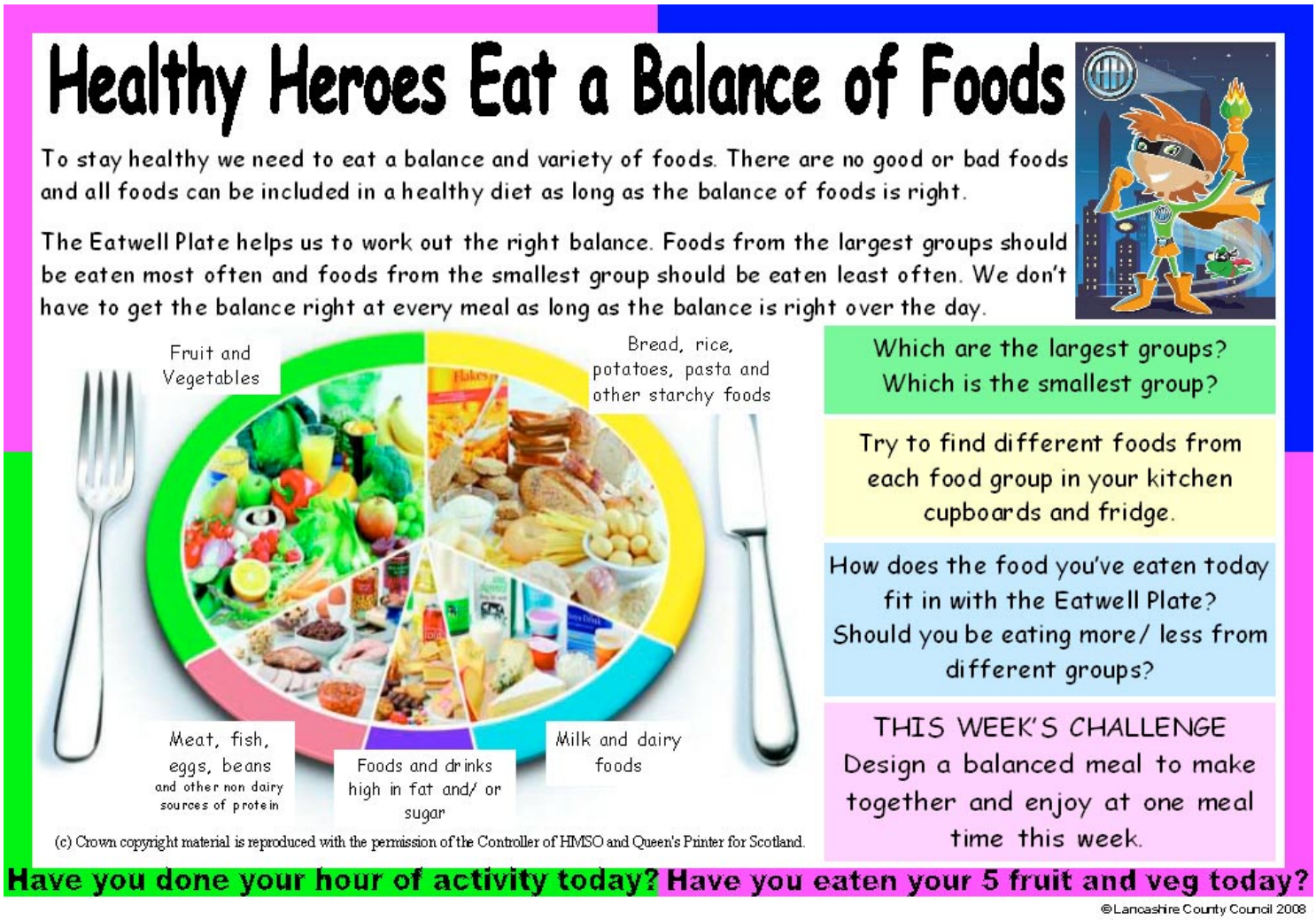
Healthy Heroes

Healthy Heroes was developed by the Healthy Schools Team in Lancashire and aims to raise awareness of healthy eating and physical activity messages by children and their families in a fun and interactive way. Children choose from a range of colourful challenge cards, such as 'A Balanced Diet', introduced by cartoon characters who reinforce key messages (See below: 'Healthy Heroes Eat a Balance of Foods'). Children have to complete up to 10 challenges at home per term, with involvement from parents and siblings. Incentives include stickers for each challenge, and Healthy Heroes capes and masks and completion certificates. At the end, the family are awarded Pledge Certificates to encourage the continuation of at least one healthy eating and one physical activity challenge. Resources are available on-line (see http://www.lhsp.org.uk/healthyheroes). The programme does not claim to solve all child obesity issues, but rather tries to capture the imagination of children and families, and engage them in thinking about developing healthier lifestyles. The programme has been commended by the National Support Team for Childhood Obesity, and received the North West Excellence in Innovation Award in 2011.

Methodology

The aims of the project's internal evaluation were developed iteratively over time, as funding became available. The Healthy Schools Team initially commissioned two Master's level students from local universities to conduct different parts of an internal evaluation (see (i) and (ii) below). Following the appointment of the authors as independent external evaluators, the Team also facilitated further qualitative research (see (iii) below), and asked the authors to synthesise all the relevant data available. The project adopted a range of methods to assess impact:

i) A parent/carer questionnaire was administered at the start and end of the programme. In the first part of the questionnaire, views were sought on changes observed in children, including uptake of school lunches, children walking to school, and



consumption of sugary snacks and drinks between meals. The second part of the questionnaire included 4 questions about children's physical activity and 6 about dietary habits. Parents' written comments on programme impact were obtained and analysed. Data were obtained for the summer and autumn terms 2009 from 26 schools, and a statistical analysis was carried out by a Master's level student.

ii) A teachers' evaluation questionnaire was developed by another Master's level student, analysing the process of implementing the scheme in 12 schools. Both parent /carer and Teachers' questionnaires were piloted and validated for reliability prior to implementation.

iii) One of the external evaluators met 25 parents in three schools where Healthy Heroes had been introduced towards the end of the summer term in 2009 during which the programme was run. These semi-structured interviews were audio recorded, transcribed and analysed.

Data sets obtained overlapped. These are summarised in Table 1 below.

Table 1: Overlapping data sets

Instrument	Parents' questionnaire	Parents' semi-structured interviews	Teachers' Survey
Number of schools involved	26	3 out of the 26	12 out of the 26
Number of participants	138 parents completed start and end of programme questionnaires. 374 parents completed end of programme questionnaires.	25 parents were interviewed	Survey reviewed progress of 552 children in the 12 schools

The project promoted distribution and collection of evaluation data. Schools encouraged parents/carers to complete questionnaires, but response rates varied. A limitation of this methodology has been that the data collected has not been amenable to analysis by children's gender and ethnicity, or by their health or Body Mass Index (BMI). Survey questions offered parents /carers only a dichotomous choice between 'yes' and 'no', when they may have needed a wider range of choices to clearly express their views (Bateman et al., 2009). However, almost 50% of parents/carers contributed further comments.

Findings

Parents' Survey: Part 1

During the summer and autumn terms 2009, 374 parents/carers from 26 schools in 'County' completed end of programme questionnaires. Results from the survey are in Table 2 below.

Table 2: Surveys of parents' / carers' views: Summer and autumn terms 2009 combined

Question	Total 374 questionnaires		
	Yes responses (%)	No responses (%)	Missing data
Q1: Did your family enjoy 'Healthy Heroes'?	365 (97.5%)	6 (2%)	3 (1%)
Q2: Did Healthy Heroes encourage your family to spend more fun time together?	301 (80%)	62 (17%)	11 (3%)
Q3: Has Healthy Heroes encouraged your child to have a school lunch?	116 (31%)	225 (60%)	33 (9%)
Q4: Has Healthy Heroes encouraged your child to walk to school more often?	169 (45%)	176 (47%)	31 (8%)
Q5: Has Healthy Heroes encouraged your family to have less sugary snacks and drinks?	276 (74%)	79 (21%)	19 (5%)
Q6: Did Healthy Heroes encourage you to make other changes?	232 (62%)	113 (30%)	29 (8%)

The 374 children comprised 183 girls and 184 boys (missing data = 7). Their mean age was 7 years. One hundred and eighty (180) parents/carers, whose children were aged from 5 to 11, included comments in their questionnaires. Most of their children (n = 130) were aged 6, 7 or 8.

Nearly all the respondents said that they had enjoyed Healthy Heroes. Four-fifths of respondents said that they had been encouraged to spend more 'fun' time together.

Just over 30% of parents/carers reported that their children had been encouraged by Healthy Heroes to have a school lunch. (Some already had one, or had a healthy packed lunch, or

considered school lunches too expensive). Over 40% said that children had been encouraged to walk to school by 'Healthy Heroes', although this was not practical for other parents due to their working hours, the distance to school, or because younger siblings were unable to walk.

A key finding was that almost three-quarters of the parents/carers (276 of 374, 74%) reported that their children's level of sugar consumption had reduced. While it is possible that this indication of children changing their behaviour is overstated, parents/carers' answers clearly ascribed this change to children taking part in Healthy Heroes.

"When someone else rather than 'Mum' tells them 'no sugary drinks', they take more notice". (Mother of girl, age not known)

"(Name of son) has encouraged all the family to eat more fruit instead of sugary snacks, and to drink plenty of water". (Parent of 6 year old boy).

"We have always tried to limit sugary snacks and drinks but (Healthy Heroes) gave (name of daughter) a greater understanding of why". (Parent of 8 year old girl).

These quotations indicate the value of schools reinforcing parental advice, and the potential for even young children to influence the behaviour of other family members.

Three-fifths of parents described a range of lifestyle improvements for their family. Many parents/carers reported that children had improved their diet, drunk more water, exercised and cooked more often, and taken better care of their teeth.

One mother of a 7 year old girl commented:

"We as parents have lost over 4 stone between us … (Healthy Heroes) certainly made a difference to our family".

Parents' Survey: Part 2

This part of the evaluation provided some statistical confirmation regarding programme impact.

Both pre and post questionnaires, recording parents' views about children's healthy eating and physical activity levels, were completed by 138 parents, 39% of the total. Positive responses to the 10 questions were scored at 10; 'sometimes' responses were scored at 5; and negative responses scored 0. The score range was 0-100. Statistical analysis found a significant improvement in mean scores at the end of the programme (mean = 7.06; Std Dev = 9.94; p = 0.05). Mean percentage pre scores were 72.21; and post scores 79.27 (mean difference 7.06) for the 138 respondents.

Further analysis was undertaken for score changes in response to the (6) healthy eating and (4) physical activity questions. Results are in Table 3 below.

Table 3: Baseline and end of programme scores for *healthy eating* and *physical activity* questions.

	Baseline mean score	Standard deviation	End of programme mean score	Standard deviation	Difference between baseline and end of programme
Healthy eating	69.32%	15.04	77.84%	13.64	8.51%
Physical activity	76.63%	16.25	81.43%	13.86	4.80%

Percentage differences between pre- and post-scores for healthy eating and physical activity are summarised in Table 4 below.

Table 4: Percentage differences between pre and post healthy eating and physical activity scores

	Improved score	Same scores	Decreased Scores	Overall Improvement	Significance Level
Healthy eating	59%	28%	13%	8.5%	p <0.001
Physical activity	43%	38%	19%	4.8%	p <0.001

Tables 3 and 4 indicate that while healthy eating and physical activity scores both improved, the level of improvement appeared higher for healthy eating. The difference between baseline and end of programme mean scores for healthy eating (increase 8.51%) and physical activity (increase 4.80%) was statistically significant (n = 138; p < 0.05). Mean baseline scores were higher for physical activity (76.6) than for healthy eating (69.3) which may mean that there was less scope for improvement in physical activity levels. Nonetheless, this finding suggests that Healthy Heroes may have had more impact on healthy eating than on physical activity levels.

Teachers' survey

One school from each of 12 districts in Lancashire was selected to use the teachers' questionnaire during the summer term 2009. The 12 lead teachers were all white British. The 12 schools had widely variable deprivation characteristics, including very deprived and comparatively affluent areas. School size varied from 76 pupils to 556. Class sizes ranged from 11 to 34 children. Within the 12 schools, 552 children were involved in Healthy Heroes (277 girls and 275 boys). 416 were white British and 130 were Pakistani. 458 (83%) completed the Healthy Heroes activity. Neither school nor class size, nor the amount of time spent on Healthy Heroes, appeared to influence the number of children completing the programme. For example two of the schools where 100% of children completed their tasks spent less than half an hour on this each week; and one of them with the lowest completion rate (52%) allocated more than an hour each week.

Teachers reported very positively on the use of activity cards such as 'Get Active as a Family' and 'Drink water'. Healthy eating and physical activity cards proved equally popular. The teachers rated the Healthy Heroes resources, including the Teachers' guide, very positively. Teachers considered that role modelling, using Healthy Heroes characters, contributed to the programme's effectiveness. Incentives seemed to work well. One of the teachers commented:

"Children got very excited because the reward for completing tasks was extra playtime; they would run around the playground being Healthy Heroes".

Sending material home also seemed productive. Parental involvement was crucial; some teachers wanted to invite parents into school to prepare them for the programme in future. There was some evidence of a lower return rate for activity cards for boys. Materials promoting reduced salt intake appeared to conflict with Asian cultural cuisine, which emphasises the necessity of salt.

Parents' interviews (25 interviews at three Primary Schools)

Nineteen mothers and six fathers whose children had been involved were interviewed towards the end of the summer term in which the programme was run. The parents were from three schools, two in relatively deprived areas, and one in a more prosperous district. No differences in parents' views were noted linked to relative deprivation levels. The tone of parents' comments, in response to the interviewer's exploratory and probing questions, is more nuanced, reflective and critical than parents' written and mainly enthusiastic comments from questionnaires.

Parents at school B (N=8) emphasised how much both they and their children had enjoyed participating in the programme. They had found the activities straightforward and easy to engage with. Parents at school C emphasised that Healthy Heroes has been 'embraced enthusiastically' by their children, to the extent of …. "giving parents grief about their own unhealthy lifestyles and causing them to change their behaviours". Parents also recognised that if they did not prioritise Healthy Heroes, or if they themselves were resistant to new ideas about food choice, this would reduce the impact of what the children had learnt. Parents welcomed being able to access all the challenges and activity cards online.

How far parents became engaged could depend on their other priorities. They referred to illness, minor surgery, dependant grandparents, lone parenthood and busy weekends as examples of why challenges had not been responded to as well as they would have wished.

Parents at school C (N=12) recognised their responsibilities and the significance of the example they set. One commented…. "Some parents don't help, do they?... it's not always the kids' fault, because they don't choose their own diets….. (and) they don't buy their own food". Parents' work commitments and habits could prevent children getting more physical exercise.

"In the winter you just get in and turn the telly on and that's it" .

Another parent said that her daughter …."doesn't really get out, but that's my fault because I am studying at the moment so my weekends are taken up at the computer".

Parents appreciated that children liked to see them involved. Their comments included:

... "Kids like it when you join in yourself…. You have to go on a bike or walk with them. They really like …. doing things together as a family".

... "I think (child's name)'s intrigued that …. I am going to have to play this hopscotch with her as well. She is interested in me getting more exercise".

Parents at school C (N=12) were also aware that Healthy Heroes competed with other school priorities, for example SATs tests, OFSTED inspections or drama productions. They suggested some new challenges, for example encouraging children to question how unhealthy lifestyle choices were promoted by advertisers, the media, and the layout of supermarkets, and by allowing unhealthy foods to be sold more cheaply than healthier ones, (for example "buy one get one free" offers).

Some of these parents considered that the Healthy Heroes challenges were likely to have most impact in households where issues were already relatively well understood, and also questioned how long-lasting the changes in children's behaviour would prove to be. Parents at school A (N=5) saw Healthy Heroes materials as more appropriate for younger children. They saw value in the messages being spread out throughout a child's primary school career. One mother commented that, in contrast to her 11 year old, her 6 year old would believe and do anything that her teachers told her.

Discussion

Healthy Heroes seems to have been successful at several levels. Children cooperated well with undertaking challenges and involving their families. Parents completed much of the required evaluation data. Schools provided the infrastructure to run the challenges, and gave up classroom time to deliver the Programme, which teachers rated highly. Teachers and parents reported that Healthy Heroes captured children's imagination. The programme encouraged positive alliances between schools and families. Nearly all families who responded enjoyed taking part.

Much of the data gives rise to optimism about the potential of Healthy Heroes for changing families' behaviour. Four-fifths of families who responded believed this to be the case, and many provided examples of changes in diet and activity levels. Children's reported reduced consumption of sugary drinks and snacks has considerable potential for improving their general and oral health. More limited behaviour changes in the take up of school lunches and in children being encouraged to walk to school were also noted.

Statistical evidence suggested that Healthy Heroes may have impacted rather more on children's nutrition and diet than on physical activity levels. The role of schools is likely to be a key determinant here. Information about healthy eating, including "5 a day", is readily communicable to children from an early age. School lunches and school lunch times provide opportunities for messages about healthy eating to be reinforced. By contrast, the demands of the national curriculum have squeezed the amount of time available at school for physical exercise and organised sports, and access to playing fields has reduced across the country. Intuitively, it seems unsurprising that programme impact on increasing physical activity levels may have been somewhat lower than success achieved in improving knowledge about and changing behaviour related to healthy eating.

Qualitative data reflected the views of some families who had already adopted healthy lifestyles. For some of these families Healthy Heroes seemed to provide additional encouragement to consolidate well established fitness and healthy eating regimes. The impact of Healthy Heroes would be likely to wear off unless children received positive encouragement from school or home.

Parents' responses reflect the reality that in crowded and busy lives promotion of children's healthy lifestyles has to compete with other work and family priorities. Parents acknowledged that their own lifestyle had a key influence, for better or worse, on children changing their behaviour. Many suggested that the chances of improving children's behaviour were strongly reinforced by encouragement and direction from school. They also reported that children were pleased when they joined in, and that children could exert pressure on parents to change their behaviour.

Healthy Heroes probably worked best with schools and parents who were already positively motivated to promoting and adopting healthy lifestyles ("working with the willing"). Other schools were less enthusiastic and found it harder to find time to implement the programme; and achieving significant change was no doubt more challenging for children and families facing economic hardship.

Making a positive impact on children's healthy lifestyles is up hill work. The evidence that Healthy Heroes has made a valuable contribution is encouraging, but not incontrovertible.

The Lancashire Healthy Schools Team demonstrated impressive strategic commitment to improving children's lifestyles through developing the Healthy Heroes Programme, with strong leadership from the healthy schools partnership, alliances with schools, and a clear vision about how to capture children's imagination and involve families. There has already been much interest in both the principles and the implementation of the programme from other authorities. Programmes like Healthy Heroes have the potential to play a key role in improving children's lifestyles and in shaping investments in their healthy futures.

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Edo Shonin, William Van Gordon, and Mark D. Griffiths

The health benefits of mindfulness-based interventions for children and adolescents

One-year estimates of prevalence indicate that approximately one in four adolescents in the United Kingdom and United States experience a mental health disorder (Merikangas, Nakamura, & Kessler, 2009). This rises to one in three for adolescents (UK and US) who have experienced a mental health disorder at some point in their lives (Merikangas et al, 2009). Anxiety disorders are the most common where the lifetime prevalence estimates for adolescents aged 13-18 years old are as high as 32%. This is followed by behaviour disorders and mood disorders where the lifetime estimates are 19% and 14% respectively (Merikangas, He, & Burstein, et al, 2010). Stress and depression, poor emotion regulation capacity, and under-developed behavioural and social coping skills in adolescents are principal factors that can lead to academic non-completion and diminished opportunities in later life (Greenberg, Domitrovitch, & Bumbarger, 2001).

Throughout the last decade, there has been growing interest into the clinical application of mindfulness-based interventions (MBIs) for alleviating issues of psychological distress, as well as for the treatment of medical illnesses more generally. Mindfulness is a spiritual or psychological faculty and described in the healthcare literature as an intentional engaging of a non-judgemental awareness of the present moment (Kabat-Zinn, 1990). The practice of mindfulness – inherited from Buddhist tradition – has been shown to be efficacious for the treatment of a broad range of medical and psychological illnesses (Grossman, Niemann, Schmidt, & Walach, 2004). Mindfulness has been utilized in secularized programs such as Mindfulness-Based Stress Reduction (MBSR) comprising weekly meetings (approximately three hours duration) typically delivered over an eight-week period. Mindfulness-Based Cognitive Therapy (MBCT) follows a similar structure (i.e., eight-week, group-based, weekly meetings featuring guided mindfulness exercises, a guided meditation CD for daily self-practice, and an all-day retreat) and is advocated by the National Institute for Health and Clinical Excellence (NICE) for the prevention of relapse for those with recurrent depression. Given the large increase in empirical research and usage of mindfulness, the purpose of this short article is to provide a concise overview of the supportive evidence for the use of MBIs for children and adolescents in health and educational contexts.

Empirical research on mindfulness

Meta-analytic studies of MBIs have demonstrated that MBIs generally yield moderate to strong effect sizes, with the strongest effects typically reported for the treatment of anxiety and/or mood-spectrum disorders (e.g., Vollestad, Nielson, & Nielson, 2012). Moderately sized effects have also been reported for reduced anxiety and mood symptoms in study populations with somatic illnesses such as cancer, diabetes, heart disease, and chronic fatigue (Hofmann, Sawyer, Witt, & Oh, 2010). There is also evidence (e.g., from single randomized controlled trials or studies employing other empirical designs) for the salutary effects of MBIs in the treatment of a broad spectrum of psychopathologies such as substance-use disorders, eating disorders, attention-deficit hyperactivity disorder, and bipolar disorder as well as for improved cognitive functioning, social-emotional resiliency, and smoking cessation (e.g., Chiesa, Calati, & Serretti, 2011; Hofmann, et al, 2010;

Witkiewitz, & Bowen, 2010). Meta-analytical findings also indicate moderate success for the direct treatment of various somatic illnesses such as chronic pain, psoriasis, coronary heart disease, fibromyalgia, and cancer (Baer, 2003).

Whilst there is debate surrounding the most appropriate age to introduce mindfulness practice to children and adolescents, there is some evidence that supports the utilization of MBIs for school-age populations (see review by Burke, 2010). In one of the first randomized controlled trials (RCTs) of MBSR for adolescents, outpatients aged approximately 15 years old (n=102) with mood, anxiety, and other psychiatric disorders demonstrated significant improvements in levels of anxiety, depression, somatic distress, self-esteem, and sleep quality (Biegel, Brown, Shapiro, & Schubert, 2009). More recently, in an RCT of a 12-week mindfulness and yoga intervention involving 97 school-age children (with an average age of approximately 10 years), those who received the mindfulness training showed significant improvements compared to the control group in problematic responses to social stress including reductions in thought rumination, intrusive thoughts, and emotional arousal (Mendelson, et al, 2010). The intervention was also found to be acceptable to students, teachers, and school adminstrators. In a controlled study of an intervention known as 'Mindfulness Education' (a teacher-taught classroom-based manualized 10-lesson program involving breath awareness and attentive listening exercises) involving 246 adolescents (with an average age of approximately 13.5 years), those who received the Mindfulness Education program demonstrated significant improvements in optimism and teacher-rated classroom social competent behaviours (Schonert-Reichl, & Lawlor, 2010).

In addition to the health-related benefits of MBIs for school-aged children, there is preliminary evidence to suggest that mindfulness practice also improves cognitive function. For example, elementary school children (n=64) aged 7- to 9-years who undertook an eight-week MBI consisting of two 30-minute sessions per week showed significant improvements in metacognition and executive function (Flook, et al, 2010). These outcomes are consistent with findings in adult populations where mindfulness practice has been shown to improve selective and executive attention as well as working memory capacity (see review by Chiesa, et al, 2011).

A change in cognitive perspective due to participants adopting a more present-orientated attentional focus has been recognized as an important mechanism underlying such changes (Baer, 2003). A greater perceptual distance from maladaptive cognitive processes makes it easier for children and adolescents to let go of and simply observe their thoughts and feelings as passing phenomena. Other proposed mechanisms for MBIs include: (i) greater exposure to thoughts and feelings leading to reduced fear/anxiety responses as elicited by external stimuli, (ii) reduced autonomic arousal leading to greater levels of calm and relaxation, and (iii) greater self-awareness leading to improved psychosocial coping strategies (Baer, 2003).

Cost-effectiveness is a particular strength of MBIs which can be delivered with as little as 3.2 facilitator hours per participant (i.e., based on a total of 32 intervention hours delivered by one facilitator to 10 participants). Compared to pharmacotherapy, reports of adverse side-effects following MBIs are also uncommon. A further strength of MBIs is their versatility. This relates to their suitability for treating a wide variety of health problems as well as the ease at which the structure of MBIs can be modified to suit the needs of different population groups. For example, for the teaching of children and adolescent groups, it is recommended that MBIs undergo the following adjustments: (i) a greater use of explanation and rationale, (ii) integration of age-group specific practices such as 'mindfulness of sounds' (involving mindful listening to different genres of music) and 'mindful texting', (iii) use of appropriate metaphors (e.g., using the example of the difficulty in getting a puppy to sit still as a means of explaining the concept of 'mindlessness' and the 'wandering mind'), (iv) a greater variety and shorter duration of mindfulness practices in order to avoid boredom (e.g., practice session lengths of 1–10 minutes duration), and (v) the engagement of parents and carers (Thompson, & Gauntlett-Gilber, 2008).

Weaknesses of mindfulness research

Although there is evidence of the efficacy of

MBIs, their wider acceptance as viable alternative treatments has been hindered by a significant lack of methodological rigour. Many of the studies (including those of children and adolescents) have small sample sizes. Furthermore, heterogeneity in terms of how the various MBIs conceptualize mindfulness, as well as differences in program structure (i.e., length of program, duration of weekly sessions, quantity of psycho-education, amount of physical exercise/yoga-type activities, and differences in levels of experience and compliance/supervision of course facilitators) limits the validity of collective findings.

Few MBI studies adequately control for potential confounding factors such as concurrent psychopharmacology, concomitant psychotherapy, and/or illness severity although these concurrent conditions are typically less pronounced in child and adolescent samples (Klainin-Yobas, Cho & Creedy, 2012). In fact, even where an RCT design is employed, few of the studies are particularly robust (e.g., due to factors such as insufficient details to enable replication, an overall lack of transparency, an absence of justification of sample sizes, etc.). Coupled with a general lack of information concerning the structure of control-group interventions, 'specificity' in terms of control design presents a further notable limitation. Furthermore, there is a relative scarcity of long-term follow-up data evaluating the maintenance effects of MBIs in both adolescent and adult samples.

Other issues in mindfulness research

Inconsistency in the use and misuse of Buddhist concepts also threatens the longer-term credibility of MBIs. For example, within the psychological literature, mindfulness meditation is generally viewed as being synonymous with a technique known as insight meditation. Although a small number of Buddhist approaches appear to share this view, the more traditional perspective is that insight meditation refers to a subtle form of meditative analysis that can permit a 'penetration' into the 'empty' nature of self and reality. Confusion in this respect is probably the reason why the vital role of insight meditation (in relation to its more traditional depiction) has been largely overlooked in the design of MBIs, and in the medical and psychological literature more generally.

A further concern relates to the level of experience (and therefore the credibility and aptitude) of teachers and facilitators of MBIs. In addition to being entirely unregulated (i.e., there is no central accrediting body), MBI facilitators may have as little as one year's mindfulness experience following completion of a single eight-week course (Mental Health Foundation, 2009). Cullen (2011), in reference to the stream of mindfulness teachings recently introduced by Western psychologists, states that MBIs are 'their own new lineage'. Lineage is a particularly important term and concept within Buddhism. This essentially relates to the authenticity of the Buddhist teachings (or Dharma) in the sense that there should be an unbroken chain of transmission flowing from teacher to student that can be traced back to the historical Buddha (or to another 'fully realized' being).

However, within Buddhism, and in addition to the direct receiving of transmissions from an accomplished meditation master, lineage can only be said to be truly intact when the teachings are eventually 'brought to life' at the point of realization. In order to effect such a realization, authentic Buddhist masters generally undergo decades of focussed meditation training and invariably endure great hardships prior to teaching the Dharma. Therefore, claims that MBIs constitute an authentic lineage in the traditional Buddhist sense, are at best, totally unrealistic. To highlight this point further, the telephone or email delivery of MBIs as implemented in a number of recent mindfulness studies can hardly be said to be in the spirit of traditional Buddhist transmission (e.g., Salmoirage-blotcher, et al, 2012; Gluck, & Maercker, 2011).

Students more accustomed to Buddhist principles have been shown to conceptualize mindfulness in different ways compared with students from non-Buddhist backgrounds (Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009). Thus, there are issues relating to the cross-cultural validity of existent measures of mindfulness, and it is currently unclear whether Westernized versus Buddhist approaches to meditation and mindfulness involve different mediating mechanisms.

Concluding comments

Interest into the health applications of MBIs has increased substantially in the last ten years including for children and adolescents. MBIs appear to represent a cost-effective, acceptable, and non-invasive means of treating a broad spectrum of medical and psychological illnesses. There is also preliminary evidence of the acceptability and salutary health effects of MBIs in children and adolescent population groups. However, regardless of the growing body of evidence signifying the potential merits of MBIs, future studies should aim to address some of the methodological issues that currently hinder their wider acceptance as robust alternative interventions. Furthermore – and perhaps of greater importance – there is an urgent need for greater continuity, clarity, and consistency in terms of the identity of MBIs. Clinicians and researchers of secularized mindfulness meditation should be mindful of the need to respect and safeguard the credibility, heritage, and ethical values not only of clinical practice in general but also of the Buddhist teachings.

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School-based intervention supporting pupils affected by trauma, bereavement and loss: STAGES (Support, Trauma and Grief – Enabling Schools)

It has long been recognised in Craigie High School that pupils experiencing difficulties with attendance, conflict, anger, behaviour and learning often have the root of these issues connected to unresolved trauma and grief. As a school, we are committed to supporting our pupils to grieve healthily which is based upon the premise that all pupils are entitled to the very best experience in school we can give them. The vision we endorse as part of the STAGES model (Support, Trauma and Grief – Enabling Schools) is that all school pupils have a right to be consulted in their bereavement needs and have a support plan put in place to help them become successful learners. This is very much in keeping with the principles and guidance from the Scottish Government document entitled *Getting It Right For Every Child,* GIRFEC, (2007). STAGES also fits with Craigie High Schools status as a level 1 *Rights Respecting schoo*l and our *Gold Health Promoting School* award, 2011.

School dealing with bereavement

Historically, school staff dealt with bereavement issues, when they became aware of them, usually through an adult somewhere in the system noticing there was a problem or by parents, carers or pupils taking the initiative to inform a member of staff bereavement had occurred. The information would then be taken to the Principal Teacher of Guidance (PTG), who would then refer on to an external agency who may or may not be able to offer support. A survey of multi agency staff employed in the child care sector in Dundee, taken by Barnardo's *Rollercoaster Service* in 2005, showed that staff would refer on to a range of 23 different agencies. In Dundee, we are fortunate to have the *Rollercoaster Service* which has a specific remit for supporting children and young people affected by trauma, bereavement and loss, but even by referring on to *Rollercoaster*, such was the incidence of bereavement and demand for support there was a waiting time of two years before a pupil could be seen. Given that a number of years already had lapsed since the date of bereavement occurred this was an unacceptable time in the life of a child to wait for support. In the absence of any targeted support, many of these pupils would exhibit concerning behaviour resulting in school exclusions, non-school attendance, self-harming, angry outbursts etc. It felt like we were losing these pupils and they were becoming further isolated and entrenched in their adversity of unresolved grief.

It is useful to remember that bereavement affects all areas of a pupil's life, which can leave them vulnerable to poorer attainments or outcomes. Pupils often report a reduction in the ability to concentrate in class and there have been some cases where it has not been possible for pupils to sit exams. It is a huge challenge for pupils to grieve in a context of learning but it is also very challenging for staff whose responsibility it is to teach.

The STAGES model

By recognising the unmanageable waiting times and requests for bereavement support it was clear a more strategic approach was required to utilise existing human resources across whole school communities as well as building upon existing policies, guidance and procedures. For example, the revised Education (Support for Learning) (Scotland) Act 2007 where it recognises bereavement, as an

additional support need, and therefore there should be provision to make a plan of support. This could easily fit with GIRFEC and any number of pastoral care guidelines for staff to follow. The STAGES model was conceived initially by *Barnardo's Rollercoaster* then developed further in partnership with Dundee City Council Education Department. The partnership then extended to include the whole of Dundee City Council's other Departments and Health Services located within Dundee City. The STAGES model works by training and supporting school based and non-school-based staff to support pupils through the stages of grief and trauma.

One success criterion for STAGES was that families would feel supported throughout the child's school career and that staff would feel supported in their capacity to respond through training, consultations and working in partnership with a multi-agency team. The programme is delivered in conjunction with our Partner Agencies of Barnardo's, Dundee Education Psychology Service and Primary Mental Health team. The Craigie school cluster was selected as a Pilot area and a plan for implementing STAGES was agreed between the Headteachers of Craigie High School and associated feeder Primaries with Barnardo's being the main coordinator/contact.

The Pilot Project: STAGES at work

The first phase of STAGES was to consult with the school community – providing information to staff, pupils and parents and to identify the incidence of bereavement amongst the pupil population. At the same time training was provided to all school staff with specialised training being given to staff who volunteered to become Bereavement Support Volunteers (BSV).

Staff were asked to meet with a pupil to find out what their bereavement needs were and put these into a Bereavement Support Plan. Staff would then meet with the pupil regularly and work with them to talk through the issues facing them. A crucial means of establishing the pupil's desired outcomes is the use of solution focussed approaches to bereavement. A Bereavement Support Plan is created by the pupil with the support of the BSV where the pupil is able to indicate how they are affected by grief and trauma and what the steps to recovery will be. The session is followed up by a therapeutic letter summarising the meeting which is typed up by the BSV then passed to the pupils where they are encouraged to share with their carers. Scales are used to produce evaluation of the work by recording start and progress points in relation to a range of factors around grief. The BS Plan becomes a record of the progress of the pupil. The worker from *Rollercoaster* initially provided support to staff through the first few sessions with pupils modelling the type of discussions and therapeutic techniques useful to productive meetings. Following this the staff then could contact Steve Sweeney (*Rollercoaster*) whenever they felt they needed some additional support.

A programme of continuing professional development for staff was included in the school CPD programme. New staff were given the same input so that all staff have the same level of knowledge and all staff have the opportunity to become a BSV.

We are currently working with 40 pupils and all are being supported by a member of staff in school. The level of support varies according to the need of the pupil. A typical response to school finding out that a pupil has become bereaved is for the PTG to contact home, make an offer of a Bereavement Support Volunteer and then a programme of support put in place. Steve Sweeney from *Rollercoaster* will work 1:1 with the BSV to support them through the initial meetings until they have developed confidence to continue with the pupil by themselves. All staff are given information about the process and then offered the opportunity to become a volunteer where more specialised support and training will be given.

The project itself is moving forward with its own momentum and changes have occurred from the original plan. Constant evaluation and discussions with *Rollercoaster* have resulted in an evolving programme and this year a development has been the inclusion of Barnardo's to do a basic awareness session of grief and trauma through the PSHE programme to all pupils in the school. Contact is then made with the home of all pupils where parents and pupils are given the opportunity to opt into support.

Training

Training is now an integral part of the development of staff in Partner Agencies eg SCSS, Xplore and other agencies who support

our young people. It is important that all staff who work with pupils have the same training and where additional support is needed then the external partner are often the one in the best position to support the young person.

Safeguarding is a key message given in training to staff. Being able to develop a mindful awareness of the personal issues we each bring to our practice should help to inform our responses and interactions with pupil's who are bereaved. An interesting fact that has been thrown up is that in supporting young people staff have realised that they themselves have some unresolved issues surrounding their own bereavement experiences and this has led to support being offered to the staff. In acknowledging these issues, we are leading towards a happier workforce who are in a better position to support the pupils. So there is now a circular system, which not only provides a service for the child but also makes provision to support the staff who support the child.

Barnardo's are part of our Community Learning Partners who meet regularly to discuss the support we offer within our school community. A main focus for the future is that of sustainability and having a process in place which be delivered within the school community.

Knowledge

Staff and pupils are increasing their knowledge of the symptoms of grief and trauma and the technical aspects of how this comes into play. It could be argued this is even in keeping with the curriculum for excellence – where, for example, linking the use of biology and how the body and brain in particular has evolved and functions, and how this relates to behaviour within systems - all contributes to a better shared understanding of how we cope and manage the process of grief. There are knock-on effects for staff who are not BSVs but who have to achieve success in helping pupils learn. BSVs are now able to communicate with teaching staff about individual pupils who are bereaved and in what ways they can be supported in class to maximise learning. The pupils themselves are given strategies for recognising their own coping styles and how they can begin to self soothe in a classroom environment.

An important aspect of the work of STAGES is to help pupils become aware of what grief is. Almost 100% of pupils asked if they know what grief is say they do not know. An explanation of grief is given and the accompanying message that grief is normal. This is a huge relief to many pupils who previously thought they were "going off their heads." There is also an emphasis highlighted in training with regards to child development and how grief has to be revisited with each sequential stage as it brings new meaning with the new cognitive abilities of the child. For example, a young person of 14 years may have experienced their loss at age 6 and has been carrying around the belief that the death was somehow their fault. This comes from the magical and egocentric stage of development that the world centres round the child and somehow they are the cause of all events. The 14-year-old may need to connect with the 6-year-old child within to help resolve the matter of guilt and self blame. This can be achieved by exploring the facts about a death and have conversations about cause and effect. Where there are clearly cases rooted in far deeper traumatic histories, the STAGES consultant to each BSV will engage in a parallel plan where the more in-depth therapeutic work takes place out with school but the day-to-day support takes place in school.

Statistics

Statistics are compiled so that we can check the involvement of ethnic minorities, LAC etc accessing the support. These have been used to evaluate the success of the Pilot Project and there are moves to roll STAGES out to other schools across our own and neighbouring authorities. In fact some of our staff and pupils have been asked to speak at Conferences etc. Pupils are actively involved in the process. Pupils Council views are sought, pupils groups produce leaflets, posters etc. Pupils' comments (following an in-school evaluation) indicate the strength of feeling. A larger scale evaluation in the school is part of our future planning.

Cluster approach

The school works closely in developing a cluster approach and links with Primary schools form part of our transition planning where pupils who are receiving support in primary are allocated a supporter for their 2-day transition days so that they know the process will continue.

Work with the local college to ensure that they are notified (with the pupil's permission) that a pupil has been receiving the support and

that the guidance structure in college will offer bereavement support to the pupil if they wish to continue. The BS Plan belongs to the pupil and encouraged to see it as a working document recording their feelings. It also contains information relating to the grief curve.

S6 pupils are being given one day training programme on supporting younger pupils with bereavement issues so that they can become peer mentors and work individually or alongside staff to support some younger pupils with their issues and how to recognise. Group based interventions are being explored as a way of supporting young people. These sessions will be delivered by a mix of in school staff, Peer Supporters and external agency support.

Following the input from *Rollercoaster* and the PTG, it was identified that a particular class this year, who are experiencing difficulties across the school, had up to eight pupils who had experienced bereavement (some of them multiple bereavements in a short period of time). That knowledge put a different light on their issues across the school and specific interventions have been initiated to support them. One of the biggest challenges is to change the perception of death and encourage pupils to be able to speak to their parents about this matter.

The Impact of STAGES

Reduced exclusions for at least two pupils who were experience severe anger responses resulting in many instances of insolent and offensive behaviour (a key category for exclusions).

Improved attendance of just over 10% for almost all of the pupils who were experiencing attendance problems.

It is interesting that our culture shies away from death more than anything else. In addressing this and being open about it, our pupils know that dying is a normal part of life and that everyone will experience it. It is how we handle the grief that is important.

Pupils know we care. Some of the comments from pupils indicate that this was the most telling factor. Raising awareness amongst staff means that staff are perhaps more tolerant of some of the symptoms being displayed by pupils.

However, the main focus now is towards sustainability and how the programme can be progressed in schools.

Evaluation of the Pilot Project

STAGES is being evaluated by Dundee University (Jindal-Snape & Sweeney, 2011), and initial evaluations show an improved awareness, confidence and skills and practice among participating staff. Young people are also reporting the positive outcomes from the support available in school as a result of the staff development and training.

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Stickers: A popular health promotion resource, but do they have any effect?

Print materials such as brochures, booklets, pamphlets, posters and stickers (an adhesive label or notice, generally printed or illustrated) are frequently used as health promotion resources in order to improve knowledge and promote healthy attitudes and behaviours (Holt, 2000; LaPier, 2000; Paul, Redman, & Sanson-Fisher, 2003). Printed items form the basis of many social marketing interventions as they provide a platform for providing targeted, stylised information on mass (Shieh & Hosei, 2008; Farmer et al., 2008; Holt, 2000; Horner, Surratt, & Juliusson, 2000). Social marketing collateral such as stickers, brochures and so forth, are portable (can tuck in a pocket, stick to a window), malleable (can be altered, drawn on) and static (the message remains constant). For at least these reasons, health promotion has drawn upon marketing methods to shape the views and perceptions of consumers (Vallance et al., 2008, Kroeze, Oenema, Campbell, & Brug, 2008; LaPier, 2000). However, the evidence in favour of behaviour change as a result of social marketing messages alone is inconclusive (Farmer et al., 2008; Lancaster & Stead, 2005; Paul et al., 2003).

Despite the arguably small benefit, the use of print materials may play a reinforcing (rather than catalytic) effect, compared with no material at all (Lancaster & Stead, 2005). This perspective has driven the continued development and distribution of social marketing resources (Campbell, Goldman, Boccia, & Skinner, 2004). However, reviews of print materials' effectiveness have focused on brochures, booklets, pamphlets and posters, with almost no literature on the effectiveness of stickers, despite their frequent use as part of health promotions campaigns (Berhane & Pickering, 1993; Horyniak et al., 2010; McDonnell, 2010). For example, a 2005 campaign aimed at increasing injecting drug users' awareness of overdose risks involved the distribution of posters, wallet cards and stickers featuring several key messages (Horyniak, et al., 2010). An evaluation of the campaign revealed that needle and syringe program clients considered the stickers to be the most useful resource. However, most of the other campaigns which have used stickers as part of their printed media materials do not evaluate the effectiveness of the stickers in particular, but rather address the effectiveness of all printed materials as a general category.

The current study assessed the reach and perceived effectiveness of health education resources developed as part of an intervention targeting Māori and Pacific parental smoking behaviour and attitudes to reduce smoking initiation among intermediate (middle) school children in South Auckland, New Zealand. The intervention utilised a variety of health education resources, including a DVD ("Our Choice, Their Future"), a website and a variety of print materials such as smokefree stickers, promotional flyers and newsletters.

Method

The data reported in this paper were drawn from the Keeping Kids Smokefree study (KKS) - a quasi-experimental intervention from 2007-09. The rationale, design and implementation for KKS have been explained elsewhere (Glover, Scragg, Nosa, Bullen et al., 2010). Briefly, KKS involved four South Auckland schools for children aged between 10 and 13 years from

families predominantly of lower socioeconomic status and mostly of Māori and Pacific Island ethnicities. Two schools received the intervention, while the other two acted as controls. The intervention used a variety of educational and health promotion events which included: smokefree art competitions that included the design of stickers, an informative DVD which starred local celebrities urging parents to take practical steps to reduce their children's risk of taking up smoking, and regular communication with parents.

In September 2008 and in June 2009, letters were sent home to all parents at the two intervention schools (N = 934). This intervention was the cessation support component of the intervention and offered information on the free national phone Quitline and on free cessation support available from a local Māori health provider. Enclosed with the letter were two stickers, (Figure 1 and Figure 2 below), developed from student artwork entered in the art competitions held in year 1 (2007) and year 2 (2008) of the intervention. The annual art competition was designed to engage students in the intervention and to stimulate their thinking about smokefree themes and messages. The winning artworks were used in KKS questionnaires, newsletters and other communication and promotional materials. Stickers were developed from winning artworks and were sent to parents promoting a smokefree house, a smokefree car and a smokefree New Zealand. One intervention School's families received at least one sticker designed by a student and the other intervention School's families another designed by a student. In Year 2 (2008) 1,275 stickers with associated letters were sent to parents of Year 7 and Year 8 students. In Year 3 (2009) 547 stickers with letters were sent to Year 7 parents only, as Year 8 parents had received them in the prior year.

Supplementary questions

In both 2008 and 2009, supplementary questions were included in the KKS parents' follow-up questionnaire asking about awareness of KKS activities, such as the 'Sponsor to Win' quitting competition and the use of KKS educational resources: the newsletters, the DVD, the KKS website and the smokefree stickers. Specifically parents were asked: "Do you remember receiving any of these stickers made from student's artwork?" They could tick "Yes" or "No". The second question was: "If so, what did you do with them?" The respondents could answer either "Displayed in house or car", "Lost or thrown out" or "other". If they responded with "other", there was a free text space where they could write an answer. The final question was: "Are these stickers a good way of labelling your house/home/car smokefree?" Response choices were: "Yes", "No", "I like them but people just ignore them" or "other comments". Again, there was a free text space to write comments. A newsletter was also sent out to parents in 2008. A follow-up question asked whether they remembered seeing it and, if they had, did they read any part of it?

Figure 1. Example of a sticker displayed in the home

Figure 2. Example of a sticker displayed in the car

Statistical Analysis

The results from the years 2008 and 2009 were combined into one dataset so that any discernable patterns would be more apparent. SAS software v 9.2 (Cary, NC, USA) was used for data merging and analysis. A p-value of less than .05 was deemed significant. We used PROC FREQ with the Chi-square test of equal proportions option to test the hypothesis: "Are these stickers a good way of labelling your house/home/car smokefree?" However, we combined "I like them but people just ignore them" with those who answered "No" because we were interested in actual outcomes rather than any like or dislike of the stickers for aesthetic reasons. This gave 608 participants who answered "Yes" and 117 answered "No". We also applied the Fisher Exact Test when necessary (i.e. one or more cell counts less than five) invoking Monte Carlo simulation to speed up calculation of the p-value.

Response rate

The questionnaire was completed by 305 intervention school parents out of 638 (48%) in Year 2 (2008) and 629 out of 1,129 parents (56%) in Year 3 (2009) - a response rate of 53%. Twenty-five parents answered the survey for both years. We included only their latest (i.e. 2009) response.

Results

Of the 934 parents who completed the follow-up questions about the stickers (2008-2009 combined), the majority were Pacific 398 (43%) followed by Māori 360 (39%), European/Other 94 (10%), Asian 42 (4%) and Indians 40 (4%). Just over two thirds of respondents remembered the stickers (N = 638, 68%) and 503 of them (81%) displayed them in their house or car (see Table 1 below). All ethnic groups found the 'smokefree' stickers memorable (N=934). No particular ethnic group was more likely to recall receiving them than any other group $\chi 2(4,N=934)=4.85$, p=.30. Pacific people (87%) were more likely to display the stickers in their house or car than any other ethnic group (Māori 77%, Asian 77%, Indian 77%, and European/Other 72%) Fisher's Exact Test using Monte Carlo simulation (N=621), p=.022.

Free text responses indicated that the fridge and the front door were common sites to adhere a sticker. Ten percent (N=62) thought the stickers had been lost or thrown out. Free text explanations reported that children placed the stickers on clothes they were wearing that day, on their school books, their school or bedroom furniture or they were ripped up or not delivered home at all. Nine percent (N=56) had used the stickers in other ways, for example, the stickers were given away to family or friends who smoked, or taken to work. Seventeen did

Table 1. Recall, Use and Perception of Stickers (2008 and 2009) by Ethnic Group.

	Total	Māori	Pacific	Euro /other	Asian	Indian
Remembered receiving stickers						
Yes	638 (68%)	236 (66%)	281 (71%)	60 (64%)	30 (71%)	31 (78%)
No	296 (32%)	124 (34%)	117 (29%)	34 (36%)	12 (29%)	9 (22%)
Sticker use[1]						
Displayed in house/car	503 (81%)	179 (77%)	237 (87%)	41 (71%)	23 (77%)	23 (77%)
Lost or thrown out	62 (10%)	28 (12%)	16 (6%)	9 (15%)	4 (13%)	5 (17%)
Other	56 (9%)	25 (11%)	18 (7%)	8 (14%)	3 (10%)	2 (7%)
Stickers good labelling method						
Yes	608 (82%)	232 (83%)	269 (85%)	56 (79%)	21 (62%)	30 (86%)
I like them but people just ignore them	82 (11%)	26 (9%)	35 (11%)	7 (10%)	10 (29%)	0 (0%)
Other	12 (2%)	2 (1%)	4 (1%)	4 (6%)	1 (3%)	4 (11%)
No	35 (5%)	20 (7%)	9 (3%)	4 (6%)	2 (6%)	1 (3%)

Note. Counts with column percentage shown in brackets. Column percentages may not add up to 100% because of rounding errors.
1. There were 17 missing values

not respond to this question. Those who recalled the stickers also reported that they were useful in labelling areas as 'smokefree' $\chi 2(1,N=725)=332.53$, $p<.001$. As one participant wrote:

"*Of course these stickers are a great way of encouraging people who smoke to keep it out of our homes, cars, schools for the safety of our kids, our friends and our families.*"

Some participants thought the stickers were a good reminder for their children, for instance one participant wrote:

"*As warning signal to our children every day not to smoke.*"

Some participants held a contrary position, that is that they didn't like to put stickers on their house or car, or they said the stickers were redundant since they did not smoke or all visitors knew the house was smokefree and respected that without a sign being visible. One participant said that they already had both Māori and English language smokefree signage.

Compared to other resources sent home for parents, the smokefree stickers were similarly disseminated. The DVD was the most likely to be recalled, with 72% (661 out of 921) of respondents saying they had received it. Of those that received the DVD 69% (458 out of 661) reported to have watched it. The KKS newsletter was also a highly recalled resource with 71% of respondents indicating that they remembered seeing it, and of these, 85% claimed to have read at least some of it. About 10% of respondents had accessed the KKS website and 55% had seen a notice about the "Sponsor to win competition".

Discussion

The student-designed smokefree stickers were a serendipitous success arising from the KKS intervention. They were originally designed to simultaneously engage and maintain contact with parent, while also espousing the smokefree message to children. The sticker designs had intrinsic integrity as they were designed by students for students, with the winning student art work used in a meaningful way - on the website, in the questionnaires, in the production of greetings cards, stickers, and a back of a bus advertisement - enhanced the reward for the winners. It was also a way of giving back to the schools and community for their participation in KKS. This is an important Maori and Pacific cultural requirement – to reciprocate and return benefits to research participants and their communities in recognition for what they were giving us (Smith, 1999).

The results from our analysis of reach and perceived effectiveness of the stickers found high acceptability and use of the product, particularly to delineate smokefree areas. The use of student artwork personalised the message. Furthermore, the stickers were likely to be aesthetically acceptable as the students were encouraged to incorporate culturally salient design elements to ensure appeal to the largely Pacific and Māori target audience. Design characteristics (such as the repeated use of bright colours, an easy to follow format and illustrations) may have increased appeal and recall of this resource (Glover, Bullen et al., 2009). For Māori and Pacific groups, research has shown that the incorporation of cultural content and design elements increases levels of acceptability (Eyles et al., 2009; Koloto, 2005). Resources which are easy to read and understand are more likely to deliver the message with greater reliability (that is, less likely to be misinterpreted) and therefore increase salience (Vallance et al., 2008). The KKS stickers featured familiar language, minimal text and engaging imagery (Hill-Briggs et al, 2008).

For a school- and family-based intervention aimed at lower socio-economic indigenous and mixed minority ethnic groups, KKS achieved high participation rates at baseline and follow-up survey points (baseline response rate 83%). Maori have significantly higher smoking rates than all other ethnic groups in New Zealand. Oversampling for Maori ensures that we are able to detect differences between ethnic, and also socioeconomic status, two key determinants of smoking uptake.

However, the study has some limitations. Firstly, there was no randomisation of provision of stickers to respondents. The stickers were bundled with other strategies being delivered as part of the intervention and effects of each component cannot be determined separately. This analysis was observational in that we supplied stickers and asked about their use, but we can not in any way infer effectiveness of the stickers to support behavioural change. The families in the study already had high rates of smokefree homes (Glover, Scragg, Nosa, McCool, Bullen in preparation). Rather than

promoting behavioural change, the stickers may have been more useful at branding KKS which was important for promoting participant retention. (Glover et al, 2009). Our study provides encouraging evidence that in the face of growing ambivalence towards the use of social marketing for smoking prevention, the use of the sticker, as messenger, was a cost effective means of engaging young people in smokefree environments. Parents appreciated the use of locally developed resources that spoke the language, used the colours and imagery of their young. This methodology is counter to standardised smokefree resources which reflect the mainstream New Zealand smokefree branding and insignia.

Our findings from this analysis invite further questions; specifically, we wonder whether there is a significant difference between the generic and bespoke stickers. And second, are stickers that incorporate content and design characteristics identifiably belonging to local or ethnic cultures more valued and thus kept and used more than stickers using graphic design elements typical of the dominant-culture? We would encourage further research into the relative impact of indigenous imagery and colours on smokefree social marketing and media messaging.

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What do lunchtime staff think about children's eating habits following a healthy eating intervention?

School lunchtime is an area of nutritional concern and evidence suggests that children do not make healthy choices at lunchtime and that school meals do not meet nutritional requirements (Epstein et al. 2001; Gould et al. 2006; Wood and Harper, 2008). This has important implications for a child's health since for some children, especially those from disadvantaged backgrounds, the school lunch maybe the only substantial meal consumed over the whole day (Colquhoun et al. 2008). Therefore understanding what influences children's consumption in the school meal setting is essential in modifying children's eating habits.

Influence of role models on children's eating behaviours

In the home environment, parents, particularly mothers, play a crucial role in influencing children's food habits (Longbottom et al. 2002) and a positive relationship exists between parents' attitudes, food preferences, and dietary intake and that of their children (Fisher et al. 2002; Patrick and Nicklas, 2005). This parental influence will, of course, extend to the school; for example, children who are not provided with healthy options at home are less likely to choose healthy options at school (Young, Fors & Hayes, 2004). However, other adult models may also influence children's food choices at school. For example, Hendy and Raudenbush (2000) found that teachers were effective as positive role models when they showed enthusiasm for the fruit or vegetable they were consuming. Furthermore, the influence of strategies such as verbal encouragement and praise by catering staff and lunchtime supervisors has also been noted (Schwartz, 2007). Lunchtime staff would seem to be especially well placed to shape and sustain children's healthy eating behaviours in the dining hall. However, Moore et al. (2010) found that in primary schools lunchtime staff worked under pressure with little time to encourage children's eating habits. This was particularly true in schools where halls were used for teaching as well as eating, or where limited seating capacity meant that children could not all be seated at once. For example, the typical lunchtime experience for children is to be fed and moved into the playground as quickly as possible so that their place can be reused, or cleared away ready for the hall to be used for afternoon activities.

Recent government policy has targeted school-supplied meals as a way of improving children's nutritional intake (Evans and Harper, 2009). This focus was supported by evidence that school based interventions may be effective in increasing children's consumption of healthy foods such as fruit and vegetables (Wood and Harper 2008). One such intervention is the Food Dudes healthy eating programme, a school based intervention designed for use in primary schools to increase children's consumption of fruit and vegetables. The approach, which uses rewards, positive role models and repeated taste exposure, has shown promising results, particularly in the short-term (Lowe et al, 2004). The intervention describes itself as taking a whole school approach to educating children about healthy eating, i.e. one that requires the involvement of all staff, including teachers, teaching assistants, catering and lunchtime staff (Parsons et al. 1996). Food Dudes recognises the role of lunchtime staff; however, to date, neither the potential

contribution in changing children's food choices in the context of the programme or the possible impact of the intervention on staff attitudes and beliefs have been assessed.

Study aims

The aim of the present study was to explore the beliefs of lunchtime staff about children's food preferences and eating habits, as well as their own role in encouraging healthy eating in the school dining hall both prior to and following the implementation of the Food Dudes programme.

Method

A questionnaire survey of lunchtime staff was carried out as part of a larger evaluation of the Food Dudes Programme. Fifteen UK primary schools located in the West Midlands took part in the study: eight schools received the Food Dudes intervention, and seven were matched control schools which received no intervention. The Food Dudes programme consists of an initial 16 day intervention phase during which children watch a series of DVD episodes of the Food Dudes adventures. The Food Dudes are four super-heroes who gain special powers by eating their favourite fruit and vegetables that help them maintain the life force in their quest to defeat General Junk and the Junk Punks. The Dudes encourage children to 'keep the life force strong' by eating fruit and vegetables every day. Class teachers also read letters to the children from the Food Dudes to reinforce the DVD messages (see Lowe et al, 2004) for a full description of the rationale behind the intervention).

Participants

Questionnaires were completed by 14 lunchtime personnel from intervention schools and 13 from control schools. Within the overall sample, 25.9% were employed only as lunchtime supervisors, 20.4% were cooks and 22.2% were kitchen staff, 3.7% of supervisors were also teachers and 27.8% were also teaching assistants. All respondents were female and a large proportion (80%) were parents of children attending the school at which they worked.

Measures

Lunchtime staff perceptions of children's eating habits were measured using a purpose designed self-completed questionnaire. These measures used a 5-point Likert scale (1=strongly agree to 5=strongly disagree) and comprised three sections as follows:

Section A: Beliefs about children's food likes and dislikes

Respondents were asked whether or not the children in their school liked a range of foods including fruits, vegetables, and foods high in fat and/or sugar (e.g. chocolate, cakes, biscuits etc.)

Section B: Children's willingness to change eating habits

These questions concerned perceptions of the children's willingness to try different fruit and vegetables and make healthy choices.

Section C: Encouraging Health Eating Choices

Lunchtime staff were asked to rate the extent to which they encouraged children to make healthy choices, and to choose different fruits and vegetables.

Procedure

The same procedure was followed in intervention and control schools. All questionnaires were completed on school premises, once the lunchtime service was over. Questionnaires were distributed for self-completion at baseline and 12-month post-intervention. Ethical approval was obtained from the University of Worcester Institute of Health and Society Ethics Committee and informed consent was obtained from all participants. Questionnaire responses were analysed using SPSS version 19.

Results

Lunchtime staff beliefs about children's food likes and dislikes

Lunchtime staff were asked to consider which foods children liked or disliked from a range of fruits, vegetables, and foods high in fat and/or sugar. At baseline 75% of staff in the intervention schools agreed that children liked vegetables, compared to 77.36% in control schools (see Table 1). At 12-month follow-up, 76.2% of staff in the intervention schools agreed that children liked vegetables compared to only 69.2% in the control schools. A similar pattern

can be seen with regard to beliefs about children's liking of fruit. At baseline 78.6% of staff in the intervention schools agreed that children liked fruit, compared to 92.9% control schools (see Table 1). At 12-month follow-up however, 92.3% of staff in the intervention schools agreed that children liked fruit compared to only 76.9% in the control schools. Beliefs about children's liking of fatty and sugary foods however remained consistently high throughout the study both in control and intervention studies.

Table 1: Percentage of lunchtime staff agreeing that children liked fruit, vegetables and foods high in fat and sugar

	Baseline		12-month follow-up	
	Intervention	Control	Intervention	Control
Fresh Fruit	78.6%	92.3%	92.9%	76.9%
Vegetables	75%	77.36%	76.2%	69.2%
High in Fat and/or sugar	100%	100%	95.1%	100%

Children's willingness to change their eating habits

Lunchtime staff were also asked whether they believed children were willing to make healthy choices at lunchtime, eat fruit and vegetables and try new foods.

At baseline 85.7% of lunchtime staff in the intervention schools agreed that the children were making healthy choices. This decreased to 71.4% at 12-month follow-up. However, in the control group, scores increased from 62.9% at baseline to 100% at 12-month follow-up.

In contrast perceptions of children's willingness to try fruit and vegetables at lunch time decreased from 85.7% at baseline to 78.6% at 12-month follow-up in the intervention schools. A similar pattern was seen in control schools: perceived willingness of children to try fruit and vegetables also decreased between baseline and 12-month follow-up. At baseline 83.3% of lunchtime staff agreed that children were willing to try fruit and vegetables. This decreased to 75% at 12-month follow-up

Lunchtime staff perceptions of children's willingness to try new foods at lunch time remained constant at baseline and 12-month follow-up (71.4%) for the intervention group. However, in the control group this increased from 62.9% at baseline to 75% at 12-month follow-up.

Encouraging Health Eating Choices

Lunchtime staff were also asked whether they encouraged the children to make healthy choices at lunchtime, to eat fruit and vegetables and to try new foods. At baseline, 92.9% of lunchtime staff in intervention schools agreed that they encouraged children to make healthy choices and this increased to 100% at 12-month follow-up. In control schools, 100% of lunchtime staff agreed that they encouraged healthy choices at baseline and 12-month follow up.

All lunchtime staff in the intervention schools (100%) agreed that they encouraged children to try new foods at lunch time and this remained constant at baseline and 12-month follow-up. In the control schools, this figure was slightly lower at baseline (92.3%) but this increased to 100% at 12-month follow-up.

All lunchtime staff (100%) in both intervention and control schools agreed that they encouraged children to try fruit and vegetables at lunch time at baseline and 12-month follow-up.

Discussion

This exploratory study examined lunchtime staff beliefs concerning children's eating habits in the context of the Food Dudes programme. Lunchtime staff were generally positive about children's liking of fruit and vegetables; over three-quarters of respondents in both intervention and control schools believed that children liked vegetables, and this remained at a high level a year later. The majority of staff believed that children liked fruit and this is consistent with what is known about children's food preferences (Edwards and Hartwell, 2002). However, all staff agreed that children liked fatty and sugary foods such as chips, chocolate and cake. Some changes were observed in these beliefs over time. In the intervention schools, an increase was seen in the proportion of staff agreeing that children liked fruit and vegetables, while a decrease was seen in the proportion that believed children liked fatty and sugar foods. In comparison, the proportion of staff in the control schools who believed children liked fruit and vegetables decreased, while beliefs about fatty and sugary foods remained constant at 100%. Although changes were quite small, it is notable that the pattern is

consistent and in line with the aims of the Food Dudes programme, and may suggest the intervention message influenced staff beliefs about children's likes and dislikes.

In contrast, however, the proportion of lunchtime staff who felt children were making healthy choices at lunchtime and eating fruit and vegetables decreased in intervention schools, and no change was seen in perceptions of children's willingness to try new foods. This suggests that, while after the intervention staff were more likely to believe that children liked fruit and vegetables, they had not noticed any change in behaviour. In control schools, the pattern was different. The proportion of staff reporting children making healthy choices and trying new foods increased, yet there was also a decrease in the proportion who believed children were choosing fruit and vegetables. This suggests that, for these supervisors', fruit and vegetable consumption may not be linked to healthy choices and warrants further investigation. There is evidence that although the term 'healthy eating' is well known by children, it is not well understood; for example it is often confused with a low-calorie diet (McKinley et al. 2005). It seems more than likely that this is as true for adults as well as children. Clearly, if lunchtime supervisors do not understand what the term 'healthy eating' means, then they will not be able to guide children appropriately. Thus even though the majority of staff in both intervention and control schools believed they encouraged the children to make healthy choices at lunchtime, exactly what this means needs further investigation.

While this study is limited by the small sample number, subtle differences in intervention and control schools are evident over time. There is some indication that the intervention may have changed staff attitudes, although it is unlikely that this reflected changes in children's behaviour. It is more likely that the programme message - that fruit and vegetables are good - had made an impact on staff. This is not surprising given that the majority of lunchtime staff were also parents of children attending the schools where they worked. Thus it may be that some understanding of the programme and its aims came from parental involvement in the scheme. It is also clear that lunchtime staff do see themselves as able to influence children's eating. However, the study findings suggest that the term 'healthy eating' may not be fully understood and a more in-depth enquiry using a qualitative methodology is necessary.

Conclusion

School involvement in the programme seems to have a positive impact on staff beliefs about children's eating choices and it appears that staff already believe that their role includes encouraging healthy eating. This positive finding needs to be built upon. Clarification of supervisors' understanding of healthy eating, using a qualitative approach would be useful to explore this further.

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Should we be giving children choices about their health?

Adults involved with caring for the health of children are making often well-intentioned decisions on behalf of the child, but to what extent is the child consulted and what are the external pressures that shape the final decision? Although legally children have the right to be consulted about decisions concerning their welfare, the limits on this consultation differ depending on the health issue under consideration and / or the agencies involved, all of which potentially affect the child's health as a consequence (Hickey and Lyckholm 2004).

This complex issue therefore raises some interesting questions. Should children be given complete freedom of choice about decisions affecting their health? Why are we comfortable with legislation preventing children from buying alcohol until they are 18 years old, but are less willing to intervene with food choices? Parents, schools, health professionals and governments currently dictate what health choices children are given and which they are not, but is this fair? If children are given freedom of choice about their health, do they have true autonomy or is it just a façade? - for example, a child may wish to be more physically active to help their weight management, but find themselves unable to walk to school each day due to the lack of safe walkways along the route. What tools do we have to bring about purposeful and long-lasting change in children's health behaviours, but more importantly how effective are these tools and are we just persuading the children to accept the adult view? Are children mature enough to make informed health decisions, but how do we decide if they are and on what basis do we make this judgment? Finally what rights of autonomy over health choices do children have enshrined in national and international law, who sets these boundaries and why?

University of Exeter's Grand Challenges

Tackling these contentious issues lie at the heart of the Grand Challenges project running at the University of Exeter in the summer of 2013. Over the course of the eleven-day project University students will be challenged to provide their answer to the difficult question of "Should we be giving children choices about their health?" - after considering the views of leading experts from the fields of child health, law, social marketing, public health and developmental psychology. The complexity of the issue of child health is no better exemplified than with the work of the Children's Food Trust (CFT) addressing the subject of the food children eat in school and the barriers/ challenges that have been encountered with pushing forward this agenda. This story and the experiences were described by Judy Hargadon, Chief Executive of the CFT, at the introductory lecture of the Child Health Grand Challenge this autumn and is summarised below.

Food in school

School is the place where we educate young people to maximise their potential for a fruitful adult life, giving them knowledge, skills and good habits to see them through. Schools take children on a learning journey, heavily directed early on with greater chances for independent decision making later in school life. But as Jamie Oliver pointed out, in his TV shows and the *Feed Me Better* campaign, as a society we were failing our younger generation by allowing our schools to feed them heavily-processed food high in salt, fat and sugar. The message being received by children

from schools was that it's OK to eat such foods all the time. Combined with a generation of parents who do not really understand food - having not been taught to cook themselves - and a well-reported lack of physical activity and excessive time spent in sedentary behaviours (Ruiz, Ortega et al., 2011), this message has contributed to the current childhood obesity crisis. It was time to do something. Government responded quickly, setting up a review panel who published the report 'Turning the Tables' (School Meals Review Panel, 2005) and a series of significant recommendations. The School Food Trust, now the CFT, was set up to make these changes happen. Not an easy task. Why?

Behaviour change

There is a growing understanding about behaviour change, especially in relation to doing what is good for you, as opposed to what is easy to do. If, as adults, we find it hard to choose a balanced healthy meal, even when we know the facts, how much harder is it for children? We know that it is hard for them to think about long term consequences of their actions – this is a skill we develop with age. Yet in this era of advertising and marketing, young people expect variety, and the chance to make choices which both reflect and project their self-image. So the challenge was to devise a system that allowed for choice but steered young people towards better food and better food habits - a change in behaviour for young people, but interestingly a bigger change for the adults who influence what they eat. We found an intricate web of activities that influence what young people eat – a whole system – that needed to evolve, just as is the case in most significant changes.

The first challenge was what degree of regulation should underpin the changes we needed to make. Left entirely to market forces, cost and price had become the dominating factor and children were being fed the cheapest possible food in many places - highly processed, requiring no more preparation than opening a plastic bag from the freezer and heating the products to serve. Some schools and caterers that cared about food – being the key phrase - had not followed that route and had shown that children are indeed happy to eat healthy food, but most had not. So some form of baseline was required to ensure adults who were feeding children did so to an agreed quality standard, and so a series of food and nutrition standards were developed to form a basic legal framework. These had to be robust but simple to operate – harder than it sounds.

The burger challenge

It is possible to make a very healthy burger (good for protein), and put it in a wholemeal bun (good for fibre) and add some salad (good for vitamins) - so clearly burgers should not be banned in schools. But should children eat a burger for lunch every day? No – for two reasons. Firstly: a varied diet is essential to ensure that our nutritional requirements are met. So the regulations had to be designed to require schools to offer a variety of foods over the week. And two, if children were told that their school was offering healthy food, and they could have a burger everyday, they might think that burgers were always healthy and hence eat them every evening too – often from high street take-aways, very few of which produce a healthy version. Hence the decision to prescribe how often you can serve burgers and similar products were included in the legislation.

There then followed a major change programme to alter the attitudes of many adults: the food suppliers and retailers - used to marketing what they liked to young people and indeed using children to engage adults, such as in the many chains that offer children's 'boxes' with items to collect; the caterers, used to serving processed food; school cooks, who had lost the ability to cook for large numbers; school builders and designers, to create kitchens where staff could actually cook, and dining rooms where young people wanted to eat; head teachers, who had mostly assumed that catering was something the local government came in to do and not really a key element of school life; and teachers and parents – key role models in a young person's life, many of whom eat very poorly and had no idea about good nutrition.

We used a whole range of activities to change behaviours and attitudes, involving social marketing techniques: in essence, applying classic marketing approaches which influence our purchasing behaviours to influence actions to lead to changed social outcomes – i.e. children eating better. Underpinning this - and in many ways still unresolved - is the question: at what age should young people be allowed to

make food choices for themselves? There are those that argue for supplying healthier food alongside the sticky buns and chocolate bars and leaving the choice to the child. Others say that school is a place to steer good learning and good habits: after all we don't allow children to miss their maths lessons, behave badly to peers and teachers, or smoke in school. At what stage in our development are we old enough to make "good" choices about food, ones that accommodate short-term need with longer term impact?

Making a difference

In the meantime, it is worth noting that the standards and changes are making a difference to what children eat. Robust research into changes in food consumption in primary schools (Children's Food Trust - Primary school food survey, 2009) and secondary schools (Children's Food Trust - Secondary school food survey, 2011) has shown that while there is still a way to go, children who have school meals are eating far less salt, fat and sugar in school; more fruit and veg; and more water instead of sugary drinks. Menus are healthier, and the confectionary, crisps and sugary pop have almost completely disappeared. We have shown that learning behaviour improves after a good lunch experience (Children's Food Trust, 2009). Any parent or teacher will tell you this is true, but our studies have shown that children are more focused and able to learn in the afternoons after a healthier lunch in a more pleasant dining environment. In primary schools, children are three times more 'on-task' with their teachers after a better lunchtime; in secondary schools those behaviours increase by around 18%. Finally, recent work, reviewing a pilot to give meals for free to all children in primary schools in two boroughs, also showed an improvement in pupils' attainment. Children in the pilot schools made up to two months more progress than their peers without the free meals, and the improvement was particularly strong amongst pupils from less affluent backgrounds. Interestingly, the children were also less likely to report eating foods like crisps, whilst parents reported positive effects on fussy eating. Food for thought!

As can be seen from the experience of the CFT, there are a number of competing influences, differential agendas and interests that need to be reconciled in order to achieve meaningful and structural change over issues of child health. Regardless of the specific health issue, developing an awareness of this complexity, an understanding of the importance of empowerment and disenfranchisement and sensitivity towards sometimes divergent opinions, lies at the heart of educating the next tranche of young people entering the health professions.

It is these very matters that the students at the University of Exeter will be faced with next summer (2013), so that they can answer the key question of "should we be giving children choices about their health"?

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