Proposing a model for promoting Children's Health in Early Childhood Education and Care Settings

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Proposing a model for promoting Children's Health in Early Childhood Education and Care Settings

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Abstract

This pilot study was conducted in one early childhood preschool nursery setting in an area of high deprivation in England to explore the under-researched area of how practitioners promote the health of children. The research used an original tool, *Child Health Promotion: A Toolkit for Early Childhood Education and Care Practitioners*, containing a 5 Step Programme as a model to guide practitioners in identifying and implementing a health promotion activity. The findings will help to set the onward agenda for a larger scale study which will foreground the voices of practitioners and highlight the role that ECEC practitioners can play in promoting the health of children.

KEYWORDS

child health, early education, health promotion

INTRODUCTION

This article foregrounds the role that early childhood education and care (ECEC) practitioners can play in promoting young children's health. It proposes a potential model for development and reports on its piloting. Many children experience poor health because of preventable conditions. Obesity, inadequate nutrition, poor mental health and infectious diseases cause concern about the state of children's health in the UK (Royal College of Paediatric & Child Health [RCPCH], 2017). The legacy of such conditions can impact on children's health, well-being and education across childhood and the lifespan. Children living in poverty are more likely to experience poor health. The Early Years Foundation Stage (EYFS) (DfE, 2017), the statutory framework which sets the standards for care and education for children aged birth-5 years in England, includes several health-related aims.

Practitioners in ECEC settings are ideally placed to work with children and their families to promote children's health; many have prolonged contact with children over several years, with almost daily contact with their parents and families, and consequently can positively influence children's health. Previous studies exploring health promotion in ECEC settings are few. Examples include: promoting babies' mental health in ECEC settings in Sweden (Haraldsson et al., 2017); perspectives on professional learning in relation to promoting young children's mental health in Australia (Askell-Williams & Murray-Harvey, 2016); and preventing childhood obesity in partnership with health professionals (Skouteris et al., 2017). However, little is known about health promotion activities in ECEC settings in the UK (BERA/TACTYC, 2017) or how practitioners conduct the health promotional aspect of their role. A review of research evidence found a 'paucity of research on health promotion within early years settings' (BERA-TACTYC, 2017, p. 64).

This article explores the potential for ECEC settings to influence children's health in the UK. It discusses the orienting ideas underpinning a proposed model for development, drawing on Bryk et al. (2010) Networked Improvement Model and Arbour et al.'s (2015) continuous quality improvement (CQI) method. These ideas informed the development of an original tool, *Child Health Promotion: A Toolkit for Early Childhood Education and Care Practitioners*, containing a 5 Step Programme for Early Childhood Health Promotion. The toolkit was piloted in a small-scale exploratory study conducted in an ECEC setting in an area of high deprivation to see how practitioners might promote the health of children in their setting. The co-researchers selected a health promotion intervention aimed at improving children's eating habits. In this article, we examine: the nature and scale of the current challenges in promoting children's health; orienting ideas to guide thinking and action regarding successfully promoting child health; findings from a pilot study to trial a new model for promoting child health in ECEC settings; and proposals for next steps in promoting child health in ECEC settings.

NATURE AND SCALE OF CURRENT CHALLENGES IN PROMOTING CHILDREN'S HEALTH

Under Article 24 of the United Nations Convention on the Rights of the Child (UNCRC 1989), all children have the right to the highest attainable standard of health and healthcare services. Yet, attaining the highest standards for all children remains challenging even for wealthy nations.

Health Promotion is defined by the World Health Organisation (WHO) as

> … the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions (2018)

In the high-income nations of the UK, the quality of life of many children is undermined by preventable health conditions (RCPCH, 2017), which can be categorised as communicable and non-communicable. Communicable diseases, caused by infections are passed on by microorganisms, such as viruses, fungi, and bacteria. The impact on children of such conditions can be minimised, and health can be promoted, by a range of activities such as teaching children about good handwashing techniques and by promoting good levels of self-care. Other health promoting activities include immunising children against preventable, infectious diseases. Since the middle of the last century, a new set of health conditions that are preventable and are non-communicable have emerged (Blair et al., 2010) including dental decay, obesity and mental health problems. Childhood obesity is of global concern with 41 million obese children, most of whom

live in low-income countries (World Health Organisation [WHO], 2019). From a global perspective, contributory factors to increased levels of obesity include lack of access to affordable and nutritional food. (WHO, 2019); an increase in urbanisation which has reduced the safe spaces available for children to play outdoors (WHO, 2019) leading to children being less physically active; and young children's engagement with technology, leading to increased levels of screen time and less physical activity (Viner et al., 2019). In the four nations of the UK childhood obesity is a major public health problem 24% of 4–5-year olds are overweight (RCPCH, 2020).

Children's mental health is also a global concern, the World Health Organisation state that between 10%–20% of children are reported to have a mental health condition (WHO, 2021). In England in 2017, the Royal College of Paediatrics and Child Health reported that 10% of children were diagnosed with a mental health condition. The figures are similar in Scotland and Wales whilst in Northern Ireland, it has been stated that more than 20% of young people suffer from 'significant mental health problems' by the time they reach age 18. Poor health in childhood can have implications for individuals across the lifespan. For example, 80% of obese children will become obese adults (RCPCH, 2017). Increasing numbers of children are also being diagnosed with mental health conditions, the most common being conduct disorders, anxiety and depression. Many children display symptoms of mental health conditions but are not formally diagnosed, (Blair et al., 2010) highlighting the importance of addressing mental health in early childhood.

The most negative determinant of health is living in poverty (Marmot, 2010; RCPH, 2017). It is calculated that the number of children living in poverty in the UK is 4.2 million (30%) and the number is projected to increase to 5.2 million by 2022 (Child Poverty Action Group, 2019). In England examples of children who are likely to have poorer health include those who are disadvantaged because of their circumstances, such as children who are looked-after by the State. Many have experienced abuse and neglect which can contribute to health problems (Department for Education & Department for Health, 2015). There is a link between low income and the prevalence of a special educational need (RCPCH, 2017, p. 104), therefore children with special educational or complex medical needs are also at greater risk of poorer health.

Child health promotion in early childhood

Many behaviours that impact on health are difficult to change once children have reached school age (Ventura & Worobey, 2013). Thus, it is important to begin to embed healthy choices and actions with young children as far as possible before they reach school age. The WHO definition of health promotion in relation to children is problematic because children by virtue of their age and stage of development rely on adults for their care and have limited knowledge or control over the processes that can improve their health. Key to promoting health in children is the need for adults to have knowledge and understanding of the reasons why certain behaviours associated with health promotion should be encouraged or discouraged. However, health beliefs are heavily influenced and shaped by many socio-cultural factors, such as religion, ethnicity, educational background and personal experience (Blair et al., 2010; RCPCH, 2017). Therein lies a tension between the ways in which parents and practitioners may promote children's health. Additionally, there may be tensions between practitioners within ECEC settings about health promotion behaviours and there may be differences in approach between practitioners and outside professionals.

Each UK nation has its own policy directives in relation to children's health. In England, where the pilot study on which this paper is based was conducted, the Healthy Child Programme: Pregnancy and the first five years of life (Department of Health, 2009a) is the policy relevant to pre-school

children. The Healthy Child Programme Healthy Child Programme From 5–19 years old (Department of Health, 2009b) is aimed at school-aged children. Both versions of the Healthy Child Programme aim to provide universal and preventative health services for children. However, there are challenges to implementing the aims for children in the first five years of life. In the first instance, ECEC settings for pre-school children do not have access to the school nursing service as do children aged 5 who attend schools; the school nursing service leads public health initiatives for school-age children. In England, the EYFS is the statutory framework (Department for Education, 2017) for standards of care and education for children aged birth-5 years. It states, 'that providers must… ensure that children are kept healthy and safe' (DfE, 2017, p. 5). It highlights standards of care relating to health promotion, stating that there is a need to support children to take part in physical activity and 'to make healthy choices in relation to food' (p. 8). Other health related examples include ensuring that children 'manage their own basic hygiene and personal needs successfully…' (p. 11). These standards of care must be met in order to comply with regulations and for settings to be able to operate. Pre-school children can spend a large proportion of their lives in an ECEC setting. Therefore, practitioners are well-placed to promote young children's health. However, as the standards of care are not explicitly highlighted as being related to health promotion, it is unlikely that there is a shared understanding of the ways that practitioners approach this aspect of the standards. Nor is there clarity about which strategies, tools and interventions are most effective in order to promote health in early childhood settings. Consequently, there is a need explore ways in which practitioners promote health in ECEC settings. In relation to child health promotion in the UK, however, little is known about how or what aspects of health are promoted (BERA-TACTYC, 2017) and little is known about the most effective ways of educating children about health promotion (Wolfenden et al., 2016). Research is therefore required to explore how children's health can be promoted in ECEC settings to drive future change (RCPCH, 2017).

ORIENTING IDEAS TO GUIDE THINKING AND ACTION FOR PROMOTING CHILD HEALTH

It is apparent from previous research evidence and from current and intransigent threats to children's health (RCPCH, 2017) that successfully addressing change for improvements needs to engage multiple perspectives and multiple stakeholders, engendering ownership and partnership. This is reflected in the WHO statement (ND) about the process of health promotion:

> Participation is essential to sustain efforts. People have to be at the centre of health promotion action and the decision-making processes for them to be effective…health promotion is carried out by and with people, not on to people

Thus, we invoke the work of Bryk et al. (2010) on *networked improvement communities* and of Arbour et al. (2015) on *continuous quality improvement* to guide our thinking and action for a participatory approach to promoting child health. Bryk et al. argue that complex, intransigent problems need diverse sets of skills and perspectives to address them effectively. Equally important is the need for a 'reconsideration of when and how in the arc of problem solving this diversity of expertise is best exploited' (Bryk et al., 2010, p. 4). Through examination of successful approaches including 'broad scale quality improvements in health services' (2010, p. 4), Bryk et al. distil a set of core ideas for advancing social improvements. They argue that several 'seemingly straightforward' questions should underpin research and practice development: what problems are we trying to solve, whose expertise is needed to solve them, what social arrangements will enable this work, and who should be doing the work? When addressing multi-strand

problems with 'numerous embedded micro-level problems' (2010, p. 5) that interact with each other over time, such as the problems currently facing child health, responses to these questions are often diverse and disorganised, meaning that much disparate effort leads to little overall progress. Rather, Bryk et al. suggest an approach of networked improvement communities that work towards shared measurable targets, helping them to stay focused on what matters *to the community* in terms of the nature of the problem, and how it should be tackled.

Networked improvement communities require participants to 'endorse shared, precise, measurable targets' (2010, p. 11), although participants contribute to the setting of those targets and to keeping them under review. 'The act of setting common targets in network improvement communities is a way for community members to vet goals and sharpen shared understandings. The process draws people into regular conversations that develop into distinct communication forms that then structure behaviour' (Bryk et al., 2010, p. 12). Essentially, the community must view the targets as valued and attainable; the targets are therefore reached through participation, discussion and the reviewing of evidence. 'Consequently, evolving targets are more than just a way to get to a product. The evolution is a process that, in and of itself, shapes and strengthens activity in a community' (Bryk et al., 2010, p. 12). Furthermore, targets are constantly reviewed and, once reached, new targets are set in a cycle of continuous quality improvement (CQI) as Arbour et al. (2015) demonstrate in their approach influenced Bryk et al. Continuous quality improvement is defined as 'a practical approach that helps frontline workers (i.e. teachers) set specific and shared improvement aims, measure progress with clear and transparent metrics, and develop, test and assess, in an iterative manner, changes that could lead to improvement' (Yoshikawa et al., 2016).

A heuristic tool, the driver diagram, is suggested by Bryk et al. (2010) to assist analysis of the target, underlying causal explanations and potential routes to addressing the target. How the driver diagram was adapted for this research is illustrated in Figure 1 below and is discussed further in the findings section.

In addition to the community's agreed target, the diagram sets out the primary drivers—main causes of the currently identified problem that the target aims to address—and the secondary drivers. Secondary drivers are proposed interventions that aim for progress towards the target through considering how the secondary drivers connect with the primary drivers, which are then tested and refined against evidence (Bryk et al., 2010, p. 15).

Mindful of the WHO's statement that participation is essential to sustain efforts and guided by ideas from Bryk et al. (2010) and Arbour et al. (2015), we devised and piloted an innovative approach to health promotion in ECEC settings. The approach aimed to enable practitioners to identify a health promotion activity specific and relevant to the needs of the children, families and practitioners in their setting. In the approach, the children's health promotion needs are at the centre of the decisions. Health promotion targets and activity aim to incorporate the views and input of all stakeholders, including practitioners, parents, outside agencies and other professionals. The role of the research team is to support and mentor participants during the research, providing tools, guiding critical reflection and assisting with guidance on evidence sources relevant to their health promotion activity. The aim of the health intervention selected by the co-researcher, manager and deputy manager was to explore ways of improving children's eating habits in the nursery. Whilst the staff at the nursery were committed to be a 'healthy eating nursery', they were motivated to look at ways of improving the nutritional value of food that children ate both in the nursery and at home, partly prompted by concern about the quality of food in the children's packed lunches from home. For example, some lunch boxes included cold chicken nuggets, chips and fizzy drinks. Staff regarded this as an area of inequality; children who had their meals provided by the nursery were being offered nutritionally balanced meals, including a hot lunch cooked on the premises.

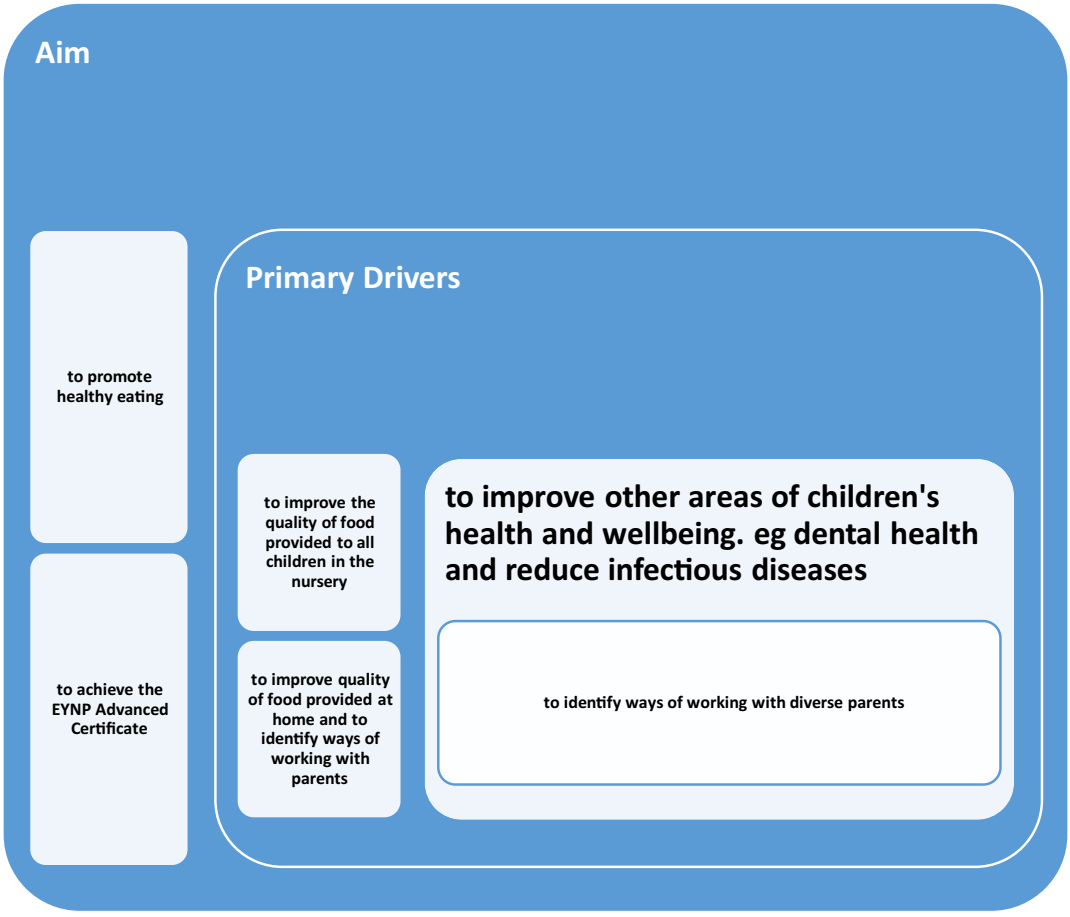

FIGURE 1 Driver diagram adapted from Bryk et al. (2010)

METHODOLOGY

Mindful of the WHO's warning that health promotion should not be 'done to' people, it is important to ensure that there is a collaborative approach between researcher and the practitioners who are participating in the research. Health promotion is more likely to be successful if there is a shared understanding of the aim of the health promotion activity and how it will benefit the setting and its community of members. With these points in mind, the methodology adopted was akin to action research (Elliott, 1991), guided by the underpinning ideas of Bryk et al. (2010) and Arbour et al. (2015). They were used to create a research and development model for ECEC health promotion in settings, *Early Childhood Health Promotion: A Toolkit for Early Childhood Education and Care Practitioners: A resource to support your practice in improving the health of children in pre-school settings*, henceforth referred to as 'the toolkit'. The network improvement community in relation to this research refers in the first instance to practitioners within their ECEC setting. With guidance by the researcher, participants were asked to identify a child health promotion priority that required attention. According to Bryk et al., if participants select their own priority, deciding on an intervention that is focussed on the needs of children in their care and is socio-culturally relevant to the children's and families' needs, there is an increased chance that the participants will develop ownership.

Participants

The model contained in the Toolkit was piloted in a local authority day care nursery setting in an area of high deprivation on a site shared with a primary school in England. The pilot was conducted with the ECEC practitioner as co-researcher alongside the lead author. The co-researcher had responsibility for family liaison in the setting. The nursery has 107 children on roll aged from birth to 5 years. It is registered for 2-year-old funding as well as 3 and 4-year-old early education funding. The level of poverty experienced by many of the families whose children attend the nursery is reflected in the high percentage, 60%, of children who access the English government's free early education and childcare funding, aimed at supporting parents on low incomes. The parents' socio-economic status is varied; some parents are in work; a proportion of parents are studying in further and higher education and many are not in work. Selection of the setting was purposive; diversity of the children and families attending and the willingness of the practitioners to participate in the research made it an ideal choice.

Ethical approval was given for this research through the Human Research Ethics Committee of the authors' affiliated institution. The research design was informed by the British Educational Research Association's ethical guidelines (2018). The co-researcher and the managers gave written consent to confirm their participation in the research and consented to the dissemination of findings from the research.

Methods

The Toolkit is a model created by the lead author adapted from a similar publication, the School Nurses Toolkit (Royal College of Nursing, 2017), a resource designed to support School Nurses working with children aged 5 and above in promoting school children's health. The Toolkit has similarities to the School Nurse Toolkit, but has been extended to support practitioners in identifying, implementing, monitoring and evaluating the health promotion activity, influenced by the ideas of Bryk et al. (2010). Part 1 of the Early Childhood Health Promotion Toolkit includes guidance and information about child health promotion and available resources. Part 2 of the Toolkit is the *5 Step Programme for Early Childhood Health Promotion* framework. It comprises documents designed to support practitioners to identify, implement, monitor and evaluate child health promotion interventions. Table 1 summarises the methods of data collection that were used in this research.

The steps of the framework and the research timetable used are summarised below in Figure 2:

The following sections explain the purpose of each step.

Step 1: Assisted participants to consider the health needs of children and families in the setting. On completion of this stage, participants were encouraged to decide on a health promotion priority for the setting.

TABLE 1 Summary of methods used in this research

Lead researcher	Co-researcher in the setting
3 × 1 hr semi-structured interviews with co-researcher	Data collected following completion of the 5 Step Programme
Field notes and photographs of health promotion activities at parents' evening	Findings from a questionnaire designed by co-researcher and sent to parents
1 × 20 min interview with Deputy Manager	Observations of children in the setting

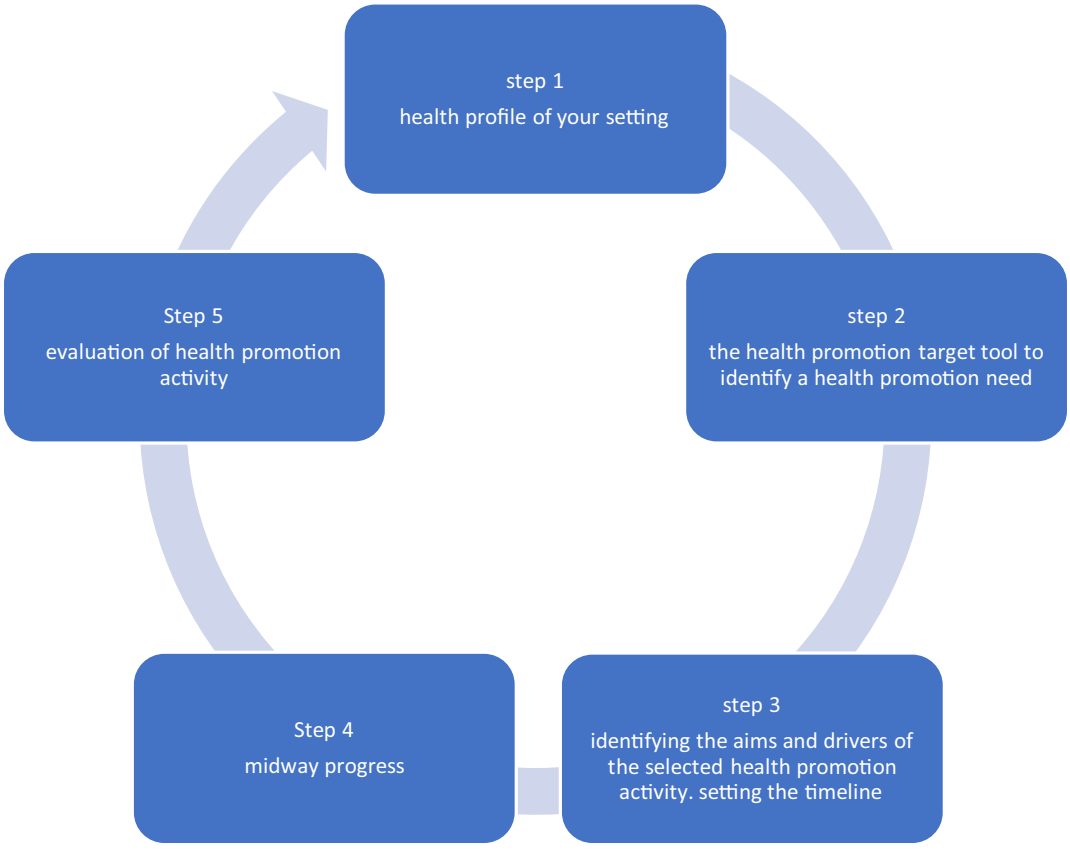

FIGURE 2 Summary of the five Steps

Step 2: Focused the participants' thinking about the benefits of the identified intervention and how to implement the intervention including a timeline.

Step 3: (adapted from Bryk et al. 2010)**:** Focused on the chosen intervention. Participants were asked to identify the primary and secondary drivers of their chosen interventions. Step 3 included a discussion of the timeline for the selected intervention.

Step 4: Aimed to take stock of progress, identify any barriers or challenges to success, identify solutions and for the PI to offer further support and plan next steps.

Step 5: Was designed to assess the effects of the intervention on children, families and practitioners; it was important to assess the sustainability of the intervention moving forward.

The PI interviewed the co-researcher at the start, middle and end of the 4-month research period. The Co-researcher used the Toolkit contents to support and guide the research.

TIMETABLE FOR DATA COLLECTION

Table 2 summarises timetable of events during the 4 months that the research took place.

The PI and co-researcher produced an initial timetable of key dates for each stage. The co-researcher devised an action plan for the research starting in January to coincide with New Year's resolutions. The co-researcher commented:

TABLE 2 Summary of research timetable

Date	Data collected	Aim
December 2018	1 hr meeting attended by manager, deputy manager/co-researcher	To discuss proposed research, explain the 5 steps
Interview 1—start of research January 2019	1 hr interview with co-researcher. Recorded and transcribed	To review steps 1, 2 and 3
Interview 2—midway interview March 2019	1 hr interview with co-researcher. Recorded and transcribed	To review step 4
March 2019	Parents' evening Field notes and photographs	Opportunity for parents to attend nursery to meet with their child's Key Person. Attended by PI to answer any questions that parents may have about research; to observe Co-researcher created a display as a health education tool for parents, provided resources and discussed health related matters with parents.
Interview 3—end of pilot May 2019	1 hr interview with co-researcher. Recorded and transcribed	To review step 5
End of pilot May 2019	20 min interview with Deputy Manager. Recorded and transcribed	To review health promotion research

> We tend to find that parents have this health boost at the beginning of the year, New Year's resolutions, we're going to do healthy eating…we have families where parents have been doing Slimming World and that's had an impact on what they give their children (interview 1)

The practitioners extended the original healthy eating intervention to include the promotion of healthy drinking. Each room leader had identified that they wanted to promote hydration by encouraging children to drink more water, partly in order to gain accreditation with the Early Years Nutrition Partnership (EYN Partnership, 2018) (see Figure 1), which aims to work with ECEC settings to improve their nutrition practice. The accreditation has a set of criteria including that children should only be served water. The action plan had helped to devise a whole nursery approach to promote the drinking of water. They realised that even though water was available to the children, and they were encouraged to drink it, they were not confident that children were doing so. Therefore, the practitioners carried out observations to note the amount of water that each child was drinking. These were recorded on a tally chart with pre-school children being encouraged to put a sticker on the chart to record each time they drank their water.

As the research progressed, other events were added to the timetable: e.g., an interview with the management of the nursery gained their perspectives of the impact of the research on the children, parents and staff; the co-researcher planned a health promotion display during the nursery's parents' evening to provide an opportunity to educate parents about the healthy eating intervention. Field notes and photographs taken by the PI who was invited to attend the evening, became part of the data.

Data analysis

The three interviews between the PI and co-researcher were recorded and transcribed. Analysis of data sought commonly occurring phrases and words, which were colour coded (Glesne & Peshkin, 1992). From these clusters of commonly occurring words, themes were identified. Interim findings and themes of each interview discussion helped to inform the next steps of the action plan as well as helping to shape the progress of the research.

FINDINGS

The following three sections summarise the co-researcher's reflections on the progress of the research during interviews at the three key points.

Interview 1**—reviewing steps 1, 2 and 3**

The questions in step 1 aimed to support practitioners to compile a health profile of their setting, the audit. The first part of the interview included a discussion about the findings from completing step 1. The co-researcher commented that it had helped to focus attention on the diversity of children, parents and families within the setting and helped them to identify the social, cultural, economic and educational differences that could impact on children's health. There were several parents with low level of literacy; on the other hand, some parents were in full-time study and were receiving a funded bursary for their children to attend the setting full-time. These findings are relevant to the children's health because parental education level has a direct effect on their children's health (Emond, 2019). The audit also highlighted the number of children in the setting who do not live with their biological parents but instead are looked after by the state, significant because looked-after children are reported as having distinct health promotion needs (Simkiss, 2019).

Many families in the setting accessed the 2-year-old funding, which in England includes the cost of food. However, when children reach their third birthday, the funding does not include food.

> … so the parents have to pay and that's when lots of them revert back to packed lunches (Co-researcher)

Additionally, children who attended for sessions rather than full-time may not eat at the nursery, which in turn could impact on the quality of the food available.

The audit highlighted the previously over-looked realisation that the setting required more information about the children's health and habits at home; knowing more would help them to bridge the potential gap between practices at nursery and home. Therefore, the co-researcher devised an anonymous questionnaire for parents to explore home practices: whether children ate breakfast, what drinks were offered, how children were served drinks, oral health routines and whether their child was registered with a dentist. The data from the survey helped to confirm the decision to focus on promoting healthy eating in the setting, but also highlighted that dental health needed to be considered:

> that's something that's rising… several children over the last maybe two years where their teeth have been black and rotten, actually rotted away… working in close proximity

> with the children, you can notice whether their teeth have been brushed…you can see the plaque building up

Interview 1 also included the co-researcher's reflections on Step 2, the purpose of which is to focus on the benefits of the intervention that was identified as a priority for the setting. The setting wanted to seek ways to improve the quality of food to all children. The nursery had recently introduced some changes to the menus to improve the nutritional value of the food and new dishes included food that the children were not necessarily familiar with and may be reluctant to try. Food neophobia, a fear of eating unfamiliar food, is a source of difficulty for caregivers of young children (Musher-Eizenman et al., 2011). The practitioners were keen to find out if the children were eating the food provided, which they did through observations of the children's eating pattern throughout the day. The practitioners worked with each other to observe children's eating habits, noting the amount eaten, what was not eaten and the reasons for not eating.

The co-researcher presented the findings from the parental survey and from the observations of the children's eating habits at a nursery staff meeting. Some of the responses to the parental survey revealed that many parents believed that their children would not eat certain foods at home. However, the practitioners had observed the children eating such foods. This provoked discussion about the ways that practitioners could work with parents to implement the healthy eating promotion activity and how to communicate the knowledge with parents about food their child would eat. The setting uses an electronic communication system to capture information about the children. It enables practitioners to send photographs and information to parents' mobile devices. This mode of communication meant that parents could receive photographs of their children eating food that they had previously believed they would not eat. The practitioners discussed how the electronic communication system could be used to promote health by passing on leaflets and messages to educate about children's health, whereas it had previously been used to pass on information to parents about their children's cognitive learning.

During the staff meeting, an action plan was drawn up of priorities for the steps in implementing the healthy eating intervention. Having identified a significant number of parents with low levels of literacy, the practitioners were conscious of the need to communicate with parents using visual methods. It was decided that the nursery's regular parents' evening would be a good opportunity for a display on healthy eating; the co-researcher's reflections on parents evening will be returned to below. The co-researcher explained that following discussions about the findings from the nursery questionnaire, practitioners empathised with the difficulties parents faced. They reflected on their experience as parents trying to change children's routines to promote healthier habits:

> we've had all this training about children's ages and stages of development, but then, they're like, well how do I take the bottle off them because that's their bedtime routine, they really enjoy it.

Returned questionnaires from parents revealed that some children did not have a dentist

> …but then speaking to some of the staff as well, they hadn't registered their child at a dentist until quite late… because they didn't know …

The final part of the first interview reflected on the findings from step 3, identifying aims and drivers of the health promotion intervention. The co-researcher explained how completing step 3 helped them to identify other areas that related to promoting children's health in the nursery, specifically, dental health and preventing the spread of infection.

The link with healthy eating and illness and infectious diseases—a secondary driver

Analysis of the observations of the children's eating habits raised an unexpected finding as a result of using the first 3 steps in the toolkit. Practitioners made a previously unidentified link between the impact of infectious disease and the children's ability to eat. Observations revealed that the most noted cause of children not eating their food was primarily a viral illness, hand, foot and mouth disease. It can cause fever and children can feel unwell. There is no treatment and the advice about excluding a child who has hand, foot and mouth is that they can return to school or nursery when they feel better (NHS, 2018). However, some children attend when they are unwell and still infectious, spreading the infection to staff and children. Sores in the children's mouths make eating difficult.

> We've had lots of children that have really suffered… doctors will prescribe numbing sprays for the mouth just to ease (the pain)…it's very hard to see in the children's mouths to see how bad it is and how much it is affecting them…we noticed that one of the signs is they just tend to hang their mouth open because it is hurting and they dribble, so this means the infection can spread even further.

To summarise, interview 1 revealed:

- The diversity of the families and the need to explore other ways of developing inclusive ways of working with parents;
- That practitioners needed to know more about practices at home to be able to identify a suitable health promotion intervention;
- Returned questionnaires helped practitioners to identify ways to promote healthy eating in the nursery in relevant ways to parents;
- That addressing dental hygiene and preventing the spread of infection were secondary drivers of the selected health promotion intervention.

Interview 2 was conducted mid-way through the 4-month period of the research to take stock of the progress with the health promotion intervention, to discuss what was going well, to identify any barriers and discuss solutions. It was an opportunity for the PI to offer support and plan next steps.

The co-researcher reported that the health promotion was going well and that '*we've been aiming more at focusing on what we want to put into practice with the staff*'. In addition, the setting was approaching the implementation of the health intervention in a united way; '*we've just spent our evening staff meeting discussing what ill health actually is and as a nursery what we see that as, and then how that links into healthy eating and a healthy lifestyle*'. They realised that each age group had different needs, so they had appraised the implementation of the intervention in ways that were suitable for the age and stage of development. Each room leader had set three actions of areas they had wanted to promote.

Practitioners made drinking water a playful activity by singing the 'water song'. They were positive role-models for the children by drinking water frequently throughout the day. However, they also realised that they were often not drinking enough fluid themselves, '*I'd go all day without a drink*'. They noticed '*that they started to feel more lethargic and some of them complained of headaches… it's just well if that how you feel, then imagine how the children feel…and they don't understand what that feeling is*.'

In the baby room, it was important to allocate the role of water monitor to one member of staff.

> the room can be very busy and sometimes just giving someone that responsibility to do set jobs just helps make sure it's definitely being done…the water monitor ensures the children are stopping throughout the day to have some water, do the water song and talk to them about why they're drinking…just to give them the words and the phrases as much as we can at this age

Practitioners identified that involving children in the routines around mealtimes was an opportunity to increase their understanding of healthy food, e.g. explaining to them the origins of food, '*by bringing in natural objects, this is a potato, this is what it looked like first, and these are the carrots…getting them to explore the touch and the feel*'. The practitioners' focus on mealtimes extended to teaching children how to use cutlery properly,

> because part of eating is the experience of it all, and enjoying it, it involves cutting food up using their cutlery…it gives them longer to enjoy and eat their food. Rather than trying to put so much in their mouths, they're slowing down their eating process as well. Which is another big thing, obviously linked to obesity is how fast sometimes children can eat and their body doesn't realise that it's getting full. Taking time to chew helps them to exercise their jaw muscles which helps with speech and language development

To summarise, interview 2 identified:

- The nursery had recognised how everyday routines could be opportunities to teach children about healthy eating;
- They had developed a refined approach relevant to meet the needs of children's ages and stages of development.

Interview 3 was conducted to review Step 5, the setting's progress with the health promotion intervention and to identify the next steps in relation to the sustainability of the intervention. The co-researcher felt that the health promotion intervention using the toolkit had '*gone really well. I think it highlighted many areas…the need to keep it at the forefront of our minds. It can sometimes get lost amongst all the other things*'.

The co-researcher also discussed the impact of the visual aid that was displayed at the parents evening (see Figure 3) which had been designed to illustrate the content of sugar in foods that children frequently brought in their lunch boxes from home. It had been designed to be helpful to parents with limited levels of literacy and for those with English as an additional language. However, reactions by many of the parents highlighted the value of communicating messages with all parents using visual display *'a lot of shock (*about the amount of sugar in products*)—I don't think they could believe it themselves'*.

In response to the question asking how helpful the toolkit and the 5 steps were in helping to identify a health promotion intervention, the co-researcher commented:

> I think you need the steps in place to see how it's working along the way…the first part really helps. It picks everything apart…it makes you look at your setting as a whole…to be able to highlight exactly what you want to cover and how you're going to do that…I don't think you could take anything away from it. I've noticed that doing the work has had an impact already. And it will carry on. it's not something that's a quick change for children, it's something they've got to build up and learn. And for the younger children

FIGURE 3 Sugar content in items in children's lunchboxes

coming through from the baby room upwards it will be something that they've lived almost.

To summarise, interview 3 revealed

- The co-researcher had explored ways of delivering impactful health education messages to parents;
- The usefulness of the toolkit and the 5 steps in helping her to identify, implement and evaluate a health promotion intervention.

Interview 4: with manager and second deputy manager

At the end of the research period, it was evident that the findings would be strengthened by seeking views from other practitioners in the setting, consequently an interview with the manager and the other deputy manager was conducted to gain their views. A key point made by the deputy manager was that in her view.

> the biggest thing that's come out of it is the staff awareness of health and wellbeing…not just for the children but for themselves as well…they're bringing in healthier lunches…

> they're drinking more water and they're encouraging children to drink more water…it's embedded into their own life as well as their practice

The deputy manager reiterated that their hope is that the changes will be sustainable because of the ways that health promotion activities have become embedded in everyday routines; changes were made using small measured steps '*it's drip by drip by drip*'. She commented on how the practitioners had effectively sought ways of communicating with parents about healthy eating. They had changed some parents' perceptions of what the children would eat by sending photographs of their children eating. And in order to help bridge the gap between the food eaten in nursery and at home, the co-researcher had created a recipe book of the children's favourite healthy, low-cost meals.

DISCUSSION

The findings from the research highlighted that engaging with the 5 steps within the toolkit gave the practitioners a framework to reflect on their own knowledge and experience in relation to health and promoted deeper thinking about how areas of health promotion can overlap and are inter-related. Following the 5 steps reflected the methodological decision to offer a framework where the practitioners were able to work towards 'setting common targets…and sharpen shared understandings' (Bryk et al., 2010, p. 12). The co-researcher commented on how following the toolkit's 5 steps helped them to identify the ways that healthy eating, healthy drinking, dental health and the prevention of infection overlap and interrelate. It suggests that following the steps helped them to unpack the complexities relating to the promotion of healthy eating and initiating change. To help them understand some of these complexities, they carried out observations of the children and, following analysis of the data, they realised that hand, foot and mouth disease was affecting children's ability to eat. Previously, it had been assumed that it was because the children were reluctant to try the new, healthy menus because of neophobia. The realisation that an infection was a barrier to healthy eating led them to consider the importance of controlling the spread of infection in the nursery. This finding demonstrates the deep reflection that the practitioners engaged with in relation to their practice. The framework set in progress a cycle of continuous quality improvement (Arbour et al. 2015).

A striking finding from the research was how effectively the practitioners worked together and with parents. Their approach emulated some aspects of the Health, Exercise, Nutrition for the Really Young (HENRY, 2020) approach. However, Thornton (2019) urges caution about the HENRY programme being the reason why obesity has been reduced, instead suggesting that a significant contribution is that the practitioners used a 'whole systems approach' (p. 2), working with parents to encourage them to adopt and maintain healthy lifestyles. Similarly, participants in this research worked closely with families to do the same. Within the nursery, practitioners allocated roles and took responsibility for tasks aimed at promoting children's health; they identified opportunities to embed activities into the nursery routines, involving children and using playful approaches to teach children about health promotion. The findings highlighted the importance of routines for children, for example, the location of water and enabling children's access to water helped to encourage them to develop autonomy.

The findings from this research demonstrate that ECEC practitioners have a valuable role to play in promoting children's health. They can embed health promotion activities in everyday nursery routines using low/no cost resources, given structures such as the Toolkit to enable and facilitate interventions and foster cyclical review. However, interventions must be relevant and realistic.

This research highlights the important skills and qualities that practitioners demonstrated, especially their motivation and leadership. The findings highlight that positive relationships with parents

are critical in order to be able to work with children and parents in sensitive ways. Nurseries can be a catalyst for healthy eating (Reinaerts et al., 2008). However, this research suggests that they can also be a catalyst and powerful influence in promoting all areas of children's health.

CONCLUSION—REFLECTIONS ON THE PILOTED TOOLKIT

The toolkit and the five steps approach to health promotion was considered to be a useful method for identifying relevant health promotions for the participants in this pilot study. However, its widespread use needs to be tested further, including in settings where practitioners may not have the time, commitment, leadership and knowledge required to identify ways they can promote children's health. The omission of including parents could be a limitation of the research design, however, the co-researcher identified that she needed to find out more about practices at home in order to shape the way that the health promotion intervention was identified and implemented.

The toolkit is an original and innovative approach which offers a principled but not prescriptive framework for promoting children's health. Devised for practitioners in an English setting, the approach could be adapted to other contexts globally. The findings from this research will be used to refine the toolkit to include exemplars of good practice that have been developed by the participants. The findings will help to set the onward agenda for a larger scale study which will foreground the voices of practitioners and highlight the role that ECEC practitioners can and, in this case, did play in promoting the health of children.

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