Facts4Life: Phase II Evaluation of the School-Based Resource

Final Evaluation Report

2015-2018

Facts4Life: Phase II Evaluation of the School-Based Resource

Final Evaluation Report

2015-2018

September 2018

This final report was produced by Emma Bird, Billie Oliver, Amy Beardmore and Jane Powell from the Centre for Public Health and Wellbeing at the University of the West of England, Bristol (UWE Bristol).

We would like to acknowledge and thank all pupils and teachers that participated in this evaluation. We also acknowledge and thank members of the Facts4Life team and Gloucestershire Healthy Living and Learning for their support in undertaking this evaluation. We thank Leigh Taylor for transcribing the qualitative data. Finally, we acknowledge and thank Gloucestershire Clinical Commissioning Group and Gloucestershire County Council for funding this evaluation.

For further enquiries about this report contact
Emma Bird emma.bird@uwe.ac.uk / 0117 32 88449
Centre for Public Health and Wellbeing
University of the West of England (UWE Bristol)
Bristol BS16 1QY

Suggested citation for this report:
Bird EL, Oliver B, Beardmore A, & Powell J (2018). *Facts4Life: Phase II Evaluation of the School-Based Resource: Final Evaluation Report*. UWE Bristol. ISBN 9781860435447.

Executive Summary

Overview

In 2012 Gloucestershire Clinical Commissioning Group and local authority partners in Gloucestershire funded the development, implementation and evaluation of a primary school-based health education intervention called Facts4Life (2012-2015). The intervention aims to explore health and illness, promote responsibility for health, and develop children's and young people's strategies for health and wellbeing (www.facts4life.org).

Facts4Life is based on three key concepts:

(i) 'Riding the ups and downs'—as we move through life, our health status is constantly in flux;

(ii) 'Keeping balanced'—we are faced with many illnesses which our bodies can often respond naturally to, to maintain balance and health;

(iii) 'Smoothing the path'—the bodily response to many illness challenges can be enhanced through making informed choices to engage in a variety of healthy lifestyle behaviours.

Ultimately, Facts4Life aims to help children to understand that mental wellbeing and physical health and illness are inextricably linked, they don't always need medicine in order to get better, and good health and wellbeing is very much linked to their environment. The intervention was designed for primary school children, aged seven to eleven years, with resources tailored according to age (7-9 (Years 3 and 4) and 9-11 (Years 5 and 6)). It follows a pupil-centred approach to learning, in which pupils themselves are responsible for researching health and wellbeing-related topics of particular interest and/or importance to them. Facts4Life teaching materials are designed to be cross-curricular and directly linked to the National Curriculum. The resource aims are closely aligned with UK policy drivers in attempting to address health and wellbeing at an early age before ideas about how health is delivered and who is responsible become fixed in young minds.

School teachers are offered training in Facts4Life and provided with a teaching booklet and access to additional online resources. They are encouraged to take a facilitative role in initiating classroom discussions and activities, and to support children to ask questions and explore possible solutions. In the original intervention iteration, lessons were centred on three themes: 'Introduction to Homeostasis'; 'Healthy Me'; and, 'The Family'.

Funding extension and revised intervention

In 2015 Facts4Life funding was extended to March 2018, enabling the development of a revised resource for children aged 7-11 years (Key Stage 2) and creation of newly developed resources for children in Key Stage 1 (aged 4-7 years) and Key Stage 3 (aged 11-14 years). The central concepts of the original intervention and many of the original activities remain, but the revised intervention includes new resources focused on promoting good mental health and positive relationships and sex education that are tailored to age group. Between 2015 and 2018 Facts4Life teacher training has been delivered in 100 sessions to more than 1,000 Gloucestershire-based teachers.

Formative evaluation by Centre for Public Health and Wellbeing

In 2012 researchers from the Centre for Public Health and Wellbeing at UWE Bristol (then Public Health and Wellbeing Research Group) were commissioned to lead an independent pilot evaluation of Facts4Life (2012-2015). Findings from the pilot evaluation were recently published (Bird & Oliver, 2017) and indicated improvements in some of the health and illness attitudes specifically targeted by the Facts4Life intervention. Focus groups and interviews with pupils and teachers receiving Facts4Life highlighted a number of positive aspects of Facts4Life including: perceived changes in pupils' attitudes and beliefs surrounding health and illness and in some cases perceived changes in health-related behaviours. Qualitative findings also identified that pupils enjoyed intervention content and enhanced their health- and illness-related knowledge and skills. It was acknowledged that Facts4Life is closely linked with National Curriculum objectives, a feature welcomed by teachers. Overall, findings suggested that Facts4Life showed promise as a school-based intervention.

The current evaluation

In April 2015 the UWE Bristol team was commissioned to undertake an evaluation of the revised Facts4Life intervention, known as 'Facts4Life: Phase II' (April 2015 to March 2018). The broad aim of the evaluation was to better understand the impact of Facts4Life on Gloucestershire-based pupils and their teachers, and to determine the costs associated with Facts4Life implementation in a school setting.

To reflect changes in the target age group for Facts4Life resources, the current evaluation includes an assessment of the impact of Facts4Life on secondary school pupils, in addition to those in primary school. The approach was also developed to assess the impact of Facts4Life, incorporating quantitative and quantitative research methods, and economic costing methods. Finally, changes in attitudes were assessed over a longer time period than the pilot evaluation.

Methods

We conducted a mixed methods study. First, a quantitative quasi-experimental (or non-randomised) study was conducted to assess whether pupils who received the revised Facts4Life intervention experienced improvements in heath and illness attitudes and resilience outcomes. We then conducted a qualitative process and outcome evaluation using focus group and interview data, to complement quantitative findings and to examine the wider context, implementation and mechanisms of Facts4Life in a school setting. Ethical approval was obtained from the University of the West of England, Research Ethics Committee in March 2016 (Ref: HAS/16/02/111).

Primary school evaluation methods

- A total of 370 pupils from twelve Gloucestershire schools provided baseline and post-intervention data. Six schools received the Facts4Life intervention, while six schools acted as the controls. A total of 303 pupils from eleven schools completed six month follow-up measures. Changes in health and illness attitudes and resilience were assessed.

- A qualitative evaluation involving qualitative focus groups and semi-structured interviews was conducted with 43 pupils and four teachers from intervention

schools. The qualitative methods were designed to elicit in-depth feedback on Facts4Life resources, to better understand the impact of Facts4Life on attitudes, and to identify considerations for wider dissemination of resources post-evaluation.

Secondary school evaluation methods

- The delivery of Facts4Life in a secondary school setting is a relatively new development, and this was the first small-scale study to explore pupils' and teachers' experiences of the intervention.

- A qualitative evaluation involving qualitative focus groups and semi-structured interviews was conducted with 35 pupils and seven teachers from four secondary schools involved with secondary school delivery of Facts4Life.

Key findings

Primary schools

- Findings from qualitative focus groups and interventions indicated that the revised Facts4Life resource continues to show promise in improving health and illness attitudes among primary school children.

- Facts4Life was well-received by primary school pupils and their teachers, and the inclusion of new resources (e.g. mental health) was perceived to be age-appropriate and including content that is highly relevant for primary school aged children.

- Pupils were able to articulate changes in their health and illness attitudes and behaviours had changed since receiving Facts4Life. Examples often explicitly referred to perceptions of increased responsibility for health, and strategy development for promoting personal health and wellbeing.

- Mental health was identified as a relevant concern, and pupils highlighted examples of newly developed coping strategies resulting from Facts4Life. Previous evaluations of interventions designed to promote children's and young people's mental health have been criticised for failing to adequately consider the mental health priorities of the children and young people themselves. It is possible that the positive outcomes

observed in this study may be, in part, attributable to the explicit student-led delivery of Facts4Life, and this is something that future mental health-focused interventions could explore.

- Teachers' engagement with the Facts4Life resource has positive implications for its sustainability within a primary school setting. Feedback indicated a change in philosophy around the teaching of health and illness, and also indicated that this will be present for subsequent pupils entering each school.

- Teachers reported a disconnect in pupils' awareness and understanding of the links between physical and mental health, with Facts4Life perceived to be a useful tool to 'bridge the gap' between the two.

- Quantitative results were also encouraging, with younger pupils from Years 3 and 4 reporting improvements in three health and illness attitudes targeted by the intervention immediately after completing the intervention. These improvements concerned concepts central to Facts4Life key messages: the need for medication when feeling unwell, strategies for promoting mental health, and perceived utility of learning about illness.

- Improvements in these attitudes, regarding need for medical intervention and strategies for mental health, were observed at six month follow-up as well as an increase in reported time spent talking about health and illness at home. Notably, however, improvements in two of these attitudes were also observed among the control group.

- A key objective for Facts4Life is to provide pupils with a deeper awareness and understanding of illness, a concept that is traditionally overlooked in the existing school curriculum. Younger pupils reported an increase in talking about illness in an open and honest manner, and it was also noted by teachers that Facts4Life provides an opportunity to discuss the concept of illness in a new and meaningful way.

- Despite positive feedback from qualitative focus groups and interviews, there were no quantifiable changes in health and illness attitudes identified among pupils from

Years 5 and 6. This finding differs from findings from the Phase I evaluation, in which positive changes were identified in response to two of six items assessed. Although not found to statistically differ from control group responses, there was a positive trend in mean intervention group responses to the majority of health and illness items. Notably, the loss of one school at six month follow-up disproportionately affected the year 5 and 6 sample size, and it may be that there was insufficient power to detect effects. The small sample at follow-up is problematic and it would be desirable to replicate the research with a larger sample.

- There was no evidence that Facts4Life had an impact upon the resilience of year 3 and 4 pupils in the intervention group. This is perhaps unsurprising given the high baseline responses. In other words, pupils scored highly on resilience indicators before taking part in the intervention, so it could be argued that there was little scope for observing small changes in these scores in the short term; a finding that has been reported elsewhere in relation to school-based interventions with 'healthy' school populations.

- This evaluation did identify a significant improvement in resilience at six month follow-up among intervention group pupils in years 5 and 6. This has positive implications for Facts4Life as building young people's resilience is a key objective of the resource. Caution is required when interpreting the finding as the six month follow-up sample was relatively small. However, the finding is supported by qualitative feedback provided by teachers and pupils, in which the development of personal autonomy and responsibility emerged as a key theme from the data.

Secondary schools

- Feedback on Facts4Life from pupils and teachers was generally positive, particularly with regard to the concept of Facts4Life and its relevance for secondary school-aged children.

- Pupils and their teachers reported examples of changes in attitudes and perceived increases in autonomy and personal responsibility for health.

- There was strong appreciation for the mental health content of Facts4Life; this was seen to be the most novel and interesting aspect of the resource.

- In line with findings from primary schools, secondary school teachers reported a disconnect in pupils' awareness and understanding of the links between physical and mental health, with Facts4Life perceived to be a useful tool to 'bridge the gap' between the two.

- Teachers were impressed with the quality of Facts4Life training and the availability of ongoing support provided post-training. One suggested area for improving training was to incorporate further advice on Facts4Life delivery to include practical classroom demonstrations to show how materials are designed to be delivered in a real world setting.

- Feedback also identified areas for developing Facts4Life content and resources to appeal more to older pupils. There was agreement across schools that some Facts4Life activities were pitched at younger pupils and that future development of the resource may benefit from engagement with, and input from, secondary school pupils.

Estimated costs associated with Facts4Life

- Intervention cost and resource data collected by the Facts4Life team between April 2015 and March 2018 revealed an estimated annual implementation cost of £46,542.

- Research and infrastructure development costs were the main contributor to the total cost of Facts4Life over the three year funding period. The majority of these costs were associated with the development of Facts4Life as a resource, with funding allocated to the design and content of resource materials including the web-based presence. Funding to update source materials are likely to be required in coming years as the health and wellbeing landscape changes, but the majority of these costs are one-off.

- Training of teachers was the chief contributor to the estimated mainstream cost, which involved 100 training sessions with more than 1,000 teachers (£17,966 per year) and equated to 39% of the total cost. This cost is likely to reduce over time as more teachers are trained in Facts4Life and peer-led training increases (i.e., one teacher training their colleagues in a school).

Conclusions

The findings from this evaluation demonstrate that Facts4Life continues to have a positive impact on primary school children's health and illness attitudes and resilience, and findings also indicate that Facts4Life holds promise as a newly developed resource for secondary school pupils.

Across primary and secondary school audiences in Gloucestershire, Facts4Life was well received by pupils and teachers, and concepts covered through intervention activities and materials were considered to be highly relevant for children and young people as they grow into adulthood. In particular, Facts4Life was perceived to be a useful resource for developing an increased appreciation and understanding of the links between physical and mental health, and for developing strategies to deal with adverse physical and mental health events.

The findings of the evaluation suggest that Facts4Life has potential to be a sustainable school-based intervention, with feedback indicating a change in philosophy around the teaching of health and illness in schools that may be present for subsequent pupils entering each school.

Facts4Life should continue to advocate for promoting children's and young people's responsibility for health through health and illness knowledge generation and the development of strategies for promoting health and wellbeing. This should be supported by continued monitoring and evaluation to enhance understanding of the benefits of Facts4Life in a variety of settings and across the life course.

Contents

Introduction

Context

In recent years increasing attention has been paid to the health and wellbeing of children in the UK, with obesity, physical inactivity, and mental health three areas of particular concern [1-3]. This is placing unsustainable health and financial pressure on the services provided at a local and national level [4]. Effective strategies are therefore required to develop children's understanding of health and illness and to promote healthy lifestyle behaviours from a young age. Pupils spend much of their time in a school setting, and as such, numerous school-based programmes promoting a wide range of health-related behaviours have been implemented [5-8]. There is evidence to suggest that healthy children perform better academically and have better health outcomes as they move forward into adulthood [5]. School-based interventions have been shown to improve children's health-related attitudes, knowledge and behaviours [5] and enhance children's health literacy through the development of critical thinking and evidence appraisal skills [9-11], skills which may enable children to make better informed choices about their health [12]. Promoting health and wellbeing from a young age is therefore desirable [5].

School-based interventions

Evidence for the effectiveness of school-based interventions is mixed and inconclusive, with some positive short-term outcomes reported [5], but recent large-scale randomised controlled trials (RCTs) from the UK failing to find an effect on behavioural or health outcomes [13-15]. Finding an 'effect' from an RCT of a public health intervention is a challenge; RCTs often report positive short-term outcomes, but their ability to determine the longer term effects of an intervention can be limited by available funding, but also because longer term changes impact may not emerge for many years. In public health, RCTs are traditionally well-regarded for their rigorous and robust study design; they tend to examine the influence of an exposure on change in a specific outcome of interest. In recent years, however, questions have been raised regarding their applicability for public health, a field in which numerous determinants of health are known to influence multiple health and wellbeing outcomes [16]. As such,

there have been calls to apply a "wider set of approaches" to generate better quality evidence on public health interventions [17].

The Facts4Life intervention

In 2012 Gloucestershire Clinical Commissioning Group and local authority partners in Gloucestershire funded the development, implementation and evaluation of a primary school-based health education intervention called Facts4Life (2012-2015). The intervention aims to explore health and illness, promote responsibility for health, and develop children's and young people's strategies for health and wellbeing (www.facts4life.org).

Facts4Life is based on three key concepts:

(iv) 'Riding the ups and downs'—as we move through life, our health status is constantly in flux;

(v) 'Keeping balanced'—we are faced with many illnesses which our bodies can often respond naturally to, to maintain balance and health;

(vi) 'Smoothing the path'—the bodily response to many illness challenges can be enhanced through making informed choices to engage in a variety of healthy lifestyle behaviours.

Ultimately, Facts4Life aims to help children to understand that mental wellbeing and physical health and illness are inextricably linked, they don't always need medicine in order to get better, and good health and wellbeing is very much linked to their environment. The original intervention was designed for primary school children, aged seven to eleven years, with resources tailored according to age (7-9 (Years 3 and 4) and 9-11 (Years 5 and 6)). It follows a pupil-centred approach to learning, in which pupils themselves are responsible for researching health and wellbeing-related topics of particular interest and/or importance to them. Facts4Life teaching materials are designed to be cross-curricular and directly linked to the National Curriculum. The resource aims are closely aligned with UK policy drivers [3, 18-19] in attempting to address health and wellbeing at an early age before ideas about how health is delivered and who is responsible become fixed in young minds.

School teachers are offered training in Facts4Life and provided with a teaching booklet and access to additional online resources. They are encouraged to take a facilitative role in initiating classroom discussions and activities, and to support children to ask questions and explore possible solutions. In the original intervention iteration, lessons were centred on three themes: 'Introduction to Homeostasis'; 'Healthy Me'; and, 'The Family'.

Funding extension and revised intervention

In 2015, Gloucestershire Clinical Commissioning Group and local authority partners extended funding for Facts4Life, enabling the development of a revised resource for children aged 7-11 years (Key Stage 2) and creation of newly developed resources for children in Key Stage 1 (aged 4-7 years) and Key Stage 3 (aged 11-14 years). The central concepts of the original intervention and many of the original activities remain, but the revised intervention also includes new resources focused on promoting good mental health and positive relationships and sex education that are tailored to age group. Between 2015 and 2018 Facts4Life teacher training has been delivered in 100 sessions to more than 1,000 Gloucestershire-based teachers.

Centre for Public Health and Wellbeing, UWE Bristol

The Centre for Public Health and Wellbeing is multidisciplinary and spans physical, health and social sciences. Our aim is to impact directly on population health and wellbeing, and to enable ethical and reflexive contributions to policy and practice. Our mission is to advance knowledge, inspire people and transform futures, addressing the grand challenges and wicked issues in public health locally, nationally and internationally.

We undertake research that makes a difference to practice. We want to influence policy. We want the public – society – to be involved in building assets in their communities, and to benefit from our work. We want to create change – we believe in social justice and equality of opportunity globally. Perhaps most of all, we want to help those in society that are most vulnerable and affected by structural inequalities across the life-course. Research in public health and wellbeing reflects systems thinking, partnership working and synergies between different professional and academic contributions to

public health. Our research is translational and aspires to contribute to real world scenarios, therefore aiming to enable ethical and reflexive contributions to policy and practice.

Formative evaluation by Centre for Public Health and Wellbeing

Researchers from the Centre for Public Health and Wellbeing at UWE Bristol were commissioned to lead an independent pilot evaluation of Facts4Life (2012-2015). Briefly, pupils from ten schools in Gloucestershire (aged 7-11 years) participated in the pilot evaluation. Pupils from five schools took part in Facts4Life lessons (Intervention group), while pupils from the remaining five schools did not (Control group). All pupils were asked to report on their health and illness attitudes and health status, before any pupil had received Facts4Life lessons (January 2015) and again after Facts4Life lessons were completed (April 2015).

Findings from the pilot evaluation were recently published [8] and indicated improvements in some of the health and illness attitudes specifically targeted by the Facts4Life intervention. Focus groups and interviews with pupils and teachers receiving Facts4Life highlighted a number of positive aspects of Facts4Life including: perceived changes in pupils' attitudes and beliefs surrounding health and illness and in some cases perceived changes in health-related behaviours. Qualitative findings also identified that pupils enjoyed intervention content and enhanced their health- and illness-related knowledge and skills. It was acknowledged that Facts4Life is closely linked with National Curriculum objectives, a feature welcomed by teachers. As such, despite the relatively small sample size, findings suggested that Facts4Life showed promise as a school-based intervention.

The current evaluation

In April 2015 the UWE Bristol team was commissioned to undertake an evaluation of the revised Facts4Life intervention, known as 'Facts4Life: Phase II' (April 2015 to March 2018). The broad aim of the evaluation was to better understand the impact of Facts4Life on Gloucestershire-based pupils and their teachers, and to determine the costs associated with Facts4Life implementation in a school setting.

To reflect changes in the target age group for Facts4Life resources, the current evaluation includes an assessment of the impact of Facts4Life on secondary school pupils, in addition to those in primary school. The approach was also developed to assess the impact of Facts4Life, incorporating quantitative and quantitative research methods, and economic costing methods. Finally, changes in attitudes were assessed over a longer time period than the pilot evaluation.

Purpose of this final report

This report presents the findings from the 'Phase II' evaluation of the revised Facts4Life intervention. It includes findings from work with Gloucestershire-based primary and secondary schools, and a description of Facts4Life resources and costs incurred during implementation.

The report is divided into three parts:

- Part 1: Evaluation of Facts4Life in primary schools
- Part 2: Evaluation of Facts4Life in secondary schools
- Part 3: Costs/resources associated with Facts4Life

Part 1: Evaluation of Facts4Life in a primary school setting

Study design and methods

Overview

In this section we present the study design and methods used to evaluate Facts4Life in a primary school setting.

Aims and objectives

The broad aim of the first part of the evaluation was to better understand the impact of Facts4Life on Gloucestershire-based primary school pupils and their teachers.

The specific research objectives were as follows:

1) To collect pre-, post- and 6-month follow-up data on pupils' health- and illness-related attitudes and resilience following receipt of the Facts4Life intervention
2) To compare pre-, post- and 6-month follow-up data from schools receiving Facts4Life (intervention schools) with those not receiving the intervention (control schools)
3) To conduct a qualitative process evaluation exploring intervention outcomes, intervention implementation, context, and delivery
4) To assess the feasibility of collecting data on school sickness absence

Research design

We conducted a mixed methods study. First, a quantitative quasi-experimental (or non-randomised) study was conducted to assess whether pupils who received the revised Facts4Life intervention experienced improvements in heath and illness attitudes and resilience. We then conducted a qualitative process and outcome evaluation using focus group and interview data, to complement quantitative findings and to examine the wider context, implementation and mechanisms of Facts4Life in a primary school

setting. Ethical approval was obtained from the University of the West of England, Research Ethics Committee in March 2016 (Ref: HAS/16/02/111).

Study population and recruitment

A total of 671 pupils were recruited from 14 mainstream primary schools (excluding special educational needs providers and privately/independently funded schools) operating in the Gloucestershire Local Authority. Schools were recruited at a Facts4Life training event. Schools were allocated to intervention or control group on a pragmatic basis; schools agreeing to deliver Facts4Life materials in the Autumn 2016 term were allocated to the intervention group, while schools with curriculum-related time constraints were allocated to the control group and asked to withhold delivery of Facts4Life materials until after the end of the study period (July 2017). Two schools were recruited as reserves.

After baseline data were collected one intervention and one control school withdrew from the evaluation. Teachers from these schools reported that it was not possible to continue due to high work demands and unexpected staff changes at the school-level. Secondly, despite piloting both questionnaires prior to evaluation we discovered that pupils recruited from Key Stage 1 (KS1) classes (Aged 4-6 years) were unable to complete aspects of the questionnaire. As such, it was agreed with the funders that only pupils from KS2 would participate. One intervention school delivered Facts4Life to KS1 pupils only, and as such the school was asked instead to complete the process evaluation aspect of the project alone.

Parents of pupils from participating schools were provided with information about the study. Passive informed consent was employed: if a parent did not wish for their pupil to take part they were required to return a signed form to the school. A member of the research team visited each school and described the study and asked pupils to provide active informed consent for participation. Teachers in participating schools were provided with an information sheet about the evaluation and asked to provide active informed consent.

After removal of data from two withdrawing schools and exclusion of KS1 data, a total of 370 pupils from twelve schools provided baseline and post-intervention data. These data were used to produce baseline to post-intervention quantitative results.

At six month follow-up, data were collected from 303 pupils from eleven schools (one control school withdrew from project). These data were used to produce baseline to six months quantitative results.

Quantitative outcome evaluation methods

Piloting

Measures were piloted with 50 pupils of all ages (4-11 years) from a Gloucestershire school not participating in the evaluation. They were well-received with no feedback from pupils or their class teachers indicating that alternative measures should be utilised in this evaluation.

Data collection

After piloting, the following data on participating schools were collected from a range of sources:

- Local Authority to which the school belongs
- Free School Meal status at each school
- Total number of pupils in each school
- Age of pupil
- Year group of pupil
- Gender of pupil

In addition, pupils were invited to complete a 12-item questionnaire created by the Facts4Life team. The questionnaire was designed to assess health and illness attitudes specifically targeted by the Facts4Life intervention. Development of questionnaire items by the Facts4Life team and pre-testing of items with the population of interest (school pupils) was indicative of content validity.

Pupils were also asked to complete the 12-item Pupil and Youth Resilience Measure (CYRM-12) [20]. CYRM-12 is designed as a screening tool to explore individual, relational, communal and cultural resources available to individuals that may bolster their resilience. This measure has been validated for use with pupils aged 5 and above [20].

Please see **Appendix A and B** for copies of the questionnaire measures.

Pupils were asked to complete the health and illness attitudes and CYRM-12 [20] questionnaires a second time, immediately after the intervention, and a third time 6 months later. Data were collected from pupils as follows:

- Time 0 (baseline): September 2016
- Time 1 (post-intervention): December 2016-January 2017
- Time 2 (6-month follow-up): June-July 2017

Each item was read aloud by the class teacher and instructions on how to complete the questionnaires were provided by the researcher.

Statistical analysis

Data were analysed using IBM SPSS Statistics v.22. Tests were conducted to identify baseline differences in characteristics of pupils in the intervention compared with the control group.

Following this, mixed between-within subjects of analysis of variance (ANOVA) models were conducted to identify changes in health and illness attitudes among intervention and control group outcomes from baseline to post-intervention (and subsequent six month follow-up). Analysis included 'time' (baseline and post-intervention/six month follow-up) as the within-subject factor and intervention condition (intervention and control) as the between-subjects factor. Univariate and post hoc tests using Bonferroni correction, including effect size calculations, were conducted to examine changes in questionnaire items according to intervention condition.

Mann Whitney-U tests were conducted to assess potential changes in CYRM-12 resilience scores over time (baseline to post-intervention and baseline to six month follow-up).

To reflect the fact that the Facts4Life resource was tailored according to age, all analyses were conducted separately according to school year group: Years 3 and 4 (aged 7–9 years) and Years 5 and 6 (aged 9–11 years).

Qualitative evaluation methods

A qualitative evaluation was conducted in all intervention schools. This involved qualitative focus groups with pupils and telephone or face-to-face interviews with teachers. These qualitative methods were designed to elicit in-depth feedback on Facts4Life resources, to better understand the impact of Facts4Life on attitudes, and to identify considerations for wider dissemination of resources post-evaluation. Focus groups and interviews were conducted at the end of the intervention period.

To provide structure to focus groups and interviews, a topic guide was developed. Focus groups explored general health and wellbeing, participation and engagement, lesson enjoyment, lesson content, delivery style and wider implementation. Focus groups consisted of 6-8 participants and lasted approximately 30 minutes in duration. Semi-structured telephone interviews with teachers explored Facts4Life training, perceptions of pupils' health and wellbeing, intervention fidelity, successes/challenges, intervention delivery, data collection, and potential for maintenance. All audio data were recorded using a digital recorder (ZOOM Handy Recorded H4n) and transcribed verbatim.

Qualitative analysis

All qualitative data collected as part of the process evaluation were transcribed verbatim and analysed using NVivo 10 (QSR International) – a software programme for qualitative analysis. Data were explored using Thematic Analysis (TA); a useful method for "identifying, analysing and reporting patterns within data" [21]. More specifically we adopted the Framework Method [22], an approach commonly used to analyse qualitative data in multidisciplinary health research.

The Framework Method involves 7 stages:

- Verbatim transcription all qualitative data.
- Familiarisation with qualitative data – reading and re-reading, and initial note taking.
- Coding of qualitative data - line by line reading of each transcript and interpretation of concepts/ideas deemed to be important to the area of interest. Initial codes will be produced independently by the research team.
- Developing a working analytical framework – comparison of initial labels/codes among researchers and agreement on codes for remaining transcripts.
- Applying the analytical framework – all remaining transcripts coded according to codes agreed by the research team.
- Charting the data into the framework matrix – charting and summarising of codes and categories generated from each transcript.
- Interpreting the data – research team exploration and interpretation of themes emerging from the data.

Qualitative findings

Overview

In this section we present the findings from the qualitative evaluation of Facts4Life in a primary school setting. Participant characteristics and findings from the thematic analysis are presented, alongside verbatim quotations provided by pupils and teachers.

A sample of 43 pupils, representing each intervention school, was purposively selected by class teachers (see Table 1).

Table 1. Primary school focus group characteristics

Intervention school ID	Participants (N)	Sex breakdown	Year group	Age
1	6	3 x male, 3 x female	3, 4	7-9
2	6	1 x male, 5 x female	4	8-9
3	6	2 x male, 4 x female	3	7-8
4*	5	3 x male, 2 x female	2	6-7
5	6	3 x male, 3 x female	5, 6	9-11
6	6	2 x male, 4 x female	5	9-10
7	8	4 x male, 4 x female	3, 4, 5, 6	7-11

Note. *One school delivered Facts4Life to KS1 pupils alone, and as such pupils from this school were asked to complete the qualitative process and outcome evaluation aspect of the evaluation only.

Four teachers from six evaluation schools participated in a telephone or face-to-face interview. In addition, one school delivered Facts4Life to KS1 pupils alone, and as such was asked to complete the process evaluation aspect of the evaluation only (see Table 2). Two teachers approached for participation via email and telephone communication declined to take part (non-response).

Table 2. Primary school telephone interview characteristics

Intervention school ID	Teacher role
1	Year 3 and 4
2	Year 4
3	Year 3
4*	Year 2
5	PSHE Lead
6	Non-response
7	Non-response

Note. *One school delivered Facts4Life to KS1 pupils alone, and as such, a teacher from this school was asked to complete the qualitative process and outcome evaluation aspect of the evaluation only.

Emergent themes

Qualitative methods gathered in-depth, rich data from school pupils and teachers exposed to Facts4Life. These findings describe how Facts4Life was received from the perspectives of pupils and their teachers, and they also aim to highlight suggested areas for improving the intervention and intervention delivery. Qualitative data were analysed in line with the Framework Method for qualitative data analysis [22]. Six broad themes emerged from the data and they explore autonomy and personal responsibility, knowledge generation, attitudinal and behavioural change, value of openness and sharing, feelings towards Facts4Life lessons, and Facts4Life training and resources.

In focus group discussions with pupils taking part in Facts4Life, pupils were asked a series of questions about Facts4Life and their wider perceptions of health and illness. Many pupils were unfamiliar with the term 'Facts4Life' at the outset, but after probing about specific lessons and asking pupils to think more generally about health and illness, they were able to speak with confidence about their learning from and experiences of Facts4Life.

Among teachers, one aspect of Facts4Life frequently discussed during telephone interviews concerned pupils' engagement with the resource and its supporting materials. All teachers commented on how the resource impacted positively upon their pupils' health and illness knowledge and attitudes as the lessons progressed. Teachers' engagement with the Facts4Life resource has positive implications for its sustainability

within a primary school setting. Feedback indicates a change in philosophy around the teaching of health and illness, and this suggests that this will be present for subsequent pupils entering the schools.

Pupils were also asked to complete a drawing task which involved conveying their ideas about what constitutes a 'healthy' or 'unhealthy' person, followed with a discussion to describe and explain their drawings. The idea was to draw out from pupils their understanding of health and illness and to explore their appreciation of the wider factors influencing health and illness. A selection of drawings is presented in Figures 1 and 2 below.

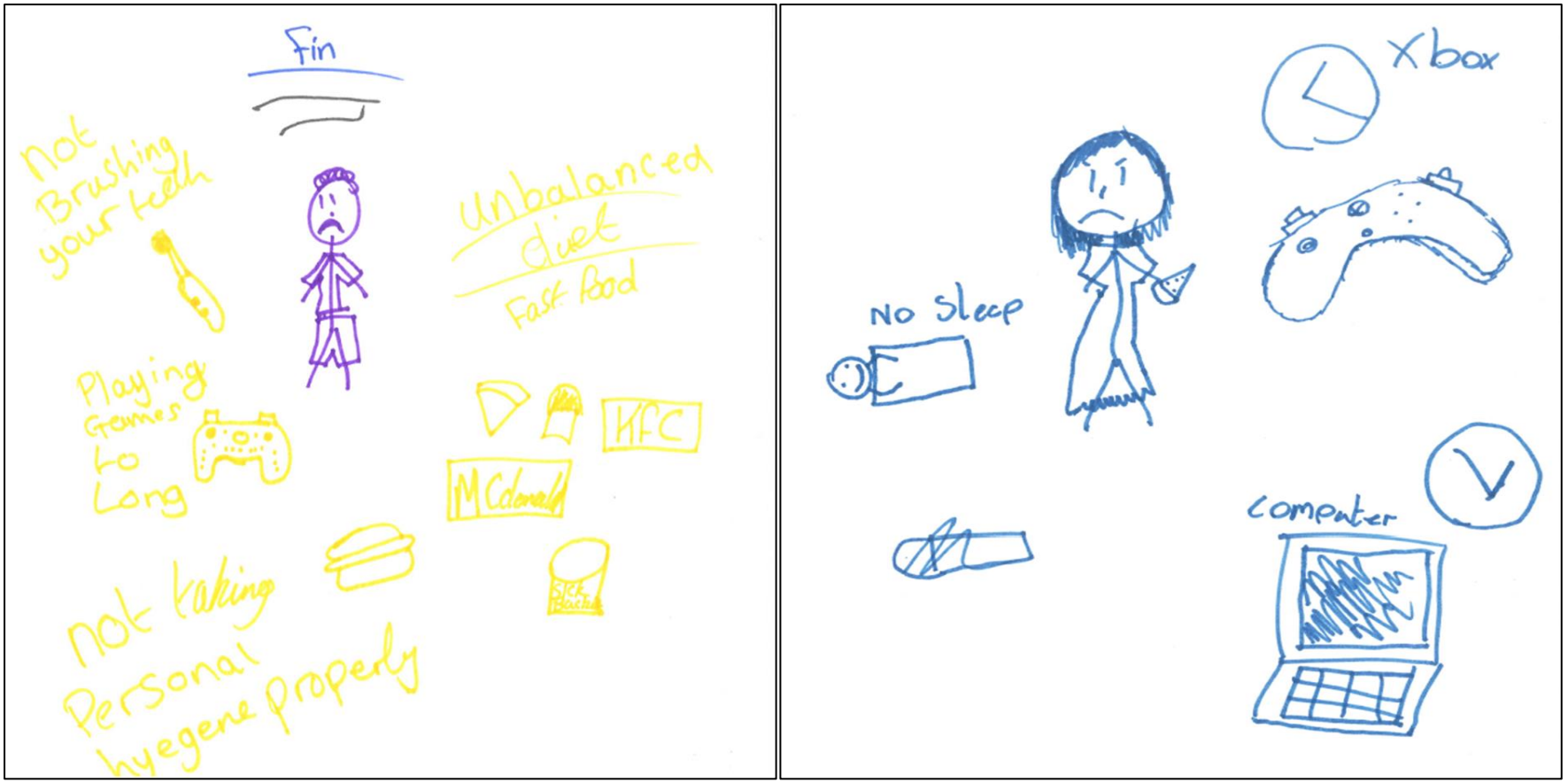

Figure 1. Pupils' perceptions of '*Unhealthy behaviours*' (School 7 (Left) and School 5 (Right))

Figure 2. Pupils' perceptions of '*Strategies for promoting health'* (School 2 (Left) and School 1 (Right))

Theme 1: Autonomy and personal responsibility

It was common for pupils to comment on how they felt Facts4Life had provided them with skills and the confidence required to share personal opinions, and to take ownership for their decisions.

> My favourite thing was learning that I can work things out for myself and do things to help myself. *Pupil, School 5*

> It made me feel better about things you can do [for your health] but didn't actually realise before. *Pupil, School 5*

> They're [Facts4Life lessons] useful to tell you what things might help in later life. *Pupil, School 1*

> The lessons are interesting and help me to feel control over my life. *Pupil, School 2*

This was strongly linked to pupils discussing strategies for promoting good mental and physical health and reducing risk of illness.

> [I've learned that] if you're going through a hard time, you might want to do colouring to help. *Pupil, School 2*

> It has showed me how to live a good life and how to look after yourself properly. *Pupil, School 7*

> I had a really bad headache and I thought, "I should drink a lot of water" and this actually made me feel better. *Pupil, School 4*

> I had a tummy ache from eating too much pizza! I just waited until I felt better and didn't need any medicine. *Pupil, School 4*

> I definitely drink more water now. *Pupil, School 3*

Pupils' comments on developing strategies for health and wellbeing were mirrored by teachers, with all teachers reflecting on perceived changes in the pupils taking part in Facts4Life.

> [The] pupils I spoke to afterwards could give me strategies that they could use if they were feeling, you know, if things were getting on top of them. They talked really confidently in a way that other classes who hadn't done it [Facts4Life lessons], and that made me want to have a go with all the classes. *Teacher, School 3*

> A lot of them would talk a lot about the things you can do to help your body without necessarily using medicine to make yourself get better. They really thought carefully about how rest is important. Sometimes that's all you need, to rest and let your body recover, rather than always turning to medicine straightaway. *Teacher, School 2*

> [Pupils] definitely have more of an understanding of staying healthy and what we need to stay healthy, and they even refer to it when we talk about why we need to wash our hands and that sort of thing. There is an element of knowing that we can sometimes just stay at home and have some Calpol, but we don't necessarily need to go to the doctor. *Teacher, School 1*

> When I talked about it with Year 1s they were really interested…they were really engaged and it was relevant because, you know, lots of them said to begin with "if you're ill you just need to go to the doctor". That was the overwhelming thing right from the beginning. We then went on to talk about medicines and medicines their parents have, and they came around to the idea that actually you didn't necessarily need to go the doctor, sometimes you can get better by yourself. *Teacher, School 4*

We get a lot of "Oh, my head hurts, my throat hurts", so it is about thinking about what that actually means and how you can help yourself. I can now say, "What can you do?" and they'll have some ideas, like "I'll go and have a drink", or "I'll take my jumper off". There isn't so much moaning about feeling ill! *Teacher, School 5*

They talk much more about what they can do to help themselves whereas they didn't before. *Teacher, School 5*

Theme 2: Knowledge generation

Focus groups elicited information on knowledge gained on a range of subjects as a result of taking part in Facts4Life lessons. Feedback was generally shared with enthusiasm and a desire to learn. Some pupils highlighted that content was challenging, with one reflecting on learning about societal differences and inequality.

I want to know more about illnesses and how they can be treated. *Pupil, School 6*

I liked it because it lets me know about my health and how it works. *Pupil, School 3*

I didn't really like learning about body parts – it's disgusting! – but it did really help me to get what's going on. *Pupil, School 1*

[I enjoyed] learning about what keeps your brain healthy. *Pupil, School 5*

[I learned about the] importance of sleep. It's really good for your brain. As a pupil you need about 9 hours. *Pupil, School 5*

They've taught me how to think about hygiene. *Pupil, School 6*

I'm learning things about myself. *Pupil, School 2*

> They're [Facts4Life lessons are] really fun. We got to learn about other cultures. *Pupil, School 6*

For some, there was a feeling that lesson content was challenging, with one reflecting on learning about societal differences and inequality.

> It was hard learning that some people are unfortunate, but it was really interesting. *Pupil, School 7*

Teachers also reflected upon pupils' responses to the learning materials and their perceptions of knowledge gain.

> I was impressed with actually how much they knew about when we were looking at the parts of the human body. Actually, their knowledge gain was astounding. We were able to get quite a detailed conversation about, like, "What [are] the different parts of the body?", "[What do] the lungs do and the heart and the liver [do]?". So, yes, it was a good resource for pushing their learning even further forward, because it was quite open ended in some areas and we could really extend the pupils. *Teacher, School 2*

> They have a better understanding of the sort of key issues that surround their lives and are able to talk about them much more. *Teacher, School 4*

> I did some pupil conferencing afterwards to find out what they'd retained from it and the running theme that pupils tended to bring up was talking about drugs and the difference between drugs that are useful like medicines and then drugs that aren't useful and to be avoided. *Teacher, School 2*

> [Outcomes of Facts4Life include] having a more positive view of what health and illness mean and how to look after themselves as a whole person. *Teacher, School 5*

> Quite a lot of pupils are talking about what helps them. They're getting quite a good vocabulary about health and illness and they really enjoyed it. Some of the discussions went on for longer than planned because they were so involved and the research tasks they really enjoyed. *Teacher, School 6*

Theme 3: Attitudinal and behavioural change

Health and illness attitudes were quantitatively assessed through this evaluation, and they were also a topic for discussion during focus groups and telephone interviews.

> I have changed what I think. You asked us [when completing the questionnaire] about whether some people never get ill. I used to think 'agree' but now I disagree. Everybody gets ill. At least once or twice. *Pupil, School 1*

> I'm now much more happy to try new foods. I used to say 'No way' to trying healthy food. *Pupil, School 3*

One pupil reflected on how Facts4Life had changed his behaviour, commenting that it has helped him to be more at home.

> I've learned about talking about things. So, sometimes now, if I've got a problem I go home and talk to my brother. He doesn't listen to me but I find it helps to just say it out loud! *Pupil, School 3*

Teachers also articulated changes in pupils' attitudes following Facts4Life.

> The biggest change has been the pupils' understanding of illness, and having balance in life. It was also the biggest thing that stood out for me on the [training] course – learning to visualise health and illness. That's really helped the pupils as well. *Teacher, School 1*

> It sends the message that it's OK and normal to be ill. We are kind of striving to be healthy but in normality we are not always 100% healthy and it [Facts4Life] gives a good way to look at this. *Teacher, School 6*

> One boy said he thought being sick was going to end up affecting the whole of his life, because he had been physically sick. This [Facts4Life] has helped him change his mind. *Teacher, School 5*

> The mental health and healthy eating topics were definitely the most useful. Oh, and where it asked the pupils to think about "does everybody get ill?" as this really changed as we worked through the materials. It helped pupils to understand that they could come into school even if they were feeling a little bit ill. This is a really big thing for us because we've got a really big push on attendance, so that's really helped. *Teacher, School 1*

Some teachers also perceived that Facts4Life had had a positive impact on attendance.

> …I have definitely seen attitudes change. I can think of two pupils in particular whose attendance was low last year. They would be saying "I don't feel very well" and Mum would keep them at home even if they were quite capable of coming in, and their attendance has definitely improved this year and I do feel that it is this [Facts4Life] that's had an effect. *Teacher, School 1*

> I think it's [Facts4Life] had an impact on the pupils and we've talked about it ever since as well. If somebody's not feeling well, I tell them it's good that they've still come in to school. And I have noticed that some pupils who have had a particular problem with attendance in the past are much better at coming in… *Teacher, School 1*

Theme 4: Value of openness and sharing

An idea central to the Facts4Life philosophy is the importance of dialogue between young people, families and the wider community. The value of opening up and sharing personal experiences and, of listening to others' experiences, was mentioned in all focus groups. There was a strong feeling from pupils that Facts4Life had created a 'space' allowing them to speak freely about health and illness in a way they hadn't previously.

> There was a thing that I did like but it made me feel a bit weird. I have a mental health thing, it's anxiety...when we were talking about it in class it made me feel a bit funny...[but] it was nice to talk about it and to let other people know, instead of just keeping it a secret. *Pupil, School 1*

> I like that we can share our own opinions about health. *Pupil, School 1*

> I liked that we got to talk about what's happened in our life. *Pupil, School 1*

> I really enjoyed talking together. *Pupil, School 2*

> I enjoy the conversations because you don't often get facts properly so it's good to hear others' opinions. *Pupil, School 3*

> I really enjoy it. I really enjoy talking to my class. *Pupil, School 5*

> Miss […] talked about the 'big bag of worries'. If you take them out and talk about them. Then they are gone and destroyed. It makes me feel so much better. *Pupil, School 6*

> I really like talking to people and finding out what they think. *Pupil, School 6*

> My sister's disabled and can't get better but I've liked talking about it in class. *Pupil, School 7*

Feedback from teachers broadly reflected that of the pupils.

> They have a better understanding of those sort of key issues that surround their lives and are able to talk about them much more. *Teacher, School 5*

> Mental health in particular and lots of pupils in class do struggle with mental health, so it's been nice that it is a topic that can be brought up and spoken about. It's given them space to talk about their feelings a bit more. *Teacher, School 1*

A lot of pupils now I think talk about things like that [health and illness] at home. *Teacher, School 1*

Because a lot of it was discussion based, it meant that everyone was able to contribute and get involved. *Teacher, School 2*

It's been much more student-led, rather than us just giving them information. *Teacher, School 5*

It just gives time to really focus in on our own health and own bodies. *Teacher, School 4*

It's been nice to talk about these things. We normally squash it [health conversations] into half an hour PSHE lessons and it would be quite separate to everything else. Whereas this, they've enjoyed it and it fits well with everything else we are doing. *Teacher, School 5*

They've really enjoyed being able to talk about their own personal experiences. *Teacher, School 5*

Being able to talk about facts is a positive thing to do. Rather than like 'cancer' is a scary word and we can't talk about it. *Teacher, School 6*

Theme 5: Facts4Life lesson experiences

Pupils were asked if they could recall content from Facts4Life lessons, and to identify specific areas of enjoyment or areas for improvement. Many of the pupils were unfamiliar with the term 'Facts4Life' at the outset and required some prompting about which lessons were being referred to. Discussions with teachers suggested that this apparent lack of awareness of 'Facts4Life' as a concept was unsurprising as most teachers did not refer to this term during lessons; Facts4Life lessons were simply integrated into wider teaching delivery.

One teacher did, however, mention that pupils in her class were excited on 'Facts4Life days' and this was supported by a feedback from a focus group:

> We all really looked forward to those lessons each week. *Pupil, School 7*

Telephone interviews with teachers indicated that pupils were engaged with Facts4Life materials and highlighted how the content was appropriate for addressing some of the mental health and emotional needs of their pupils.

> They were very focused and it [Facts4Life lessons] was on an afternoon which is often a more difficult time for Reception because they are quite tired in the afternoon. But they were really focussed and [we] had some really good conversations with them and discussions. Yeah I was really impressed with their engagement. *Teacher, School 2*

> They are very keen [on Facts4Life] which is why it's probably taken longer sometimes to do a lesson! *Teacher, School 4*

> It fitted in seamlessly. Pupils' emotional development…it's quite a priority for some of our pupils. *Teacher, School 2*

Once prompted with details about Facts4Life, pupils provided the following feedback.

> I really enjoyed the 'It's great to be me' thing. *Pupil, School 2*

> I really enjoyed doing the fitness stuff and working out a fitness plan. *Pupil, School 2*

> I liked the food pyramid where we had to think about what was healthy. And we had to organise food into different sections. *Pupil, School 3*

> My favourite bit was drawing healthy and unhealthy people. *Pupil, School 3*

It was great getting to draw healthy and unhealthy. And we got to talk about a member of our family and gave them an illness. *Pupil, School 7*

I really liked learning about how my body works and what body parts we have. *Pupil, School 3*

Exercise [based on Facts4Life lesson plan] made me feel confident and happy. *Pupil, School 4*

I look forward to learning all about healthy stuff. I feel that we'll be learning something about our body. *Pupil, School 4*

Theme 6: Feedback on Facts4Life training and resources

Facts4Life training sessions for teachers are regularly delivered during the school term. To deliver Facts4Life in the classroom, training is strongly recommended by the Facts4Life team, but not required. In the pilot evaluation, most teachers attended training, while a few were given an insight into Facts4Life from a teacher colleague based at their school who had attended training. All teachers involved in the current evaluation attended a training session. Feedback indicated that training was a beneficial exercise and there was broad agreement that teachers planning to draw upon Facts4Life ideas in the classroom in the future should try to attend a training session, where possible.

It [training] was really good, as the trainers that were there showed how passionate they were about it [Facts4Life]. One of the trainers is a GP, I think, so it really showed how important this thinking is from a medical perspective. They could all speak really confidently about it and it made us think about how to teach illness in a different way. *Teacher, School 1*

They gave us kind of a background overview of the idea…teaching pupils to be healthy and ways that they can help themselves with illness and not necessarily just turn to medicine. That definitely was the message that came through when teachers did the work [delivered Facts4Life lessons] with pupils and I think that that was really highlighted in the training, which was good. *Teacher, School 2*

Everyone [other teachers at school] seemed to be pretty positive that it would be easy to teach from [the resource booklet]. *Teacher, School 2*

For me personally, I found it [training] really useful because they [trainers] went into the background of it and why it was written in the first place. So it prepared me quite well. *Teacher, School 3*

[Facts4Life training] was really good and it pointed us in the right directions as to where to find resources, how to use planning tools and ideas for types of activities you might do. *Teacher, School 4*

I think it's a very clear and easy to use resource and it integrates well with the rest of our curriculum. So it's not like an add-on that we need to kind of fit in, it's something that's important and fits in well with what we are already doing. *Teacher, School 3*

It was pretty seamless and I think because we have a designated PSHE lesson every Monday afternoon to start our week, it gives the opportunity for any…if pupils have got any issues that are coming into school from the weekend that they are concerned about, it means we can start the week of on a positive and you know talk anything through. *Teacher, School 2*

I found it quite easy [to embed Facts4Life within the curriculum] actually. It kick started us thinking about mental health and the class really enjoyed it. We have so much to try and fit in [to the curriculum], so it's always important that new stuff [Facts4Life resource] is able to slot in and flow with everything else that we're doing. *Teacher, School 1*

There was one teacher that found the integration of Facts4Life into the curriculum more difficult and indicated that she would benefit for further guidance on this.

> Working out how best to fit it in to what we're doing already is the challenge for me. *Teacher, School 6*

Another teacher suggested that less experienced teachers might benefit from additional support to plan how to deliver recommended material in time available.

> Maybe when we're using it with NQTs [newly qualified teachers] we should break down sessions into smaller sessions. Experienced teachers will be able to see that [some session plans] are too long but NQTs might try to do the whole thing and find out too late that it's too much. *Teacher, School 5*

In addition to training teachers were provided with access to a resource booklet, tailored to Key Stage and a website containing additional materials to support Facts4Life delivery. Teachers were asked to provide feedback on Facts4Life resources and their applicability in the classroom setting.

> I think the resources and the book itself was very clear and the lesson plans are easy to follow and everyone gave positive feedback. No one [None of the teachers] said it was difficult. *Teacher, School 2*

> We have had to tweak it for some of the less able, just to make it more simple, but it's easily adaptable. *Teacher, School 5*

> It's quite flexible anyway so it can work with all abilities. *Teacher, School 6*

> I found it [resource] really good because you could pick bits that were most relevant and dip in and out if you needed to. *Teacher, School 2*

> There was quite a lot of content, which was good because we were able to tailor it to class and pick bits that would work best with the class. Rather than, I think, cover all of it there was enough in there that they were able to cover and still meet the objectives by using a selection of the resources *Teacher, School 3*

> There's a unit of healthy me [Jigsaw scheme] about physical health, food and drugs and alcohol and mental health, but this goes broader. It's meatier […] particularly the stuff about illness which isn't covered in our [Jigsaw] scheme. We have looked at mental health and stress…but the 'illnesses' side of it, and having a connection between physical health and mental health in Facts4Life is really good. *Teacher, School 6*

> I personally found the lesson plans really clear and really focussed. I know with timings, we often have quite short slots, so I decided to do half of a session one week and then pick it up again the next week and it was quite easy to do it that way. *Teacher, School 1*

Teachers were receptive to the website as an easily accessible resource. However, they did provide some ideas for improving the quality and utility of the website.

> There isn't anything on the website at the moment that is interactive, [for example] teacher's saying "This worked well for me". It might be useful to see comments like "I've done this activity but I did it this way" or someone's recommendation for a particular age group. *Teacher, School 5*

> The only thing I would say is that it would be useful to have on there [website] the original booklets, so that you could download them. Some of our booklets have disappeared through the time that we've been using them! *Teacher, School 3*

I did try to access it [website] but it wasn't very clear. I did get some of the resources but I couldn't get the links to work. I tried to download the Facts4Life game but it didn't work. But, it is really good to know that they're there [Facts4Life support team] to support you once you take it [Facts4Life resource] back to school. *Teacher, School 1*

Quantitative results

Overview

In this section we present the results from the quantitative evaluation of Facts4Life in a primary school setting. Changes in health and illness attitudes and resilience scores are reported, alongside statistical analysis of these outcomes.

A summary of the key quantitative results is provided at the end of this section.

School-level organisational and demographic characteristics

When conducting school-based evaluations, it is useful to consider how well the sample of primary schools recruited to the study represents schools in the wider population. Ensuring that the sample is similar to the wider population is particularly important if there are plans to roll-out an intervention beyond the end of the research evaluation period. Presented below is a comparison of Facts4Life evaluation schools with the England average (based on freely available school data), and a comparison of Facts4Life intervention and control group characteristics.

Comparing Evaluation Schools with the England average

Twelve primary schools located in the Gloucestershire Local Education Authority (LEA) participated in the evaluation. Five schools were community schools, three were foundation schools, two were academy schools, one was voluntary-aided and one was voluntary controlled.

As shown in Table 3, the average school size of schools participating in the evaluation was slightly smaller than the England average (212 versus 260, respectively) [23]. There was considerable variation in the number of pupils enrolled at evaluation schools, ranging from 87 to 343. The gender split was comparable for evaluation schools and the England average (49.8% girls versus 49.0% girls, respectively) [23].

Table 3. Comparison of evaluation school characteristics with England average

	Evaluation Schools	England Schools (Average)
School size	212	260
Gender (Female) %	49.8	49.0
FSM eligibility % [a]	12.9	25.4
% Overall absence	4.1	4.0

Note. a = Free School Meals.

Free School Meals eligibility is one measure that is commonly used as a proxy for deprivation. Table 3 illustrates that the percentage of pupils eligible for Free School Meals (FSM) was more than 10% lower in evaluation schools compared with the England average (12.9% versus 25.4%, respectively) [23].

As show in Table 3, overall absence (defined as: percentage of possible mornings or afternoons recorded as an absence from school for whatever reason, whether authorised or unauthorised, across the full academic year) in evaluation schools was comparable with the England average (4.1% versus 4.0%, respectively) [23].

In this outcome evaluation, four intervention schools were rated 'Good', one rated 'Requires Improvement', and one rated 'Inadequate'. Four control schools were rated 'Good', one 'Outstanding' and one has recently converted to an academy and has no current rating. A comparison of evaluation school rating with the England average demonstrates that the two categories are broadly similar [24].

Comparing intervention and control school characteristics

When conducting controlled evaluations (comparing intervention and control groups) it is useful to explore the similarity of intervention and control group characteristics. This is because we want to ensure that we are comparing 'like with like'. As shown below, intervention and control group characteristics were broadly similar in post-intervention (N = 370) and six month follow-up samples (N = 303).

Table 4 compares intervention and control group school size, Free School Meal eligibility and overall absence according to intervention and control group in both samples. In the post-intervention sample, there was no difference in school size ($t = -0.88$, $df = 10$, $p = 0.40$), Free School Meal eligibility ($t = -0.62$, $df = 8$, $p = 0.55$), or overall

absence (t = -1.13, df = 10, p = 0.29) between intervention and control conditions. At six month follow-up, there was no difference in school size (t = -1.57, df = 9, p = 0.15), Free School Meal eligibility (t = -2.01, df = 7, p = 0.08) or overall absence (t = -1.49, df = 9, p = 0.17) between intervention and control conditions.

Table 4. School-level characteristics according by intervention arm

	Intervention		**Control**		
Post-intervention sample (N=370)					
	Mean	**SD**	**Mean**	**SD**	**p[a]**
School size	190.2	57.9	238.0	119.7	0.4
FSM Eligibility[b]	11.8	3.0	14.1	7.8	0.6
Overall Absence	3.8	0.4	4.4	1.3	0.3
Six month follow-up sample (N=303)					
	Mean	**SD**	**Mean**	**SD**	**p[a]**
School size	190.2	57.9	268.20	105.21	0.2
FSM Eligibility[b]	11.8	3.0	17.03	4.84	0.1
Overall Absence	3.8	0.4	4.62	1.35	0.2

Note. a = Independent-samples t-test. b = Free school meals.

Table 5 compares intervention and control group Ofsted ratings and reveals no difference in Ofsted rating between intervention and control group schools ($\chi 2 = 2.93$, df = 3, p = 1.00) in the post-intervention sample. However, after losing one control school at six month follow-up, a significant difference between intervention and control group Ofsted ratings was observed ($\chi 2 = 58.89$, df = 2, p = 0.001).

Table 5. Ofsted ratings according to intervention arm

	Intervention		Control		
Post-intervention sample (N=370)					
	N	**%**	**N**	**%**	
Ofsted rating					1.00
Outstanding	0	0.0	0	0.0	
Good	4	66.6	4	66.6	
Requires Improvement	1	16.7	0	0.0	
Inadequate	1	16.7	0	0.0	
Not reported	0	0.0	1	33.4	
Six month follow-up sample (N=303)					
	N	**%**	**N**	**%**	**p[a]**
Ofsted rating					0.01
Outstanding	0	0.0	0	0.0	
Good	4	66.6	3	80.1	
Requires Improvement	1	16.7	0	0.0	
Inadequate	1	16.7	0	0.0	
Not reported	0	0.0	1	19.9	

Note. a = Chi squared test of association.

Table 6 presents information on how many pupils completed baseline measures, according to sex and year group.

Table 6. Baseline data provision

	Intervention (%)	Control (%)	Total (%)*
Post-intervention sample (N=370)			
Sex	177 (47.8)	191 (51.6)	368 (99.4)
Year Group	178 (48.1)	192 (51.9)	370 (100.0)
Age	177 (47.8)	187 (50.5)	364 (98.3)
Six month follow-up sample (N=303)			
Sex	166 (54.8)	136 (44.9)	302 (99.7)
Year Group	167 (55.1)	136 (44.9)	303 (100.0)
Age	165 (54.5)	134 (44.2)	299 (98.7)

Note. * Numbers add to less than the total sample size for some variables due to missing data.

Table 7 compares sex, year group and age according to intervention and control groups. In the post-intervention sample baseline there was no significant difference in sex ($\chi 2 = 1.54$, df = 1, p = 0.22), year group participation ($\chi 2 = 3.46$, df = 1, p = 0.06), or age (t = 1.52, df = 362, p = 0.13) between intervention and control groups. Due to loss of one school at six month follow-up, there was a significant difference in year group participation ($\chi 2 = 4.61$, df = 1, p = 0.03) and age (t = 2.06, df = 297, p = 0.04) between

groups. There was a higher proportion of pupils in Years 3 and 4 in the control group compared with the intervention group, and average age of control group pupils was significantly lower than those in the intervention group. There was no statistical difference between groups for sex breakdown ($\chi 2 = 2.02$, df = 1, p = 0.16).

Table 7. Baseline descriptive statistics

	Intervention				Control				
	N	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**p**
Post-intervention sample (N=370)									
Girls	72	40.4	-	-	91	47.4	-	-	0.22[a]
Years 3-4	100	56.2	-	-	127	66.1	-	-	
Years 5-6	78	43.8	-	-	65	33.9	-	-	0.06[a]
Age	177	-	8.40	1.01	187	-	8.25	0.94	0.13[b]
Six month follow-up sample (N=303)									
Girls	67	40.1	-	-	66	48.5	-	-	0.16[a]
Years 3-4	98	58.7	-	-	96	70.6	-	-	
Years 5-6	69	41.3	-	-	40	29.4	-	-	0.03[a]
Age	167	-	8.35	1.00	134	-	8.13	0.86	0.04[b]

Note. a = Chi squared test of association. b = Independent-samples t-test.

Comparison of intervention and control group outcomes

Health and illness attitudes

Pupils were asked to complete the Facts4Life questionnaire at three-time points: baseline, immediately after the intervention period, six months after the intervention. To reflect the fact that the Facts4Life resource was tailored according to age, results are presented according to school year group: Years 3 and 4 (aged 7–9 years) and Years 5 and 6 (aged 9–11 years). Tables 8 to 11 provide means and standard deviations on the outcome variables for the intervention and control conditions. Analysis of item responses over time was indicative of moderate-good reliability as the majority of intra-class coefficients (ICC) were within the 0.5 to 0.75 range [25].

Years 3 and 4 baseline to post-intervention analysis

As shown in Table 8, intervention group pupils reported a more favourable mean score for nine out of twelve items after receiving the intervention. For one item, the mean score was the same. For the remaining two items, the mean scores were less favourable

after receiving the intervention. For pupils in the control group, the mean scores for four items were more favourable after the intervention period. The mean score for one item remained the same. Mean scores for the remaining seven items were less favourable after the intervention period.

In order to assess the significance of these results (i.e., to find out whether the favourable responses at post-intervention were statistically different after taking part in the intervention), a mixed between-within subjects analysis of variance (ANOVA) was conducted.

At the multivariate level there was a significant time by condition interaction for pupils in Years 3 and 4, $F(12, 156) = 2.89$, $p = 0.001$, Wilks' $\lambda = 0.82$. At the univariate level there was a significant time by condition interaction effect for three items: "When I feel ill I always need to take medicine to feel better"; "There is nothing I can do to help when I am feeling low"; and, "It is useful to learn about illness".

To assess these changes according to intervention and control group conditions, post hoc tests with Bonferroni corrections were conducted. These tests revealed ***significant baseline to post-intervention improvements in intervention group responses*** to:

- When I feel unwell I always need to take medicine to feel better (Mdiff = 0.56, p = 0.001, Eta squared = 0.17).
- There is nothing I can do to help when I am feeling low (Mdiff = 0.32, p = 0.04, Eta squared = 0.04).
- It is useful to learn about illness (Mdiff = 0.26, p = 0.04, Eta squared = 0.04).

Notably, there were no significant changes in control group responses to these items.

Table 8. Years 3 and 4 baseline to post intervention health and illness attitudes

		T0		T1		ICC (95% CI)
	N	Mean	SD	Mean	SD	
Some people are never ill[a]						
Intervention	100	3.66	1.17	4.10	1.04	0.55 (0.48, 0.69)
Control	104	3.83	1.15	4.01	1.08	
Being ill is a normal part of life[b]						
Intervention	99	1.76	0.81	1.72	0.85	0.62 (0.47, 0.74)
Control	103	1.97	0.99	1.96	1.07	
Most of the time my body will get better by itself[b]						
Intervention	99	2.00	0.91	2.22	0.94	0.50 (0.38, 0.57)
Control	103	2.45	1.25	2.30	1.05	
When I feel ill I always need to take medicine to feel better[a]						
Intervention	97	2.28	1.02	2.84	1.14	0.67 (0.53, 0.78)
Control	99	2.80	1.24	2.70	1.23	
When I feel ill I always need to see a doctor[a]						
Intervention	99	3.08	1.15	3.35	1.09	0.64 (0.49, 0.75)
Control	104	3.32	1.19	3.30	1.18	
I know that I can do things to keep myself as healthy and well as possible[b]						
Intervention	99	1.88	0.84	1.88	0.83	0.47 (0.24, 0.55)
Control	101	1.84	0.90	1.84	0.94	
Healthy eating and exercise help me to stay well[b]						
Intervention	99	1.69	0.77	1.67	0.80	0.59 (0.43, 0.72)
Control	102	1.76	0.93	1.74	0.82	
There is nothing I can do to help when I am feeling low[a]						
Intervention	100	3.36	1.27	3.68	1.06	0.54 (0.32, 0.60)
Control	98	3.65	1.24	3.48	1.20	
We talk about health and illness at home[b]						
Intervention	98	3.00	1.14	2.95	1.23	0.58 (0.41, 0.70)
Control	99	2.88	1.26	2.96	1.26	
It is useful to learn about illness[b]						
Intervention	96	2.14	1.14	1.88	1.02	0.59 (0.42, 0.71)
Control	101	1.94	0.96	2.05	0.89	
I enjoy learning about how to keep happy and healthy[b]						
Intervention	98	2.03	0.96	2.39	1.08	0.64 (0.40, 0.76)
Control	103	2.08	1.10	2.16	0.94	
It's okay to feel sad or upset sometimes[b]						
Intervention	99	1.82	0.97	1.65	0.76	0.60 (0.47, 0.74)
Control	103	1.80	1.10	1.84	0.92	

Note. Scores range from 1 to 5 on a Likert-response scale (1 = strongly agree, 5 = strongly disagree). a = higher score is more desirable. b = lower score is more desirable. Green highlights indicate a more desirable response at post-intervention or follow-up, compared with baseline, yellow highlights indicate no difference, and red indicates a less desirable response. ICC = Intra-class correlation testing test–retest reliability.

Years 3 and 4 baseline to six month follow-up analysis

As shown in Table 9, at six month follow-up, intervention group pupils reported a more favourable mean score, compared with baseline, in ten out of twelve items. For the remaining two items, the mean scores were less favourable at six month follow-up. For pupils in the control group, the mean scores for seven items were more favourable after the intervention period. The mean score for one item remained the same. Mean scores for the remaining four items were less favourable after the intervention period.

Mixed between-within subjects ANOVA revealed a significant time by condition interaction, $F(12, 137) = 3.46$, $p = 0.001$, Wilks' $\lambda = 0.77$. At the univariate level there was a significant time by condition interaction for four items: "Most of the time my body will get better by itself", "When I feel ill I always need to take medicine to feel better", "There is nothing I can do to help when I am feeling low", "We talk about health and illness at home".

Post hoc tests with Bonferroni corrections revealed ***significant baseline to six month follow-up intervention group responses*** to:

- When I feel ill I always need to take medicine to feel better (Mdiff = 1.04, p = 0.001, Eta squared = 0.08).
- There is nothing I can do to help when I am feeling low (Mdiff = 0.51, p = 0.001, Eta squared = 0.04).
- We talk about health and illness at home (Mdiff = 0.26, p = 0.05, Eta squared = 0.03).

There were statistical improvements in control group responses to:

- Most of the time my body will get better by itself (Mdiff = 0.37, p = 0.04, Eta squared = 0.03).
- When I feel ill I always need to take medicine to feel better (Mdiff = 0.39, p = 0.01, Eta squared = 0.03).

Table 9. Year 3 and 4 baseline to six month follow-up health and illness attitudes

		T0		T2		ICC (95% CI)
	N	Mean	SD	Mean	SD	
Some people are never ill[a]						
Intervention	98	3.69	1.18	4.14	0.96	0.46 (0.34, 0.63)
Control	75	3.75	1.13	4.05	1.06	
Being ill is a normal part of life[b]						
Intervention	97	1.72	0.77	1.57	0.73	0.49 (0.28, 0.65)
Control	74	2.08	1.10	1.78	0.95	
Most of the time my body will get better by itself[b]						
Intervention	98	2.03	0.90	2.15	0.77	0.54 (0.32, 0.54)
Control	73	2.53	1.24	2.18	1.00	
When I feel ill I always need to take medicine to feel better[a]						
Intervention	95	2.29	1.03	3.33	3.63	0.68 (0.53, 0.79)
Control	75	2.80	1.25	3.14	1.32	
When I feel ill I always need to see a doctor[a]						
Intervention	97	3.11	1.15	3.63	1.05	0.62 (0.35, 0.75)
Control	75	3.25	1.19	3.52	1.27	
I know that I can do things to keep myself as healthy and well as possible[b]						
Intervention	98	1.88	0.83	1.68	0.67	0.54 (0.32, 0.54)
Control	74	1.76	0.81	1.73	0.76	
Healthy eating and exercise help me to stay well[b]						
Intervention	98	1.70	0.76	1.66	0.71	0.52 (0.21, 0.67)
Control	75	1.67	0.78	1.77	0.85	
There is nothing I can do to help when I am feeling low[a]						
Intervention	98	3.37	1.24	3.89	0.97	0.41 (0.37, 0.59)
Control	73	3.79	1.09	3.65	1.19	
We talk about health and illness at home[b]						
Intervention	97	3.08	1.10	2.84	1.09	0.51 (0.39, 0.66)
Control	72	2.82	1.29	2.86	1.24	
It is useful to learn about illness[b]						
Intervention	94	2.10	1.09	1.84	2.33	0.42 (0.41, 0.45)
Control	75	1.87	0.94	1.98	1.06	
I enjoy learning about how to keep happy and healthy[b]						
Intervention	96	2.00	0.95	2.33	0.93	0.56 (0.37, 0.70)
Control	75	1.95	0.99	1.95	0.90	
It's okay to feel sad or upset sometimes[b]						
Intervention	98	1.84	0.98	1.62	0.86	0.46 (0.30, 0.55)
Control	75	1.85	1.12	1.74	0.92	

Note. Scores range from 1 to 5 on a Likert-response scale (1 = strongly agree, 5 = strongly disagree). a = higher score is more desirable. b = lower score is more desirable. Green highlights indicate a more desirable response at post-intervention or follow-up, compared with baseline, yellow highlights indicate no difference, and red indicates a less desirable response. ICC = Intra-class correlation testing test–retest reliability.

Years 5 and 6 baseline to post-intervention analysis

As shown in Table 10, intervention group pupils reported a more favourable mean score for five out of twelve items after receiving the intervention. For one item, the mean score was the same. For the remaining six items, the mean scores were less favourable after receiving the intervention. For pupils in the control group, the mean scores for six items were more favourable after the intervention period, while responses to the other six items were less favourable.

Mixed between-within subjects ANOVA revealed no significant time by condition interaction at the multivariate level, $F(12, 177) = 0.93$, $p = 0.07$, Wilks' $\lambda = 0.71$. There was a time interaction for pupils in Years 5 and 6, $F(12, 117) = 2.89$, $p = 0.002$, Wilks' $\lambda = 0.77$ with both groups showing change in mean responses over time. However, the main effect comparing the two groups was not found to be significant, $F(12, 117) = 1.52$, $p = 0.13$, Wilks' $\lambda = 0.77$, suggesting ***no statistical difference in responses according to intervention or control condition***.

Table 10. Year 5 and 6 baseline to post-intervention health and illness attitudes

		T0		T1		ICC (95% CI)
	N	Mean	SD	Mean	SD	
Some people are never ill[a]						
Intervention	78	3.67	1.11	4.03	0.99	0.50 (0.27, 0.67)
Control	64	3.89	0.99	4.22	0.95	
Being ill is a normal part of life[b]						
Intervention	78	1.74	0.92	1.66	0.65	0.58 (0.38, 0.73)
Control	64	1.80	0.62	1.82	0.74	
Most of the time my body will get better by itself[b]						
Intervention	78	2.19	0.84	2.34	0.86	0.57 (0.36, 0.62)
Control	64	2.16	0.74	2.07	0.74	
When I feel ill I always need to take medicine to feel better[a]						
Intervention	78	2.64	1.13	2.95	1.19	0.65 (0.47, 0.78)
Control	62	2.97	0.87	3.32	0.88	
When I feel ill I always need to see a doctor[a]						
Intervention	76	3.38	1.07	3.68	1.01	0.73 (0.59, 0.84)
Control	64	3.59	0.66	3.77	0.92	
I know that I can do things to keep myself as healthy and well as possible[b]						
Intervention	77	1.58	0.75	1.75	0.75	0.52 (0.29, 0.68)
Control	65	1.72	0.57	1.85	0.67	
Healthy eating and exercise help me to stay well[b]						
Intervention	78	1.64	0.66	1.74	0.89	0.59 (0.39, 0.74)
Control	64	1.56	0.59	1.64	0.76	
There is nothing I can do to help when I am feeling low[a]						
Intervention	77	3.66	1.12	3.66	1.10	0.57 (0.36, 0.72)
Control	64	3.56	0.92	3.73	1.00	
We talk about health and illness at home[b]						
Intervention	78	2.82	1.18	2.90	1.09	0.54 (0.33, 0.70)
Control	64	2.89	0.98	2.72	1.00	
It is useful to learn about illness[b]						
Intervention	78	1.77	0.81	1.94	0.97	0.49 (0.25, 0.66)
Control	65	1.86	0.73	1.80	0.67	
I enjoy learning about how to keep happy and healthy[b]						
Intervention	78	2.14	0.95	2.18	0.94	0.63 (0.44, 0.76)
Control	65	2.25	0.79	2.28	0.84	
It's okay to feel sad or upset sometimes[b]						
Intervention	78	1.68	0.92	1.58	0.71	0.49 (0.45, 0.61)
Control	65	1.57	0.53	1.63	0.76	

Note. Scores range from 1 to 5 on a Likert-response scale (1 = strongly agree, 5 = strongly disagree). a = higher score is more desirable. b = lower score is more desirable. Green highlights indicate a more desirable response at post-intervention or follow-up, compared with baseline, yellow highlights indicate no difference, and red indicates a less desirable response. ICC = Intra-class correlation testing test–retest reliability.

Years 5 and 6 baseline to six month follow-up analysis

As shown in Table 11, at six month follow-up, intervention group pupils reported a more favourable mean score for seven items after the intervention. For one item, the mean score was the same at baseline and six month follow-up. For the remaining four items, the mean scores were less favourable at six month follow-up. For pupils in the control group, the mean scores for nine items were more favourable after the intervention period. Mean scores for the remaining three items were less favourable after the intervention period.

In line with baseline to post-intervention findings, ANOVA tests using baseline and six month follow-up data revealed no significant time by condition interaction at the multivariate level, $F(12, 89) = 0.80$, $p = 0.65$, Wilks' $\lambda = 0.90$. There was a time interaction, $F(12, 89) = 5.48$, $p = 0.001$, Wilks' $\lambda = 0.58$ with both groups showing change in mean responses over time. However, the main effect comparing the two groups was not found to be significant, $F(12, 89) = 1.10$, $p = 0.37$, Wilks' $\lambda = 0.15$, suggesting ***no statistical difference in responses according to intervention or control condition***.

Table 11. Year 5 and 6 baseline to six month follow-up health and illness attitudes

		T0		T2		ICC (95% CI)
	N	Mean	SD	Mean	SD	
Some people are never ill[a]						
Intervention	69	3.67	1.05	4.16	0.85	0.50 (0.23, 0.69)
Control	40	3.90	0.90	4.15	1.05	
Being ill is a normal part of life[b]						
Intervention	69	1.74	0.85	1.55	0.56	0.53 (0.27, 0.71)
Control	40	1.93	0.57	1.68	0.86	
Most of the time my body will get better by itself[b]						
Intervention	69	2.17	0.87	2.17	0.71	0.47 (0.32, 0.73)
Control	39	2.31	0.80	2.25	0.78	
When I feel ill I always need to take medicine to feel better[a]						
Intervention	69	2.62	1.13	3.35	1.10	0.55 (0.30, 0.73)
Control	40	2.98	0.86	3.68	0.94	
When I feel ill I always need to see a doctor[a]						
Intervention	67	3.40	1.07	3.91	0.85	0.53 (0.42, 0.58)
Control	40	3.45	0.71	3.75	0.87	
I know that I can do things to keep myself as healthy and well as possible[b]						
Intervention	69	1.59	0.77	1.64	0.73	0.62 (0.40, 0.77)
Control	40	1.80	0.61	1.73	0.60	
Healthy eating and exercise help me to stay well[b]						
Intervention	69	1.64	0.66	1.74	0.70	0.50 (0.22, 0.69)
Control	39	1.51	0.56	1.68	0.69	
There is nothing I can do to help when I am feeling low[a]						
Intervention	68	3.63	1.13	3.81	1.03	0.57 (0.22, 0.64)
Control	40	3.55	0.99	3.63	0.98	
We talk about health and illness at home[b]						
Intervention	69	2.87	1.16	2.99	1.11	0.46 (0.17, 0.66)
Control	40	2.88	0.94	2.63	0.87	
It is useful to learn about illness[b]						
Intervention	69	1.83	0.82	1.80	0.88	0.56 (0.32, 0.73)
Control	40	1.80	0.72	1.83	0.71	
I enjoy learning about how to keep happy and healthy[b]						
Intervention	69	2.19	0.94	2.39	0.90	0.58 (0.35, 0.75)
Control	40	2.13	0.79	2.33	1.00	
It's okay to feel sad or upset sometimes[b]						
Intervention	69	1.68	0.96	1.57	0.74	0.44 (0.33, 0.55)
Control	40	1.63	0.54	1.63	0.77	

Note. Scores range from 1 to 5 on a Likert-response scale (1 = strongly agree, 5 = strongly disagree). a = higher score is more desirable. b = lower score is more desirable. Green highlights indicate a more desirable response at post-intervention or follow-up, compared with baseline, yellow highlights indicate no difference, and red indicates a less desirable response. ICC = Intra-class correlation testing test–retest reliability.

Resilience outcomes

Pupils were asked to complete the Pupil and Youth Resilience Measure (CYRM-12) at baseline, immediately after the intervention period, and six months after receiving the intervention.

As CYRM-12 responses were not normally distributed, we present the medians (and inter-quartile ranges (IQR)) in addition to mean values. As shown in Table 12, tests revealed ***no differences in Year 3 and 4 resilience scores at any time point***.

Table 12. Year 3 and 4 Resilience (CYRM-12)

Outcomes	N	Mean[a]	SD	Median	IQR[b] (25th Q)	IQR (75th Q)	p[c]
Baseline (T0)							
Intervention	100	17.99	3.12	18.00	16.00	20.00	0.14
Control	127	18.54	3.35	19.00	16.00	21.00	
Post-intervention (T1)							
Intervention	100	17.49	3.12	17.00	15.00	20.00	0.29
Control	127	17.68	3.51	18.00	16.00	20.00	
Baseline (T0)							
Intervention	98	18.20	3.09	18.00	16.00	21.00	0.36
Control	96	18.55	3.37	19.00	17.00	21.00	
Six month follow-up (T2)							
Intervention	94	18.22	3.03	18.50	16.00	20.25	0.06
Control	92	18.89	3.67	19.00	17.00	22.00	

Note. a = Possible CYRM-12 scores range from 0 to 24. A higher score is desirable. b = IQR = Inter quartile range. c = Rank sum between groups. Median CYRM-12 scores were used in analysis because data were found to be negatively skewed.

As shown in Table 13, there was no difference between Year 5 and 6 resilience scores according to intervention group at baseline or at post-intervention. However, ***tests did reveal a significantly higher resilience score among intervention group pupils in Years 5 and 6*** compared with those in the control group at six month follow-up.

Caution is advised when observing this finding as the six month follow-up sample was smaller than baseline and post-intervention, and as reported above, baseline resilience was high.

Table 13. Year 5 and 6 Resilience (CYRM-12)

Outcomes	N	Mean[a]	SD	Median	IQR[b] (25th Q)	IQR (75th Q)	p[c]
				Baseline (T0)			
Intervention	78	19.60	3.03	20.00	18.00	22.00	0.37
Control	65	19.14	2.88	20.00	17.50	22.00	
				Post-intervention (T1)			
Intervention	78	18.71	3.23	19.00	17.00	21.00	0.46
Control	65	19.09	3.05	20.00	17.00	21.00	
				Baseline (T0)			
Intervention	69	19.42	2.93	20.00	18.00	22.00	0.33
Control	40	19.32	2.85	20.00	18.00	21.00	
				Six month follow-up (T2)			
Intervention	64	19.73	2.84	20.00	18.00	22.00	0.03
Control	39	18.62	2.78	19.00	17.00	21.00	

Note. a = Possible CYRM-12 scores range from 0 to 24. A higher score is desirable. b = IQR = Inter quartile range. c = Rank sum between groups. Median CYRM-12 scores were used in analysis because data were found to be negatively skewed. Green highlight indicates a significantly higher resilience score among six month follow-up intervention group respondents compared with the control group.

Summary of quantitative outcome evaluation results

Years 3 and 4

- Quantitative results were promising, with younger pupils from Years 3 and 4 reporting improvements in three health and illness attitudes targeted by the intervention immediately after completing the intervention. These improvements concerned concepts central to Facts4Life key messages:
    - The need for medication when feeling unwell
    - Strategies for promoting mental health
    - Perceived utility of learning about illness

- Improvements in attitudes regarding need for medical intervention and strategies for mental health were observed at six month follow-up.

- Six month follow-up results also indicated an increase in reported time spent talking about health and illness at home.

- Notably, improvements in two health and illness attitudes were observed among pupils in years the control group.

- There was no evidence that Facts4Life had an impact upon the resilience of year 3 and 4 pupils in the intervention group. This is perhaps unsurprising given the high median scores reported. In other words, pupils scored highly on resilience indicators before taking part in the intervention, so it could be argued that there was little scope for observing small changes in these scores in the short term; a finding that has been reported elsewhere in relation to school-based interventions with 'healthy' school populations.

Years 5 and 6

- There were no quantifiable changes in health and illness attitudes identified among pupils from Years 5 and 6.

- This finding differs from findings from the Phase I evaluation, in which positive changes were identified in response to two of six items assessed. Although not found to statistically differ from control group responses, there was a positive trend in mean intervention group responses to the majority of health and illness items.

- Notably, the loss of one school at six month follow-up disproportionately affected the year 5 and 6 sample size, and it may be that there was insufficient power to detect effects. The small sample at follow-up is problematic and it would be desirable to replicate the research with a larger sample.

- This evaluation did identify a significant improvement in resilience at six month follow-up among intervention group pupils in years 5 and 6. This has positive implications for Facts4Life as building young people's resilience is a key objective of the resource. Caution is required when interpreting the finding as the six month follow-up sample was relatively small. However, the finding is supported by qualitative feedback provided by teachers and pupils, in which the development of personal autonomy and responsibility emerged as a key theme from the data.

Part 2: Evaluation of Facts4Life in a secondary school setting

Study design and methods

Aim

The broad aim of the second part of the evaluation was to better understand the impact of Facts4Life on Gloucestershire-based secondary school pupils and their teachers. The specific research objective was to conduct a qualitative evaluation exploring pupils' and teachers' experiences of Facts4Life, intervention implementation, context, and delivery in a secondary school setting.

Research design

We conducted a qualitative process and outcome evaluation. Ethical approval was obtained from the University of the West of England, Research Ethics Committee in March 2016 (Ref: HAS/16/02/111).

Study population and recruitment

The delivery of Facts4Life in a secondary school setting was a relatively new development, and this was the first small-scale study to explore pupils' and teachers' experiences of the intervention. We aimed to recruit pupils and teachers from five secondary schools (excluding special educational needs providers and privately/independently funded schools) operating in the Gloucestershire Local Authority. Five schools were recruited at a Facts4Life training event, and all schools agreed to deliver Facts4Life materials in the Autumn term (2016). Due to unforeseen circumstances one secondary school was unable to participate in the evaluation, resulting in a final sample of four participating schools.

Parents of pupils from participating schools were provided with information about the study. Passive informed consent was employed: if a parent did not wish for their pupil to take part they were required to return a signed form to the school. A member of the

research team visited each school and described the study and asked pupils to provide active informed consent for participation. Teachers in participating schools were provided with an information sheet about the evaluation and asked to provide active informed consent.

Qualitative evaluation methods

Focus groups were conducted with pupils, while four teachers took part in a face-to-face interview and three teachers from one school participated in a focus group. These qualitative methods were designed to elicit in-depth feedback on Facts4Life resources, to better understand the impact of Facts4Life on attitudes, and to identify considerations for wider dissemination of resources post-evaluation. Focus groups and interviews were conducted at the end of the intervention period.

Similar to methods employed in the primary school evaluation, a topic guide was developed for focus groups and interviews. Focus groups explored general health and wellbeing, participation and engagement, lesson enjoyment, lesson content, delivery style and wider implementation. Focus groups consisted of 4-8 participants and lasted approximately 30 minutes in duration. Interviews and focus groups with teachers explored Facts4Life training, perceptions of pupils' health and wellbeing, intervention fidelity, successes/challenges, intervention delivery, data collection, and potential for maintenance. All audio data were recorded using a digital recorder (ZOOM Handy Recorded H4n) and transcribed verbatim.

Qualitative analysis

In line with primary school evaluation methods, all qualitative data collected were transcribed verbatim and analysed using NVivo 10 (QSR International) and explored using the Framework Method [22]. In an attempt to draw out similarities and differences between primary school and secondary school pupils' experiences, a deductive approach to analysis of secondary school data was employed, with feedback from secondary school pupils and their teachers linked to themes that emerged during primary school data analysis.

Qualitative findings

A sample of 35 pupils representing four secondary schools was purposively selected by class teachers (see Table 14) with a total of six focus groups conducted. Seven teachers took part in an interview or a focus group.

Table 14. Secondary school focus group characteristics

School	Focus group	Participants (N)	Sex breakdown	Year group	Age
1	1	6	6 x male	7	11-12
2	1	4	2 x male, 2 x female	8	12-13
	2	6	3 x male, 3 x female	9	13-14
	3	4	4 x male	7	11-12
3	1	7	3 x male, 4 x female	7	11-12
4	1	8	3 x male, 5 x female	7	11-12

Feedback on Facts4Life from pupils and teachers was generally positive, particularly with regard to the broad concept of Facts4Life and its relevance for young people. Pupils and their teachers reported examples of attitude changes and increases in perceived autonomy and personal responsibility for health. There was also strong appreciation for the mental health topics explored through Facts4Life; this was seen to be the most novel and interesting aspect of the resource. Teachers reported a disconnect in pupils' awareness and understanding of the links between physical and mental health, with Facts4Life perceived to be a useful tool to 'bridge the gap'. Feedback also identified areas for developing Facts4Life content and resources to appeal more to older pupils. There was agreement across schools that some Facts4Life activities were pitched at younger pupils and that future development of the resource may benefit from engagement with, and input from, secondary school pupils. Findings from the thematic analysis, including verbatim quotations from pupils and teachers, are presented below.

Theme 1: Autonomy and personal responsibility

Consistent with findings from primary school pupils and their teachers, pupils identified numerous examples of changes in their perceptions of autonomy and personal responsibility for health.

> I feel like I haven't physically changed because of [Facts4Life] but when I've been doing stuff [in life], I've been thinking more about my life and the impacts my decisions have on me. *Pupil*

> [Facts4Life has] made me think more about you're doing and how [life] is more complicated than it seems. For example, when we were studying how to live a healthier life, I started to always pack my [school] bag, and make sure I had an alarm set the night before because sometimes I've gotten up 40 minutes late. *Pupil*

> [Facts4Life] has helped me to understand more of the things that you can change to make yourself healthier. *Pupil*

There was agreement among teachers across schools that Facts4Life was relevant to pupils' lives and that, as teenagers (or approaching teenage years) increased autonomy and personal responsibility for health becomes ever-more important. One teacher highlighted that Facts4Life messages were embraced by pupils in their day-to-day lives:

> [Facts4Life] is quite general and I think [pupils] related it very much to stress faced by school [work]. They could apply [Facts4Life messages] to their own lives and experiences. *Teacher*

One teacher from the focus group identified some of the strategies that pupils had developed as a result of Facts4Life lessons:

> If you've got a headache, maybe turn your computer screen off and have a breath of fresh air. Then maybe drink some water. Reaching for [medication] doesn't have to be the first line of defence, there might be other options. *Teacher*

A second teacher from the same focus group agreed with the first teacher, adding:

> The 'ride the ups and downs' [theme within Facts4Life] was a good theme. The kids got it. They learned to think [up strategies, such as] 'Don't leave the house without breakfast' or 'Don't be disorganised'. [Riding the ups and downs] was a really great analogy for our kids. *Teacher*

Theme 2: Attitudinal and behavioural change

There was a sense among teachers that Facts4Life had influenced some changes in pupils' health and illness attitudes.

> It definitely did have an effect on some of [the pupils]. [There was] increased recognition and understanding [about health and illness]. Facts4Life builds an understanding that 'these things happen' and we have to build some resilience to deal with them. So, talking openly about [illness] becomes, for want of a better word, 'normal'. *Teacher*

Pupils also reflected on changes in their attitudes, and a new appreciation that life can sometimes be difficult to navigate.

> In life, it's not always the straight healthy line. You are not always feeling good. *Pupil*

Focus group discussions also highlighted the value of sharing and openness as one possible strategy for good health:

> [I've learned] that it's probably good to share a problem than keep it inside you. If you are really ill but you don't know what's wrong, it probably easier and a lot safer to tell someone about it, otherwise you keep it locked away. *Pupil*

> [Facts4Life] helped me to think…if you're not feeling too good, maybe open up to a family member or get some exercise and fresh air. *Pupil*

Theme 3: Knowledge generation

Pupils and teachers reported an increase in health and illness related knowledge as a result of Facts4Life. Pupils were able to list key facts that they had learned through Facts4Life and were able to identify how they might manage were they faced with an adverse event.

> It taught us important life skills. Like, it's not such a good idea to either drink or smoke. It teaches you how to make the right decisions. *Pupil*

> We talked about serious mental health issues like depression…and what would happen if…how would I cope [if feeling emotional or unwell]. *Pupil*

> We covered topics like what you should do to be healthy, physically and mentally. The healthy living stuff is quite useful. *Pupil*

Some pupils felt that the content contained within Facts4Life lessons was not new to them; they had covered it in previous school years.

> We did a lesson on microbes and how they affect illnesses. It was a bit more stuff that I hadn't already known…[but most of] it was going over things we already know. *Pupil*

However, one student felt that although concepts were not new to him the content of lessons was deepening his knowledge base.

> I wasn't exactly thinking 'Oh, wow, this is amazing, I'm learning something completely new', but I was getting a better understanding. *Pupil*

One of the teachers reflected upon her perceptions of pupils' Facts4Life knowledge and understanding gains:

> A lot of [the pupils] seemed to think that they hadn't really learnt much. But I think my evaluation of their learning is that they've actually learnt a lot more than they realise. *Teacher*

In another interview, one teacher felt that some of the material was targeted at a lower age group, but added:

> You do need to adapt it a little bit for your audience, but I think I could easily teach it to all years, adding a bit more detail and going further [with Facts4Life concepts]. *Teacher*

In contrast, one teacher felt that the language was too difficult for Year 7 pupils, suggesting that materials require adaptation to audience.

There were differences in how some activities were received by pupils according to school. For example, pupils from one school enjoyed an activity based on discussion of Gloucestershire health statistics and inequality, and developed an appreciation for the wider determinants of health (features of the environment that affect our lives).

> I quite liked finding out statistics and facts. It's nice to know how everything works…how everything looks on a bigger scale. It's more interesting than just thinking about your own life and opinions. *Pupil*

However, one teacher from another school held a different view:

> I didn't think that the Gloucestershire statistics [activity] was very good. The kids were really not that interested in it. They don't want to see the bigger picture. It doesn't mean anything to them. *Teacher*

Theme 4: Facts4Life lesson experiences

Pupils' experiences and perceptions of Facts4Life were varied, ranging from enjoyment and enthusiasm to indifference and dislike.

> [Facts4Life] was just fun to do! *Pupil*

> [Facts4Life] was definitely an improvement on what we covered in primary school. It was more practical. *Pupil*

> [Facts4Life lessons] are more creative. I think [Facts4Life] is more clever than the other [PSHE lessons] we've had. *Pupil*

> I've heard it all before. It would have been nice to learn some extra stuff as well. *Pupil*

> [Facts4Life lessons] are interesting but a bit childish. *Pupil*

Pupils' perceptions of the resource were often interlinked with the delivery style utilised by teachers. There was strong appreciation for group discussion, creative thinking and sharing of personal experiences.

> I feel like everybody got a say. We had lots of class discussions. *Pupil*

> I really liked the group and partner activities. Although, sometimes you're constantly restricted to the person you're sat next to on the seating plan. You don't really get to hear more than one other opinion. *Pupil*

One teacher commented:

> Human bingo was the most successful [activity] because it meant that [pupils] could discuss issues between themselves and find out what [illnesses] each other had had. *Teacher*

Facts4Life resources are designed for schools to plan into their own PSHE curriculum and to make decisions on time allocation for chosen modules. Based on feedback from teachers and pupils, schools may wish to consider giving greater time to enable students to explore issues in more depth.

> I felt that sometimes the lessons moved on quite quickly. You got given a topic and you would have five minutes to really think about it before you moved on. Sometimes [Facts4Life] didn't go deep enough. *Pupil*

> If you slowed down [Facts4Life] lessons a bit it might work better. *Pupil*

Some teachers commented that the lessons highlighted health and illness issues that previously had not been discussed in a classroom setting. It was suggested that in light of Facts4Life and in response to classroom discussions, additional guidance from schools on signposting pupils to support services would be beneficial.

> We got stuck on [the] mental health [topic]…but half of the year 7s have actually got mental health issues. Their stories went on and on because they had so much to say. I did wonder if the girls were trying to 'out do' each other with their illnesses. It's a good thing if it unlocks [their concerns] but you need to know where to refer [pupils] onto, and I don't feel like I've had enough training to do that. *Teacher*

One teacher also held a concern that the whole class activities suggested in the resources were not always suitable in a classroom setting:

> Some [activities] worked if it a was big class…[but] the balance ball activity was a bit difficult to manage. They didn't get [the message]. They saw it as more of a game, and once they had a big bouncy ball, it was not going to be anything else but silly. If you had a very small group it might work, but it was just not that effective for us. *Teacher*

Theme 5: Facts4Life training and resources

Facts4Life training was praised by all teachers, and there was appreciation for the enthusiasm and passion with which it was delivered. One teacher who had attended training at the end of Facts4Life delivery in her school commented:

> I found [training] quite reaffirming in a way because I was pleased that I was [delivering Facts4Life] how it was meant to be. So that was good. I think that probably owed to the resource book. *Teacher*

There was also an acknowledgement that training was not the end of the support available to teachers:

> There was somebody [at the training session] from a special school and you could definitely see that there was going to be a relationship [between the teacher and Facts4Life team] as to how to adapt [Facts4Life materials]. You could see that [the trainer] was going to provide extra support and guidance. *Teacher*

Support for delivering Facts4Life beyond the training session is available to schools upon request. However, one teacher felt that teachers may benefit from additional advice on Facts4Life delivery, and that it could include practical classroom demonstrations to show how materials are designed to be delivered in a real world setting.

> I would have liked [the trainer] to explain a little bit more about [Facts4Life]. Even though the [Facts4Life] booklet is comprehensive I didn't have an awful lot of time to go through it. I would have liked to have had [advice] on just how [the trainer] would like it to be presented. *Teacher*

This was also raised by a second teacher, commenting:

> [The trainer] discussed the actual creating of [Facts4Life] and how excited [the Facts4Life team] were, but not how it works in reality. I'd like to see how [the trainer] would try [delivering Facts4Life] in front of a real class. *Teacher*

There was praise from all teachers about the quality of the teaching resources; one teacher commented that the booklet (and additional online resources) was 'more than a bolt on' for PSHE.

> I think the [resource booklet] is brilliant [for adapting to different pupil needs and abilities]. *Teacher*

> [The online Facts4Life forum] where you can put up your questions, or just [say] 'I've been doing this today'. Sharing information and resources. That's brilliant. *Teacher*

However, teachers also identified areas for improving resources, citing formatting errors and online web links that did not work. Another teacher indicated that pupils would benefit from additional interactive video resources. However, two teachers did not feel that the balance ball video was successful in delivering key messages to their pupils.

> The balance ball video was a bit…difficult. Just watching other kids do [the balance ball activity] didn't work at all. *Teacher*

Across schools there were differences in opinions towards the cartoon images that sit alongside Facts4Life resources. In the most part, pupils did not like the images, although one teacher reported that pupils in her class had liked the uniformity of the images. Views on the cartoon images were strongly conveyed in focus groups and interviews.

> I really didn't like [the Facts4Life cartoons]. I'd prefer anything [else], maybe even emoji's or something. *Pupil*

> Maybe [include Facts4Life cartoons] on the front page [of the resource booklet] but don't actually have the pictures in [the resource booklet]. They're good drawings, they just don't portray humans. *Pupil*

Teachers from two schools felt that the cartoon images created a distraction:

> The sort of caricature, cartoony [Facts4Life images]…they really couldn't get past them. Every single [class I taught] found the pictures a distraction. It's maybe just a 'teenage' thing but I just found it frustrating because it meant we couldn't get on. *Teacher*

> The [Facts4Life cartoons] do look really funky to me, but [the pupils] couldn't relate to them. It was a bit of a shame. They were all distracted and saying 'What are those faces?' I think maybe [they would be] best for the young…I don't know, but they definitely weren't for [our pupils]. *Teacher*

Part 3: Estimated costs associated with Facts4Life

Introduction and Aims

In recent years increasing attention has been paid to the health and wellbeing of children in the UK, with obesity, physical inactivity, and mental health three areas of particular concern [1-3]. This is placing unsustainable health and financial pressure on the services provided at a local and national level [4].

Health in England is improving although substantial opportunities exist for further reductions in the burden of preventable disease. The gap in mortality rates between men and women has reduced, but marked health inequalities between the least deprived and most deprived areas remain. Declines in mortality have not been matched by similar declines in morbidity, resulting in people living longer with diseases. Health policies must therefore address the causes of ill health as well as those of premature mortality. Systematic action locally and nationally is needed to reduce risk exposures, support healthy behaviours, alleviate the severity of chronic disabling disorders, and mitigate the effects of socioeconomic deprivation.

This economic evaluation aims to estimate the costs associated with Facts4Life training, resource preparation, and delivery.

Methods

Data on resource use and actual costs incurred were collected by the Facts4Life team and recorded via spreadsheet between April 2015 and March 2018. Actual costs incurred (e.g., personnel costs, travel, facilities hire) were used to estimate training and programme delivery costs.

Costs were categorised as follows:

- Facts4Life delivery resources
- Facts4Life preparation resources
- Facts4Life research and development resources to reflect the actual mainstream costs of the programme in a real world delivery scenario

Programme delivery costs are recurrent and will occur once the programme is funded through mainstream funding mechanisms. Preparation costs are mostly non-recurrent, one-off training costs, as once teachers have been trained to refer to and deliver Facts4Life there is no need to repeat the training. However, preparation costs have been included in the totals here reflecting an assumption that everyone receives refresher training the cost estimate consequently reflects the maximum possible cost in the real world.

Results

Data collected by the Facts4Life team between April 2015 and March 2018 on intervention costs and resources revealed an estimated annual implementation cost of £46,542 (£139,627 over three years) (see Table 15). This figure excludes research and infrastructure development costs.

Training of teachers was the main contributor to the estimated annual costs, which involved 100 training sessions with more than 1,000 teachers (£17,966 per year) and equated to 39% of the estimated annual cost of Facts4Life. This cost is likely to reduce over time as more teachers are trained in Facts4Life, and peer-led training increases (i.e., one teacher training their colleagues in a school). Costs associated with administration (personnel) and support for teaching delivery were two other substantial costs identified.

Table 15. Facts4Life estimated costs and resources (April 2015 –March 2018)

Category and description of resources	April 2015 – May 2018 (£ actual)
Delivery cost estimate	
Printing resources	10,126
Website design and maintenance	6,116
Administration (Personnel)	22,372
Administration (Company costs)	3,281
School support for classroom delivery	25,312
Sub-total	67,207
Preparation cost estimate	
Facility hire for training	2,040
Training preparation and development (Teachers)	14,000
Training (100 sessions with 1000+ Teachers)	53,900
Travel	1,510
Advisory Group	970
Sub-total	72,420
Research and infrastructure development	
Evaluation and reporting (Facts4Life)	18,500
Evaluation by Centre for Public Health and Wellbeing (UWE Bristol)	55,943
Liaison with GPs, including surgery research pilot	31,500
Strategic development (philosophy, business and implementation planning)	36,423
Resource writing	71,500
Resource design	23,735
Ongoing website development	25,000
County initiatives, networking, promotion and marketing	14,265
Sub-total	276,866
Estimated total implementation cost for Facts4Life over three years, funder perspective[a]	**139,627**
Annual estimated total implementation cost for Facts4Life[b]	**46,542**

Note. a = Delivery cost estimate + preparation cost estimate. Research and infrastructure development costs are excluded. b = Estimate based on estimated total implementation cost for Facts4Life over three years, funder perspective / 3.

Research and infrastructure development costs were the main contributor to the total cost of Facts4Life over the three year funding period (April 2015 to March 2018). The majority of these costs are associated with the development of Facts4Life as a resource, with funding allocated to the design and content of resource materials including the web-based presence. Some of the infrastructure development costs are non-recurrent (UWE Evaluation funding), but others are recurrent. For example, Facts4Life resources will need to be updated as time passes and it continued monitoring and evaluation of Facts4Life in some format is recommended.

Conclusions and Recommendations

This report presents the findings from UWE's Centre for Public Health and Wellbeing 'Phase II' evaluation of a revised Facts4Life intervention. This evaluation aimed to build upon formative evaluation work to better understand the impact of a revised intervention on Gloucestershire-based pupils and their teachers, and to determine the costs associated with implementation in a school setting. A mixed-methods evaluation was conducted with twelve participating primary schools, while a qualitative outcome evaluation was conducted with pupils and teachers from four secondary schools.

Key findings:

Primary schools

- Findings from qualitative focus groups and interventions indicated that the revised Facts4Life resource continues to show promise in improving health and illness attitudes among primary school children. [Pages 22-40]

- Facts4Life was well-received by primary school pupils and their teachers, and the inclusion of new resources (e.g. mental health) was perceived to be age-appropriate and including content that is highly relevant for primary school aged children. [Pages 22-40]

- Pupils were able to articulate how their health and illness attitudes and behaviours had changed since receiving Facts4Life. Examples explicitly referred to perceptions of increased responsibility for health, and strategy development for promoting health and wellbeing. [Pages 22-40]

- Mental health was identified as a relevant concern, and pupils highlighted examples of newly developed coping strategies resulting from Facts4Life. Previous evaluations of interventions designed to promote children's and young people's mental health have been criticised for failing to adequately consider the mental health priorities of the children and young people themselves [26-27]. It is possible that the positive outcomes observed in this study may be, in part, attributable to the explicit student-

led delivery of Facts4Life, and this is something that future mental health-focused interventions could explore. [Pages 22-40]

- Teachers' engagement with the Facts4Life resource has positive implications for its sustainability within a primary school setting. Feedback indicated a change in philosophy around the teaching of health and illness, and also indicated that this will be present for subsequent pupils entering each school. [Pages 22-40]

- Teachers reported a disconnect in pupils' awareness and understanding of the links between physical and mental health, with Facts4Life perceived to be a useful tool to 'bridge the gap' between the two. [Pages 22-40]

- Quantitative results were encouraging, with younger pupils from Years 3 and 4 reporting improvements in three health and illness attitudes targeted by the intervention immediately after completing the intervention. These improvements concerned concepts central to Facts4Life key messages: the need for medication when feeling unwell, strategies for promoting mental health, and perceived utility of learning about illness. [Pages 45-49]

- Improvements in these attitudes, regarding need for medical intervention and strategies for mental health, were observed at six month follow-up as well as an increase in reported time spent talking about health and illness at home. Notably, however, improvements in two of these attitudes were also observed among the control group. [Pages 45-49]

- A key objective for Facts4Life is to provide pupils with a deeper awareness and understanding of illness, a concept that is traditionally overlooked in the existing school curriculum. Younger pupils reported an increase in talking about illness in an open and honest manner, and it was also noted by teachers that Facts4Life provides an opportunity to discuss the concept of illness in a new and meaningful way. [Pages 45-49]

- Despite positive feedback from qualitative focus groups and interviews, there were no quantifiable changes in health and illness attitudes identified among pupils from Years 5 and 6. This finding differs from findings from the Phase I evaluation, in which positive changes were identified in response to two of six items assessed. Although not found to statistically differ from control group responses, there was a positive trend in mean intervention group responses to the majority of health and illness items. Notably, the loss of one school at six month follow-up disproportionately affected the year 5 and 6 sample size, and it may be that there was insufficient power to detect effects. The small sample at follow-up is problematic and it would be desirable to replicate the research with a larger sample. [Pages 50-53]

- There was no evidence that Facts4Life had an impact upon the resilience of year 3 and 4 pupils in the intervention group. This is perhaps unsurprising given the high median scores reported. In other words, pupils scored highly on resilience indicators before taking part in the intervention, so it could be argued that there was little scope for observing small changes in these scores in the short term; a finding that has been reported elsewhere in relation to school-based interventions with 'healthy' school populations. [Page 54]

- This evaluation did identify a significant improvement in resilience at six month follow-up among intervention group pupils in years 5 and 6. This has positive implications for Facts4Life as building young people's resilience is a key objective of the resource. Caution is required when interpreting the finding as the six month follow-up sample was relatively small. However, the finding is supported by qualitative feedback provided by teachers and pupils, in which the development of personal autonomy and responsibility emerged as a key theme from the data. [Pages 54-55]

Secondary schools

- Feedback on Facts4Life from pupils and teachers was generally positive, particularly with regard to the concept of Facts4Life and its relevance for secondary school-aged children. [Pages 59-68]

- Pupils and their teachers reported examples of changes in attitudes and perceived increases in autonomy and personal responsibility for health. [Pages 59-68]

- There was strong appreciation for the mental health content of Facts4Life; this was seen to be the most novel and interesting aspect of the resource. [Pages 59-68]

- In line with findings from primary schools, secondary school teachers reported a disconnect in pupils' awareness and understanding of the links between physical and mental health, with Facts4Life perceived to be a useful tool to 'bridge the gap' between the two. [Pages 59-68]

- Teachers were impressed with the quality of Facts4Life training and the availability of ongoing support provided post-training. One suggested area for improving training was to incorporate further advice on Facts4Life delivery to include practical classroom demonstrations to show how materials are designed to be delivered in a real world setting. [Pages 59-68]

- Feedback identified areas for developing Facts4Life content and resources to appeal more to older pupils. There was agreement across schools that some Facts4Life activities were pitched at younger pupils and that future development of the resource may benefit from engagement with, and input from, secondary school pupils. [Pages 59-68]

Estimated costs associated with Facts4Life

- Intervention cost and resource data collected by the Facts4Life team between April 2015 and March 2018 revealed an estimated annual implementation cost of £46,542. [Pages 70-73]

- Research and infrastructure development costs were the main contributor to the total cost of Facts4Life over the three year funding period. The majority of these costs were associated with the development of Facts4Life as a resource, with funding allocated to the design and content of resource materials including the web-based presence. Funding to update source materials are likely to be required in

coming years as the health and wellbeing landscape changes, but the majority of these costs are one-off. [Pages 70-73]

- Training of teachers was the main contributor to the estimated annual cost, which involved 100 training sessions with more than 1,000 teachers (£17,966 per year) and equated to 39% of the total. This cost is likely to reduce over time as more teachers are trained in Facts4Life and peer-led training increases (i.e., one teacher training their colleagues in a school).

Conclusions

The findings from this evaluation demonstrate that Facts4Life continues to have a positive impact on primary school children's health and illness attitudes and resilience, and findings also indicate that Facts4Life holds promise as a newly developed resource for secondary school pupils.

Across primary and secondary school audiences in Gloucestershire, Facts4Life was well received by pupils and teachers, and concepts covered through intervention activities and materials were considered to be highly relevant for children and young people as they grow into adulthood. In particular, Facts4Life was perceived to be a useful resource for developing an increased appreciation and understanding of the links between physical and mental health, and for developing strategies to deal with adverse physical and mental health events.

The findings of the evaluation suggest that Facts4Life has potential to be a sustainable school-based intervention, with feedback indicating a change in philosophy around the teaching of health and illness in schools that may be present for subsequent pupils entering each school.

Facts4Life should continue to advocate for promoting children's and young people's responsibility for health through health and illness knowledge generation and the development of strategies for promoting health and wellbeing. This should be supported by continued monitoring and evaluation to enhance understanding of the benefits of Facts4Life in a variety of settings and across the life course.

References

1. National Statistics/NHS Digital. (2017). National Child Measurement Programme: England, 2016/17 school year. Available at: https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/national-child-measurement-programme-england-2016-17 (Accessed 27 April 2018).
2. National Statistics/NHS Digital. (2017). Statistics on obesity, physical activity and diet. (2017). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/613532/obes-phys-acti-diet-eng-2017-rep.pdf (Accessed 27 April 2018).
3. Public Health England (2015). Improving young people's health and wellbeing. A framework for public health. London, UK. Available at: http://www.youngpeopleshealth.org.uk/wp-content/uploads/2015/07/PHE-Improving-young-peoples-health-and-wellbeing.pdf (Accessed 27 April 2018).
4. Galbraith-Emami, S. (2013). *Public Health Law and Non-Communicable Diseases*. London, England: UK Health Forum.
5. Langford, R., Bonell, C.P., Jones, H.E. et al. (2015). The WHO Health Promoting School framework for improving the health and wellbeing of students and their academic achievement. *Cochrane Database Syst Rev*; *4*. DOI: 10.1002/14651858.CD008958.pub2.
6. Allison, R., Bird, E.L., McClean, S. (2017). Is team sport the key getting everybody active, every day? A systematic review of physical activity interventions aimed at increasing girls' participation in team sport. *AIMS Public Health*, *4* (2), 202-220.
7. Bird, E.L., Halliwell, E., Diedrichs, P.C., & Harcourt, D. (2013). Happy Being Me in the UK: a controlled evaluation of a school-based body image intervention with pre-adolescent pupils. *Body Image*, *10* (3), 326–34.
8. Bird, E.L., & Oliver, B. (2017). Pilot evaluation of a school-based health education intervention in the UK: Facts4Life. Journal of Public Health, 1-9. DOI: https://doi.org/10.1093/pubmed/fdx003.
9. Borzekowski, D.L. (2009). Considering children and health literacy: a theoretical approach. *Pediatrics*; *124* (Suppl 3):S282–8.

10. De Bourdeaudhuij, I., Van Cauwenberghe, E., Spittaels, H. et al. (2011). School-based interventions promoting both physical activity and healthy eating in Europe: a systematic review within the HOPE project. *Obes Rev*; *12*(3): 205–16.
11. McLuckie, A., Kutcher, S., Wei, Y. et al. (2015). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC Psychiatry*; *14*(379). 10.1186/s12888-014-0379-4.
12. Woods-Townsend, K., Bagust, L., Barker, M. et al. (2015). Engaging teenagers in improving their health behaviours and increasing their interest in science (Evaluation of LifeLab Southampton): study protocol for a cluster randomised controlled trial. *Trials*; *16*: 372.
13. Anderson EL, Howe LD, Kipping RR et al. Long-term effects of the Active for Life Year 5 (AFLY5) school-based cluster-randomised controlled trial. BMJ Open 2016; 6:e010957.
14. Jago R, Edwards M, Sebire S et al. Effect and cost of an after-school dance programme on the physical activity of 11-12 year old girls: The Bristol Girls Dance Project, a school-based cluster randomised controlled trial. IJBNPA 2015a; 12:128.
15. Lloyd J, Creanor S, Logan S et al. Effectiveness of the Healthy Lifestyle Programme (HeLP) to prevent obesity of UK primary-school children: a cluster randomised controlled trial. The Lancet Child and Adolescent Health 2018; 2(1):35-45.
16. Dahlgren, G., & Whitehead, M. (1991). *Policies and Strategies to Promote Social Equity in Health*. Stockholm, Sweden: Institute for Futures Studies.
17. Rutter, H., Savona, N., Glonti, K., et al. (2017). The need for a complex systems model of evidence for public health. *Lancet*, 390: 2602-2604.
18. Department of Health. (2010). *Healthy Lives, Healthy People: Our strategy for public health in England*. Available at: https://www.gov.uk/government/publications/healthy-lives-healthy-people-our-strategy-for-public-health-in-england (Accessed 27 April 2018).
19. NHS England. (2014). *Five Year Forward View*. NHS England.
20. Liebenberg, L., Ungar, M., LeBlanc, J.C. (2013). The CYRM-12: A brief measure of resilience. *Can J Public Health*, *11*, 104 (2):e131-5.
21. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qual Res Psych*, *3*, 77–101.

22. Gale, N.K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, *13*:117.
23. House of Commons Library (2016). *Schools and class sizes in England & the UK: Social Indicators page*. Available at: http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN02625 [Accessed 27 April 2018].
24. Ofsted. (2018). *Ofsted reports*. Available at: https://reports.ofsted.gov.uk/ [Accessed 27 April 2018].
25. Koo, T.K., & Li, M.Y. (2016). A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *J Chiropr Med*, *15* (2), 155-163.
26. Kidger, J., Donovan, J.L., Biddle, L. et al. (2009). Supporting adolescent emotional health in schools: a mixed methods study of student and staff views in England. *BMC Public Health*; *9*:403.
27. Oliver, S., Harden, A., Rees, R. et al. (2007). Young people and mental health: novel methods for systematic review of research on barriers and facilitators. *Health Education Research*; *5*(1):770-790.

Appendix A: Facts4Life Questionnaire

Some people are never ill.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Being ill is a normal part of life for us all.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Most of the time my body will get better by itself.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
When I feel ill I always need to take medicine to feel better.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
When I feel ill I always need to see a doctor.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I know that I can do things to keep myself as healthy and well as possible.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Healthy eating and exercise help me to stay well.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
There is nothing I can do to help when I am feeling low.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
We talk about health and illness at home.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It is useful to learn about illness.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I enjoy learning about how to keep healthy and happy.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It’s okay to feel sad or upset sometimes.				
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

Appendix B: Pupil and Youth Resilience Measure (CYRM-12)

	No	Sometimes	Yes
1. Do you have people you want to be like?			
2. Is doing well in school important to you?			
3. Do you feel that your parent(s) or caregiver(s) know a lot about you (for example, what makes you happy, what makes you scared)?			
4. Do you try to finish activities that you start?			
5. When things don't go your way, can you fix it without hurting yourself or other people (for example, without hitting others and saying nasty things)?			
6. Do you know where to get help?			
7. Do you feel you fit in with other pupils?			
8. Do you think your family cares about you when times are hard (for example, if you are sick or have done something wrong)?			
9. Do you think your friends care about you when times are hard (for example, if you are sick or have done something wrong)?			
10. Are you treated fairly?			
11. Do you have chances to show others that you are growing up and can do things by yourself?			
12. Do you like the way your family celebrate things (like holidays or learning about your culture)?			

Centre for Public Health and Wellbeing, UWE Bristol

The Centre for Public Health and Wellbeing is multidisciplinary and spans physical, health and social sciences. Our aim is to impact directly on population health and wellbeing, and to enable ethical and reflexive contributions to policy and practice. Our mission is to advance knowledge, inspire people and transform futures, addressing the grand challenges and wicked issues in public health locally, nationally and internationally.

We undertake research that makes a difference to practice. We want to influence policy. We want the public – society – to be involved in building assets in their communities, and to benefit from our work. We want to create change – we believe in social justice and equality of opportunity globally. Perhaps most of all, we want to help those in society that are most vulnerable and affected by structural inequalities across the life-course. Research in public health and wellbeing reflects systems thinking, partnership working and synergies between different professional and academic contributions to public health. Our research is translational and aspires to contribute to real world scenarios, therefore aiming to enable ethical and reflexive contributions to policy and practice.

If you would like to work with us please contact Centre Director Professor Jane Powell (jane.powell@uwe.ac.uk).

Follow us on Twitter: @publichealthuwe