

## **Pilot evaluation of a school-based health education intervention in the UK: Facts4Life**

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## **Abstract**

**Background** This study assessed short-term changes in children's health and illness attitudes and health status following Facts4Life, a school-based health education intervention.

**Methods** Children aged 7-11 years (School Years 3-6) recruited from 10 schools in the UK participated in this study. A quasi-experimental design was utilised with 187 children participating in the intervention, and 108 forming a control condition. Children in both conditions completed measures of health and illness attitudes and health status at baseline and at immediate follow-up. Intervention effects were examined using mixed between-within subjects ANOVA.

**Results** Analysis revealed significant baseline to follow-up improvements in intervention group responses to "When I feel unwell I need to take medicine to feel better" (Years 3 and 4:  $p = 0.05$ ,  $\eta^2 p = 0.02$ ; Years 5 and 6:  $p = 0.004$ ,  $\eta^2 p = 0.07$ ). For intervention group children in Years 5 and 6 there was an improvement in response to "When I am ill, I always need to see a doctor" ( $p = 0.01$ ,  $\eta^2 p = 0.07$ ). There was no evidence that Facts4Life had an impact upon health status.

**Conclusions** This study identified some positive intervention effects and results suggest that Facts4Life has potential as a school-based health education intervention.

## Background

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.<sup>1-3</sup> This is placing unsustainable health and financial pressure on the services provided at a local and national level.<sup>4</sup> Effective strategies are therefore required to develop children's understanding of health and illness and to promote healthy lifestyle behaviours from a young age.

Children from across the socio-economic spectrum spend a large amount of time in the school environment and as such, schools provide an ideal setting for the promotion of physical and mental health.<sup>5-7</sup> School-based interventions have been shown to improve children's health-related attitudes, knowledge and behaviours<sup>8-11</sup> and enhance children's health literacy through the development of critical thinking and evidence appraisal skills,<sup>12-13</sup> skills which may enable children to make better informed choices about their health.<sup>14</sup> However, despite recent systematic review evidence indicating some positive short term health outcomes associated with school-based interventions<sup>15-17</sup> the overall quality of the evidence is mixed, due to methodological limitations<sup>15</sup> and differences in intervention content.<sup>18</sup>

The content of school-based programmes tends to focus on strategies for promoting health, with limited consideration of illness and its origins.<sup>15-16</sup> This could be because illness is a topic that adults often avoid or find too difficult to discuss with children.<sup>19-20</sup> It is inevitable that children will be exposed to illness at some point in their lives. Exposure may occur through direct experience (e.g., catching a cold or feeling stressed) or through indirect experience (e.g., serious illness or death of a grandparent). Research suggests that children's personal experience of illness impacts upon their understanding of health and illness and illness prevention.<sup>21</sup> As such, providing opportunities for children to discuss health and illness in a way that is meaningful and relevant to their personal context<sup>22</sup> may have the potential to enhance health education in the school setting.

The purpose of this study was to conduct an outcome evaluation assessing changes in children's health and illness attitudes, and health status following receipt of a school-based health education intervention called Facts4Life.

## **Methods**

### **Participants**

A total of 327 children aged 7-11 years ( $M = 8.99$ ,  $SD = 1.12$ ) from 10 primary schools located in the South West of England were invited to participate in this study, with 324 (99% of sample approached) completing baseline measures. Parents or guardians were sent a letter containing information about the study. If a parent did not wish for their child to take part they were required to return a signed form to the school; a strategy that has been shown to increase participation rates.<sup>23</sup> After excluding individuals that did not complete post-intervention measures ( $n = 29$ , 91% retention rate), the final study population comprised 295 participants. Ethical approval was obtained from the University of the West of England, Research Ethics Committee in March 2014.

### **Study design**

Due to curriculum-related time constraints across schools, a pragmatic quasi-experimental study design was required, with children from five schools allocated to an intervention group and children from five other schools forming the control group. Schools were allocated to the intervention group if at least one teacher from that school had received training in the Facts4Life intervention and if the school head teacher agreed to intervention delivery between January and April 2015. As such, children from seven classes (Years 3 and 4,  $n = 4$ ; Years 5 and 6,  $n = 3$ ) in five schools were allocated to the intervention group, while the control group consisted of children drawn from six classes in five schools (Years 3 and 4,  $n = 3$ ; Years 5 and 6,  $n = 3$ ).

### **Facts4Life intervention**

Facts4Life is a school-based health education intervention designed for children aged 7-11 years. The primary aim of the intervention is to help children explore physical and mental health and illness in order to develop greater understanding and personal responsibility for health. The intervention seeks to achieve this aim through developing children's health and illness knowledge and attitudes, and through promotion of healthy lifestyle behaviours.

The intervention is based on three key concepts: (1) “Riding the ups and downs” – as we move through life, our health status is constantly in flux; (2) “Keeping balanced” – we are faced with many illnesses which our bodies can often respond naturally to, to maintain balance and health; (3) “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. Table 3 outlines some example lesson aims, activities and processes of Facts4Life.

Teaching resources are tailored according to children’s age: 7-9 (Years 3 and 4) and 9-11 (Years 5 and 6). Specific lesson aims and activities do not differ according to age group; it is the intervention processes which are tailored. For example, when introducing children to the concept of homeostasis, children in Years 5 and 6 are encouraged to reflect upon and discuss the potential factors influencing homeostasis in more depth than those children in Years 3 and 4, as per age-related expectations set out in the UK National Curriculum. Facts4Life also explicitly aims to make cross-curricular links between subjects. For example, Facts4Life materials can be used in Geography lessons to explore and debate differences in illness experience among people from diverse countries, and they can also be used in Physical Education to learn about the importance of leading an active lifestyle.

The intervention advocates for an interactive approach to teaching and learning, with a specific focus on student-centred discussion. In contrast to other school-based interventions which may follow a more prescriptive information provision approach <sup>15</sup>, Facts4Life aims to encourage children to explore issues affecting their lives, be it personal or affecting family members or friends. Teachers take a facilitative role in initiating classroom discussions and activities, and support children to ask questions and explore possible solutions.

In this study, Facts4Life was delivered in a classroom setting and was facilitated by the class teacher. Teachers were encouraged to facilitate at least one Facts4Life session (approximately 50 minutes in duration) per week between January and April 2015. Teacher feedback indicated that children were exposed to approximately 8 hours of the Facts4Life intervention over 12-weeks. At the mid-point, children had a one-week school holiday. Facts4Life was free to all schools participating in this study, allowing children in control schools to receive the intervention beyond the study period.

Training was provided for all teachers. A three-hour training session was led by the Facts4Life team responsible for designing the intervention. Training focused on conveying the philosophy of Facts4Life and discussions based on how best to facilitate intervention content in the classroom setting alongside the wider curriculum. A resource booklet detailing the intended structure, content and outcomes was distributed to each teacher. Each teacher was allocated to a representative from the Facts4Life team, who could be called upon for advice and support.

## **Measures**

Prior to baseline data collection, two questionnaires were piloted with 56 children aged 7-11 years from two schools not participating in this study. Children were invited to complete both measures and to discuss any concerns relating to completion of the items. No objections were raised and as such, both questionnaires were administered to children in all schools participating in this study, approximately one week prior to the intervention period (January 2015) and approximately one week after the intervention period had ended (April 2015).

### ***Health and illness attitudes***

Participants completed six single items created by intervention developers designed to assess attitudes specifically targeted by the intervention. Development of items by experts working in this area and pre-testing of items with the population of interest was indicative of content validity. Items were: “When I feel unwell I need to take medicine to feel better”, “There is nothing I can do to reduce the risk of getting ill”, “When I am ill I always need to see a doctor”, “Some people are never ill”, “I am confident I can do things to keep myself as healthy and well as possible”, “Most of the time, most of us get better from illness without any help”; Likert-response scale, 1 = strongly disagree, 5 = strongly agree). Table 1 provides the means and standard deviations for intervention and control conditions and test-retest reliability (all Intra Correlation Coefficients = 0.60-0.75).<sup>24</sup>

### ***Health status***

Participants completed the 45 item Child Health and Illness Profile – Child Edition (CHIP-CE), which describes five domains of health: achievement, risk avoidance, resilience,

satisfaction, and comfort.<sup>25</sup> Descriptive data on sex, age, year group and date of birth were also collected. This measure has been used extensively with primary school-aged children and demonstrates adequate-to-excellent levels of reliability and validity.<sup>26-27</sup> Data were handled according to the CHIP-CE Technical Manual.<sup>28</sup> Mean scores were standardised to *T*-scores ( $M = 50$ ;  $SD = 10$ ). Table 2 provides the means and standard deviations for intervention and control conditions and internal consistency for each domain.

## **Procedure**

Approximately one week prior to intervention implementation participants completed baseline questionnaires in a classroom setting. Children were provided with instructions by the researcher (EB) and each item was read aloud by the class teacher. Follow-up data collection was conducted approximately one week after the end of the intervention period. Due to prior conflicting commitments in one school, data collection was conducted two weeks after. Children in both conditions received a certificate thanking them for participating.

## **Statistical analysis**

Data were analysed using IBM SPSS Statistics v.20. At baseline there was no difference in sex ( $\chi^2 = 0.17$ ,  $df = 1$ ,  $p = 0.68$ ,  $V = 0.02$ ) or school size ( $t = 0.33$ ,  $df = 293$ ,  $p = 0.74$ ,  $d = 0.04$ ; intervention  $M = 212.12$ ,  $SD = 133.89$ ; control  $M = 206.85$ ,  $SD = 127.32$ ) between intervention and control groups. Each school in England is inspected and regulated by the Office for Standards in Education, Children's Services and Skills (Ofsted). Following inspection, schools are categorised as 'outstanding', 'good', 'satisfactory' or 'requires improvement'. In this study all intervention schools were categorised as 'good', while control schools varied from 'outstanding' to 'satisfactory' categories ( $\chi^2 = 213.65$ ,  $df = 2$ ,  $p = 0.01$ ,  $V = 0.85$ ). The percentage of children eligible for free school meals was significantly higher in intervention schools ( $t = 6.81$ ,  $df = 293$ ,  $p = 0.01$ ,  $d = 0.87$ ; intervention  $M = 19.87\%$ ,  $SD = 9.06$ ; control  $M = 13.23\%$ ,  $SD = 5.97$ ).

Mixed between-within subjects analysis of variance (ANOVA) models were conducted to identify changes in intervention and control group outcomes from baseline to follow-up. Analysis included 'time' (baseline and follow-up) as the within-subject factor and intervention condition (intervention and control) as the between-subjects factor. Univariate

and Bonferroni correction tests, including effect size calculations, were conducted to examine changes in questionnaire items according to intervention condition. To reflect the fact that the Facts4Life resource was tailored according to age, analysis was conducted separately according to school year group: Years 3 and 4 (aged 7-9 years) and Years 5 and 6 (aged 9-11 years).

## Results

### Changes in health and illness attitudes

At the multivariate level there was a significant time by condition interaction for children in Years 3 and 4,  $F(6, 155) = 4.75, p = 0.001, Wilks' \lambda = 0.85$ . As shown in Table 4, at the univariate level there was a significant time by intervention condition interaction for two items: “When I feel unwell I need to take medicine to feel better” and “Some people are never ill”. Post hoc tests using the Bonferroni correction revealed a statistically significant baseline to post-intervention improvement in intervention group responses to “When I feel unwell I need to take medicine to feel better” ( $M_{diff} = 0.19, p = 0.05$ ) with a small effect size ( $\eta^2 p = 0.02$ ), but no significant change in intervention group responses to “Some people are never ill”. There were no significant changes in control group responses to either of these items.

At the multivariate level there was a significant time by condition interaction for children in Years 5 and 6,  $F(6, 111) = 2.31, p = 0.04, Wilks' \lambda = 0.89$ . At the univariate level there was a significant time by condition interaction for responses to “When I feel unwell I need to take medicine to feel better” and “When I am ill, I always need to see a doctor” (Table 4). Post hoc tests using the Bonferroni correction revealed significant baseline to post-intervention improvements in intervention group responses to “When I feel unwell I need to take medicine to feel better” ( $M_{diff} = 0.28, p = 0.004$ ), and “When I am ill, I always need to see a doctor” ( $M_{diff} = 0.39, p = 0.01$ ), both with a moderate effect size ( $\eta^2 p = 0.07$  and  $\eta^2 p = 0.07$ , respectively). There was no significant change in control group responses to either of these items.



## Changes in health status

At the multivariate level there was a significant time by condition interaction for children in Years 3 and 4,  $F(5, 121) = 3.21, p = 0.01, Wilks' \lambda = 0.88$ . As shown in Table 4 at the univariate level there were significant time by condition interactions for achievement and comfort domains of the CHIP-CE. Post hoc tests of control group responses using the Bonferroni correction revealed a significant improvement in achievement ( $M_{diff} = 0.90, p = 0.05$ ) and comfort ( $M_{diff} = 2.28, p = 0.001$ ), both with small-to-moderate effect sizes ( $\eta^2 p = 0.02$  and  $\eta^2 p = 0.07$ , respectively). There were no significant changes in intervention group responses to either of these domains over time.

At the multivariate level there was a significant time by condition interaction for children in Years 5 and 6,  $F(5, 82) = 2.32, p = 0.05, Wilks' \lambda = 0.88$ . However, when examining responses for children aged 9-11 years at the univariate level, no significant time by intervention condition interactions for any domain of the CHIP-CE were identified (Table 4).

## Discussion

### Main findings of this study

Facts4Life was associated with a significant post-intervention improvement in one attitude targeted specifically by the intervention, namely, a change in attitude towards the need for medication when feeling unwell. This finding was most strongly observed among intervention group children in Years 5 and 6, but was also seen in intervention group children in Years 3 and 4. The high baseline score for this item across intervention and control groups suggests that children hold strong attitudes towards medication as a (or *the*) solution to illness. However, the significant reduction in mean score observed among those in the intervention group indicates that Facts4Life may have agency in changing children's attitudes towards medication, a concept central to Facts4Life philosophy. This finding is particularly encouraging as positive health attitudes may be easier to instill in younger children than older children.<sup>29</sup>

Consistent with evidence that children's knowledge of and attitudes towards health and illness develop in sophistication and accuracy over time,<sup>21,30-31</sup> children in Years 5 and 6

revealed a significant post-intervention improvement in attitudes towards the need for medical intervention from a doctor when unwell, a finding that was not observed among younger participants. The attitudes targeted by this intervention may have resonated more strongly with older children. This is consistent with findings from a systematic review of school-based health education interventions which reported that interventions designed for young people were more effective among older children,<sup>32</sup> although this has not been reported elsewhere.<sup>15</sup>

There was a positive trend in all but one of the intervention group responses to health and illness attitudes items, although these were not shown to be statistically significant. There was a small decline in confidence in children's strategies for managing illness among intervention group children in Years 3 and 4, although not statistically significant. This is perhaps unsurprising as a young child's ability to engage in healthy lifestyle behaviours is most likely based on the wishes of the parent or guardian,<sup>21,33</sup> as opposed to the child themselves. Notably, however, children's confidence-related attitudes were positive at baseline and post-intervention. There were no significant changes identified in control group responses from pre- to post-intervention.

There was no evidence that Facts4Life had an impact upon the health status of children in the intervention group, as responses across age groups were broadly similar at baseline and post-intervention. The self-reported health status of Year 3 and 4 children in the control group was shown to significantly improve from pre- to post-intervention in relation to the achievement and comfort domains of the CHIP-CE. It is important to note that mean responses to the health status questionnaire were within the 'normative' range for average/good health for each health domain,<sup>26-27</sup> regardless of intervention condition and age category, at baseline and post-intervention. This could mean that the measure utilised for this study may have been unresponsive to short-term changes in health status among a 'healthy' school population.

### **What is already known on this topic**

Schools have a unique ability to reach large groups of children with different experiences and from different backgrounds, and thus they provide an ideal setting for the promotion of health.<sup>5-7</sup> There is consistent evidence in support of school-based interventions for improving short-term health-related attitudes, knowledge and behaviours,<sup>8-11</sup> and reducing health

inequalities.<sup>34</sup> However, the overall quality of the evidence is somewhat mixed.<sup>15-17</sup>

### **What this study adds**

This is the first study to assess short-term changes in children's health and illness-related attitudes, and changes in health status following the Facts4Life intervention. Findings add to the evidence base in support of school-based health education interventions designed to improve health and illness attitudes. With its focus on physical and mental health and illness, student-centred approach to learning, and cross-curricular activities, Facts4Life is a novel school-based health education intervention for primary school children. Unlike traditional health education interventions, which are often teacher- or expert-led,<sup>18</sup> children were encouraged to discuss health and illness issues that resonated with their own personal experiences and interests, an approach that has been shown to influence children's learning.<sup>35-36</sup> Furthermore, while many health education interventions are delivered as one aspect of the school day,<sup>16</sup> the concept of embedding interventions across the curriculum is not new and studies have shown that such an approach to health education is associated with improved health outcomes.<sup>36-38</sup> Furthermore, Facts4Life has potential as a sustainable school-based intervention as its content and activities are explicitly linked to the UK National curriculum, and therefore do not add unduly to time pressures and over-crowding of the school teaching timetable experienced in many schools.<sup>38-39</sup>

### **Study limitations**

Random allocation of schools to condition was not possible as intervention schools were required to have at least one teacher who had received training in Facts4Life and had the capacity to implement the intervention during a pre-specified intervention period. Such constraints are not uncommon in school-based research.<sup>40-41</sup> Furthermore, a sample size calculation indicated that 10 schools (5 clusters) per arm and 300 children (minimum sample size of 30 per cluster) were required to detect a meaningful difference in CHIP-CE scores, based on previous applications of the questionnaire.<sup>42</sup> The final sample size was 295 which suggests that the study was marginally underpowered. Finally, although the schools included in this pilot evaluation represent children from across the socio-economic spectrum, differences between intervention and control school characteristics, such as free school meal eligibility, warrant further exploration. This is particularly important for improving

understanding of the impact of school-based interventions on reducing health inequalities.

## **Conclusions**

Despite its acknowledged limitations, this pilot evaluation identified some positive intervention effects and findings suggest that Facts4Life has potential as a school-based health education intervention. Future, large scale studies should explore the effects of Facts4Life on health and illness attitudes and subsequent behaviour change over time.

## **Authors' contributions**

The study was conceived by ELB and BO. ELB was responsible for data collection. ELB analysed the data and discussed findings with BO. ELB drafted the first version of the manuscript. Both authors provided critical edits and revisions to the manuscript, and reviewed and approved the final version.

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Table 1. Descriptive statistics for health and illness-related attitudes by intervention condition and time ( $n = 295$ ).

|  | Intervention Mean ( <i>SD</i> ) |             | Control Mean ( <i>SD</i> ) |             | ICC ( <i>95% CI</i> ) |
|--|---------------------------------|-------------|----------------------------|-------------|-----------------------|
|  | Baseline                        | Follow-up   | Baseline                   | Follow-up   |                       |
| <b>Years 3 and 4</b>   |                                 |             |                            |             |                       |
| When I feel unwell I need to take medicine to feel better <sup>a</sup>                     | 4.18 (0.97)                     | 3.47 (1.23) | 3.70 (0.91)                | 4.00 (0.89) | 0.67 (0.45, 0.84)     |
| There is nothing I can do to reduce the risk of getting ill <sup>a</sup>                   | 2.80 (1.33)                     | 2.60 (1.27) | 2.98 (1.31)                | 2.94 (1.04) | 0.65 (0.39, 0.80)     |
| When I am ill I always need to see a doctor <sup>a</sup>                                   | 2.74 (1.23)                     | 2.19 (1.11) | 2.87 (1.17)                | 2.46 (0.87) | 0.60 (0.38, 0.76)     |
| Some people are never ill <sup>a</sup>   | 2.09 (1.24)                     | 1.85 (1.11) | 1.68 (0.89)                | 1.96 (1.19) | 0.60 (0.39, 0.76)     |
| I am confident I can do things to keep myself as healthy and well as possible <sup>b</sup> | 4.33 (0.82)                     | 4.17 (1.02) | 4.13 (0.98)                | 4.33 (0.86) | 0.64 (0.41, 0.82)     |
| Most of the time, most of us get better from illness without any help <sup>b</sup>         | 3.16 (1.25)                     | 3.41 (1.15) | 2.74 (1.21)                | 3.17 (0.96) | 0.67 (0.48, 0.81)     |
| <b>Years 5 and 6</b>   |                                 |             |                            |             |                       |
| When I feel unwell I need to take medicine to feel better <sup>a</sup>                     | 3.81 (0.72)                     | 3.25 (1.00) | 3.65 (1.09)                | 3.65 (1.06) | 0.73 (0.53, 0.87)     |
| There is nothing I can do to reduce the risk of getting ill <sup>a</sup>                   | 2.26 (0.97)                     | 2.25 (0.95) | 2.75 (1.19)                | 2.61 (1.19) | 0.65 (0.48, 0.87)     |
| When I am ill I always need to see a doctor <sup>a</sup>                                   | 2.38 (0.88)                     | 1.88 (0.80) | 2.56 (1.00)                | 2.49 (0.92) | 0.75 (0.56, 0.89)     |
| Some people are never ill <sup>a</sup>   | 1.68 (0.85)                     | 1.69 (0.78) | 2.02 (1.06)                | 1.98 (1.12) | 0.71 (0.59, 0.86)     |
| I am confident I can do things to keep myself as healthy and well as possible <sup>b</sup> | 4.47 (0.61)                     | 4.47 (0.74) | 4.31 (0.82)                | 4.36 (0.89) | 0.65 (0.38, 0.85)     |
| Most of the time, most of us get better from illness without any help <sup>b</sup>         | 3.31 (0.98)                     | 3.47 (1.00) | 2.96 (1.10)                | 3.24 (0.99) | 0.72 (0.56, 0.94)     |

**Note.** Scores range from 1-5 on a Likert-response scale (1=strongly disagree, 5=strongly agree). <sup>a</sup> Lower scores are more desirable. <sup>b</sup> Higher scores are more desirable. ICC = Intra class correlation.

Table 2. Descriptive statistics for health status by intervention condition and time ( $n = 295$ ).

|                      | Intervention Mean <i>T</i> -score ( <i>SD</i> ) |               | Control Mean <i>T</i> -score ( <i>SD</i> ) |               | Internal consistency ( $\alpha$ ) |           |
|----------------------|---|---------------|--|---------------|-----------------------------------|-----------|
|                      | Baseline  | Follow-up     | Baseline                                   | Follow-up     | Baseline                          | Follow-up |
| <b>Years 3 and 4</b> |   |               |  |               |                                   |           |
| Achievement          | 51.94 (9.69)                                    | 50.58 (10.65) | 46.61 (11.83)                              | 49.87 (10.69) | 0.69                              | 0.66      |
| Risk avoidance       | 49.37 (10.91)                                   | 50.47 (10.22) | 50.00 (9.85)                               | 49.28 (10.04) | 0.65                              | 0.74      |
| Resilience           | 48.95 (10.08)                                   | 48.43 (10.14) | 48.13 (10.05)                              | 49.77 (9.65)  | 0.65                              | 0.67      |
| Satisfaction         | 51.47 (9.99)                                    | 50.44 (10.20) | 48.14 (11.85)                              | 48.84 (9.72)  | 0.82                              | 0.79      |
| Comfort              | 50.59 (10.65)                                   | 49.89 (11.10) | 46.28 (10.32)                              | 49.98 (7.50)  | 0.82                              | 0.80      |
| <b>Years 5 and 6</b> |   |               |  |               |                                   |           |
| Achievement          | 51.78 (7.18)                                    | 51.27 (7.89)  | 51.15 (10.42)                              | 47.44 (10.90) | 0.67                              | 0.74      |
| Risk avoidance       | 49.40 (9.22)                                    | 49.96 (10.11) | 51.15 (10.42)                              | 49.63 (9.61)  | 0.65                              | 0.80      |
| Resilience           | 52.00 (8.38)                                    | 52.21 (9.11)  | 51.16 (10.41)                              | 51.31 (10.70) | 0.74                              | 0.79      |
| Satisfaction         | 49.14 (8.53)                                    | 49.31 (10.23) | 48.98 (10.22)                              | 51.15 (9.70)  | 0.85                              | 0.88      |
| Comfort              | 49.79 (8.39)                                    | 50.08 (9.94)  | 52.54 (9.15)                               | 50.29 (9.94)  | 0.82                              | 0.84      |

**Note.** Higher scores indicate a better health-related quality of life. A 'normative' mean score for each domain is 50. A score of 43 or below indicates poor health in that domain. A score of 57 or higher indicates excellent health.  $\alpha$  = Cronbach's alpha.

Table 3. An outline of the aims and activities included in the Facts4Life resource booklet.

| Facts4Life Lesson Aims  | Example Activity      | Processes   |
|---|-----------------------|---|
| <p>‘Introduction to Homeostasis’</p> <ul style="list-style-type: none"> <li>To increase awareness of body regulation.</li> </ul>          | Balance ball activity | <ul style="list-style-type: none"> <li>Whole class activity in which children support a balance ball together, using their hands. The balance ball represents the body, and it is explained that to stay healthy the body needs to maintain balance.</li> <li>Discussion point for children in Years 3 and 4: <i>“What sort of illnesses might affect bodily balance?”</i></li> <li>Discussion points for children in Years 5 and 6: <i>“What sort of illnesses might affect bodily balance?”</i>, <i>“What about mental health?”</i>, <i>“How might some people’s response to illness differ from others?”</i></li> </ul>  |
| <p>‘Healthy Me’</p> <ul style="list-style-type: none"> <li>To develop skills for enhancing personal responsibility for health.</li> </ul> | Circle time           | <ul style="list-style-type: none"> <li>Whole class activity in which children are encouraged to discuss health-related behaviours over which they have no control and to introduce the concept that there are some lifestyle behaviours that they might be able to influence to some extent (e.g., sleep, physical activity, diet).</li> <li>Sentence starters for children in Years 3 and 4: <i>“A healthy choice I can make is...”</i>, <i>“Why is it important to be healthy?”</i></li> <li>Sentence starters for children in Years 5 and 6: <i>“Things I can control now in order to keep healthy include...”</i>, <i>“Who is responsible for keeping me healthy?”</i></li> </ul> |
| <p>‘The Family’</p> <ul style="list-style-type: none"> <li>To increase understanding that illness is a normal part of life.</li> </ul>    | Family fact file      | <ul style="list-style-type: none"> <li>Small group activity in which children explore specific illnesses (e.g., the common cold) and create a ‘fact file’ of knowledge, causes and management strategies.</li> <li>The same structure is used for lessons for children in Years 3 and 4, and Years 5 and 6, however, children in Years 5 and 6 are invited to consider illness in more detail and with a more in-depth focus on individual-level variation (e.g., differences in lifestyle choices and socio-economic life experiences).</li> </ul>   |

Table 4. Univariate time x intervention condition interactions.

| Measure   | Baseline to post-intervention time by condition interactions |          |           |
|---|--|----------|-----------|
|   | <i>F</i> ( <i>df</i> = 1, 292)                               | <i>p</i> | $\eta^2p$ |
| Health and illness related attitudes: Facts4Life questionnaire                |  |          |           |
| <b>Years 3 and 4</b>  |  |          |           |
| When I feel unwell I need to take medicine to feel better                     | 23.82  | 0.01*    | 0.12      |
| There is nothing I can do to reduce the risk of getting ill                   | 0.44   | 0.51     | 0.00      |
| When I am ill I always need to see a doctor                                   | 0.35   | 0.56     | 0.00      |
| Some people are never ill   | 4.68   | 0.03*    | 0.03      |
| I am confident I can do things to keep myself as healthy and well as possible | 2.14   | 0.15     | 0.01      |
| Most of the time, most of us get better from illness without any help         | 0.99   | 0.32     | 0.01      |
| <b>Years 5 and 6</b>  |  |          |           |
| When I feel unwell I need to take medicine to feel better                     | 8.43   | 0.01*    | 0.07      |
| There is nothing I can do to reduce the risk of getting ill                   | 0.13   | 0.72     | 0.00      |
| When I am ill I always need to see a doctor                                   | 5.61   | 0.02*    | 0.04      |
| Some people are never ill   | 0.07   | 0.80     | 0.00      |
| I am confident I can do things to keep myself as healthy and well as possible | 0.74   | 0.39     | 0.01      |
| Most of the time, most of us get better from illness without any help         | 0.69   | 0.41     | 0.13      |
| Health status: CHIP-CE  |  |          |           |
| <b>Years 3 and 4</b>  |  |          |           |
| Achievement   | 6.90   | 0.01*    | 0.04      |
| Risk avoidance  | 1.75   | 0.19     | 0.01      |
| Resilience  | 1.87   | 0.17     | 0.01      |
| Satisfaction  | 0.94   | 0.33     | 0.01      |
| Comfort   | 4.11   | 0.04*    | 0.02      |
| <b>Years 5 and 6</b>  |  |          |           |
| Achievement   | 1.65   | 0.20     | 0.01      |
| Risk avoidance  | 1.25   | 0.27     | 0.01      |
| Resilience  | 0.38   | 0.54     | 0.00      |
| Satisfaction  | 2.10   | 0.15     | 0.02      |
| Comfort   | 2.97   | 0.09     | 0.03      |

$p < 0.05$ .  $\eta^2p$  = partial eta squared. CHIP-CE = Child Health and Illness Profile – Child Edition.

