Adolescence as a key point in the lifecourse to target health literacy interventions: A cluster-randomised controlled trial of the LifeLab education intervention

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Introduction

Adolescence offers a window of opportunity during which improvements in health behaviour could benefit long-term health, and enable better preparation for parenthood, passing on better health prospects to children.

Aim:

We evaluated whether an educational intervention, which engages adolescents in science, can improve their health literacy and behaviours.

LifeLab – A hospital classroom:

LifeLab is a novel educational intervention designed to promote health through science literacy in adolescents, operating from a purpose-built facility at the heart of University Hospital Southampton.
The LifeLab programme enables students to learn how the nutrition of parents, children and adolescents influences health; to understand the impact of their lifestyle on their future risk of lifestyle related non-communicable diseases.
Schools from across the south coast have attended LifeLab, with 10,886 school students participating to date.

Figure 1 Photos to illustrate the a selection of the activities students participate in on the LifeLab activity day

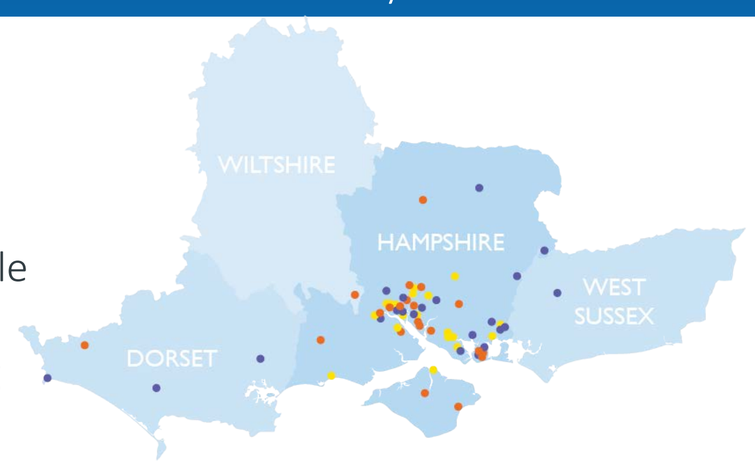

Figure 2 Map to show location of school participating in LifeLab

Methods

- A cluster-randomised controlled trial was conducted with 38 secondary schools in Southern England; 19 were randomised to the LifeLab intervention and 19 to control
- 2,487 students completed online questionnaires at baseline and 12 months follow up
- The primary outcome was change in theoretical health literacy between baseline and 12 months post-intervention
- This study is registered (ISRCTN71951436), and the trial status is complete

The LifeLab educational intervention

- Teacher professional development, including Health Conversation Skills training
- A fully resourced, 2 week scheme of work for 13-14 year olds, incorporating lessons, pre and post an activity day
- A hands-on activity day at LifeLab, with practical activities building on the lessons delivered in school and including a 'Meet the Scientist' session
- An opportunity for the school students to present their scientific posters at the LifeLab annual showcase

Results

At 12 months, participation in LifeLab, was associated with an increased standardised total theoretical health literacy score (adjusted difference between groups = 0·27SDs (95%CI=0·12, 0·42)), see figure 3. Intervention participants also showed a move to judge their own lifestyles more critically, with fewer reporting their behaviours as healthy (53·4%) than control participants (59·5%) (adjusted PRR=0·94 (0·87, 1·01)), see figure 5.
Among all participants at baseline, awareness that "there are certain things I can do to lower my risk of heart disease" was greater (88.1%) than that for "there are certain things I can do to lower my risk of cancer" (69.5%) (see Figure 6).
Subgroup analysis showed no difference between the results for boys and girls, or for those living in more and less disadvantaged neighbourhoods.

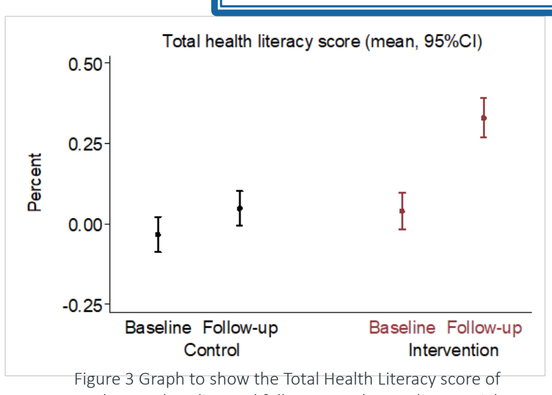

Figure 3 Graph to show the Total Health Literacy score of students at baseline and follow-up and according to trial status

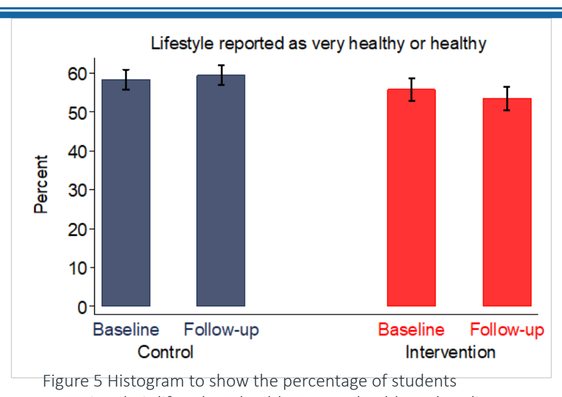

Figure 5 Histogram to show the percentage of students reporting their lifestyle as healthy or very healthy at baseline and follow up and according to trial status

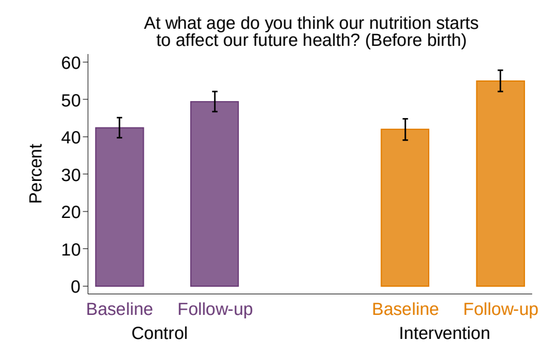

Figure 4 Histogram to show the percentage of students identifying the correct lifecourse stage at which nutrition affects future health, at baseline and follow-up and according to trial status

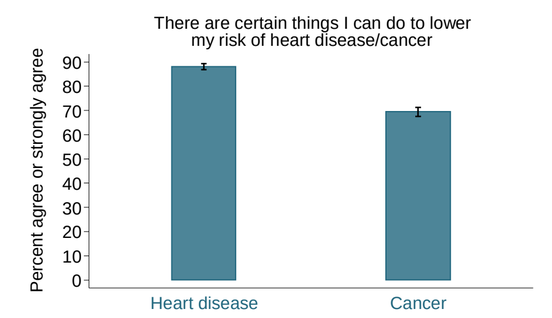

Figure 6 Histogram to show the percentage of LifeLab students agreeing with statements about awareness of risk of heart disease and cancer

Discussion

We have established that adolescents who are offered a science education intervention show increased health literacy manifesting in sustained change in knowledge of life-long effects of their health behaviours, alongside a move to show more critical reflection of their own lifestyles.

The LifeLab programme of work enables students to discover first-hand how nutrition influences health; to understand the impact of their lifestyle on their future risk of non-communicable diseases and how their own health is linked to the health of the children they may have in the future.

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