

## Impact case study (REF3)

<b>Institution:</b> University of the West of Scotland		
<b>Unit of Assessment:</b> 24: Sport and Exercise and Leisure and Tourism		
<b>Title of case study:</b> Healthy schools: Changing teaching to improve the health and well-being of children.		
<b>Period when the underpinning research was undertaken:</b> 2012 - 2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Prof Julien Baker	Professor	2012 - 2016
Dr Duncan Buchan	Senior Lecturer	2015 - 2020
Dr Rosie Arthur	Lecturer	2012 - 2020
<b>Period when the claimed impact occurred:</b> 2013 - 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<b>1. Summary of the impact</b>		
<p>This case study summarises the impact of our research to inform the development of the <b>Healthy Schools</b> resource; a pioneering framework to guide the teaching and planning, tracking and monitoring, and evaluation of Health and Wellbeing education in Lanarkshire, Scotland. Our research findings have led to several positive changes to the design of the Healthy Schools resource, including evidence-informed physical activity interventions for school children and teacher training. With approximately 80% (~n = 95) of primary schools within North Lanarkshire and 68% (~n = 88) of primary schools within South Lanarkshire utilising the Healthy Schools resource as their core delivery model for Health and Wellbeing in the curriculum, our findings have contributed towards efforts to enhance children's health and wellbeing.</p>		
<b>2. Underpinning Research</b>		
<p>Between 2012 and 2016, the Pediatric Health and Physical Activity Research Strand (PH) team led by Dr Buchan at UWS received funding (GBP76,000) from NHS Lanarkshire's Child Healthy Weight team (LCHW) to utilize their scientific and research expertise to undertake a collaborative partnership. PH completed a series of linked research studies from 2012 with our findings influencing subsequent health and wellbeing provision as outlined below.</p> <p>Buchan, Baker et al., evaluated the effectiveness of a school based "<b>Fit for School</b>" lifestyle intervention which was implemented by the LCHW team to n=3290 children. The research <b>[3.1]</b> evaluated the effectiveness of the LCHW preventative services. Further work found that The <b>Fit for School</b> programme also improved several cardiometabolic risk factors and reduced waist circumference <b>[3.2]</b>. A subsequent study examined changes in BMI and psychosocial variables following the <b>Fit for School</b> programme at six months post-intervention <b>[3.3]</b> and found that some initial improvements were not evident six months after the intervention ceased. It was clear from our findings that the preventative services offered by the LCHW team may have had a short-term impact, but once the intervention is removed, improvements were lost. Our findings highlighted the need for a sustainable approach to health and wellbeing that could be embedded within the education curriculum to assist teachers in the delivery of health and wellbeing education, and benefit children's health and wellbeing in the long-term. These findings were outlined in the aforementioned research and were sent to the LCHW.</p> <p>Subsequently, Buchan and Arthur were commissioned by LCHW to evaluate a new curriculum approach to improve child health called Healthy Schools. The findings suggested that the use of Healthy Schools was helpful for teachers and positively influenced the health knowledge of children. A series of recommendations to improve the health impacts of Healthy Schools were provided <b>[3.4]</b> to LCHW to incorporate within future provision.</p> <p>Specifically, there were recommended improvements to the teacher's physical activity resources within Healthy Schools <b>[3.4]</b>. As a result, the team delivered and evaluated teacher-led programmes, <b>Daily Mile</b> and <b>Activity Breaks</b>. <b>Activity Breaks</b> and <b>Daily Mile</b> were delivered to five schools and 100 children, and were well-received within the school classrooms as methods for</p>		

increasing physical activity and reducing sedentary behaviour which would be appropriate to include within the Healthy Schools resource.

There is also a drive to influence children's 24-hour health behaviours throughout both school and home time, with a particular focus on health inequalities. Arthur & Buchan's research explored the potential methods which could involve families of low socio-economic status who were not normally involved in school activities [3.5]. Based on these findings we designed and delivered **Happy Homework** to 40 children and parents which focussed on improving 24-hour movement behaviours and diet in a way which was accessible to all families. The evaluation revealed that the programme was well-received by teachers, children and families of all backgrounds offering multiple potential health and familial benefits. Further evaluation of Happy Homework is anticipated in 2021.

The research outputs and underpinning research were the result of external funding received from NHS Lanarkshire (GBP76,000).

### 3. References to the research

**3.1** Brown, E. C., Buchan, D.S., Cavana, J., Baker, J.S., Wyatt, F.B. & Kilgore, J.L., (2016) Fit for school: results of a 10-week school-based child healthy weight pilot intervention for primary school students, *International Journal of Health Promotion and Education*, 54(5): 229-244, <http://doi/10.1080/14635240.2016.1157511>

**3.2** Brown, E.C., Buchan, D., Wyatt, F.B., Kilgore, J.L., Chatzi, M., Cavana, J. & Baker, J., (2017) 'The 10-week lifestyle intervention fit for school: impact on obesity indices, biomarkers, and blood pressure', *Health Behavior and Policy Review*, 4 (2): 142-149. <https://doi.org/10.14485/HBPR.4.2.5>

**3.3** Brown, E.C., Buchan, D.S., Drignei, D., Wyatt, F.B., Kilgore, L., Cavana, J. & Baker, J., (2018) 'Primary school children's health behaviors, attitudes, and body mass index after a 10-week lifestyle intervention with follow-up', *Frontiers in Pediatrics*. 6: 137. <https://doi.org/10.3389/fped.2018.00137>

**3.4** Buchan, D.S., Donnelly, S., McLellan, G., Gibson, A-M. & Arthur, R., (2019) 'A feasibility study with process evaluation of a teacher led resource to improve measures of child health', *PLoS ONE*, 14 (7): e0218243. <https://doi.org/10.1371/journal.pone.0218243>

**3.5** Donnelly, S., Buchan, D.S. McLellan, G & Arthur, R. (2020, December 10). Exploring the feasibility of a cluster randomised control trial to improve children's 24-hour movement behaviours and dietary intake: Happy Homework. Preprint DOI: 10.31236/osf.io/a2znt

### 4. Details of the impact

Between 2012 and 2020 the Pediatric Health and Physical Activity Research Strand (PH) conducted several ground-breaking interventions within schools that were shown to have a direct impact on the knowledge, behaviours, and health of over 3500 children. Our research **directly led** to the development of **three new evidenced-informed health initiatives** and related teacher professional development (approximately 1184 teachers), which has subsequently improved the health and wellbeing of children within Lanarkshire, Scotland.

Our research provided important insights into the current NHS Lanarkshire's Child Healthy Weight team (LCHW) preventative services which informed their future provision. Our research findings [3.1, 3.2] provided the first evidence to the LCHW team of the effectiveness of their preventative services within schools. These findings [3.1, 3.2] helped validate LCHW to adopt a more holistic approach to tackling the health and wellbeing of children within education settings. Moving away from short-term, external led interventions, the Healthy Schools resource was developed [5.1]. The adoption of a more sustainable approach to the long-term prevention of unhealthy weight gain has been influenced from the recommendations provided from of our research [3.1, 3.2].

PH undertook an initial evaluation of the feasibility of implementing Healthy Schools within the school curriculum, and several recommendations were provided [3.4]. Our research findings and updates were disseminated regularly to the LCHW team via meetings every month and written reports [5.2]. Collectively, our findings and recommendations were well-received by the LCHW team who have sought to develop and improve the Healthy Schools resource [5.3, 5.4]. This resulted in several positive changes to Healthy Schools, including changes to site navigation, the teaching of health-related topics and initial teacher training in the use of the resource [5.4].

As a result of our recommendations and the continued refinement of the Healthy Schools resource, we can demonstrate a direct and positive impact on teachers delivering health and wellbeing [3.4; 5.5, 5.6]. Our interviews with teachers found that the Healthy Schools resource provides an easy to navigate website with helpful planning, lesson activities and evaluation tools [3.4]. We have clear evidence that when teachers use the Healthy Schools resource, they note improvements in the consistency and quality of health and wellbeing lessons they deliver [5.5, 5.6]. Through our interviews with teachers, they report that Healthy Schools is a valuable tool for teachers to improve their teaching of health and wellbeing topics - an area where teachers often lack confidence and previous training [5.5, 5.6].

There has been a marked increase in the number of teachers participating in professional development related to the Healthy Schools resource from 2015/16 (108 teachers) to 2018/19 (508 teachers) [5.7]. These teachers will have benefitted from the recommendations provided to LCHW based on our research findings concerning initial teacher training [3.4; 5.4]. To date, approximately 1,292 teachers have received CPD training in the use of the Healthy Schools resource [5.7]. As our findings suggest, using the Healthy Schools resource can improve the consistency and quality of the health and wellbeing lessons teachers deliver to children [5.5, 5.6].

The use of the Healthy Schools resource has grown since our initial research investigation. Approximately 80% (~n = 95) of primary schools within North Lanarkshire and 68% (~n = 88) of primary schools within South Lanarkshire use the resource as their core delivery model for Health and Wellbeing in the curriculum [5.7]. The collective outcomes from our research findings have helped inform the delivery of Health and Wellbeing education to approximately 38,797 children within Lanarkshire and demonstrates the wide-reaching impact of our research findings.

## 5. Sources to corroborate the impact

**5.1** Healthy Schools resource website: <https://healthyschools.scot/>. The website provides an overview of the Healthy Schools framework. The following link ([Healthy Schools Research | Healthy Schools](#)) also refers to the research work undertaken by the Pediatric Health and Physical Activity Research Strand (PH)

**5.2** Minutes of NHS Lanarkshire's Child Healthy Weight (LCHW) Team meeting: This report provides evidence of our research findings and updates being disseminated regularly to the LCHW team via meetings and written reports.

**5.3** Testimonial from Senior Health Improvement Lead of the NHS Lanarkshire's Child Healthy Weight team: This testimonial details the collaborative relationship between LCHW and Pediatric Health. The letter also details how LCHW have made several positive changes to the Healthy Schools resource based on our research findings.

**5.4** Report from The Curriculum Support Teacher within the Healthy Schools Team: This report lists the recommendations which were provided to Lanarkshire's Child Healthy Weight team based on our research findings. The Curriculum Support Teacher has provided details on the action taken and impact of each recommendation provided by PH.

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**5.5** Research Report 1: This research report provides details of the interviews undertaken with teachers who use the Healthy Schools resource. Teachers found that the Healthy Schools resource provides an easy to navigate website with helpful planning, lesson activities and evaluation tools which helps improve their teaching of health and wellbeing topics to children.

**5.6** Research Report 2 (delayed due to COVID-19): This research report provides details of the interviews undertaken with teachers who use the Healthy Schools resource. These are separate interviews to those presented in **[5.5]**.