

Institution: Leeds Metropolitan University
Unit of Assessment: 2A Public Health, Health Services & Primary Care
Title of case study: Prevention of Childhood Obesity; Clinical and Public Health Approaches
<p>1. Summary of the impact (indicative maximum 100 words) Research in the area of childhood obesity has focussed on the development, implementation and evaluation of interventions. The APPLES Study (1996-99), the first UK school-based RCT was key in contributing to the evidence-base through wide dissemination including 3 BMJ (2001) publications, cited in NICE (2006) and WHO guidance (2004). Collaborations with academics, practitioners and the RCPCH led to the development of further community-based obesity treatment and prevention interventions including WATCH IT; early programmes e.g. EMPOWER, HELP and HAPPY and more recently innovative school-based initiatives involving school gardening. There is evidence of results being disseminated and influencing research, practice and policy.</p> <p>2. Underpinning research (indicative maximum 500 words) The work on nutrition and childhood obesity has its origins in the PhD studies (Professor Pinki Sahota, Meaghan Christian), Dr Maria Maynard. There is a strong history of collaborations with Leeds University and practitioners resulting in acknowledgement of Leeds as a centre for excellence in childhood obesity research. Pragmatic trials have been designed and implemented within existing infrastructures with robust evaluations to inform both practice and policy. The APPLES study (1, 2) was one of the first to highlight the increasing prevalence of childhood obesity within the UK in the late 1990's (3). Staff are recognised for their expertise in generating evidence to inform better quality interventions. Publications and conference presentations resulting from this work have attempted to explore effective approaches in the prevention and treatment of childhood obesity across a range of age groups and settings. The applied nature of the research has focussed on improving the quality of interventions and services through links with PCT commissioning, other researchers and DH obesity policies resulting in a number of grants being awarded. Building on this experience further intervention studies have been undertaken which focus on the early prevention of childhood obesity contributing to current evidence that the early years are a critical period to address obesity risk factors. The team has continued to collaborate with existing (Leeds University, NHS Trust, PCT) and new partners (Universities of Bradford, Warwick, Southampton, Cambridge, Royal College of Paediatrics and Child Health (RCPCH)) in the development and evaluation of further interventions listed below along with funding sources:-</p> <p>2004 - 09 - WATCH IT, community-based treatment programme led by Health Trainers (Wellcome Trust 650,000);(4) 2006 -11 - EMPOWER Project, health-visitor-led early intervention with RCPCH (DH) 2006 - 11 HELP Programme targeting parents attending Children Centres, LeedsMet Centenary PhD studentship</p> <p>Further work is currently developing around this theme. P. Sahota is a co-applicant on a NIHR programme grant (£1.9m initially) with Professor Wright (PI) from Bradford Institute of Health Research to assess health determinants of 13,500 mothers and children in the Born in Bradford study. Data from a subsample of 1700 has informed the development of an early intervention for the multi-ethnic population of Bradford currently being evaluated. P Sahota has secured funding from industry (Danone) for the dietary analysis to increase understanding of dietary risk factors and inform the targeted intervention.</p> <p>School-based interventions remain as key research areas and novel interventions are being evaluated and the impact of these studies is being realised in practice and policy. 2008-11 Factors influencing uptake of free school meals (Education Leeds) (5) 2008 - 2010 School-based fruit and vegetable intervention- (Project Tomato) (NIHR) 2010-13 RHS School Gardening Project (NIHR)(6) 2012- 14 Evaluation of PhunkyFoods primary school-based nutrition and physical activity programme.(NESTLE Global)</p>

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Child health and obesity remain key areas of public health policy in the UK as referred to in the recent Public Health White Paper and Marmot Review. The research undertaken includes interventions across childhood and therefore compliments the life course approach proposed for impacting on public health, practice and policy.

3. References to the research (indicative maximum of six references)

References to the research

1. Sahota P, Rudolf MCJ, Cade J, Dixey R, Hill AJ, Barth JH. (2001) APPLES: Process and Impact evaluation of a school-based obesity prevention programme in the UK. *BMJ*, 323:1027 - 1029. DOI: <http://dx.doi.org/10.1136/bmj.323.7320.1027>
2. Sahota P, Rudolf MCJ, Cade J, Dixey R, Hill AJ, Barth JH. (2001) APPLES: A group randomised trial of a school-based obesity prevention programme in the UK. *BMJ* 323: 1029 - 1032. DOI: <http://dx.doi.org/10.1136/bmj.323.7320.1029>
3. Mary Rudolf, Pinki Sahota, Julian Barth, Jenny Walker. (2001). Increasing prevalence of obesity in primary school children: cohort study. *BMJ* 322: 1094-1095. DOI: <http://dx.doi.org/10.1136/bmj.322.7294.1094>
4. Rudolf MCJ, Christie D, McElhone S, Sahota P, Dixey R, Walker J, Wellings C. (2006) WATCH IT: a community based programme for obese children and adolescents. *Archives of Disease in Childhood*. *Archives of Disease in Childhood* 2006;91;736-739. DOI: 10.1136/adc.2005.089896 Available at: <http://dx.doi.org/10.1136%2Fadc.2005.089896>
5. Pinki Sahota, Jenny Woodward, Rosemary Molinari and Jo Pike (2013) Factors influencing take-up of free school meals in primary and secondary-school children in England. *Public Health Nutrition*: page 1 of 9 doi:10.1017/S136898001300092X Available at: <http://journals.cambridge.org/download.php?file=%2FFPHN%2FS136898001300092Xa.pdf&code=da5b7ca31c8573bf67d2aaa56a4c8e16>
6. Evans, CEL., Ransley, JK., Christian, MS Greenwood DC., Thomas, JD., & Cade, JE (2013) A cluster-randomised controlled trial of a school-based fruit and vegetable intervention: Project Tomato *Public Health Nutrition* 14:1-9. DOI: <http://dx.doi.org/10.1017/S1368980012005290>

4. Details of the impact (indicative maximum 750 words)

The applied nature of the research has led to improvement in the quality of interventions that enhance nutrition, target childhood obesity and influence practice and policy. The research has been viewed as relevant and timely and has generated significant interest. The following summary provides evidence of impact of the research undertaken.

The APPLES study was cited in NICE guidance on Obesity (1); WHO report on Childhood Obesity (2) and included in numerous systematic reviews including Cochrane (3) and the Centre for Reviews and Databases.

Dissemination and sharing of good practice in child weight management was led by Professor Sahota through organisation at LeedsMet of 2 national meetings (June 2006 and May 2009) that brought together leading academics and practitioners involved in treatment programmes. This resulted in the formation of the first ever group dedicated to childhood obesity interventions, Childhood Obesity Research Group (CORG). The meetings established a case for development of standard evaluation approaches for child weight management programmes. Professor Sahota was subsequently invited by the National Obesity Observatory to join a working group for the development of the Standard Evaluation Framework (4) which is the recommended evaluation framework across the UK, thereby facilitating evidence from a wide range of programmes to contribute to the broader evidence base. Additionally CORG provided a consultation base for e.g.

establishing the National Child Measurement Programme.

P. Sahota (PI) undertook a costing study of WATCH IT, a community-based childhood obesity treatment programme which has been used by commissioners of weight management services (5). The programme is on the list of 10 approved programmes by the DH and is currently being commissioned in Leeds and other PCT's e.g. Birmingham and Coventry with the emerging data making a major contribution to the understanding effectiveness of community-based interventions (6.)

In March 2011, the HELP programme, an early intervention aimed at parents of young children was submitted to the Centre for Excellence and Outcomes in Children and Young People's Services (C4EO) (www.c4eo.org.uk) of the National Foundation for Educational Research (NFER). The Centre evaluates examples of effective local practice that provide demonstrable evidence of improving outcomes for children, young people and their families and aims to inform decision and policy making, and to share and disseminate effective practice with others working across the children's sector. HELP was judged as promising practice and is published on the C4EO website under this category. This has resulted in the programme and the accompanying resource manual being made available practitioners (7), and thereby influencing practice by improving the quality of advice and support offered to parents of young children.

The extensive experience in the development of child weight management programmes and the access to a network of academics and practitioners in obesity management led to the team being commissioned by NHS Health Scotland to undertake an evidence-review of effective behavioural strategies for childhood obesity programmes, (2010, NHS Health Scotland). The aim of this review was to aid the development of effective weight management programmes in Scotland. However there has been wider interest in these findings and their application to practice and evidence was also submitted to the House of Lords. Science and Technology Committee on Behaviour Change (8).

The research on factors influencing uptake of free school meals in Dec 2010 has resulted in a new policy launched on 15 December 2010 for all Leeds secondary schools which improves access to healthy food and makes free school dinners more widely available. The research suggested many children who are eligible for free school meals fail to take up their entitlement and instead snack on unhealthy food during morning break time. The new policy allows pupils to pre-order 'grab bags' - consisting of a sandwich, dessert and drink which can be eaten at break-time when they are hungry and thereby taking advantage of their entitlement.

In Jan 2012 research undertaken by the team resulted wide media coverage on the role of family mealtimes in encouraging fruit and vegetable consumption <http://thefamilydinnerproject.org/the-fruit-and-veggie-boosting-effects-of-family-dinner-2/> (9)

As an acknowledgement of Professors Sahota's expertise in the field of Childhood Obesity she was invited to:- join the International Scientific Committee for the European Congress on Obesity (May 12-15 2013); join the DH Expert Working Group in Nov 2012 to develop commissioning guidance for Child Weight Management Programmes which are now available; in Feb 2013 to present an Expert Testimony to the Programme Development Board on child weight management programmes (10); the House of Commons to the launch of the All Part Parliamentary Group on Obesity 16.4.13.

5. Sources to corroborate the impact (indicative maximum of 10 references)

1. The prevention, identification, assessment and management of overweight and obesity in adults and children APPLES cited as best practice on prevention. Full guideline – all of the evidence and rationale (Dec 2006) available at www.nice.org.uk/CG043fullguideline
2. Obesity in children and young people: A crisis in public health (2004) Obesity Reviews, Vol 5. Supplement 1 May 2004. APPLES programme cited as good practice in school-based obesity prevention available at <http://www.ncbi.nlm.nih.gov/pubmed/15096099>
3. T. Brown, S. Kelly and C. Summerbell (2007) Prevention of obesity: a review of interventions

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- obesity reviews (2007) 8 (Suppl. 1), 127–130. APPLES Cited. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-789X.2007.00331.x/abstract>
4. Standard Evaluation Framework 2010. National Obesity Observatory available at www.noo.org.uk/SEF
 5. C. Spoor¹, P. Sahota¹, C. Wellings², M. C. J (2013) Costing a pilot complex community-based childhood obesity intervention. *Journal of Human Nutrition and Dietetics*; Volume 26, Issue 2, pages 126–131, April 2013. Available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-277X.2012.01273.x/full>
 6. The Foresight report, *Tackling Obesities: Future Choices*, was published on 17 October 2007. Available at: www.foresight.gov.uk/Obesity/Obesity.html WATCH IT cited as best practice programme.
 7. Information on HELP intervention submitted to the Centre for Excellence and Outcomes in Children and Young People's Services (C4EO). Available at: www.c4eo.org.uk/themes/general/vlpdetails.aspx?lpeid=362
 8. Sahota P, Wordley J, Woodward J (2010) Literature Review: Health behaviour change models and approaches for families and young people to support HEAT 3: Child Healthy Weight Programmes. NHS Health Scotland 30th Aug 2010. Available at: [http://www.healthscotland.com/uploads/documents/14147-Child Healthy Weight Literature Review.pdf](http://www.healthscotland.com/uploads/documents/14147-Child%20Healthy%20Weight%20Literature%20Review.pdf)
 9. Available at <http://thefamilydinnerproject.org/the-fruit-and-veggie-boosting-effects-of-family-dinner-2/>
 10. Available at <http://www.nice.org.uk/guidance/index.jsp?action=download&o=63653>