

Obesity Prevention & Lifestyle (OPAL) Summary of Flinders University OPAL Evaluation Project Final Report

December 2016

Introduction

Childhood overweight and obesity is a leading public health concern. The Obesity Prevention & Lifestyle (OPAL) program; a multi-site, multi-setting, multi-strategy community based childhood obesity prevention program, is being implemented in response to this issue.

The aim of the OPAL program is to improve eating and physical activity patterns of South Australian children, through families and communities, and thereby increase the proportion of 0-18 year olds in the healthy weight range and improve their quality of life.

OPAL was planned as a joint Australian Government, South Australian Government and Local Council program to be funded from 2008-2017. Part way through the program (2014), the Australian Government terminated the National Partnerships Agreement on Preventative Health (NPAPH) and withdrew funding to the OPAL program and evaluation.

Despite the loss of Australian Government funding in 2014, the South Australian Government and Local Councils have continued to partner to implement the OPAL program in 20 communities. The South Australian Government funding will conclude, as planned, in June 2017.

OPAL targets regions where disadvantage is greatest and the program impacts over 400,000 residents or one quarter of the State's population.

OPAL Communities:

Phase 1 (2009-14)	Phase 2 (2010-15)	Phase 3 (2011-16)	Phase 4 (2012-17)
City of Marion	City of Whyalla	City of West Torrens	Alexandrina Council
City of Mt Gambier	District Council of the Copper Coast	City of Murray Bridge	The Coorong District Council
City of Onkaparinga	City of Charles Sturt	Mid Murray Council	City of Salisbury (North)
City of Playford	City of Port Adelaide Enfield	Northern Areas Council, Peterborough and Mount Remarkable (joint site)	City of Charles Sturt (Outer)
City of Port Augusta		City of Playford (South)	Campbelltown City Council
City of Salisbury		City of Palmerston - NT (COPAL)	



Evaluation of the OPAL program

To determine the effectiveness of the OPAL program, a multicomponent evaluation framework (including qualitative and quantitative methods) was developed.

The Flinders University of South Australia (Flinders) OPAL Evaluation Project is the first of two components of the OPAL program evaluation.

The second component is the OPAL Integrative Evaluation which is currently being completed by the University of South Australia. The outcomes of the Integrative Evaluation are expected in the first half of 2017.

The Flinders University OPAL Evaluation Project

The Flinders OPAL Evaluation Project Final Report (the “Report”) is a comprehensive and lengthy document. This Summary outlines the findings from the Report.

Evaluation context

As a result of Australian Government cuts to funding for the NPAPH and the OPAL program in June 2014, the funding for the Flinders OPAL Evaluation Project ended early. The implications are that instead of a full complement of 20 OPAL communities, only the first 10 (communities in Phase 1 and Phase 2) have been evaluated.

The smaller than expected sample size, compounded by the low responses rates for the surveys, has ultimately reduced the statistical power to detect population level change. Further, the evaluation period was reduced from five years to three years of intervention due to delays in ethics approvals. The Report notes that “the period of evaluation may not have been long enough to have seen significant changes in the outcomes measured, in particular in weight status” (page 155).

These limitations, and others outlined later in this Summary and in the Report, must be considered when interpreting the results.

Methodology

The Flinders OPAL Evaluation Project was a repeat cross-section quasi-experimental research design. This means that this evaluation:

- compared ‘baseline’ measures with ‘final time-point’ measures;
- conducted surveys and measurements with two different cohorts of individuals (and in some cases, their parents) at baseline and final time-points. They were not necessarily the same individuals followed up over time; and
- compared OPAL ‘intervention’ communities with similar communities not receiving the OPAL program. These ‘comparison’ communities were matched with OPAL communities on maternal education, Index of Relative Social Disadvantage and the population of families.

The data which were collected were compared (i) for differences between the baseline and final time-point measures, and (ii) for differences between the OPAL communities and the comparison communities. Any differences were analysed for “statistical significance” – in other words that the differences were *unlikely to have occurred by chance*.

Primary and Secondary Outcome Measures

The primary outcome measures for the Flinders OPAL Evaluation Project were change in the proportion of children within the healthy weight range, and change in health-related quality of life.

The costs associated with, and the challenges of an Economic Evaluation of, the OPAL program was discussed.

The secondary outcome measures for the Flinders OPAL Evaluation Project related to changes in eating practices (including fruit, vegetable and discretionary food/drink consumption) and changes in home and school environments, sleep, physical activity and sedentary (screen-time) practices. The community capacity building component of the OPAL program also was evaluated.

Primary outcomes - findings

Change in the proportion of children in the healthy weight range

There were no statistically significant changes in the proportion of children of healthy weight over time in OPAL or comparison communities, nor statistically significant differences between OPAL and comparison communities at the final time-point.

The Report examined the weight status of preschool and primary school children in a number of additional ways.

NOTES: The Flinders OPAL Evaluation Project used height and weight measurements to calculate individuals' Body Mass Index (BMI). BMI was used to:


- > *calculate a BMI z-score (this tells us where a particular score [BMI adjusted for age and gender] lies in relation to the mean [the average]); and*
- > *categorise weight status according to; underweight, healthy weight, overweight or obese.*

For preschool children (4-5 years):

- > There was no statistically significant difference between BMI nor BMI z-score measures at baseline compared with final time-point in the OPAL or comparison communities overall. In addition, there was no statistically significant difference between OPAL and comparison communities at final time-point.
- > There was no statistically significant difference between the prevalence of children classified as underweight, healthy weight, overweight or obese from baseline to final time-point. There was also no statistically significant difference between the OPAL and comparison communities at the final time-point.

For school aged children (9-11 years):

- > There was no statistically significant difference between BMI measures at baseline compared with final time-point in the OPAL or comparison communities overall. In addition, there was no statistically significant difference between OPAL and comparison communities at final time-point.
- > There was no statistically significant difference between the prevalence of children classified as healthy weight or overweight from baseline to final time-point. There was also no statistically significant difference between the OPAL and comparison communities at the final time-point. There was a statistically significant decrease in the prevalence of underweight children in the OPAL communities but the differences between OPAL and comparison communities at final time-point were not statistically significant.
- > At the final time-point there was a statistically significantly increase in the prevalence of obesity in comparison communities and higher prevalence of obesity compared with OPAL communities. There was also a statistically significant increase in BMI z-score for



children in comparison communities from baseline to final, but the difference between OPAL and comparison communities at final time-point was not statistically significant. These two findings, noting the other inconclusive findings about the impact of the OPAL program on children's weight, have uncertain significance at the population level.

Change in Health-Related Quality of Life

There was a statistically significant decrease in child health-related quality of life from baseline to final time-point in comparison communities, and a smaller (not statistically significant) decrease for OPAL communities. The magnitude of the decrease in health-related quality of life was (statistically) significantly larger for comparison than OPAL communities at the final time-point.

NOTES: Quality of Life is a broad concept and is based on an individual's subjective experience of their overall wellbeing. Health-related Quality of Life is an individual's satisfaction or happiness with those aspects of overall quality of life that can be clearly shown to affect health—either physical or mental. It is about their ability to be able to go about their usual activities of daily living with a particular condition e.g. obesity.

- > The Report notes that the baseline and final time-point measures are taken from two different cohorts of individuals so it is not possible to make any direct inferences about changes in health-related quality of life within individuals in OPAL and comparison communities between baseline and final time-point.

Economic Evaluation

The ability to complete the economic evaluation of the OPAL program was challenging due to the use of two different cohorts of individuals for the baseline and final time-point populations (not the same children) for the assessment of health-related quality of life for the OPAL and comparison communities, and the relatively short time frame of evaluation (three years). Thus, definitive conclusions about the relative cost effectiveness of the OPAL program could not be drawn from the information presented.

Secondary Outcomes


There were no statistically significant differences between OPAL and comparison communities at final time-point for the majority of secondary outcomes.

Fruit and Vegetable Consumption

- > Around two-thirds of all students reported that they met the recommended intake of two serves of fruit at baseline and final time-point. Although there was a statistically significant increase between baseline and final time-point in the proportion of students reporting they were meeting the recommended daily intake of fruit in the OPAL communities, there were no statistically significant differences between the OPAL and comparison communities at the final time-point.
- > Less than one-third of all students reported that they met the recommended intake of five serves of vegetables at each time-point. Although there was a statistically significant increase between baseline and final time-point in the proportion of students reporting they were meeting the recommended daily intake of vegetables in the comparison communities, there were no statistically significant differences between OPAL and comparison communities at the final time-point.

Discretionary Food and Drink Consumption

- > Approximately a quarter of all students reported that they met the recommendations of less than two serves of discretionary food (including sweetened beverages) per day at baseline and final time-point. While there was no statistically significant change between



baseline and final time-point in students from OPAL and comparison communities meeting these guidelines, there was a statistically significantly higher proportion of students from OPAL communities meeting the guidelines, compared with comparison communities, at final time-point.

Physical Activity

NOTES: In 2014, the Australian Department of Health revised Australia's Physical Activity and Sedentary Behaviour Guidelines. Prior to 2014, children were recommended to accumulate 60 minutes or more of moderate or greater intensity physical activity on all days of the week. The data presented in this report are based on this earlier definition.

- > At baseline, just over a quarter of all students met the physical activity guidelines and this increased to more than a third at final time-point.
- > There was a statistically significant increase in the proportion of students who reported that they met the physical activity guidelines at final time-point compared with baseline in both OPAL and comparison communities. However, there was no statistically significant difference between the groups at final time-point.

Sedentary Behaviour – screen-time

- > There was a statistically significant decrease in the proportion of students who reported that they met the screen-time guidelines (no more than two hours per day) at final time-point compared with baseline in both OPAL and comparison communities. However, there was no statistically significant difference between the groups at final time-point.

Sleep


- > Around two-thirds of all students met the sleep guidelines (9-11 hours per night). Sleep durations were similar between OPAL and comparison communities at baseline and final time-point. The Report does not report on an analysis of differences between the groups.

Physical Environments

- > The Report examined parental surveys to examine many environmental (home and community) factors which may influence activity and sedentary behaviours.
- > Statistically significant differences between OPAL communities and comparison communities at the final time-point were found for a limited number of these factors. These included increases in parents attending a community garden and the existence of a farmers' market in the local area and decreases in the percentage of children with a television in their bedroom.
- > Overall, the most commonly available facilities for physical activity were public parks, playgrounds or open spaces, friends or relative's homes and bike/hiking/walking trails/paths. There were no statistically significant changes in the reported number of community activity facilities available or number used at least once a fortnight from baseline to final time-point in the OPAL and comparison communities, nor between these groups at final time-point.

Community Capacity Building

The Flinders OPAL Evaluation Project also included a qualitative study examining community capacity building in OPAL communities. The findings were that OPAL contributed positively to community capacity building in OPAL communities. OPAL strengthened community capacity in ways that respected diverse community rhythms, the internal dynamics of community groups and local partners. OPAL's provision of quality resources to support community capacity building was important. However the single most important factor was the community development values and approaches used in the OPAL program.



The Report identified that the community development approach of the OPAL Program, resulted in the OPAL workers taking on the roles of Facilitator, Collaborator and Resource Provider. “In all [community capacity building] group discussions, there was acknowledgement of the positive contribution of OPAL to the community development work... [and a number of the discussion participants] made mention of the skills, personal qualities and accessible support from the OPAL workers” (page 153). The qualitative study tells “a story of effective community capacity building in which OPAL has been a player. As one group notes: *‘there is a footprint left behind that will carry on’*” (page 154).

Evaluation Limitations

The Flinders OPAL Evaluation Project Final Report notes the limitations for the evaluation:

- > Selection bias - with response rates of less than 25% overall for 9-11 year old students, the findings of the evaluation relating to this age group should be treated with caution as the effect on the outcomes are not known. Please note that there may be a lower likelihood of selection bias for findings relating to 4-5 year old children as these data are collected routinely outside of the OPAL program.
- > Generalisability of findings - the OPAL program ran in localities with greater disadvantage and thus outcomes may or may not be generalisable to other communities or populations.
- > Relatively short evaluation period – all outcomes for 9-11 year olds were measured over a three year follow-up period due to delays in obtaining ethics approvals.
- > Socio-Economic Status differences in baseline characteristics – all models were adjusted by suburb, Index of Community Socio-Educational Advantage and age to adjust for possible confounding, which may or may not be sufficient to control for confounding.
- > Questionnaire data – while individual items may have been tested for reliability and validity, the psychometric properties of the OPAL surveys have not been tested.
- > Time-related selective sampling – seasonal variations in food and activity may affect the reporting based on the time of year the data was collected.
- > Sub-group analyses – these have a small risk of finding a false positive and should be treated with caution. Attention should be paid to patterns of change rather than on the result of any individual test.

In addition:

- > The evaluation scope – the Flinders OPAL Evaluation Project did not examine all aspects of the OPAL program, for example it did not measure the dose of the OPAL intervention, nor how well it was adopted in each location.
- > The evaluation originally intended to examine outcomes across 20 OPAL communities. As a result of Australian Government cuts to funding for NPAPH and the OPAL program, only the first 10 OPAL communities have been evaluated.

For more information

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