



Evaluating return on investment in a school based health promotion and prevention program: The investment multiplier for the Stephanie Alexander Kitchen Garden National Program



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ARTICLE INFO

Article history:

Received 27 August 2013

Received in revised form

20 May 2014

Accepted 30 May 2014

Available online 2 June 2014

Keywords:

Australia

Health promotion and prevention

Lifestyle and eating behaviours

Complex community-based interventions

Investment multiplier

Health economics

Stephanie Alexander Kitchen Garden

National Program

ABSTRACT

Successful health promotion and disease prevention strategies in complex community settings such as primary schools rely on acceptance and ownership across community networks. Assessing multiplier impacts from investment on related community activity over time are suggested as key alongside evidence of program health effects on targeted groups of individuals in gauging community network engagement and ownership, dynamic impacts, and program long term success and return on investment.

An Australian primary school based health promotion and prevention strategy, the Stephanie Alexander Kitchen Garden National Program (SAKGNP), which has been providing garden and kitchen classes for year 3–6 students since 2008, was evaluated between 2011 and 2012. Returns on Australian Federal Government investment for school infrastructure grants up to \$60,000 are assessed up to and beyond a two year mutual obligation period with:

(i) Impacts on student lifestyle behaviours, food choices and eating habits surveyed across students ($n = 491$ versus 260) and parents ($n = 300$ versus 234) in 28 SAKGNP and 14 matched schools, controlling for school and parent level confounders and triangulated with SAKGNP pre-post analysis;

(ii) Multiplier impacts of investment on related school and wider community activity up to two years; and

(iii) Evidence of continuation and program evolution in schools observed beyond two years.

SAKGNP schools showed improved student food choices ($p = 0.024$) and kitchen lifestyle behaviour ($p = 0.019$) domains compared to controls and in pre-post analysis where 20.0% (58/290) reported eating fruit and vegetables more often and 18.6% (54/290) preparing food at home more often. No significant differences were found in case control analysis for eating habits or garden lifestyle behaviour domains, although 32.3% of children helped more in the garden (91/278) and 15.6% (45/289) ate meals together more often in pre-post analysis.

The multiplier impact on total community activity up to two years was 5.07 (\$226,737/\$44,758); 1.60 attributable to school, and 2.47 to wider community, activity. All 8 schools observed beyond two years continued garden and kitchen classes, with an average 17% scaling up and one school fully integrating staff into the curriculum.

In conclusion evidence supports the SAKGNP to be a successful health promotion program with high community network impacts and return on investment in practice.

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1. Introduction

1.1. Evaluating success and return on investment for health promotion and prevention programs in complex community system settings such as primary schools

Health promotion and prevention strategies in community settings are in general most effective where they engage with social networks and build social capital to enable community ownership and embedding of strategies (Hawe and Shiell, 2000; Moore et al., 2006). This is particularly the case for health promotion and prevention activities at primary schools, as social institutions within a community setting that represent a complex system with direct and indirect community relationships and social networks (Hawe and Ghali, 2008; Shiell et al., 2008).

In such complex systems engagement with and ownership of programs by networks and dynamic impacts between programs and networks are key to the success of health promotion and prevention strategies (Shiell and Hawe, 1995). There is an increasing body of evidence that independent of evidence of potential impacts at an individual level, health promotion and prevention programs that do not engage with community networks and ownership, fail over time to have an impact on population health, particularly beyond program obligation and evaluation periods (Hawe et al., 2009). Without community involvement and ownership, impacts are short-lived (Schensul, 2005) and fail to be effective in impacting on disadvantaged populations targeted (Hill et al., 2005). While the Framingham study (Dawber et al., 1957; Truett et al., 1967) showed major causes of death are preventable, individual patient rather than community level programs have had marginal if any impact (Zaza et al., 2005). Success of health promotion programs in community settings such as schools generally requires engaging with complex systems of networks in those communities (Shiell et al., 2008). Where behaviour models have been successful at population levels, such as telephone messaging in improving physical activity and diet (Eakin et al., 2007), they have generally coincided with approaches which also actively engage with and enable dynamic impacts over time across networks in communities.

Hence, conventional cost effectiveness analysis models informed by evaluation of effects on individual patients without consideration of community network impacts struggle to gauge the expected long term effects of health promotion and prevention programs in such community settings (Shiell and Hawe, 1995). Conventional assessment of within study costs and effects typically do not enable assessment of whether programs will continue beyond evaluation periods, are expected to be successful or provide an adequate return on investment, with long term effects usually postulated around sensitivity and scenario analysis. However, multiplier effects from program investment flowing across networks into community activities in such settings have been suggested to provide a robust quantitative indicator of community ownership, engagement with, and building of, social networks and capital, and sustainability of programs over time (Hawe et al., 2009; Shiell et al., 2008).

Multiplier assessment over time provides key evidence to assess network engagement, ownership and dynamic impacts. Triangulated with qualitative evidence of impacts of context this enables informed assessment of whether typically short term program effects on individuals during evaluation periods can be expected to translate into sustainable programs with long term outcomes across communities. Such triangulated and combined assessment of individual and community impacts is key in health promotion, as Perriago highlights in the Guide to economic evaluation in health promotion: “To make a true economic assessment of health

promotion options, one must be forward thinking and consider many different avenues to arrive at a given result” (de Salazar et al., 2007: p. 1). Estimating multiplier effects over time also provides a foundation to consider more complex forms of network analysis, such as mapping activity impacts to the role of gatekeepers or champions, feedback loops between context and intervention, or the extensiveness and intensiveness (Yin, 1979) of networks over time (Hawe et al., 2009), which we return to consider in discussion.

1.2. The Stephanie Alexander Kitchen Garden National Program (SAKGNP) in primary schools

The Stephanie Alexander Kitchen Garden National Program (SAKGNP) is a school based program designed to promote pleasurable food education in Australian primary schools (Stephanie Alexander Kitchen Garden Foundation, 2011). Since 2008 the Australian Federal Government has funded competitive capital grants of up to \$60,000 for Australian primary schools to build garden and kitchen facilities, with a mutual obligation for funded schools to undertake Stephanie Alexander Kitchen Garden (SAKG) classes for primary school students aged 8–12 years (across grades 3–6) for two years. To be eligible for SAKGNP capital funding, schools in a grant application process needed to demonstrate a whole of school commitment to: hiring garden and kitchen specialists to support weekly lessons for all Years 3–6 students (45 min each school week in a vegetable garden and 90 min in a kitchen classroom); linking lessons to the official curriculum; support and engagement in the Program, including involvement of community volunteers; and a minimum two year commitment to running SAKGNP classes.

The SAKGNP represents the extension of a pilot SAKG pilot program in Victoria which started in 2001. The Victorian SAKG pilot program had also competitively funded primary schools for capital expenditure in setting up gardens and kitchens, but with additional recurrent expenditure associated with running classes over the first 12 months (Block et al., 2012; Block and Johnson, 2009; Gibbs et al., 2013a, 2013b). A national evaluation of the SAKGNP was commissioned in late 2011 to determine the health-related impacts and program-related outcomes including return on investment to the Australian government (Yeatman et al., 2013, in press). This paper considers the methods, analysis and findings for evaluating the return on investment component of the SAKGNP from a societal perspective, allowing for impacts on students, parents, staff, schools and wider communities.

2. Methods

Ethical approval for the evaluation was obtained from the University of Wollongong Human Research Ethics Committee and all relevant jurisdictional education departments.

Short term impacts of the SAKGNP on student attitudes, behaviour and lifestyle are evaluated with triangulation of comparative and pre-post surveys of students and parents [INSERT LINK TO ONLINE FILE A] for four SAKGNP domains of interest proposed by the Australian Department of Health and Ageing:

- (i) Garden lifestyle behaviours consider the level of enjoyment, confidence and ability of students in gardening;
- (ii) Kitchen lifestyle behaviours consider the level of enjoyment, confidence and ability of student in cooking and other kitchen activities;
- (iii) Eating habits and behaviours consider the quantity of fruit and vegetables consumed and mealtime behaviours;
- (iv) Food choices consider willingness to try new foods and diversity of foods chosen to eat.

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