

Community-based efforts to prevent obesity: Australia-wide survey of projects

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Abstract

Issues addressed: Community-based programs that affect healthy environments and policies have emerged as an effective response to high obesity levels in populations. Apart from limited individual reports, little is currently known about these programs, limiting the potential to provide effective support, to promote effective practice, prevent adverse outcomes and disseminate intervention results and experience. The aim of the present study was to identify the size and reach of current community-based obesity prevention projects in Australia and to examine their characteristics, program features (e.g. intervention setting), capacity and approach to obesity prevention.

Methods: Detailed survey completed by representatives from community-based obesity prevention initiatives in Australia.

Results: There was wide variation in funding, capacity and approach to obesity prevention among the 78 participating projects. Median annual funding was Au\$94 900 (range Au\$2500–\$4.46 million). The most common intervention settings were schools (39%). Forty per cent of programs focused on a population group of $\geq 50\,000$ people. A large proportion of respondents felt that they did not have sufficient resources or staff training to achieve project objectives.

Conclusion: Community-based projects currently represent a very large investment by both government and non-government sectors for the prevention of obesity. Existing projects are diverse in size and scope, and reach large segments of the population. Further work is needed to identify the full extent of existing community actions and to monitor their reach and future ‘scale up’ to ensure that future activities aim for effective integration into systems, policies and environments.

So what? Community-based programs make a substantial contribution to the prevention of obesity and promotion of healthy lifestyles in Australia. A risk of the current intervention landscape is that effective approaches may go unrecognised due to lack of effective evaluations or limitations in program design, duration or size. Policy makers and researchers must recognise the potential contribution of these initiatives, to both public health and knowledge generation, and provide support for strong evaluation and sustainable intervention designs.

Key words: prevention, community, intervention, population health.

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Introduction

Community-based obesity prevention programs are becoming an increasingly important component of the response to high levels of overweight and obesity internationally.^{1,2} The rationale for such

approaches is strong,^{3–5} and an increasing number of demonstration programs have reported successful implementation and impact on levels of overweight and obesity, including in France,⁶ the US⁷ and Australia.^{8,9} As a result, there have been significant investments in

community-based initiatives to address obesity in Australia, from both government and non-government sectors, yielding programs of widely varying scale, complexity and resourcing.

Among recent investments, the Australian government, as part of the 2008 National Partnership Agreement on Preventive Health (total funding Au\$932.7 million), provided \$72 million from 2009 to 2014 for 'Healthy Communities', to support up to 92 local government areas across Australia to deliver community-based nutrition and physical activity promotion programs and policies. Further funding was provided to state governments to implement healthy lifestyle programs for children (Au\$326 million, 2011–2018) and through workplaces (Au\$290 million, 2009–2018).^{10,11}

In light of these recent increases in funding for community-based obesity prevention activities and the increasing confidence that well-designed evaluations have conferred to the evidence base to support such initiatives, there is a need for greater understanding of community-based obesity prevention projects currently underway both worldwide and in Australia. Evidence of the way in which these investments are operationalised is required to inform funding and support for current and future initiatives, to identify evidence generation needs and to identify and disseminate successful strategies.¹² It is widely perceived that only a few of these programs will typically report their planning, implementation or results in the peer-reviewed literature; therefore, severe limitations to our overall understanding of their scope, reach and approaches will persist unless these findings are uniformly measured, collated, reported and synthesised. There is a risk that programs may be funded, run and completed with little broader dissemination of the results obtained or lessons learned from these investments. Therefore, a better understanding of current practice is required. This information can be used to identify ways in which good practice can be supported and knowledge translation and exchange enhanced.

Surveys of community-based obesity prevention programs have been implemented in the US,¹³ and across Europe by the World Health Organization (WHO).¹⁴ These international surveys vary in scope and relevance to community-based prevention. The US survey, for example, included all programs aiming to either prevent or treat overweight and obesity, although only among children, excluding the possibly large component of work focusing on adults.¹³ The European study identified and analysed 83 projects implemented between 2005 and 2011 in Europe and found the projects included exhibited wide variation.¹⁴ There was a strong focus on children and on school-based programs in most projects included. The survey found that information was limited on the reach of activities, the costs and, crucially, the effectiveness of the community-based initiatives.¹⁴ The researchers concluded that further support structures and resources were needed in Europe to facilitate high-quality implementation and the evaluation of projects, and to generate evidence for the effectiveness or otherwise of programs.¹⁵

To date, there has been no research in Australia on this topic. The aim of the present study was to identify the size and reach of current community-based obesity prevention projects in Australia and to examine their characteristics, capacity and approaches to obesity prevention.

Methods

A survey designed to measure the characteristics, capacity and approaches of community-based obesity prevention projects in Australia was developed and implemented in early 2010. A community-based obesity prevention project was defined as a program of activities that occurred in the community, either at or through community settings or by engagement with existing community group(s), with objectives that could be expected to influence energy balance by promoting healthy eating and/or physical activity. Specific exclusions were one-off events (e.g. a healthy eating fair), projects that focused solely on individual behaviour change (e.g. through educational counselling), higher-level policy or 'social marketing only' programs and treatment or management oriented projects that worked solely with overweight or obese individuals. Community programs auspiced by any organisation were eligible and projects were not restricted to those with a research or evidence generation objective.

Recruitment

A two-stage process was used to identify and recruit potential community-based obesity prevention interventions. The first step in recruitment was to contact a wide variety of individuals, organisations and government departments likely to be involved in the funding, planning and implementation of projects and request that they identify potentially relevant projects and contact people for each of these projects. The initial contact list was generated through the existing network of professionals involved in community-based obesity prevention of the CO-OPS Collaboration (Collaboration of COmmunity-based Obesity Prevention Sites)² and key organisations. This included the community health sector, academics, state government departments (health, sport and recreation, education), local councils and non-governmental organisations (e.g. The National Heart Foundation). In the second stage of recruitment, the contact person identified from each potentially eligible project ($n = 137$) was invited by email to complete the survey. In some cases further discussion with the contact person from the project was required to clarify eligibility. Respondents were able to complete the survey electronically either online, on their own computer (offline) or on hard copy.

Survey tool

A 104-item survey was developed and piloted with a selection of community-based obesity prevention projects in Australia. The stepwise survey comprised an initial 40-question 'compulsory' section, followed by an additional 'optional' 64 items that provided more detail. Results presented herein focus on the initial 40 core

items. Questions included basic descriptions of aspects of the project (e.g. location, staffing, funding, population group), along with several questions adapted from the WHO survey tool¹⁴ and CO-OPS Collaboration Best Practice Principles for Community-based Obesity Prevention.¹⁶ Some questions allowed open-ended responses, and the results were then coded into categories by researchers. The survey was answered by one project representative from each eligible project. A copy of the survey is available on request from the corresponding author.

Ethics statement

The study was approved by the Deakin University Human Ethics Advisory Group (Approval no. HEAG-H 191/09) and respondents provided informed consent to participate.

Results

Figure 1 gives details of participation in the study. From 1322 contacts identified, 137 projects met the eligibility criteria and, of these, 78 returned completed surveys (response rate 57%).

The 78 projects were located in all states and territories of Australia, with the exception of the Australian Capital Territory (population size 350 000; 1.6% of the Australian population). Four projects had a national focus and two were part of international initiatives (Table 1). Projects were generally distributed across states according to the size of the population, although New South Wales and Queensland appeared to be under-represented relative to population size, whereas Western Australia and, to a lesser extent, South Australia had a large number of projects relative to population size. The largest proportion of projects was led by local or community health organisations (46%), followed by non-governmental and charity organisations (22%) and state government departments (15%), with few projects led directly by local government (10%) or academic institutions (3%). All but two projects reported partnering with a range of other organisations from differing sectors;

participants reported forming links with between one and 120 other organisations to implement their strategies.

The median project staffing was one full time equivalent (FTE) staff member, with a range of 0.05 (approximately 1 day per month) to 17 FTE. The median annual project funding was Au\$94 900 (range from Au\$2500 to almost Au\$4.5 million). Seventeen per cent of projects were funded on an ongoing basis, whereas of those that were funded and planned for a specific time period, the median duration was 3 years. There was substantial variation in project size and capacity by state. South Australian projects were notably larger than the national average, with a median of 3.6 FTE staff and median annual project funding greater than double the national average, although none of these was established on an ongoing basis. Projects in the two most populous states, namely New South Wales and Victoria, accounted for 50% of all participating projects; however, these states also had the lowest median annual funding (Au\$53 900 and Au\$60 000, respectively).

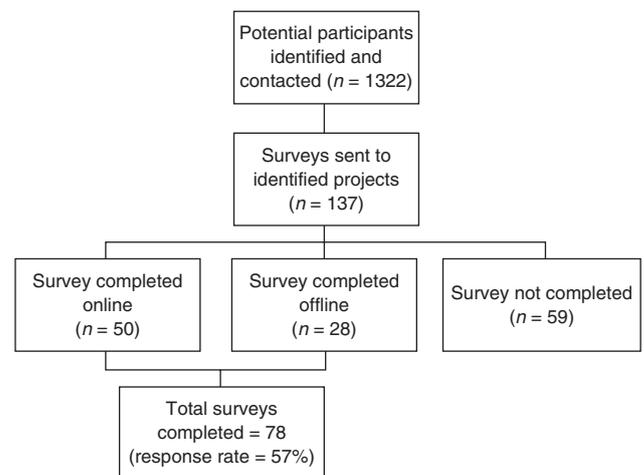


Fig. 1. Flow chart of participant recruitment.

Table 1. Project size and capacity by location, staffing levels, annual funding and project duration

The two Australian Territories, namely the Australian Capital Territory (ACT) and the Northern Territory (NT), have been excluded from this table because there were no responses from the ACT and only one in the NT, which had data missing for these variables. The *n* values for each category vary due to missing or incomplete data. The asterisk denotes a category for which only one response was available due to missing data. Unless indicated otherwise, data are given as the median with the range in parentheses. FTE, full time equivalent

	<i>n</i>	Population size, million (% of Australian population)	Staffing (FTE) (<i>n</i> = 70)	Funding per annum (Au\$ '000) (<i>n</i> = 50)	No. (%) projects funded as 'ongoing' (total <i>n</i> = 70)	Duration of project (years) (<i>n</i> = 58)
All	78		1 (0.05, 17)	94.9 (2.5, 4460)	12 (17%)	3 (0.8, 10)
NSW	14 (18%)	7.0 (33%)	1.5 (0.5, 4.5)	53.9 (3.5, 215.5)	2 (15%)	1.8 (1, 5)
Victoria	25 (32%)	5.3 (25%)	1 (0.05, 7.2)	60 (2.5, 1100)	3 (14%)	3 (1, 5)
Queensland	4 (5%)	4.3 (20%)	1 (0.5, 5)	137.7*	1 (50%)	1.6*
Western Australia	14 (18%)	2.2 (10%)	1 (0.3, 9)	110 (6.7, 1200)	4 (29%)	2 (0.8, 5)
South Australia	10 (13%)	1.6 (7%)	3.6 (0.2, 17)	240.4 (4, 4460)	0 (0%)	3 (1, 10)
Tasmania	4 (5%)	0.5 (2%)	1 (0.7, 2.5)	154.8 (100, 277.5)	0 (0%)	2.7 (1, 4.4)
National	4 (5%)	21.4	8.3 (3, 14.1)	1150 (1000, 1300)	0 (0%)	3, (3, 3)
International	2 (3%)	–	3.7 (0.3, 7)	20*	1 (50%)	1*

Table 2 provides an overview of the target population groups for the participating projects and the major intervention settings and strategies. Results are also presented separately for higher- and lower-funded projects (above or below median annual funding) and according to the size of the target population group. A substantial number of projects focused on large target populations, with 40% aiming to prevent obesity in populations of >10 000 people. There was some association between the size of the target population and the level of funding, with 71% of projects focused on >10 000 participants receiving above median funding, compared with 18% of projects focused on <500 participants. The programs were diverse in their activities, focus and strategies. They included programs such as local physical activity promotion ‘challenges’ and walking groups, community activities to improve healthy food availability and consumption, school- and preschool-based programs using multiple strategies to promote good nutrition and/or physical activity, as well as large-scale programs (up to statewide) working across multiple settings, using a range of strategies and approaches. Several programs that were initiated overseas and adapted or further developed in the Australian context were also included.

One-third of projects adopted a whole-of-population approach in defining the target population, whereas a substantial proportion of the remaining projects included a specific focus on high-risk and vulnerable groups, including low socioeconomic status (54%), rural and remote (31%), Indigenous populations (31%) and culturally diverse groups (23%). There was little difference between the higher- and lower-funded projects in the selection of target population characteristics, although a greater proportion of higher-funded projects reported a whole-of-population approach (44% vs 12% of lower-funded projects). One-quarter of projects aimed to prevent obesity across the full spectrum of ages within their population, whereas the major focus was on children among age-specific projects, especially primary (elementary) school-age children (37% of all projects).

The most popular intervention strategy identified was community capacity building (including professional development workshops, building and supporting stakeholder working groups; 79% of projects), whereas the least common strategy was social marketing, included in just 36% of projects. Environmental strategies (in 63% of projects), such as increasing access to fresh fruit and vegetables, infrastructure changes to support physical activity and interventions to influence price or economic incentives, were almost as common as more traditional individual behaviour change- and/or education-based strategies (67% of projects). There were notable differences according to project size and funding; however, higher-funded projects and those with large target populations were more likely to use social marketing and environmental strategies to support and promote healthier lifestyles. The most common project setting was within schools (37%), followed by ‘whole-of-community’ (multiple setting) interventions (36%). Smaller numbers of programs operated

through group programs, early childhood settings, workplaces, healthcare or the mass media.

Overall, one-third of respondents believed that their project did not have enough resources to achieve its objectives, whereas approximately one in five (19%) felt that staff did not have adequate training and capacity to achieve project objectives. Projects with above-median funding were less likely than lower-funded projects to report insufficient resources (25% vs 48%, respectively) and insufficient staff capacity (8% vs 30%, respectively), although there was no difference in the proportion reporting that additional staff training would be beneficial to their project.

Just over half of all projects included strategies that focused on promoting both nutrition and physical activity (56%). Slightly more projects focused exclusively on physical activity (26%) than exclusively on nutrition (18%). It was more common for higher-funded projects to focus on both aspects (70%) compared with lower-funded projects (40%). There were no appreciable differences in project focus between projects with different target population sizes.

Discussion

The present study describes, for the first time, the characteristics of a large number of community-based obesity prevention projects in Australia and provides an important insight into this significant field of action in the response to obesity and unhealthy lifestyles. The 78 projects were heterogeneous in terms of size, capacity, approach and scope. Variation was so broad that it is difficult to characterise the ‘typical’ community-based activity for obesity prevention in Australia. Programs ranged from small, locally based initiatives working within the existing capacity and funding of health promotion or community health organisations through to multimillion dollar government-funded programs. Large programs make an important contribution both by impacting upon large population groups and in contributing to the evidence base on the effectiveness of interventions. Furthermore, there may be increased efficiency in conducting ‘scaled-up’ programs for large population groups when these programs are funded appropriately and can plan and deliver best practice interventions. Both small, local programs and larger activities can make an important contribution to the overall effort towards creating a healthier community. Small programs, if they are well evaluated and results are reported and shared, can provide a testing ground for new ideas and strategies that may then be adopted on a broader scale. Conversely, large programs, which work across multiple settings and complex environments, provide an interim step in beginning to move away from ‘project’-based activities and further towards sustained community-level preventive action. However, it is clear that community-based interventions currently serve very large segments of the population, often with very limited resources, and community capacity building seems to be central to their approach. Community-based

Table 2. Characteristics of projects and their target populations

Data show percentages with *n* in parentheses. Not all totals add up to 78 (or the *n* values given in the column header) due to missing responses or multiple responses. Where multiple responses to a question were allowed, column percentages are the percentage of the total (*n* given in the column header). In all other cases, percentages given are of the valid responses. ATSI, Aboriginal and Torres Strait Islander; CALD, culturally and linguistically diverse; SES, socioeconomic status

Variable	All projects (<i>n</i> = 78)	Annual funding level ^A		Population group size ^B		
		Higher (<i>n</i> = 25)	Lower (<i>n</i> = 25)	Small (<i>n</i> = 21)	Medium (<i>n</i> = 22)	Large (<i>n</i> = 31)
Target population size						
<100	10% (8)	0	21% (5)	38% (8)		
100 to <500	17% (13)	9% (2)	17% (4)	62% (13)		
500 to <1000	8% (6)	4% (1)	13% (3)		27% (6)	
1000 to <5000	12% (9)	9% (2)	21% (5)		41% (9)	
5000 to <10000	9% (7)	13% (3)	4% (1)		32% (7)	
10 000 to <50 000	15% (12)	26% (6)	4% (1)			39% (12)
50 000+	24% (19)	39% (9)	21% (5)			61% (19)
Target population characteristics ^C						
CALD	23% (18)	20% (5)	28% (7)	14% (3)	23% (5)	29% (9)
ATSI	31% (24)	36% (9)	36% (9)	24% (5)	32% (7)	35% (11)
High risk	26% (20)	24% (6)	28% (7)	24% (5)	35% (8)	19% (6)
Low SES	54% (42)	56% (14)	60% (15)	62% (13)	59% (13)	48% (15)
Disability	9% (7)	12% (3)	8% (2)	14% (3)	5% (1)	10% (3)
Rural and/or remote	31% (24)	44% (11)	28% (7)	19% (4)	23% (5)	45% (14)
Whole of population	33% (26)	44% (11)	12% (3)	14% (3)	35% (8)	45% (14)
Target age groups ^C						
0 to <2 years	15% (12)	28% (7)	12% (3)	5% (1)	5% (1)	26% (8)
2 to <5 years	21% (16)	28% (7)	24% (6)	10% (2)	9% (2)	26% (8)
5 to <12 years	37% (29)	48% (12)	40% (10)	19% (4)	45% (10)	42% (13)
12 to <18 years	23% (18)	48% (12)	20% (5)	10% (2)	23% (5)	29% (9)
18 to <65 years	33% (26)	32% (8)	40% (10)	33% (7)	27% (6)	32% (10)
65+ years	15% (12)	12% (3)	20% (5)	19% (4)	18% (4)	13% (4)
All age groups	24% (19)	16% (4)	20% (5)	24% (5)	27% (6)	26% (8)
Environments for intervention ^C						
School	37% (29)	56% (14)	36% (9)	29% (6)	55% (12)	32% (10)
Preschool and/or early childhood	18% (14)	20% (5)	24% (6)	19% (4)	14% (3)	16% (5)
Healthcare and/or health services	19% (15)	20% (5)	24% (6)	0% (0)	27% (6)	23% (7)
Work place	18% (14)	24% (6)	12% (3)	14% (3)	14% (3)	19% (6)
Mass media	15% (12)	16% (4)	24% (6)	10% (2)	23% (5)	13% (4)
Group program	21% (16)	16% (4)	24% (6)	14% (3)	23% (5)	26% (8)
Whole of community	36% (28)	52% (13)	28% (7)	0% (0)	41% (9)	52% (16)
Main intervention strategies ^C						
Social marketing	36% (28)	52% (13)	28% (7)	24% (5)	41% (9)	42% (13)
Capacity building	79% (62)	96% (24)	68% (17)	76% (16)	82% (18)	77% (24)
Individual behaviour change	67% (52)	68% (17)	64% (16)	52% (11)	73% (16)	74% (23)
Peer education	58% (45)	56% (14)	60% (15)	62% (13)	55% (12)	61% (19)
Environmental	63% (49)	80% (20)	60% (15)	48% (10)	86% (19)	55% (17)
Annual project funding						
Higher (above median)	25 (50%)			18% (2)	40% (6)	71% (15)
Lower (below median)	25 (50%)			82% (9)	60% (9)	29% (6)
Project resources						
% Reporting:						
Insufficient resources to achieve objectives	32% (24)	25% (6)	48% (11)	30% (6)	38% (8)	34% (10)
Insufficient staff capacity to achieve objectives	19% (14)	8% (2)	30% (7)	16% (3)	19% (4)	21% (6)
Additional staff training would be beneficial to project	60% (43)	41% (9)	38% (9)	35% (7)	38% (8)	39% (11)
Project focus						
Nutrition only	18% (13)	9% (2)	28% (7)	21% (4)	15% (3)	21% (6)
Physical activity only	26% (19)	22% (5)	32% (8)	21% (4)	25% (5)	(9)
Both nutrition and physical activity	56% (40)	70% (16)	40% (10)	58% (11)	60% (12)	(14)

^ATwenty-eight project representatives did not provide funding data or amounts that could be converted into figures per annum.

^BPopulation group size was defined as small if there were fewer than 500 subjects, medium for 500–10 000 subjects and large for >10 000 subjects.

^CMultiple responses were allowed.

interventions seem also to be an accepted way of reaching marginalised or at-risk population groups.

There was significant variation in the size and funding of projects between states. In Australia, it is common that community-based health promotion programs are funded by state governments, which have responsibility for most health funding. It is less common for projects to be funded by the federal government or the philanthropic and not-for-profit sectors. States that are leading the way in investment and innovation in obesity prevention activities should be recognised for this commitment and other states encouraged to learn from and emulate their successes, as well as less successful components of programs.

The limited duration of many programs is of substantial concern. Just one in six projects identified in the present survey were funded on an ongoing basis. In addition to time pressures on staff and possibly reduced time available for needs assessment, planning, evaluation and dissemination of results, there are two key risks for community-based programs of limited duration. First, where strategies are diluted across large populations and involve many incremental changes to environments and policies, it may be very difficult to achieve significant impacts on key outcome measures (e.g. reductions in obesity prevalence) in 3 years or less. This may lead to erroneous conclusions that the program has 'failed' or is fundamentally ineffective. Second, even if programs are shown to be effective in the short term, there may not be sufficient time or capacity to ensure sustainability and long-term adoption of program elements and new policies in communities, resulting in longer-term failure of the interventions to have an impact on population health. The inherent limitations in attempting to address a complex, long-term problem such as obesity through short-term 'projects' or time-limited activities has led to a call for a more sustained and comprehensive approach,¹⁷ including a greater focus on the very upstream determinants of obesity,¹⁸ and the application of systems science,^{17,19} yet the current model of funding and activity is not geared towards this type of action. Although the types of projects documented here continue to make an important contribution to the creation of healthier environments and evidence generation, substantial changes will be needed for obesity prevention to become embedded in policies, environments and systems in the long term.

The present survey was the first to explore the current coverage of community-based obesity prevention initiatives in Australia and aimed to provide a detailed profile of these initiatives. Given the relatively high respondent burden for such an in-depth study and the generally low staff capacity within community-based programs, it is likely that the respondents to the survey were biased towards larger and better-funded and resourced programs, especially those with links to academic institutions. Therefore, the total picture of community-based obesity prevention is likely to vary substantially from the results documented herein. There is a high likelihood that

many more programs have been undertaken than those captured by the survey, with a wide variety of innovative approaches and strategies. However, it is also likely that these programs may be less well funded, experience greater pressure on resources and have more limited ability to draw on existing evidence and to evaluate programs in a way that provides evidence of effectiveness and contributes to the evidence base. Of the 78 participating projects, only 11 reported that they had publicly published reports about their project to date and, of these, only four were in peer-reviewed literature. Although there is evidence that the majority of initiatives surveyed involved collaboration with a range of partners from multiple sectors, the lack of reporting of outcomes, and some limitations to the evaluation approaches used, suggest that there may be benefits to greater collaboration between practitioners and academics to promote both evidence generation and knowledge translation. A central finding from these results must be that there are a wide variety of approaches to obesity prevention, both programmatic and activity based, that cannot be investigated reliably through reviews of published literature. Without either increased engagement between practitioners and academics or active knowledge exchange activities to share lessons and disseminate best practices from these projects, there is a real risk that the substantial investments in community-based programs and the large volume of knowledge and experience generated within the programs will be lost, leading to repetition of mistakes and wasting of scarce public health and health promotion resources.

Further limitations of the present study include the limited capacity to follow up potential participants who had been contacted at the initial recruitment stage. Strengths of the present study include the development of a novel survey tool that incorporates published best-practice principles for community-based obesity prevention¹⁶ and a WHO survey instrument that had, at the time, been pilot tested with European projects and has since been used for a broad evaluation of community-based obesity prevention activity across Europe.¹⁴ The results of the present study are the first of their kind for Australia and among the first in the world in assessing the status of community-based obesity prevention.

The present pilot study provides a basis for future research assessing community-based obesity prevention work in Australia. Future work should aim to identify the full range of current projects and elicit key information on variables of interest, as derived from the findings of this pilot survey, and to promote dissemination of key findings from programs in a manner that may facilitate development of high-quality, sustained community changes to create an obesity preventing environment. This 'mapping' of existing initiatives should be tracked over time to identify gaps (e.g. population groups or geographic regions for which activities or evidence are limited) and to monitor the progress of activities towards the next generation of comprehensive community actions and systems activation.

Conclusions

This study has demonstrated that there is a great deal of action as well as wide variation in programs aiming to prevent obesity at the community level in Australia. The significant community efforts in this area are rarely captured in the academic literature. Community-based programs are a substantial component of the response to obesity in populations and there is a wide variety of action in government and non-government sectors. This current generation of programs has the potential to provide some of the necessary evidence for the next generation of more comprehensive, systems-based actions to promote healthy weight and healthy lifestyles. Further work is needed to identify the full extent of existing community actions, to monitor their reach and future 'scale up' to ensure that high-quality existing obesity prevention efforts are supported and that future activities aim for effective integration into systems, policies and environments.

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