

Whole of community physical activity interventions: easier said than done

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ABSTRACT

Objectives: To reflect on whole community intervention approaches to promoting physical activity, using experiences from the 10,000 Steps Rockhampton project.

Design: Many studies are quasi-experimental with single site intervention and comparison communities.

Setting and participants: Whole communities.

Intervention: Coordinated multiple strategies designed to address individual, interpersonal and environmental determinants of physical activity.

Main outcome measure: Physical activity

Results: There are many challenges to conducting whole community interventions. Developing community partnerships and coalitions, reaching socially disadvantaged groups, and developing effective evaluation methods are identified as specific concerns.

Conclusions: Despite the challenges, the whole community approach still offers tremendous potential for developing the social and cultural change which will be required for sustained improvements in population physical activity

What do Batsfjord (in the Arctic region of Norway, population 2500), Saskatoon (capital of the Canadian province of Saskatchewan, population 208 000), Wheeling (in the Ohio River Valley of West Virginia, USA, population 31 420), Rockhampton (in tropical central Queensland, Australia, population 60 000), Romsås (a suburb of Oslo, Norway, population 6700), and Ghent (the capital city of the East Flanders province of Belgium, population 228 000) have in common?

The answer is that all are examples of recent whole community multi-strategy physical activity intervention trials.¹⁻⁶ In the case of Båtsfjord,¹ the focus was on reducing multiple cardiovascular risk factors (nutrition, smoking, alcohol, physical inactivity), while in the other communities the interventions focused solely on physical activity promotion. Several physical activity projects with multiple intervention communities in a defined regional area have also been conducted in recent years—for example, in five municipalities in the Maastricht region of the province of Limburg in the Netherlands and in six communities in the Ozark region of Missouri, USA.^{7,8}

All these projects built on the ideas developed in the 1970s and 1980s multiple risk factor intervention studies in Finland (for example, North Karelia)⁹ and the USA (for example, the Stanford Five City project, and the Minnesota and Pawtucket Heart Health projects).¹⁰⁻¹² These pioneer projects focused on the simultaneous reduction of several risk factors for cardiovascular disease (CVD) including smoking, high blood pressure,

cholesterol and obesity, and all had a strong focus on the promotion of physical activity at the individual and community level. As with prior activity promotion efforts, all relied heavily on education and supervised exercise opportunities, but these projects were leaders in the field of “whole population” interventions with additional strategies targeted to reach multiple sectors of the communities through community organisations and workplaces.¹³

In contrast with these landmark studies, most of the 21st century whole community physical activity interventions have been guided by social ecological models of health behaviour. All used participatory community planning to develop multiple concurrent community based strategies designed to intervene at the individual (personal), social (interpersonal) and environmental (physical and legislative) levels.^{14,15}

Although the emphasis on different strategies has varied across projects, six broad strategies appear to be common to most of the recent whole community intervention projects. These include: (1) social marketing through local mass media (TV, radio, newspapers); (2) other communication strategies (posters, flyers, information booklets, websites, maps) to raise awareness of the project and provide specific information to individuals in the community; (3) individual counselling by health professionals and the use of PA prescriptions; (4) working with voluntary and non-government organisations, including sporting clubs, to encourage participation in walking and other activities and events; (5) working in specific settings such as schools, workplaces, age care centres and shopping malls; and (6) environmental change strategies.

Most projects have used the name of the community to aid in social marketing (for example, Wheeling Walks,³ Romsås in Motion,⁵ Harts slag (Heartbeat) Limburg)⁷ or developed an acronym around the community name (for example, Project WOW (Walk the Ozarks to Wellness)).⁸ Others have incorporated the “main message” of their campaign into the project name (for example, 10,000 Steps Rockhampton¹⁶ and 10,000 Stappen – Elke Stap Telt (10,000 steps, every step counts) in Ghent⁶). As the name suggests, in the 10,000 steps projects, individuals were encouraged to use pedometers as a means of goal setting and monitoring, and encouraged to use diaries and/or a website to monitor steps. Several other projects also encouraged individual monitoring—for example, in Romsås a walk diary was distributed to every household; it could be returned to project staff for data capture and participation in local competitions.⁵



Figure 1 Signs and footpath stencils used in the 10,000 Steps Rockhampton project.

In the last 8 years, the concept of “environmental strategies” has been an important component of whole community physical activity intervention trials. In each community there have been efforts to engage with town planners, local councils and transport authorities to develop local environments which are more supportive of culturally and climatically appropriate activities. For example, many interventions have included using signs to indicate routes for walking, or to encourage stair use instead of using elevators or escalators (fig 1). Many projects have also worked with authorities to improve the condition of footpaths, cycleways, ski trails (in Båtsfjord) and recreation areas. Issues of safety have been addressed in various ways: in Rockhampton the researchers worked with local authorities to control stray dogs,¹⁷ while in Romsås efforts were made to improve clearing of snow from footpaths in winter.⁵

Considering the difficulties of changing physical activity behaviour, the reports to date from these whole community intervention sites are extremely encouraging. In almost all these communities there were positive changes in behaviours compared with measures in the matched comparison communities. In some cases, however, in light of the enormous effort required to develop and implement these complex multi-strategy interventions, the effects were quite small, especially when compared with the results from some interventions which target high risk individuals and offer individualised advice on changing behaviour.¹⁸

Importantly, however, when risk is widely distributed in a population, small changes in behaviour across the whole population are likely to yield greater improvements than large changes in a small number of people; so the small improvements in physical activity reported in these whole community interventions translate into large population benefits.¹⁹ In terms of chronic disease prevention, increasing physical activity may be particularly important for everyone with a body mass index (BMI) >25 kg/m²,²⁰ so the combined primary and secondary prevention strategies included in most whole community programmes may be particularly effective.

Recent results from communities of all sizes, from the Arctic Circle to the Tropic of Capricorn, suggest that there is potential to implement “whole community” interventions to increase physical activity anywhere in the world. These interventions are, however, not easy to conduct. The reports that reach the pages of our peer review literature often present the strategies

and results without considering the challenges and difficulties of mobilising a whole community to work together to encourage physical activity among local residents. In this paper we review our experiences with the 10,000 Steps Rockhampton project,^{4 16 17 21 22} and reflect on the challenges of developing, implementing and evaluating a whole community physical activity intervention.

GETTING STARTED: DEVELOPING THE PROJECT

Most physical activity intervention projects have to start by finding funds. In the case of 10,000 Steps Rockhampton, the project originated as a funding submission from a group of academics who developed a community coalition to bid for funding from the Queensland state government in 2001.¹⁶ In preparing the submission, the first challenge was to agree on a site for the intervention study—one where media coverage could be confined to the local community and where people generally lived and worked in the community without commuting to/from neighbouring towns outside the “reach” of the intervention strategies. Having agreed on the site (Rockhampton) we then had to identify a comparison community with similar sociodemographic characteristics which was sufficiently far away that it would not be affected by the intervention strategies.¹⁶

Development of the community coalition involved visiting all the “key players” in physical activity in the intervention community and getting their support in principal for the project. This took many weeks of work, with meetings to explain the concepts (initiated by the researchers) and to explore potential partnerships with and contributions from many community organisations. With at least eight key community partners and six academic researchers “at the table”, the next challenge was to work out which strategies would be included in the funding submission (fig 2). We also had to agree on the organisational structure of the project team, and work out how to balance the “top down” approach of the researchers with “bottom up” input from the community representatives. More details of this development process have been described elsewhere.¹⁶ Working with the community in these initial stages was crucial to the success of the project; in hindsight we realise that navigating the complexities of local

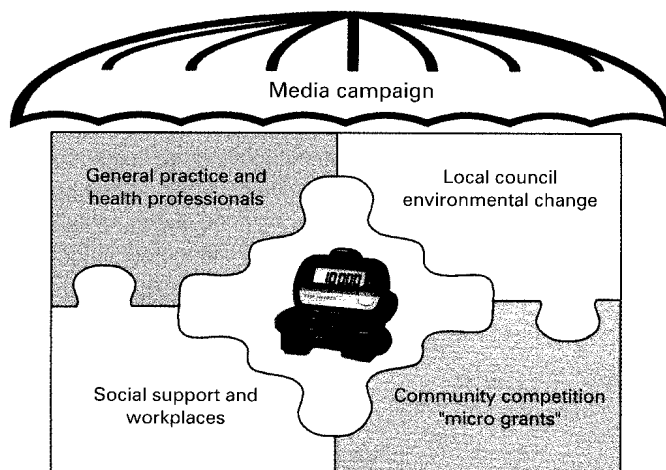


Figure 2 Key strategies used in the 10,000 Steps Rockhampton project. The media campaign formed an umbrella for the simultaneous implementation of all the strategies, with 10,000 Steps and the use of a pedometer as a central theme.

and state political processes is something that can only be learned through experience.

Following the successful "bid", the project was officially "launched" by the state minister of health in Rockhampton in November 2001. While this was part of the political process, we had not yet collected the baseline measures which would be crucial to our evaluation of the project.⁴ We will never know whether there was any increase in activity as a result of the media attention given to the project at this early stage.

IMPLEMENTATION

Following the launch and collection of baseline data, implementation of the five key strategies was carried out by a local project team with direction from a local physical activity task force (which evolved from the initial partners in the bid) and a more distal expert health promotion advisory and evaluation group (academic researchers).

The marketing and media campaign involved both planned and opportunistic promotion of the project under the name of "10,000 Steps Rockhampton". A feature story on the project in a national magazine resulted in two (unplanned) reports on national TV; these were key to galvanising local support for the project by placing it in the national spotlight. Efficient and effective use of local mass media—radio, television and print—proved very effective in raising public awareness of the project, and helped to engage the key players for the remaining strategies. As a result, general practitioner (GP) participation in the project, for example, was much higher than in single focus Australian GP studies completed elsewhere in Australia.²¹

Throughout the 2 year implementation period a major challenge was maintaining ongoing meaningful engagement of the community coalition charged with providing local input and guidance to the project. While attendance at the local physical activity task force meetings remained high throughout the project, meaningful decisions and reflective input from the community partners was limited. Although health promotion theories stress the importance of community partnerships,²³ it is difficult to engage diverse stakeholders to make significant and supported—financial or human capital—input into a project that is arguably perceived as tangential to their "core" concerns, especially during the planned transition to complete community control of the project. Although there were very few groups—formal or otherwise—who did not support the project in spirit, physical activity promotion was often thought to be "someone else's business". Notwithstanding this, the local physical activity task force remains in place 5 years after the end of project funding, but ongoing commitment from local groups and agencies remains an ongoing challenge.

In terms of intervention fidelity, the most problematic aspect of the project was accessing and involving socially disadvantaged groups. Local and regional non-government organisations funded to work with these populations participated in the local physical activity task force, but found it difficult to make physical activity promotion a leading priority. Although project staff worked with local libraries to organise no-cost pedometer loan schemes, reaching hard-to-reach population groups was a constant challenge.

EVALUATION

The primary outcome evaluation for the 10,000 Steps Rockhampton project used pre- and post-intervention CATI surveys of random samples of the intervention and comparison communities, with the individual as the unit of analysis.⁴ This

quasi-experimental approach (with one intervention and one comparison community), which is commonly used in whole community intervention studies, reduces the ability to draw causal inferences from the collected data.²⁴ Multiple sites in each of the intervention and comparison arms, with analysis at the community level, can overcome this problem. However, for logistical reasons there are seldom more than five or six communities in each arm; this limits the power to detect intervention/comparison differences, especially if there are distinct differences among the communities.²⁵

Although we relied on self report measures, the Ghent researchers supplemented self report measures with objective pedometer step-counts,⁶ and it is likely that we will soon see whole community interventions evaluated with accelerometers. While this approach is to be commended, there are issues relating to the random selection of participants for monitoring, and the effect this has on their physical activity. This approach is, however, preferable to that used in trials where participants are recruited from convenient samples of volunteers, which increases the potential for self selection bias.

In Rockhampton we collected limited process data to assess the reach of the intervention strategies.^{26, 27} The use of more comprehensive process measures, as in the Romsås on the Move project, allows greater insight into the reach of individual strategies. This has been a significant flaw in previous whole community research and should be addressed in future studies. With adequate data it should be possible to conduct analyses to assess the relative contributions of specific strategies to overall behaviour change.²⁸

SUSTAINABILITY AND DISSEMINATION

Although the 10,000 Steps Rockhampton project demonstrated modest success in terms of behaviour change outcomes, it nonetheless captured ongoing interest from the Queensland state government and support for the dissemination of project concepts and materials to individuals, workplaces and communities throughout the state of Queensland and across Australia. At present there are over 74 000 registered users of the step-log website, more than 1500 registered programme providers, more than 100 workplaces and 13 communities who have implemented adaptations of the original project.²²

CONCLUSIONS

Whole community physical activity interventions present enormous challenges for researchers. There is still a great deal to be learned about the mechanisms of community engagement, the effectiveness of community coalitions, how to reach the most disadvantaged groups in the community, and the efficacy of individual strategies, which when implemented simultaneously in a coordinated approach, will result in behaviour change in populations. Despite the challenges, the whole community approach still offers tremendous potential for developing the social and cultural change which will be required for sustained improvements in population physical activity.

RECOMMENDATIONS FOR RESEARCHERS AND PRACTITIONERS

Ultimately communities are the confluence of policy, environment, and individual levels of intervention to affect changes in physical activity behaviour, and as such should remain an important focus of future promotional activities. From an evidence based perspective there is much that remains needed to understand clearly what constitutes "best practice" in terms of community based physical activity promotion programmes.

This lack of evidence base displays the ongoing need for more community based approaches, and an ongoing need for researchers and practitioners to work closely in the establishment of this evidence base. Practitioners considering future projects aimed at promoting physical activity at the community level should not be deterred by the weak evidence base as this is likely a result of measurement, design and implementation errors instead of a true lack of effect. The future of community based intervention should be done through close partnerships between the research and professional community to best ensure positive, measurable outcomes that provide a clearer understanding of the processes and outcomes associated with their efforts. The following reflective recommendations are provided to assist future partnerships of this type:

- ▶ For researchers
 - Involve the local community from the outset in planning and development of the project. Take time to develop a close working relationship with mutually beneficial outcomes.
 - Consider the unit of analysis when developing the evaluation plan. Multiple communities may be needed to evaluate better the outcomes associated with the project.
 - Multiple intervention strategies will require differentiated evaluation strategies to determine the relative effectiveness and contribution of each.
 - The research team's work with the community practitioners requires a careful balance of rigour and execution. The needs of the research team to ensure the fidelity of the intervention and the integrity of data collection must be

What is already known on this topic

- ▶ Pioneering community intervention studies of the 1970s and 1980s focused on the simultaneous reduction of multiple risk factors for cardiovascular disease with a strong focus on the promotion of physical activity at the individual and community level.
- ▶ Historically early projects relied on education and supervised exercise opportunities.
- ▶ By contrast, most 21st century whole community physical activity interventions have been guided by social ecological models of health behaviour.

What this study adds

- ▶ The current article is a review of recent community interventions and a reflection by key members of a significant project in the Australian context.
- ▶ Six broad strategies appear to be common to most of the recent whole community intervention projects, including: social marketing and other communication strategies; individual counselling by health professionals; collaborative work across a range of traditional and non-traditional physical activity providers; working in specific settings such as schools, workplaces, age care centres and shopping malls; and environmental change strategies.
- ▶ Practical recommendations are made for the research community and health promotion practitioners to assist in future successful projects.

balanced with the practitioner's excitement to implement the project.

- ▶ For health promotion practitioners
 - Whole of community projects should aim for participation from a range of public, private and commercial sectors. Do not limit yourself to traditional providers of physical activity and health promotion services.
 - Take sufficient time to have supporting local public relations and marketing campaigns in place before programme launch.
 - Work closely with researchers to ensure project success and the establishment of an evidence base in support of current and future projects.
 - Local communities should make a specific effort in terms of process evaluation of project related activities.

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